

INTERNATIONAL

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68



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

» Our advertising campaigns involve all of you out there on the market

COMMUNICATION IS INFORMATION

Dear readers,

Communication is my main job.

Communication means information in keeping, of course, with the policy of fairness and transparency that everybody here at Mapei has adopted in all our miscellaneous activities and business operations in so many different countries.

I am reminded of this every day when I look at the old and now slightly faded poster hanging in my office that I am still so fond of and look after with great care, even now many years later and after changing premises several times. The poster says: "Communicating is a battle you have won". And all of us here at Mapei still have many battles to win with you at our side.

I would like to take this chance to talk to you about communication by drawing your attention to the new advertising campaign that has just begun and will continue throughout the entire year.

Communicating and investing in advertising is a vital way of showcasing all our different activities, such as research, manufacturing new products, commitment to respecting the environment and human activities, marketing and selecting/using the very best products (something that also involves and affects all of you out there on the market).

"Everything's ok with Mapei" is the main slogan of our advertising campaign that involves major investment in lots of media, such as radio, press and social/digital media in Italy and other countries where Mapei operates. It is the guiding thread running through various advertising projects taking place throughout the year.

KERAFLEX, a collection of cementitious adhesives at the cutting-edge of Mapei's portfolio, is the first product line to be advertised on the radio and in the press in Italy: the advert is based around a personified, "swash-buckling" image of the product setting some ceramic tiles straight, and it also focuses on the product's qualities and properties.

I would also like to draw your attention to this latest issue of *Realtà Mapei International*, which, as always, is full of news about the Mapei world, including the opinions of lots of leading figures from the world of culture, the building industry and sport. There is also plenty of information about our commitment to social responsibility and some new columns.

I hope you all enjoy your listening and reading.

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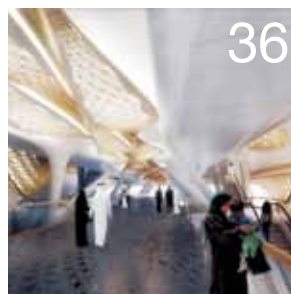
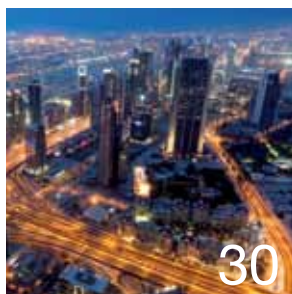
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Boy Bitten by a Lizard is a work by Michelangelo Merisi da Caravaggio on display at the "Eternity and Time between Michelangelo and Caravaggio" exhibition, which opened on 10th February and will run until the 17th of June. Mapei is sponsoring the exhibition, contributing to raising funds for medical research for children.



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CORRIGENDUM

In the latest issue of the magazine (*Realtà Mapei International* no. 67) the figures for the Western European and Latin American building markets mentioned at the top of page 2 are wrong.

The correct figures are the following: Latina America -2.3% for 2017; Western Europe: 1375 billion Euros, +4.1% for 2017; +2.9% for 2018.

We apologize for the mistakes.



Alberto Quadrio Curzio, Emeritus
Professor of Political Economics at the
Cattolica University of Milan and President
of the Accademia Nazionale dei Lincei

Progress through culture

THE IMPORTANCE OF RELIABLE AND CONCRETE BENCHMARKS FOR PROMOTING CULTURE

Do culture and science help “nations” in their socio-civil development and economic growth? At first sight, the answer is obviously yes, but if we look at all the news on the web and the various ways in which public opinion is shaped, we cannot be so optimistic, because antiscientific, antisocial, anti-institutional and anti-economic claims seemed to be given undue credence.

Every Country has its own waves of fake news that are either false or biased. Let's take two recent examples in Italy. The first concerns health. The so-called “antivax” (anti-vaccinations) brigade managed to get themselves taken seriously, despite the great improvement in both individual and community health resulting from vaccinations, backed up by irrefutable scientific evidence. In the end, however, the scientific world and institutions managed to gain the upper hand, because, on one hand, the Accademia Nazionale dei Lincei (i.e. Italy's most important scientific institute) drew up an excellent report showing that vaccinations were vital for the health of both individuals and society as a whole and, on the other, first the Italian Government issued a decree and then Italian Parliament passed a law making them compulsory.

Our second example comes from the field of economics. Euro sceptics claim that the European Union and Eurozone

are like cages from which we need to escape as quickly as possible. In actual fact, suggesting that Italian businesses are penalised by these institutions constitutes a failure to realise that Italy's involvement in the Euro has provided protection in terms of national public debt and allowed innovative Italian companies (not those merely ‘hanging on’ by taking advantage of competitive devaluations) to become stronger and more competitive than ever, since they have come up with innovation. Similar examples can be found in all Nations.

This inevitably poses the question: how can we counteract superficial thinking? Generally speaking what we really need are reliable accredited sources of information and a real commitment to promoting culture and the monitoring of news/information instead of lazily believing everything we hear. Learning how to critically monitor news does not just come from formal education, it also, and no less importantly, comes from what we learn at work as we hone our professional knowledge and, with it, our critical thinking.

Another general kind of learning comes from being actively involved in every aspect of the community. Visiting exhibitions and museums and thinking about what we see provides us with an insight into the history of culture and art. Attending conferences forces us to think about well-established beliefs protecting us from reiterate soundbites we do not really understand. Even being part of a sports association creates knowledge shared between different realms of expertise that exchange well-grounded information. Culture and the community often move hand-in-hand.

This might be seen an ideal model that does not take into account the hardship of everyday life. It is partially so but the conditions to build the public trust is to fix cultural and civil credible knowledge and comprehensible benchmarks. Every nation should have its own agenda committed to helping us raise our cognitive and critical understanding of the world.

As an example, let's take some different but complementary cases: the UN, the EU (and its various member states), the G7's Scientific Academies. These are crucial examples that public opinion is seldom aware of.

On a worldwide institutional level, the UN settled in 2015 its 2030 Agenda for Sustainable Development focused around 17 goals aimed at allowing present generations to live in dignified socio-economic conditions without compromising the needs of future generations.





SUSTAINABLE DEVELOPMENT GOALS



FIG. 1. In 2015 the UN set its 2030 Agenda for Sustainable Development focused around 17 goals aimed at allowing present generations to live in dignified socio-economic conditions without compromising the needs of future generations.

This worldwide macro-project has historical credibility because the UN has been working towards these goals for decades, focusing even greater attention since the 1992 “Earth Summit” held in Rio de Janeiro (Brasil) and the Millennium Development Goals for the 21st century set in 2000. Its credibility is reinforced by the fact that it was approved by the almost 200 nations belonging to the UN General Assembly.

Nevertheless, all this is not enough unless certain conditions are also brought about in two other institutional and socio-economic realms similar to those found in other countries and on other continents.

On a continental institutional level, the European Union has set its own 2030 Agenda around three key aspects of sustainable growth (economic, social, environmental) with more specific targets for the next 15 years, focusing, amongst other things, on human dignity, regional and worldwide stability, a healthy planet, fair and equitable societies, and financial prosperity. All the various European projects take these goals into account to varying degrees.

On a national institutional level, the individual member states of the EU are gradually falling in line, since their National Institutes of Statistics are introducing assessment indicators based on the guideline settled by the United Nations’ Statistics Division through an Inter Agency Group for monitoring these goals.

In Italy, prompt action was taken on a number of levels: Istat

(Italian National Institute of Statistics) intervened immediately; the National Reform Plan incorporated in the 2017 Def (Government Economic Financial Planning Paper) made reference to three “strategic operations” for implementing the 2030 agenda (a strategy for sustainable development, social wellbeing indicators and the promotion of gender equality);

a civil body, the ASviS (Italian Agency for Sustainable Development), carried out excellent promotional work.

On a scientific level the G7 of scientific academies has discussed similar issues (that we looked at in issue no. 64 of *Realtà Mapei International*) at the meeting held at the Accademia Nazionale dei Lincei in Rome in 2017.

During the 12 years it has been in operation (starting from 2005), the G7 of Scientific Academies have always focused on major issues related to the Millennium

Development Goals and 2030 Agenda to provide guidelines in terms of scientific research, political intervention and social cultural awareness. Previous joint statements have concerned such topics as energy, climate change, illnesses, health and natural disasters.

All the G7 of Scientific Academies have focused their efforts on promoting transnational cooperation between their academies and on their ability to impact on government policies. And so, in conclusion, it has often been claimed that only a culture of widespread, consolidated, sustainable development can bring together science, technology and politics, which means that progress comes from culture.

➤ **What we need are reliable accredited sources of information and a real commitment to promoting culture**

Eternity and Time

from Michelangelo to Caravaggio

MAPEI'S SUPPORT FOR CULTURE, THE ARTS, AND SOCIAL RESPONSIBILITY IS CONTINUING THROUGH THE SPONSORSHIP OF THE EXHIBITION AT SAN DOMENICO MUSEUMS IN FORLÌ

The opening ceremony was attended by Dario Franceschini, at the time Italian Minister for Cultural Heritage and Activities and Tourism.



Ludovico Carracci, *The Conversion of St. Paul*, detail, 1587-1588, oil on canvas, Bologna, Pinacoteca Nazionale.

Culture and solidarity are once again to the fore in 2018 as Mapei is a Platinum Partner in supporting the exhibition devised and promoted by Fondazione Cassa di Risparmio di Forlì in partnership with Forlì City Council.

The exhibition entitled "Eternity and Time between Michelangelo to Caravaggio (L'Eterno e il Tempo tra Michelangelo e Caravaggio)" officially opened on 10th February at the San Domenico Museums in Forlì and will run until the 17th of June. The exhibition looks at the way in which the values of art change from the Renaissance to the Baroque era in relation to the works and masterpieces of Michelangelo and various other artists, including Raphael, Rosso Fiorentino, Pontormo, Vasari, the Carraccis, Titian and Caravaggio.

Mapei is continuing to support events held at the San Domenico Museums in Forlì, after sponsoring the exhibitions "Piero della Francesca. Exploring a Legend" in 2015 and "Art Déco. The Roaring Twenties in Italy" in 2016, as you can read in *Realtà Mapei International* no. 57 and 63.

Once again, the takings from ticket sales for the exhibition will help finance research into children's tumours, including prevention and health care, as part of the Fabbrica del Sorriso projects organised by Mediafriends.

Mapei is even more visible with its logo appearing on the communication tools distributed at the exhibition, online, and in the TV special about the exhibition produced and broadcast in Italy by Sky Arte HD, which was on air during prime time from 28th February to 5th March, plus a further 20 repeats at later dates.

A SUMPTUOUS CULTURAL DISPLAY

For the first time ever after holding twelve previous exhibitions at the San Domenico Museums, the display begins from the old San Giacomo Apostolo Church and then extends across the ground-floor and first-floor premises of old home of the Dominicans.

"If we have now reached the 13th international exhibition at San Domenico Museum - so the President of Cassa dei Ris-



El Greco, *A Boy Blowing on an Ember to Light a Candle*, 1571-1572, oil on canvas, Naples, Capodimonte Museum.

parmi Foundation, Roberto Pinza, stated at the official opening of the exhibition - it is because we firmly believe in the need to maintain this cultural/promotional enterprise.”.

“This work takes great organisation and plenty of investment – so he continued - but we are delighted to be so committed to creating and organising (we do not merely copy other projects, we devise our own) exhibitions of the highest order that attract so many people: our ambition is to add something more to all the research that had already been carried out into the 16th century”.

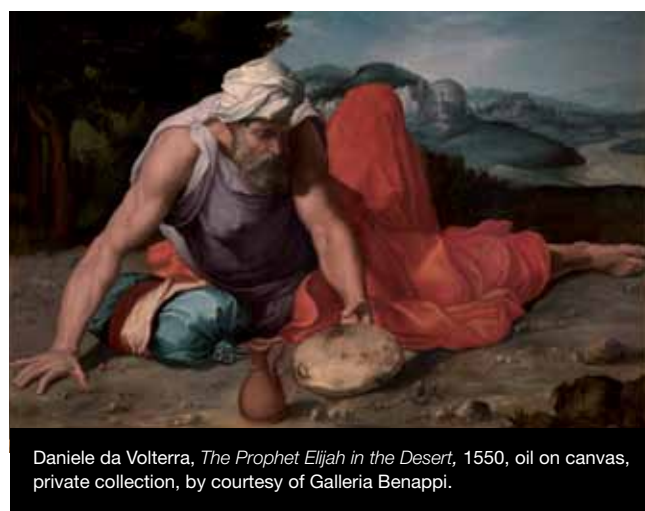
The mayor of Forlì, Davide Drei, focused on the importance of renovating the church and using it to host major exhibitions: “I would like to point out that this place was completely run down and dilapidated in 1978 when the roof collapsed. The fact that now, just forty years later, it can host works by Caravaggio and Michelangelo is an extraordinary thing for our city. The partnership between the City Council and Foundation has resulted in another extremely important project”.

“For three years now - so Massimo Ciampa representing



Michelangelo, *Giustiniani Risen Christ*, detail, 1515, marble, Bassano Romano, San Vincenzo Martire Monastery.

Michelangelo Merisi da Caravaggio, *Boy Bitten by a Lizard*, 1595-1596, oil on canvas, Longhi Foundation, Florence.



Daniele da Volterra, *The Prophet Elijah in the Desert*, 1550, oil on canvas, private collection, by courtesy of Galleria Benappi.



Mediafriends (the non-profit social-utility organisation run by Mondadori, Medusa and Mediaset) noted - part of the ticket takings from the exhibition at San Domenico Museums have gone towards fundraising activities to help young children in Italy and around the world break free from poverty, suffering and marginalisation. Over the first two years, the project managed to collect 4,200,000 Euros, which was donated to 8 research and care projects”.

Since the President of the Scientific Committee, Antonio Paolucci, could not attend the opening event, Professor Daniele Benati was given the job of presenting the exhibition. He noted that after four events devoted to the 20th century, this year the San Domenico Museums feature a highly emotional exhibition layout focused around the 16th century, the century that paved the way for our modern age.

HOW THE RENAISSANCE CAME TO AN END

190 works are on display, including a Raphael, three Caravaggios (we need only mention *The Pilgrims' Madonna* and *The Sacrifice of Isaac*), a marble sculpture and six drawings by Michelangelo, two works by Pontormo, a Rosso Fiorentino, a Vasari, a Moretto, a Rubens and various other works by the Carraccis (Enrico, Annibale and etchings by Agostino). “Eternity and Time between Michelangelo and Caravaggio” provides an overview of one of the highest and most fascinating moments in Western history. The years stretching, ideally, from the Sack of Rome (1527) to the death of Cara-



Caravaggio, *Madonna of the Pilgrims*, 1604-1606, oil on canvas, Rome, Saint Agostino Basilica in Campo Marzio.



Federico Barocci, *Deposition From Cross*, 1567-1569, oil on canvas, Perugia, San Lorenzo Cathedral.

vaggio (1610), from the beginning of the Protestant Reform (1517-1520) to the Council of Trent (1545-1563), and from Michelangelo's *Last Judgement* (1541) to Galileo's *Sidereus Nuncius* (1610), heralded the beginning of modern times. The San Domenico Museums provide a perfect stage for the drama and intrigue of a century that witnessed the disturbing death spasms of a magnificent twilight (that of the Renaissance) and the opening up of new and enlightened horizons through the great masterpieces of Mannerism.

In Italy, the bloodiest battle of all in the fight for modern painting was fought out in the realm of church commissioned painting and Caravaggio was the key player in this battle. From Michelangelo's late works to the other great artists on display, an aesthetic web of references and innovations extends out to breathe life into a new age.

CONSTANT COMMITMENT TO PEOPLE IN NEED

The exhibition in Forlì perfectly embodies Mapei's constant commitment to projects combining culture and solidarity work.

For many years now, Mapei has been supporting various musical evenings for collecting donations for scientific research carried out by associations like the Negri Weizmann Foundation, LILT (the Italian Anti-Tumour League) and the Milan Committee of the Italian Red Cross. For instance, Mapei recently sponsored an extraordinary concert organised by the Veronesi Foundation to finance research into women's tumours.

The beauty of a century from the Renaissance to the Baroque

AN INTERVIEW WITH GIANFRANCO BRUNELLI,
DIRECTOR OF THE EXHIBITION



The major exhibition being held at San Domenico Museum in Forlì in 2018 is showcasing for the very first time, the intriguing beauty of a century stretching from the magnificent twilight of the late Renaissance to the brightly shining new horizons of the Baroque period. The new layout provides a comprehensive overview of the exhibition theme.

The period stretching from when Michelangelo completed his *The Last Judgement* in the Sistine Chapel (1541) to Michelangelo Merisi da Caravaggio's brief but dazzling rise to fame in Rome is one of the most engaging and fascinating periods in the history of art.

Mannerist painting had set down the guidelines for "art for art's sake", in which poetic licence and caprice were very much to the fore or, in other words, a kind of breaking the rules within the rules: erudite art aimed at a small clique of the elite capable of appreciating the clever interplay of subtle allusions to Raphael and Michelangelo in all their incomparable magnificence.

This way of viewing art was called into question by the polemics of Protestant reformers, who urged for a return to the rigours of the early Church as part of their protests against the papal court. But even before the Council of Trent established the educational value of pictures "to be venerated according to what they represent", thereby avoiding any danger of iconoclasm, artists had independently devised a new kind of figuration in which the need for storytelling took precedence over artistic virtuosity as an end in itself.

Signs of a new focus on religious subject matter had been in the air for some time in Rome itself. Michelangelo's life and artistic career are emblematic in this respect, as his aspiration towards very precise figuration bereft of any trappings or ornament attracted the wrath

of those who believed the simplicity of a nude was indecorous. His thoughts and meditations, only understood by a very few, made him an easy target for the most ferocious polemics, clearly visible in the melancholy of the spiritual research in his final years.

Even before the middle of the century Rome became the centre of new lines of artistic experimentation, whose rich heterogeneity can be seen in this exhibition. Pope Paul III (born Alessandro Farnese), who convened the Council of Trent in 1545, was the head of his own proper court on a par with those in the rest of Europe. Artists like El Greco and Giovanni de' Vecchi worked for him, bringing with them a fresh wave of neo-mysticism, as did architects like Antonio da Sangallo the Younger, and Jacopo Barozzi da Vignola who, after study of antiquity, introduced a new concept of space.

All the frenetic building work going on required new religious artworks created to be more easily understood and spreading a new sense of piety. And while artists like Girolamo Muziano and Federico Zuccari proposed a more educational narrative form in which painting returned once again to be an "illustrated book" for the illiterate, it was Federico Barocci who really managed to bring together religious fervour and pre-Baroque sentimentality thanks to his rediscovery of Correggio.

Meanwhile, the scrupulous attempt to keep to "reality" and "verisimilitude" resulted in a revival in independent historical and naturalistic studies. The scientific research and careful observation of nature by scholars like Aldrovandi and

Ligozzi gave rise to naturalism as a new subject.

Painting in northern Italy, closely tied to local styles and bereft of the excesses of Mannerism, had already ventured in this direction.

Bologna, the second capital of the Church State, saw new and more earthly senses blossom in the painting of the Carracci brothers in contrast with the "timeless" art of Pulzone and Valeriano in Rome.

Caravaggio certainly drew on Lombardy's great legacy. He used light surrounding shadow to describe everything

from people to things with a new, desperate kind of rigour. Between the end of the old and beginning of the new century, his pauperist leanings contrasted with Annibale Carracci's plaintive classicalism and Rubens' baroque dy-

namism.

From Michelangelo's late work to Caravaggio via Raphael Rosso Fiorentino, Lorenzo Lotto, Pontorno, Sebastiano del Piombo, Correggio, Bronzino, Vasari, Parmigianino, Daniele da Volterra, El Greco, the Carracci brothers, Barocci, Veronese, Titian, Zuccari, Reni and Rubens: the exhibition in Forlì weaves an aesthetic thread of unique references and allusions illustrating the birth of the modern age.

An innovative cultural pathway stretches from one Michelangelo to the other, in the quest to discover a mirroring of eternal and historical values. Any idea or ideal of human and terrestrial completeness dissolves in the work of the earlier Michelangelo, while in the latter humanity, now shoeless and sullied, comes sinfully knocking on Heaven's door.

» **An aesthetic thread of unique references portraying the birth of the modern age**

Public-private partnerships to help boost the region

HERE IS WHAT THE MAYOR OF FORLÌ, DAVIDE DREI, HAS TO SAY

Even before the exhibition currently underway - "Eternity and Time between Michelangelo and Caravaggio" - opened, over 35,000 visitors had already made bookings. How do you explain this "predestined success"?

This important exhibition, currently being held in the striking spaces of San Domenico Museums and San Giacomo Church, is the result of an art project designed to raise the bar in terms of quality. Visitors to the exhibition are treated to a display that simultaneously focuses on aesthetics, history, philosophy, ethics, religion and politics, drawing their attention to one of the most controversial and complex periods in history and the history of art. This explains why it was destined to be a great success, mainly due to the positive input and working synergy between public investment - with its heritage of historical spaces in the San Domenico complex - and the energising creativity of private capital, which has resulted in such a glowing success and provided the opportunity for economic, cultural and social growth that will reverberate all over the surrounding area, making both a regional and national impact.

Over the last fifteen years the city of Forlì has focused much more attention and given much more importance to culture than in the past. The first stepping stone along this path dates back to 2005, when the San Domenico Museums opened to the public and hosted the first in a long line of cultural events and exhibitions. Fifteen years later, how



has the city changed?

When a community finds itself blessed with such a rich architectural and artistic heritage as Forlì, it also finds itself with the duty to preserve, enhance and pass on this legacy to the following generations. This is a moral duty and an investment, because culture is an invaluable asset to be placed in the hands of those capable of proceeding along the new path, partly following in our tracks. Based on these considerations, it is obvious how important certain projects our city has taken on over the last twenty years have been, such as the design and then implementation of a brand-new mapping out of the city's cultural events and initiatives based around projects carefully targeted on both 'containers' and their 'contents'.

The series of major exhibitions held at the San Domenico

complex has undoubtedly played a leading role in this general framework of events. This important architectural complex has been renovated paying the utmost attention to its history and original nature. This system has injected Forlì onto the major loop of so-called "art tourism", increasingly popular and strategic

from the viewpoint of both cultural enhancement and the national economy. So, what may initially have been considered as a gamble with that first major exhibition on Palmezzano has gradually gained due acclaim and recognition with each new exhibition scheduled at the San Domenico/San Giacomo Church complex.

Over the last ten years there has been a significant



Enhancing the cultural heritage is part of an urban regeneration strategy

increase in private interest in investing in art in Italy, as in other countries. How has Forlì benefited from private and corporate patronage and sponsorship of culture?

I would like to emphasise just how important culture is in this City Council's policies, providing a complex and multi-participated driving force in relaunching the community both socially and economically based on a model in which public investment and the creativity of private parties jointly converge around the notions of beauty, knowledge and criticism. It also provides a framework allowing both private and private-social players to display their worth and their vocation through sweeping projects aimed at boosting growth.

Not just exhibitions but also other cultural-artistic projects have benefited and continue to benefit from the important contribution and input of important private players, all of which has produced very positive results.

Forlì, which is always being an agrarian city with lots of small and medium-sized businesses as well as major industries, has never been considered a tourist destination. All this attention being paid to art and culture is changing things. As well as the indisputable effects on the local economy, what other positive repercussions are there for the city and its inhabitants? What do the people of Forlì think about this transformation?

Our area stands out for its considerable number of industrial concerns of worldwide renown, which have managed to overcome the economic recession of the last few years thanks to their ability to innovate and focus on internationalisation. Within this manufacturing fabric, cultural policy has found its own place and support, attracting attention to and enhancing its existing heritage to open up fresh prospects that will inevitably have an impact on both the economy and tourism. This is a vision that the people of Forlì have recognised and embraced, giving it the attention it deserves and getting actively involved as front-line players.

What direction is the city's cultural heritage heading and what future plans are there to continue this pos-

itive process? Might this new phase that has begun provide the opportunity to redevelop the city from an urban and residential viewpoint as well?

As soon as it took office, this City Council set about regenerating the entire city centre based on a new urban masterplan and by offering benefits to anybody supporting this redevelopment project from a building viewpoint.

More generally speaking, enhancing the cultural heritage is part of an urban regeneration strategy geared to cultural, social and environmental sustainability, as epitomised by the new University Campus. Just a few months ago the Campus was officially opened. Besides, a new link to the city centre, for the first time in Forlì's history, makes it possible to cross the campus area that is now directly connected to the modern-day city. These projects have allowed us to complete a plan very close to our hearts that has seen us focused on regenerating a strategic area over the last few years, with a view to making the university a bridge (also from a town-planning viewpoint) between tradition and innovation, the present and future, increasingly incorporated in our city's cultural-social life.

Not just culture. Forlì was recently elected to be a "2018 European City of Sport".

We are extremely honoured to have been awarded this title by ACES Italia (the Italian branch of the non-profit organization for sport promotion ACES Europe), which is recognition for our city's great vocation for sport in its widest sense. This important accolade has been attained partly thanks to investment made over recent years in boosting our sport infrastructures. It also rewards our great tradition for sport, whose roots lie in the area's history, as testified by all the people from our city, who have been such outstanding sports people in both the past and present and continue to be an example and inspiration for young people. So, Forlì is a Sports City and, at the same time, a European city, recognition on two fronts thanks to our commitment to promote the most authentic values associated with sport: a sense of belonging, solidarity, social inclusion, team spirit, respect, and health education/information. Values that permeate every level of our society, which we support with great belief and determination.



The future of Milan and a new approach to the cities

AN INTERVIEW WITH THE ARCHITECT STEFANO BOERI, RECENTLY NOMINATED PRESIDENT OF LA TRIENNALE DI MILANO

Stefano Boeri, Milanese, born in 1956, architect. Professor of Urbanistics at the Polytechnic of Milan and Visiting Professor at the Harvard Graduate School of Design, in Cambridge (USA). Milan City Councillor for Culture from 2011 to 2013 and, since 2015, member of the Scientific Committee of the Galleria degli Uffizi Museum, Florence. Member of Consulta Architettonica, creators of the concept plan for Expo 2015, Boeri designed the Vertical Forest, the first ever prototype of a sustainable building with facades decorated with trees and plants, which won the Best Tall Building Worldwide Award in 2015. Last January he was nominated President of La Triennale di Milano.

Let's start with an issue of great interest: our cities' outskirts and abandoned areas. What should the role of an architect be within the framework of a process of urban improvement and the redevelopment of entire suburbs?

I think the regeneration or redevelopment of areas of cities that have been partially abandoned or neglected is a very important issue, as in the case of the stations, goods hubs, old markets, prisons and entire areas of large-scale infrastructures at the service of Milan built at the beginning of the 20th century, which have now lost their purpose. They were often situated on the outskirts of cities and the growth of expanding urban areas has incorporated them into the city itself. A system of 7 goods hubs extending over an area of more than 1,300,000 m² is quite an undertaking for Milan, a city that now has new available areas much closer to the centre. The project for the goods hubs also considers the creation of a large park, which would lead to an efficient improvement in the quality of the air.

This would be a great challenge for the future.

When we think about parks, we generally associate



them with the more privileged areas of the city, while the outskirts seem to remain on the side-lines. What needs to be done to change the state of things?

Milan already has a lot of parks, even if it would probably be better to talk about gardens. Some of those areas that are now abandoned could and should also be used to increase the amount of parkland on the outskirts of the city. For example, the area of Bovisa with the decommissioned gasometers could become a large park. To a certain extent we could also say the same about the post-Expo area, or for other abandoned areas in various parts of the city. There is no doubt that our objective must be that of being able to work both on the parkland in the centre of the city, and on a system of less centralised existing parks, as well as on the development of parkland in abandoned areas.

During a meeting held on the 28th of January in the Italian Senate, you stated that Italy has more than 4 million buildings that should be demolished and rebuilt according to the latest criteria in terms of sustainability and aesthetics. Are you still of the same opinion?

I am even more convinced of my opinion! It was based on information supplied by Ance (the Italian Association of building companies) which, in spite of being approximate figures, are a pretty good indicator of the current situation. We should be thinking about a far-reaching policy to replace our building stock. This would also be a way of using the building industry as the driving force for various economic sectors. I am talking about small and medium sized companies in the construction industry, companies operating in the service sector, technical sectors, the world of creativity, manufacturers of furniture, and much more besides. An investment that would bring enormous benefits.

There is a great deal of interest in the issue of environmental and social responsibility of our cities. What is the current situation in Italy, and in Milan in particular?

There is a great deal of interest in this particular issue, especially when the quality of the air is perceived as being bad and we are in a state of emergency. I believe that the operation the Mayor of Milan has started to work on, to extend the amount of urban woodland, is a step in the right direction. We really must be committed to the possibility of doubling the amount of plants, trees and parks in general in Milan. Apart from redeveloping 4 million buildings, I would also like to propose the creation of a ministry to promote the development of wood and forests. Woods and forests play a fundamental role in the health of our cities and in urban redevelopment in general. They are also a vital part of the economy in numerous regions of Italy and they could be managed and become part of a potential circular economy for the building and furniture industries, something we don't currently exploit to the full.

You were recently nominated President of La Triennale di Milano. In an interview you talked about the Triennale as one of the hubs of a so-called Culture Park, along with the Piccolo Teatro and the Arena, large-scale three-year International Exhibitions and the exhibitions taking place on a daily basis, which are open to the city day and night. Have you already singled out some of the themes and events for La Triennale?

We are working on it, but I would like to talk about at least one of them. In fact, we are in the lucky position of having an historical "Culture Park" which encloses the most important institutions in Milan: the Piccolo Teatro, Castello Sforzesco, the Teatro Dal Verme, the Arena Civica, the Triennale and several others. My wish, as an institution, is that we could all sit around a table and coordinate a programme of summer events and imagine that, in July and August, with just one ticket, it would be possible to take part in a series of differentiated events all

around the city. This would create the most wonderful Milanese summer and could also be part of a tourist event.

There was one issue that recently dominated critics, politicians and architects: the Museum of Design. Do you think it is necessary to choose a different destination?

I would say it is not. The Triennale is the right place to host a Museum of Design. The way the Triennale organized its various displays in other places, such as the Villa Reale in Monza, or in partnerships with other associations, was wonderful. But the heart of Milanese design is the Triennale and I don't see any reason for moving it to other buildings. What we do need, however, is more spaces, but within the spaces of the Triennale, not outside.

You turned down the label of "Star Architect" but said you were rather a "Street Architect". Is that still the way you feel?

Absolutely. An architect must admire the stars, but must also watch very carefully where he puts his feet. When I am involved in a project, I really like to get to the heart of the problems and I love talking to those who have to promote, construct and inhabit the project. Architecture may very well look upwards, but it must never lose touch

with what is happening on the ground, in the immediate surroundings.

You are currently President of La Triennale, but for years you have been a politician, an architect, an urbanist and a professor. What do you enjoy most?

I am an architect. When I was editor of a magazine or when I was involved in politics, teaching or acting as president of an institution, I have always done it as an architect. Basically, architecture means anticipating spaces in life and that is what I have always tried to do.

Even though it seems I have led a pretty eclectic life, I feel I am an architect and I have always wanted to carry out these activities while remaining one. At the end of the day I am one thing only, an architect.

» **We should be thinking about a far-reaching policy to replace our building stock, using the building industry as the driving force for various economic sectors**



MAPEI SUPPORTS LA TRIENNALE DI MILANO

After years of collaborating with this institution, Mapei recently decided to join the **Corporate Platinum Amici della Triennale** (Friends of the Triennale) initiative, a group of companies and private citizens which share the same values in terms of social responsibility and cultural patronage, and which take an active part in the life of La Triennale Foundation and in the development of its activities.

UPGRADING THE SCHOOL STOCK:

a host of problems and effective solutions

FROM IMPROVING ENERGY EFFICIENCY TO PROTECTIVE WALL COATINGS: THE SYSTEMS PROPOSED BY MAPEI FOR WORK ON SCHOOL BUILDINGS

Amongst the many different types of public buildings, those dedicated to teaching are a very important category in terms of environmental management and the relationship with the end users: teaching and non-teaching staff, students and parents. School buildings are amongst the most important and significant items in the budget of the local authority responsible for their upkeep, particularly in terms of energy consumption and the cost of carrying out routine and non-scheduled maintenance. What is more, the objectives of the didactic programme are closely connected not only to the quality of the teaching staff, but also to the quality of the buildings themselves and whether there are laboratories, gymnasiums, assembly areas or simply comfortable, healthy and safe classrooms within the structure.

Often, due to a series of reasons that also have to do with demographic constraints, the need for new school buildings is quite low, whereas the need to intervene and improve our existing school stock, which often dates back quite a number of years, is becoming more and more urgent. Buildings which may be structurally sound, but in need of measures to improve their energy efficiency, or where asbestos on the roof (or else in service rooms) is in a hazardous condition.

There may also be cases whereby the buildings do not comply with the most recent standards in terms of safety and accessibility for disabled students, or in

the most serious and dangerous cases the schools have structural problems and do not comply with anti-seismic regulations.

THE SOLUTIONS PROPOSED BY MAPEI

When designing new schools, and even more so when designing upgrading work on existing schools, an in-depth analysis of the state of the structure needs to be carried out in order to fully understand the nature of the problems and to identify the most appropriate solutions. For a number of years, Mapei has been testing and proposing systems that play an important role in upgrading work, from energy improvement systems to consolidating systems and from thermal and acoustic insulation systems to anti-seismic strengthening applications and wall coatings.

» **The need to upgrade the existing school stock is becoming urgent**



Without overlooking the range of eco-sustainable products available, which are often specified by local authorities when interventions are carried out on school buildings.

As far as effective solutions proposed by Mapei are concerned, the most suitable for thermal insulation is the MAPETHERM system, for acoustic insulation we have the MAPESILENT and MAPESONIC systems and for encapsulating asbestos there is the AQUAFLEX SYSTEM. There are also a number of structural strengthening solutions available, such as for the seismic upgrading of buildings by applying carbon, glass and basalt fibre fabrics, bars, cords, plates and meshes in combination with epoxy adhesives and grouts from the FRP SYSTEM, a system used to

strengthen all types of structures and certified in Italy through the CIT (Technical Suitability Certificate) rating system as well as at an international level (ICC-ES Certificate); glass and basalt fibre structural strengthening meshes form the FRG systems, specifically developed for strengthening masonry, and fibre-reinforced cementitious mortars with very high performance properties. Not to mention the renowned Mapei product lines for installing ceramic, stone, resilient, wooden and textile floor and wall coverings.

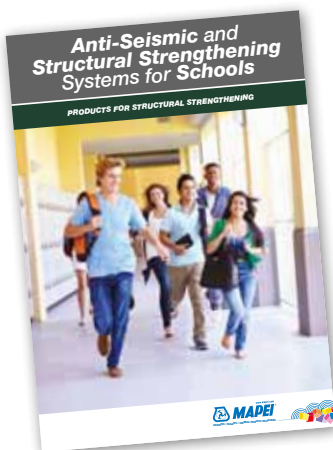
AMONGST THE PRODUCT LINES PROPOSED BY MAPEI FOR WORKS ON SCHOOLS, THE FOLLOWING ARE OF PARTICULAR INTEREST:

Products for building • Products for structural strengthening • Products for waterproofing • Products for thermal insulation • Products for acoustic insulation • Products for bonding resilient, wooden and textile material • Products for bonding ceramic and stone materials • Products for cementitious and resin floor coverings • Wall protective and decorative coatings • Products for sports surfaces.



CUTTING-EDGE SOLUTIONS for schools

FOR THE REPAIR AND STATIC/SEISMIC UPGRADING OF SCHOOLS, AS WELL AS FOR THE THERMAL INSULATION OF THEIR WALLS, MAPEI PROPOSES INNOVATIVE SYSTEMS



Find out more by downloading the **Anti-Seismic and Structural Strengthening Systems for Schools** brochure at www.mapei.it

THE FRP AND FRG SYSTEMS FOR STRENGTHENING

The Mapei FRP System is a complete range of composites made from very high strength and extremely high mechanical strength fibres and polymeric resins specially formulated for the strengthening and static and seismic upgrading of structures made from normal, pre-stressed and reinforced concrete, steel, masonry or wood. The term FRP stands for Fibre Reinforced Polymer. FRP's are part of the more vast family of structural composites and are made from strengthening fibres set in a polymer matrix. The characteristic of structural composites is that they provide better, or at least more

“complete”, mechanical properties than those that would otherwise be provided by the single components. The use of FRP's in the construction industry applies mainly to the renovation of weak or damaged structures and the static and seismic upgrading of structures. The Mapei FRP System consists of a wide range of:

- uniaxial, biaxial and quadriaxial carbon fibre fabrics (MAPEWRAP C);
- uniaxial and quadriaxial glass fibre fabrics (MAPEWRAP G);
- uniaxial, high-strength basalt fibre fabric (MAPEWRAP B);
- steel fibre fabrics (MAPEWRAP S FABRIC);
- a wide range of cords in carbon fibre (MAPEWRAP C FIOCCO), glass fibre (MAPEWRAP G FIOCCO) and steel fibre (MAPEWRAP S FIOCCO);
- pultruded carbon fibre plates (CARBOPLATE);
- pultruded bars in carbon fibre (MAPEROD C) and glass fibre (MAPEROD G);
- pultruded carbon fibre tubes (CARBOTUBE) and a wide range of epoxy adhesives (MAPEWRAP PRIMER 1, MAPEWRAP 11/12, MAPEWRAP 21 and MAPEWRAP 31).

The Mapei FRG System is a complete range of composites which uses an inorganic, pozzolanic mortar rather than a polymer matrix to guarantee excellent



ABOVE. Seismic upgrading of school buildings by applying MAPEWRAP EQ SYSTEM (left) and MAPEWRAP (right) fabrics.

chemical-physical and elasto-mechanical compatibility with masonry substrates. They are used for the repair or static and seismic upgrading of all types of concrete and masonry structures. The term FRG stands for Fibre Reinforced Grout. FRG's are made from strengthening fibres set in an inorganic matrix. These types of material offer a series of advantages, including when used on buildings of historical or artistic interest, such as high mechanical strength, low architectonic impact, high durability, ease of application, reversibility.

The Mapei FRG System consists of:

- pre-primed, alkali-resistant (A.R.) glass fibre meshes (MAPEGRID G 120 and MAPEGRID G 220);
- pre-primed basalt fibre mesh (MAPEGRID B 250);
- two-component, high ductility, fibre reinforced, pozzolanic reaction cementitious mortars (PLANITOP HDM and PLANITOP HDM MAXI);

■ two-component, high ductility, ready-mixed hydraulic lime (NHL) and Eco-Pozzolan-based mortar (PLANITOP HDM RESTAURO).

MAPETHERM FOR THERMAL INSULATION

The energetic performance of a building, including those hosting schools, kindergartens, and universities is becoming more and more important because of the environmental constraints and the increasing cost of the fuel. The external thermal insulation composite system is the only viable solution for the energetic upgrading of the existing buildings.

MAPETHERM is a system including an adhesive, a leveling mortar, an insulation panel, an alkali-resistant reinforcement grid, a primer and a finishing coat, as well as sealants and accessory materials for the installation. Being MAPETHERM a multi-component system, the compatibility among the components is a key factor in order to obtain the performances of the overall system as well as its durability. The MAPETHERM system offers the following advantages

- Lower energy consumption: the amount of energy required to heat and cool the building is lower, leading to considerably lower monthly bills.
- Reduction of harmful emissions: it contains the emission of pollutants and substances that damage the environment.
- Insulation with continuity: it allows to insulate all vertical matt surfaces with a single, continuous system and to eliminate areas of the structure with localised and often harmful partial insulation.

■ Safeguarding wall structures on a long-term basis: it puts buildings into a state of thermal balance by insulating them without breaks or interruptions.

■ Correct and total elimination of thermal bridges;

■ Exploiting the inertia of walls: during cold weather, it keeps walls warm and then uses the heat stored in their mass. In hot weather, it prevents them overheating.

■ Thinner wall structure: walls may be thinner, lighter and cheaper to build and the floor area within the walls can be increased.

■ Correct and balanced vapour diffusion

■ Health and living comfort: it reduces the risk of the formation of condensation, and therefore mould, on internal surfaces and allows heat flow to be exploited more efficiently.

These advantages make the investment related to the MAPETHERM system installation attractive from several points of view.



Find out more by downloading the **Mapetherm** manual at www.mapei.it



WORK IN PROGRESS

at school

MAPEI TOOK PART IN THE REPAIR OF SEVERAL SCHOOLS AND KINDERGARTENS ALL OVER THE WORLD. YOU FIND SOME EXAMPLES IN THESE PAGES



DUDLEY COLLEGE EVOLVE BUILDING

DUDLEY (UK)

In 2012 the building was completely renovated to offer its students an ultramodern structure. Mapei eco-sustainable products with very low emission of volatile organic compounds (VOC) were specified to install the vinyl and textile flooring to safeguard the health of the workers and end users. The adhesives also had to provide sufficient strength for the floors that are subjected to intense traffic. Before installing the flooring a damp proof membrane was installed using MAPEPROOF ESM and then levelled off with LATEXPLAN TRADE. The vinyl flooring and carpet tiles were installed with ULTRABOND ECO 380 and ULTRABOND ECO TACK, respectively, both with very low emission level of VOC.

Year of the Mapei intervention: 2012

Contractor: ISG

Works director: Roo Williams, C&C Flooring

Installation company: C&C Flooring

Mapei distributor: Betrex

Mapei co-ordinator: Mapei U.K. Technical Services



SÃO JOÃO DE DEUS SCHOOL PONTA DELGADA (PORTUGAL)

The Associação Jardins-Escolas João de Deus is a century-old Portuguese nonprofit organisation dedicated to promoting solidarity through educational and cultural activities. The organisation takes care of 8,268 people in its 55 education centres in Portugal. In 2013 a new school was opened in Ponta Delgada, in the Azorean islands. Mapei took part in the construction of the school by supplying an efficient thermal insulating system using MAPETHERM AR2 cementitious mortar to bond and skim the insulating panels; SILEXCOLOR PRIMER undercoat to treat the insulated surfaces; SILEXCOLOR BASE COAT undercoat and SILEXCOLOR TONACHINO thick-layered silicate coating product for the final finish. MAPEFLEX PU45 and MAPESIL AC were also used to seal joints.

Period of construction: 2011-2013

Year of the Mapei intervention: 2013

Designer: Consulmar Açores - Projectistas e Consultores Lda.

Client: Azorean Islands Government

Contractor: Somatex Edifor Thermal Insulation

Installation company: Spitex II

Works direction: Tiago Simas

Mapei distributor: Spitex II

Mapei co-ordinator: Marco Ferro, Lusomapei (Portugal)



GIRDWOOD SCHOOL GIRDWOOD, ALASKA (USA)

This school is not far from Anchorage, which is a year-round resort town surrounded by the peaks of the Chugach Mountain Range and famous internationally for its 5-star ski resort, Alyeska. Expansion and renovation works involved the use of MAPECEM QUICKPATCH to repair defects in the floor; PLANIBOND EBA bonding agent to ensure a perfect bond of the following layer to the floor substrate; and ULTRATOP PC, which was poured on the floors of the hallways and the common areas/auditorium, as well as around all of the embedded aluminum strips and design features.

Period of construction: 1982

Year of the Mapei intervention: 2015

Client: Anchorage School district

Contractor: Watterson Construction

Designer: Sheila Wyne

Works direction: Greg Hutchins, Performa, Inc.

Mapei distributor: Anchorage Sand & Gravel Co., Inc.

Mapei coordinator: Tom Lundgren, Mapei Corp. (USA)





AMERICAN INTERNATIONAL SCHOOL OF BUDAPEST BUDAPEST (HUNGARY)

The school was founded in 1973 and intended to provide a proper American-style education to children of people working for diplomatic corps, multinational and local companies. In 2008 a new 14.000 m² facility was built in a ten-hectare area bought from the local government in a suburb near Budapest. The new complex also encloses a gymnasium for the students' physical training. In this area rubber floorings were laid using a Mapei reliable installation system. The expansion joints of the substrate were sealed with MAPEFLEX PU45. The surface was again cleaned and the dust was completely eliminated before applying by roller PRIMER G and ULTRAPLAN ECO. The rubber covering was then bonded with ULTRABOND ECO V4 SP multi-purpose, solvent-free acrylic adhesive.

Year of construction: 2008

Year of the Mapei intervention: 2009

Client: AISB Foundation

Project: A+A Stúdió Kft. (Annus Ferenc, Annus Marina Nagy Mihály and Varga Imre)

Installation company: Csatlós Sámuel

Mapei distributor: Magyar-Szőnyeg Kft.

Mapei co-ordinator: Nagy Antal, Mapei Kft. (Hungary)



Year of construction: 2013

Year of the Mapei intervention: 2013

Design: Proarh Ltd., Davor Matekovic.

Client: Tehnika Vrbani Ltd.

Contractor: Tehnika Plc.

Installation company: Visio Ltd.

Mapei co-ordinators: Nenad Karalija and Jozo Grgic, Mapei Croatia Ltd.

ALOJZIJE STEPINAC PRIMARY SCHOOL ZAGREB (CROATIA)

The Alojzije Stepinac Primary School in Zagreb is known as one of the most modern primary schools in Croatia. It includes a sports complex with outdoor fields and terraces for outdoor teaching. The floors in the sports hall were renovated with MAPECOAT TNS MULTISPORT COMFORT system. MAPECOMFORT flexible rubber matting was bonded on the surfaces with ADESILEX G19 adhesive. MAPECOAT I 600 W primer was then applied on the MAPECOMFORT matting. MAPECOAT TNS GREY semi-flexible, acrylic resin-based basecoat was then applied followed by a layer of MAPECOAT TNS FINISH coloured acrylic resin-based coating product. The finishing was carried out with MAPECOAT TNS PAINT.



KINDERGARTEN OF THE "ART" RESIDENTIAL COMPLEX

KRASNOGORSK (RUSSIA)

The kindergarten of the residential complex ART in the city of Krasnogorsk is a creative project with original architectural and design solutions. In the complex there are spacious playrooms, a comfortable swimming pool, sports and music halls, and bedrooms. Mapei was involved in the construction of the swimming pool by supplying TOPCEM PRONTO, NIVOPLAN PLUS, and PLANICRETE for preparing the substrates; MAPEFILL for anchoring; IDROSTOP, MAPELASTIC, MAPEBAND, and MAPENET 150 for waterproofing; KERACRETE to bond the ceramic tiles; ULTRACOLOR PLUS for grouting joints and MAPESIL AC for sealing expansion joints. ULTRACOLOR PLUS was also used on the colored façade to grout wide joints.

Year of the Mapei intervention: 2014

Client: Krost

Contractor: Krost

Design: Dante O. Benini & Partners Architects

Mapei coordinator: Irina Boldyreva, ZAO Mapei (Russian Federation)



UNIVERSITY OF CANTERBURY LAW BUILDING

CHRISTCHURCH (NEW ZEALAND)

The School of Law at the University of Canterbury was founded in 1873 and has a long standing reputation for academic excellence. It is housed in a modern stand-alone building with purpose built tutorial and lecture rooms, a Moot Courtroom and a law library. Mapei helped providing a solution for damage to 3 floors where upgrading of the reinforcement was required, following the Christchurch earthquakes in 2010 and 2011. Any cracks discovered in the substrates were then cleaned out and filled with EPORIP and EPOJET LV. The surfaces were then primed using MAPEWRAP PRIMER 1 SP and any small voids were filled with ADESILEX PG1. ADESILEX PG1 was then applied to both the marked out position on the floor and the underside of the CARBOPLATE E 170. The latter was then placed carefully on to the floor and pressure rolled ensuring that there were no air voids between the floor and the CARBOPLATE.

Year of the Mapei intervention: 2011

Client: University of Canterbury

Contractor: Technosol Limited

Design: Holmes Consulting Group

Mapei coordinator: Darren Ballantine, Mapei New Zealand





LYRECO COMPANY KINDERGARTEN MARLY (FRANCE)

Lyreco, a company which operates in the office supplies sector, has created a range of services specifically to improve the life quality of its employees. One of these is the new company crèche at the headquarters in Marly, which takes care of around 30 children whose ages range from 3 months to 3 years. Cracks in the existing substrate of the floor slab were opened, cleaned and then repaired using EPORIP epoxy adhesive. To promote adhesion of the smoothing layer, the surface was treated with a coat of PRIMER G quick-drying, synthetic resin primer. After drying, the entire surface was smoothed with a layer of MAPESOL 3. Around 300 m² of linoleum were laid with ULTRABOND ECO 540 synthetic polymer adhesive.

Year of construction: 2009

Year of the Mapei intervention: 2009

Client: Lyreco

Project: Pierre-Marie Deefort

Installation company: GLM

Installed Materials: linoleum floorings supplied by Marmoleum

Works director: Veritas

Mapei co-ordinator: Vincent Lecomte,
Mapei France



MIDDLE SCHOOL CAMPI SALENTINA (ITALY)

A thermal insulation system was applied on the walls of the school. Rockwool panels were bonded to the walls using MAPETHERM AR1 GG mortar. An even layer of mortar was applied over the surface of the insulating panels, making sure it did not run into the joints of the adjacent panels and form thermal bridges. An even 2 mm layer of MAPETHERM AR1 GG was then applied on the façades and, while the mortar was still wet, MAPETHERM NET glass fibre mesh was placed on the mortar. After another 24 hours, a second layer of MAPETHERM AR 1 GG was applied. After 15 days, once the mortar was completely cured, the surfaces were finished off by applying the QUARZOLITE system, comprising QUARZOLITE BASE COAT coloured acrylic undercoat and QUARZOLITE TONACHINO PLUS highly protective, mould and mildew-resistant acrylic coating.

Year of the Mapei intervention: 2014

Design and works direction: Raffaele Guido

Client: Campi Salentina City Council

Contractor: Marullo Costruzioni Srl

Mapei distributor: Edil Bagno Idrotermica S.a.s

Mapei co-ordinators: Alfredo Nocco, Danilo De Matteis, Luca Carcagni, Mapei SpA (Italy)

COSTANTINI MIDDLE SCHOOL SAN PAOLO BEL SITO (ITALY)

The Costantini Middle School was built in the 1970's and structural strengthening work was carried out in 2014. MAPEWRAP C UNI-AX unidirectional carbon fibre fabric, a product particularly recommended for seismic upgrading work on structures in areas at risk of seismic activity, was applied to the pillars. The substrate was treated with MAPEWRAP PRIMER 1. The MAPEWRAP C UNI-AX fabric was impregnated with MAPEWRAP 21 epoxy resin prior to application. Once the fabric had been placed on the substrate, another coat of MAPEWRAP 21 was applied on the MAPEWRAP C UNI-AX fabric. PLANITOP HPC FLOOR cementitious mortar was used to strengthen the floors. Other products used included INTOMAP R1 base render and KERACOLOR GG grout for joints.

Year of the Mapei intervention: 2015

Client: Costantini middle school

Contractor: Edil Geo

Mapei distributor: Edil Sangermano

Mapei coordinator: Antonio Errico, Mapei SpA (Italy)



UGO FOSCOLO MIDDLE SCHOOL OSTRA VETERE (ITALY)

Work to upgrade the seismic capacity of the Ugo Foscolo Middle School was made a priority in 2014. The system proposed involved the application of unidirectional carbon fibre fabrics from the Mapei FRP system. A series of vertical holes was drilled in the beams in correspondence with the connection points between the beams and the floor. Pieces of bar and cord made from MAPEWRAP FIOCCO were cut to length and then impregnated with MAPEWRAP 21 epoxy resin. While the resin was still wet, it was broadcast with QUARTZ 1.2 to improve adhesion. Once hardened, the "bow" formed as previously described was applied. The substrate was then treated with MAPEWRAP PRIMER 1 epoxy primer. A layer of MAPEWRAP 11 two-component epoxy grout was applied on the primed substrate. MAPEWRAP C UNI AX 600 unidirectional carbon fibre fabric impregnated with MAPEWRAP 31 epoxy adhesive was also applied. Work was completed by filling all the cavities in the anchoring bows with MAPEFIX EP 470, folding back the dry part of the fabric applied previously and impregnating it with MAPEWRAP 31 broadcast with QUARTZ 1.2 quartz sand.

Year of the intervention: 2016

Client: Ugo Foscolo middle school

Contractor: Sartini Floriano

Design and work direction: Francesco Monni AhRte Srl

Mapei distributor: Vibroedil srl

Mapei coordinators: Manuele Borghi, Dominica Carbotti, Mapei SpA (Italy)



SAN BIAGIO CATHOLIC PROFESSIONAL TRAINING CENTRE MONZA (ITALY)

The historical headquarters of the Ente Cattolico Formazione Professionale (ECFoP - Catholic Professional Training Association) of Monza is part of the parish school of San Biagio. Reinforced structural strengthening work was carried out by applying two layers of PLANITOP HDM RESTAURO mortar to the surface of the vaulted ceiling, with MAPEGRID G220 glass fibre mesh embedded between the two layers. The most serious cracks in the masonry were filled with MAPE-ANTIQUE I hydraulic binder. Mapei Technical Services recommended using MAPEWRAP G FIOCCO glass fibre cord for anchoring in the perimeter walls. The cord was cut to the length required to form bows and MAPEFIX VE SF 300 chemical anchor was inserted into a series of holes drilled into the perimeter walls. At this point, the pieces of cord were inserted into the holes and their free ends were splayed out and impregnated with MAPEWRAP 11. Once the MAPEWRAP 11 had hardened, the ends were coated with PLANITOP HDM RESTAURO.

Year of the Mapei intervention: 2017

Client: ECFoP

Contractor: LB Costruzioni

Design: Diego Truccolo

Mapei coordinators: Andrea Peli,
Massimo Seregini, Mapei SpA (Italy)



DANTE ALIGHIERI HIGH SCHOOL GORIZIA (ITALY)

The Dante Alighieri High School in Gorizia, dating back to the 1970s, was strengthened in 2014. The intervention included the use of MAPEWRAP EQ SYSTEM providing an efficient connection between the various masonry panels and the reinforced concrete framework. To prevent walls tipping over in the event of an earthquake, all the buffer walls were fastened to the masonry and reinforced concrete frame. The finishing coats were initially removed from the walls down to the render. The surface of the walls was then coated with MAPEWRAP EQ ADHESIVE. MAPEWRAP EQ NET glass fibre fabric was applied on all the walls. A second coat of MAPEWRAP EQ ADHESIVE was applied with a roller to completely impregnate the strengthening fabric. After around 24 hours, the surfaces were skimmed with PLANITOP 210 mortar. Thereafter, they were primed with MALECH undercoat. The following day they were painted with DURSILITE paint.

Period of construction: 1629

(newest section built in the 1970's)

Year of the Mapei intervention:
2014

Design: Mariano Del Piccolo

Client: Lara Carlot, Gorizia Provincial
Government

Works direction: Stefano Morandin

Contractor: Tecnomalte Strengthening
System

Installation company: S.E.I. Società
Edile Isontina

Mapei distributor: Edil Casa Macuzzi

Mapei co-ordinators: Giuseppe
Melcangi, Paolo Baldon, Claudio
Azzena, Ivan Carlon, Mapei SpA (Italy)



GREGORIANUM BUILDING CATTOLICA UNIVERSITY OF MILAN

Situated next to the Basilica of St. Ambrogio, the home of the Università Cattolica (Catholic University of the Sacred Heart) in Milan is in an ancient monastery that was completely renovated in 1929 and turned into a teaching complex dedicated to graduate studies by the architect Giovanni Muzio, who also restored its Bramante style cloisters. Since 1933 other structures have been added to the University's main central body, starting with the Augustinianum College, followed by the Antonianum Building, the Domenicanum Building, the Franciscanum Building, the Ambrosianum Building and the Gregorianum Building.

The latter one, which was restored last year, was built in 1937 and, over the years, parts of it have been extended and additional storeys have been added. The four buildings that make up this section of the University have vertical load-bearing structures in reinforced concrete, concrete and masonry, while the horizontal structures are made up mainly of reinforced concrete and brick-concrete elements.

After carrying out several surveys and analysing the various problems found during the surveys, the various interventions required to improve the complex were defined: tying-in of the floors to form a rigid connection between the various buildings at floor level using different methods; strengthening of concrete lift and stair wells by consolidating one concrete lift well and two concrete stair wells using fibre-reinforced composite materials; strengthening of the solid brick facing walls by consolidating several walls with reinforced renders and injecting special materials.

CONSOLIDATION, STRENGTHENING AND INSTALLATION

The contractor contacted Mapei Technical Services which, after carrying out a survey directly on site, recommended using unidirectional carbon

fibre fabrics from the MAPEWRAP SYSTEM line to repair the reinforced concrete structures and to carry out static strengthening work.

To repair and level off the concrete surfaces, it was recommended to use PLANITOP SMOOTH & REPAIR, an R2-class, rapid-setting, shrinkage-compensated, thixotropic, fibre-reinforced cementitious mortar, which is applied in a single layer from 3 to 40 mm thick.

The substrate was treated with MAPEWRAP PRIMER 1 two-component epoxy primer. A layer of MAPEWRAP 11 two-component epoxy grout for structural bonds was then applied over the primer with a trowel, followed by the application of MAPEWRAP C UNI AX 300 high-strength, unidirectional carbon fibre fabric with high modulus of elasticity, impregnated with MAPEWRAP 31 epoxy adhesive. A roller was then used to go over the surface to make sure the adhesive had completely penetrated into the fibres of the fabric and to prevent the formation of air bubbles. To form the anchors, Mapei Technical Services specified the use of MAPEWRAP C FIOCCO 10 mm glass fibre cord. Once the holes for the cord had been drilled, they were filled with MAPEFIX VE SF 420 styrene-free, hybrid vinyl resin-based chemical anchor, which is suitable for structural loads. MAPEFIX VE SF 420 is certified according to the European Standards ETA option 1 (anchors in concrete in tension or compression zones), ETA rebar (supplementary reinforcement) and fire certification performance C1 (in seismic zones). At this point, the cords cut to the length required were inserted into the holes and then sealed in place. The ends of the cord were splayed out and impregnated with MAPEWRAP 31 with a roller and, while the resin was still fresh, it was broadcast with QUARTZ 1.2 sand to form a good bonding surface.

The internal and external masonry walls (about 300 m²) were strengthened



2

PHOTO 1. The façade of the Cattolica University of Milan.

PHOTO 2. The Gregorianum complex in which the works were carried out.

PHOTOS 3 and 4. MAPEWRAP C FIOCCO cord was inserted in the holes after filling them with MAPEFIX VE SF 420 chemical anchor.

PHOTO 5. MAPEGROUT EASY FLOW mortar was used for masonry restoration.

PHOTO 6. The linoleum flooring was installed with ULTRABOND ECO 520 adhesive.

PHOTO 7. Strengthening floor slabs with PLANITOP HPC FLOOR.

with a special reinforced render made up of an electro-welded mesh and MAPEGROUT EASY FLOW one-component thixotropic mortar applied with a spraying rendering machine.

Structural strengthening for the brick-concrete floor slabs (a total area of around 500 m²) was carried out making up a 2 cm thick connection using PLANITOP HPC FLOOR one-component, fibre-reinforced, shrinkage-compensated, high-strength, highly fluid cementitious mortar. Before applying the mortar, the substrate needed to be consolidated and, for this operation, PRIMER 3296 acrylic primer in water dispersion diluted at a rate of 1:1 was used.

After restoring the floor slabs, to form sound, compact screeds with the correct thickness and the appropriate mechanical characteristics, Mapei Technical Services recommended TOPCEM PRONTO, a pre-blended, normal-setting, shrinkage-compensated mortars for screeds classified as CT-C30-F6 A1_s according to EN 13813 standards.

The linoleum flooring for the corridors and the entrance area was installed with ULTRABOND ECO 520, a solvent-free, synthetic polymer-based adhesive in water dispersion with very low emission of volatile organic compounds (EMICODE EC1).

TECHNICAL DATA

Client: Cattolica University of Milan

Contractor: Grassi&Grespi

Design: Studio Finzi

Mapei distributor: Grassi&Grespi

Mapei co-ordinator: Massimo Seregini, Dario Casale, Luca Albertario, Mapei SpA (Italy)



3



4



5



6



7

A HISTORY OF CHALLENGES AND SUCCESSES

FROM A SMALL OFFICE
TO PRESTIGIOUS PROJECTS
IN MIDDLE-EAST
AND EASTERN AFRICA





LEFT. The first produced bag upon opening the production line in Dubai in 2009 with employees' signatures.

The extension to the manufacturing plant in Dubai (see the following article) is just the latest steppingstone in Mapei's process of growth in the United Arab Emirates that began over ten years ago. After operating on the local market for a number of years, in 2008 the Group began working through its subsidiary, Innovative Building Solutions (IBS), in Dubai from an office in the Karama district. At first the Mapei products distributed locally were imported into the Emirates through the mother company, but then in 2008 a production facility was purchased located on an approximately 40,000 m² plot of land inside Dubai Investment Park. The next year was spent bringing it into operation and converting it into a cutting-edge manufacturing unit meeting the stringent health, safety and eco-sustainability standards set for Mapei manufacturing plants worldwide with constant support from the Group's Central Engineering Service. The materials manufactured here comply with the standards set in the industry's rules and regulations, such as GSO/ISO 13007-1 and those indicated by the GEV. The production plant was initially used for manufacturing adhesives for ceramics, grouts, self-levelling compounds,

products for screeds, mortars for repairing concrete, admixtures for concrete and grinding aids. The decision to begin with these particular materials was part of a careful strategy devised by the subsidiary to initially focus on a segment of the market that would guarantee the best results in the short term on a market dominated by the firm's competitors.

Working with great determination, the staff at IBS (now called Mapei Construction Chemicals L.L.C.) gradually succeeded in making the local market increasingly aware of the quality and benefits offered by Mapei products, so that solutions from various product lines were imported from the mother company before being incorporated in the plant's operations.

But it was not all easy: from the end of 2009 onwards, the economic recession even hit the United Arab Emirates, an unexpected crisis for most people that



ABOVE. Mapei Construction Chemicals L.L.C. now has a larger product storage facility. There are over 25 different nationalities of people in the subsidiary's team.

IN THE FACING PAGE. Mapei Construction Chemicals L.L.C.'s staff outside the recently extended manufacturing plant and new offices.

required the local subsidiary to work even harder. And, for a short while, its sales did not rise as expected. During this particularly tricky period, when competitors kept on losing profits and cutting investments, the Mapei Group, in contrast, continued to invest in the Arab Emirates and staff at the subsidiary constantly strove to boost sales, eventually managing to turn the situation around to the firm's own advantage.



ABOVE. Stefano Iannacone, Mapei Group's Director for Middle East & East Africa.

Results were not slow in coming: the turnover rose from just a few million Dirhams (local currency) in 2008 to approximately 240 million in 2015; the Dubai plant is now over 5000 m² bigger than it used to be and also includes a showroom, a training centre and a bigger warehouse; seven product lines are now manufactured here and the number of staff has risen to 128; Mapei solutions have helped construct numerous architectural works, including some of the most prestigious (and biggest) in the United Emirates: the famous Burj Khalifa and Armani hotel, Dubai underground railway line, Dubai and Abu Dhabi airports, Ferrari World amusement park and the recently constructed Louvre Museum in Abu Dhabi, the biggest museum on the Arab Peninsula.

I am extremely proud of the people working for Mapei Construction Chemicals L.L.C.. Seeing how we have progressed from a small office to the projects we have carried out so far gives me great satisfaction."



IBS officially became Mapei Construction Chemicals L.L.C. four years ago, taking on a name clearly emphasising it belongs to the Group.

AN AMBITIOUS FUTURE

Mapei has much bigger plans for this subsidiary: Mapei Construction Chemicals L.L.C. is now the regional headquarters for the Middle East and East Africa, so that the Group will have even more extensive business operations and constant growth in the countries of these important regions.

Back in 2013 Mapei exported products from Dubai to Qatar and in 2015 Mapei Doha was founded in this country. The Group has deliberately targeted this country due to forecasts for heavy investments in building in this region. Economic growth (approximately +2.4%-a-year) and a particularly profitable building market open up interesting prospects of the future.

Even sport is a driving force behind growth in Qatar: the 2016 UCI Road World Cycling Championships were held in Doha in 2016 and the country is supposed to host the 2022 Football

World Cup. With this in mind, plenty of projects have been planned (and are partly underway) to construct sports infrastructures and stadiums and also to renovate and upgrade existing facilities. Mapei Doha has already shown it can supply products for such important projects as the redevelopment of the Msheireb neighbourhood in downtown Doha, Qatar National Library, Doha underground railway line, etc.

The Group also has an eye for other markets in the region, as the Saudi Arabian market. Mapei solutions have been marketed in this country for a number of years now, allowing to complete important projects such as the Riyadh metro (see the dedicated article in this issue of the magazine), King Abdullah Petroleum Research and Studies Center, Mecca and Medina railway stations and the renovation of the Royal Clock Tower in Mecca (see *Realtà Mapei International* no. 45).

Mapei also plans to enhance its operations in Egypt, where its subsidiary Vinavil Egypt has been operating for years manufacturing raw materials for coatings and building products, such as

THE FIGURES OF MAPEI CONSTRUCTION CHEMICALS



128

staff of 25 different nationalities



+4.36%

increase in turnover in 2017 (compared to 2016)



7

product lines manufactured in Dubai



3

production lines in the plant: liquids, powders, epoxy-based products



120

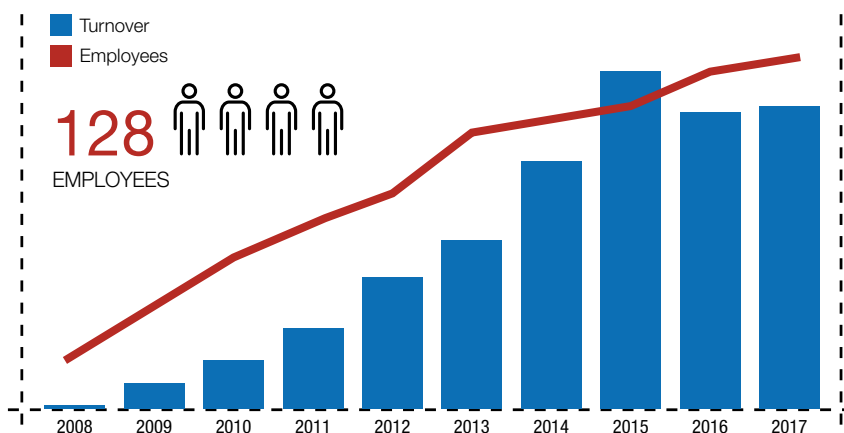
training events for 930 people in 2017



1,000

approximately customers

➤ **Economic growth and a particularly profitable building market open up interesting prospects of the future in the region**



ABOVE. The Group's strategy involves expanding in various countries in the Middle East and East Africa. **LEFT.** Mapei Construction Chemicals L. L. C.'s growth in terms of turnover (columns) and staff (red line).

vinylacetate and vinyl versatate dispersions. Last December, Mapei Egypt for Construction Chemicals SAE was set up and now operates in the New Cairo district as part of plans to expand in this country, setting up local production in the near future.

Egypt with its estimated population of over 100 million people plans to implement numerous development projects in the infrastructural, residential and accommodation sectors, such as the new capital to the east of Cairo and coastal development along the Mediterranean or Red Sea. It also provides the oppor-

tunity to break onto neighbouring markets everywhere from Libya to Sub-Saharan Africa due to important free-trade agreements.

There are further plans (and people already working on them) to help Mapei expand into East African countries and Pakistan, extremely promising markets for a company in this sector. Once again, it will initially be a matter of marketing products and systems manufactured at the plant in Dubai, but in the long term there are plans to open manufacturing facilities on site.

As usual, Mapei's familiar principles of

internationalisation underscore these expansion projects: keeping close to the customer's needs (both through local production and by means of a research activity aimed at meeting the market's demands), an attentive and professional technical assistance service, constant cooperation with distributors and applicators, a wide range of training opportunities in the form of seminars, workshops and conventions, and a constant focus on enhancing human resources. In the case of Mapei Construction Chemicals L.L.C., this also means constant respect for local culture, open-mindedness and adaptability: there are over 25 different nationalities of people in the subsidiary team and knowing how to listen and work side-by-side with others has always been one of its distinctive traits. And an important asset in its success.



MAPEI

celebrates in Dubai

AN EXTENDED MANUFACTURING PLANT, NEW OFFICES, TEN YEARS' BUSINESS IN THE EMIRATES...PLENTY OF REASONS FOR MAPEI CONSTRUCTION CHEMICALS L.L.C. TO CELEBRATE

The 21st March was an important date for Mapei Construction Chemicals L.L.C., the Group's subsidiary based in Dubai. That was the date of the opening of its new offices and an extension to its manufacturing plant in Dubai Investments Park, one of the most important industrial areas in the Middle East, coinciding with celebrations to mark ten years' business in the United Arab Emirates. The Group invested 6.5 million US dollars for extending the existing production unit on the site: this has resulted in the introduction of an epoxy resin production line that will allow Mapei Construction Chemicals L.L.C to widen its portfolio of locally manufactured products and supply new solutions specifically studied for the local market. The investment also led to the creation of an additional 5200 m² covered storage facility that can now hold even greater quantities of materials. The new offices, also part of this investment plan, cover an area of over 2000

m², accommodate over 120 staff, and include a showroom and training centre. Such an important event deserved to be celebrated properly and the subsidiary did so in great style. The idea was to celebrate the results of ten years' business on the Emirates market, boost Mapei's image and, at the same time, thank its customers and business partners for contributing to so much success. Customized crystal gifts were prepared for those attending the celebrations.

The day began with a press conference organised at Mapei Construction Chemicals L.L.C.'s new offices, which was attended by about 35 journalists and 4 representatives of TV channels.

Veronica Squinzi, Mapei Group's Global Development Director, stated at the press conference that: "Mapei plans to strengthen its presence in the region and help boost ongoing economic growth by increasing its manufacturing output and catering for the local market's specific

The press conference by Mapei Construction Chemicals L.L.C. included speeches by Veronica Squinzi, Marco Squinzi, Liborio Stellino, Stefano Iannacone, and H.E. Omar Al Mesmar and was attended by local TV correspondents and journalists.



needs. The United Arab Emirates continue to offer important opportunities, such as Expo 2020. Mapei is ready to back these projects by drawing on the experience it has already gained supplying cutting-edge solutions of the highest quality".

Marco Squinzi, the Group's Research & Development Director, pointed out that: "Supplying the best products for the building world is our day-to-day business. Thanks to our global presence, we can draw on the experience of our 28 Research & Development laboratories worldwide coordinated by our central R&D Laboratory in Milan. Innovation and sustainability guide our technical approach and together will help future generations enjoy a better quality of life". Stefano Iannacone, Mapei Group's Director for the Middle East & East Africa, stated that: "We are optimistic there will be a rise in demand on the building market. The newly extended plant will allow us to support it and supply important projects. We plan to keep on investing in the region, helping the development of local markets so that we can become one of the main suppliers throughout the entire region".

H.E. Omar Al Mesmar, General Manager of Dubai Investments Park (DIP), noted that: "Hosting Mapei, a manufacturer of innovative solutions complying with the most stringent standards in terms of

The official ribbon-cutting ceremony performed by (from right on) Marco Squinzi, Veronica Squinzi, H.E Sultan Bin Saeed Al Mansoori, Liborio Stellino, and Stefano Iannacone, which was followed by the Minister's visit to the new facilities.





health, safety and environment, here at Dubai Investments Park is something we are extremely proud of".

Liborio Stellino, Ambassador of Italy to the United Arab Emirates, underlined the importance of Mapei as a leading Italian company investing in the local economy. Following the press conference, there was a visit by the UAE' Minister of Economic Affairs, His Excellency Sultan Bin Saeed Al Mansoori, who was welcomed by performances of traditional songs and dances, followed by a ribbon-cutting ceremony performed by Veronica Squinzi, Marco Squinzi, H.E. Sultan Bin Saeed Al Mansoori and Liborio Stellino.

In the afternoon, about 300 guests, including local authorities, customers, business partners and employees, were

invited to a special evening of celebrations. The guests also included the Ambassador Liborio Stellino, Valentina Setta, the Italian Consul General in Dubai, Gianpaolo Bruno, Trade Commissioner to the UAE, Oman and Pakistan for ICE (Italian Trade Agency), Simonetta Grisanti, Commercial Attaché of the Embassy of Italy to the United Arab Emirates, Riccardo Ardito, Mapei Corporate Area Manager for the United Arab Emirates, Qatar and Saudi Arabia, Andrea Perini, Mapei Corporate Area Manager for Egypt, Roberto Boselli, Mapei Operations Group Director, Stefano Barsotti, Project Manager for Mapei Engineering Central Services, and Enrico Geronimi from the Mapei Technical Services team.

In the evening the guests were able to

enter the area of the manufacturing plant that had been specially decorated for the event. Veronica Squinzi, Marco Squinzi and Stefano Iannacone thanked everybody for coming and briefly illustrated the key moments in Mapei's growth both globally and in the Emirates. Guests then had the chance to visit the production unit. All the guests were then served a dinner to bring the evening to a pleasant close accompanied by special entertainment: a sand artist created a reproduction of the Dubai skyline and Mapei logos using MAPEGLITTER coloured glitters. A six-piece orchestra delighted guests with Italian songs and music. An evening for sharing in past successes and future projects for Mapei Construction Chemicals L.L.C. and its guests.



PHOTO 1. Guests arriving for the gala dinner.

PHOTO 2. All the guests got the chance to visit the area allocated for the celebrations.

PHOTO 3. The event was also attended by delegates from the Mapei Group and VIPs, such as (from left on) Roberto Boselli, Marco Squinzi, Liborio Stellino, Gianpaolo Bruno, and Andrea Perini.

PHOTO 4. Veronica Squinzi, Marco Squinzi and Stefano Iannacone thanked all the guests for attending and illustrated how Mapei has evolved in the Emirates. Ambassador Liborio Stellino also gave a speech referring to Mapei as a symbol of Italian excellence investing abroad.

PHOTO 5. A meal was served during which guests enjoyed an assortment of music and entertainment by various artists.



DUBAI: work is under way for expo 2020

THE ENTIRE CITY IS GETTING READY FOR THE NEXT EXPO... SO IS MAPEI

Excitement is in the air in Dubai: it is only two years until the next edition of the World Expo and the city is already buzzing. This is partly because Dubai Expo, the first to be held in the Middle East or in an Arab nation, will coincide with the 50th anniversary of the founding of the United Arab Emirates. It will give the host country the chance to show off its rich tapestry of traditions, the uniqueness of its landscape, and the elegance of its distinctive culture. At the same time, it will also give Dubai the chance to promote itself as a centre of innovation and modernity, capable of interacting with the international community and of facilitating the exchanging of ideas, projects and knowledge between different nations. This intention is clearly evident in the main theme of the exhibition, "Connecting Minds, Creating the Future", focusing on the fact that communication between the smartest people around the world is what generates the innovations required to guarantee a sustainable (and stimulating) future for the whole of mankind.

BUILDING WORK ON THE SITE...

For some time now, the nation's authorities have set a number of important

building and modernisation projects underway to ensure the city is ready to host such an important event.

First and foremost, work on the site of Expo 2020, chosen mainly for logistical reasons: midway between Dubai and Abu Dhabi, it extends for 4.38 km² and will be easily accessible for the 25 million visitors expected to attend, thanks to three international airports, a cutting-edge road network, a system of underground railway lines specially extended for the event, and 700 zero-emissions buses called Expo Riders.

The site will be divided into three separate thematic districts, each focusing on one of the Expo's secondary themes (Opportunity, Mobility, Sustainability), which will converge on the central square, Al Wasl Plaza (or Connection Square). As the site's real symbolic hub, this square will host the most important ceremonies, such as the opening and closing of the Expo. Pride of place has been reserved for the United Arab Emirates Pavilion designed by Santiago Calatrava. The Expo Village will be located just outside the Expo site and will offer approximately 3000 suites, 1500 hotel rooms and a wide range of amenities

such as restaurants, bars and shops. Work on building the site has already begun, with almost 5 million m³ of earth having already been excavated, and it is expected to be completed by 2019.

...AND AROUND THE SITE

As has already been mentioned, major investments have been made in the transport sector: the Dubai Metro will be extended to handle up to 46,000 people/hour and allow the Expo area to be reached from Dubai Marina Station in just 16 minutes. Al Maktoum International Airport will be modernised at a cost of 32 billion US dollars. An ultra-high-speed railway line with magnetically levitating capsules is being designed to run from Dubai to Abu Dhabi (157 km) in just 12 minutes and to Riyadh in 48 minutes (1,100 km). The local authorities also intend to significantly increase the number of buses and taxis available, providing them with a more extensive road network.

There are numerous construction projects more or less directly connected with the Expo: the construction of a huge solar energy plant, which will be installed at Al Maktoum International



THE FACTS AND FIGURES FOR EXPO DUBAI 2020

**ALMOST
6 MONTHS**

running from 20th October
2020-10th April 2021

1 MAIN THEME

“Connecting Minds,
Creating the Future”

3 SECONDARY THEMES

Opportunity, Mobility,
Sustainability

200
participants expected
from **180** nations

25 MILLION
visitors expected, **70%**
from foreign countries

30.000
volunteers involved
of different nationalities,
ages and backgrounds

277,000
jobs created, **40%**
in tourism

8 BILLION EUROS
cost of building the site

**15.5 BILLION
US DOLLARS**
total cost of Expo 2020

Airport to reduce the environmental impact of the vast numbers of visitors coming from abroad; the Dubai Canal Project, which, again drawing on solar energy, is intended to recreate a sort of “Little Venice” in Dubai, complete with canals and a man-made island; the Bluewaters Island district serving hospitality and shopping purposes; an entire new city, Dubai South, located to the south of the Expo pavilions; Santiago Calatrava’s tower, soon be the world’s tallest skyscraper; the city of Aladdin built on water, a complex of houses and shopping malls inspired by fairy tales; the world’s biggest shopping mall called “Mall of the World”; and the City of Health to the north of Dubai, whose 240 hectares are intended to host an important health tourism centre.

AND MAPEI IS INVOLVED

With all this building work and construction operations going on, Mapei was bound to be involved. The company has always provided cutting-edge solutions and products for architectural works and infrastructures to be constructed for worldwide events. After making an important contribution to the

Milan Expo (see *Realità Mapei International* no. 53), Mapei was keen to offer its help and expertise for the Dubai event and is already involved in various local projects. First and foremost, the creation of a bigger road system, which will allow easy access to the Expo 2020 site from various different parts. In particular, the company’s subsidiary, Mapei Construction Chemicals, supplied the products for repairing concrete (PLANITOP 110 ME, MAPEGROUT ME 05, and MAPEGROUT T60 ME) in the construction of the R1048/1 and R1048/5 interchanges.

Mapei systems are also being used on the Expo site itself: various products for repairing concrete and waterproofing have, indeed, already been used in the construction of the Dubai Trade Centre Jebel Ali inside Expo Village.

Mapei is targeting to supply more solutions from a number of its different product lines for lots of other building projects in the wider Expo site including Dubai South Mall, various Pavilions and infrastructures, and also accommodation facilities. We will talk about this at greater length in forthcoming issues of *Realità Mapei International*.



SUPER LUXURY HOTELS

In Dubai

WATERPROOFING AND INSTALLING CERAMICS AND MARBLES IN THREE NEW 5-STAR HOTELS

Three excellent hotels with unparalleled amenities grace Al Habtoor City in Dubai. World-famous international designers and architects have worked on the three 5-star hotels in the new neighborhood, representing famous hospitality brands that inspire confidence and symbolize luxury living and offering more than 1.600 elegant rooms. All three hotels are designed and inspired by different époques and styles. The St. Regis Dubai is inspired by the legacy of New York's gilded age and represents nobility and Beaux-Arts architecture. W Hotel is characterized by an avant-garde design. On the other hand, The Westin Dubai interiors feature stylized motifs inspired by Art Décor, which combines modernist style with fine craftsmanship and rich materials.

Owners and designers choose Mapei waterproofing systems for underground structures, bathrooms and damp areas due to the company's reputation as supplier of quality products. Mapei solutions were also used for building screeds and installing ceramic tiles and marble slabs in several areas of the hotels.

Besides, all the materials and systems supplied in the project feature low emission level of VOC (Volatile Organic Compounds) and comply with the LEED requirements, which enable designers and contractors to create eco-sustainable projects.

WATERPROOFING UNDERGROUND STRUCTURES

For waterproofing 70,000 m² of substructure, the contractors used the synthetic membrane MAPEPLAN TU WL 30 with good mechanical and welding characteristics. The innovative concept of inserting a "warning layer" allows easily detection of any eventual damage, that may occur during the installation or subsequent working phases, safeguarding the integrity of the whole waterproofing system.

For waterproofing structural joints, IDROSTOP PVC BI/BE was used, a highly flexible water stop made out of high-quality thermo-plastic vinyl resins. The anchorage of the membrane was completed with MAPEPLAN T DISK, a PVC-P

fixing element with high puncturing resistance. Sealing and waterproofing injections in construction joints were carried out with IDROSTOP MULTI PVC-P re-injectable hoses.

More than 1.000 piles were treated using MAPEGROUT ME05, a high performance, shrinkage-compensated, high-flow micro concrete along with PLANIGROUT 300 ME PCT, a three-component, multi-purpose fluid epoxy resin grout. Both products are manufactured and distributed on the UAE market by Mapei Construction Chemicals L.L.C., the UAE subsidiary of the Group. Onsite technical support was provided by Mapei during the system installation, which was important to ensure the quality of welding.

» **Mapei
synthetic
membranes
to waterproof
substrates
on 70,000 m²**

WATERPROOFING BATHROOMS AND DAMP ENVIRONMENTS

MAPELASTIC SMART, a two-component, highly flexible cementitious mortar, was chosen for waterproofing substrates on all types of damp environments due to its durability, high performance and easiness of application characteristics. It was applied on over 90,000 m² in the three hotels.

MAPELASTIC SMART is easily applied by brush, roller or spray, on both horizontal and vertical surfaces, at a thickness of approximately 2 mm. Due to the content and high quality of the synthetic polymers used in the formulation, the hardened layer of MAPELASTIC SMART remains constantly flexible under all environmental conditions.

In order to ensure the excellent mechanical characteristics of MAPELASTIC SMART membrane, it was reinforced with MA-PETEX SEL, a non-woven, macroholed polypropylene fabric.

BUILDING SCREEDS AND CONSOLIDATING THE SUBSTRATES

A Mapei system was used for substrate preparation on both horizontal and vertical surfaces, before installing ceramic tiles and natural stone. The company proposed TOPCEM, a special quick-drying (4 days), controlled-shrinkage hydraulic binder, to create screeds on an area of 50.000 m². TOPCEM allows ceramic tiles to be installed after 24 hours and natural



ABOVE. Ceramic tiles were installed with KERAFLEX MAXI S1, KERAFLEX and ADESILEX P9.

BELOW. Substrates in the bathrooms were waterproofed with MAPELASTIC SMART and MAPELASTIC SEL.



stone after 2 days. These properties added a great value for the projects by speeding up the process of tile installation in comparison with traditional sand-cement screeds.

Gypsum boards were treated with PRIMER G, a synthetic resin primer in water dispersion with a very low content of VOC, prior to the installation of ceramic tiles.

INSTALLING CERAMIC TILES AND NATURAL STONE

Thanks to its complete range of adhesives and grouts, Mapei was chosen by the investor as supplier of systems for installing ceramic and marble coverings. Before selecting the most suitable adhesives, dimensional stability and staining tests were conducted in Mapei Research & Development Laboratory. Based on laboratory results, it was decided to use the high performance adhesives KERAFLEX MAXI S1, KERAFLEX, and ADESILEX P9.

KERAFLEX MAXI S1 is a deformable cementitious adhesive with extended open time and no vertical slip, especially suitable for the installation of large-size porcelain tiles and natural stone.

KERAFLEX, also a cementitious adhesive, is suitable for single-fired, double-fired, and porcelain tiles, terracotta, klinker, stone materials and mosaics on every type of floors, walls and ceilings.

ADESILEX P9 cementitious adhesive with no vertical slip was selected for bonding porcelain tiles on vertical and horizontal surfaces.

As for grouting joints on both ceramic and marble coverings, Mapei proposed KERACOLOR FF and ULTRACOLOR PLUS, high-performance, anti-efflorescence, quick-setting and drying poly-mer-modified mortars with water-repellent DropEffect and mould-resistant BioBlock technology. Their wide range of colors enables designers to choose appropriate tones for proper combination with ceramic tiles.

This article was taken from *Realtà Mapei Middle East & East Africa*, no. 01, the in-house magazine published by Mapei Construction Chemicals L.L.C., whom we would like to thank.



ADESILEX P9 was used to bond porcelain tiles on both horizontal and vertical surfaces

IN THE SPOTLIGHT

ADESILEX P9

It is an improved (2) slip resistant (T) cementitious adhesive (C) with extended open time (E) classified as C2TE according to EN 12004. Ideal for interior and exterior bonding of ceramic tiles and mosaics on floors, walls and ceilings.

Also suitable for spot bonding of insulating materials such as expanded polystyrene, rock and glass wool, sound-deadening panels, etc.

It is easily workable and highly

thixotropic and can be applied on a vertical surface without slumping or slipping even when heavy tiles are used. It ensures perfect adherence to all materials normally used in building and hardens with minimal shrinkage.



TECHNICAL DATA

St. Regis, The Westin Dubai and W Hotel, Al Habtoor City, Dubai (UAE)

Period of construction: 2013- 2016

Period of the Mapei intervention: 2013-2016
Intervention by Mapei:

supplying products for screeds, waterproofing and bonding ceramic tiles and marble

Client: Al Habtoor Group LLC

Design consultant:

Khatib & Alami Consolidated Engineering Company

Main contractor: HLG Contracting

Sub-contractors: Al Shirawi (waterproofing), GCS (screeds)

Installation companies:

AHK International, Marmi Group, Dar Al Rokham

Mapei coordinators:

Bachir A Abdallah, Shatha Weldali, Hany Al Assal, and Ian Gregory, Mapei Construction Chemicals L.L.C. (UAE)

MAPEI PRODUCTS

Underground waterproofing:

Idrostop Multi, Mapeplan T Disk**, Mapeplan TU WL**, Mapegrout ME 05*, Planigrout 300 ME PCT*, Idrostop PVC BI/BE

Waterproofing damp areas:

Mapelastic Smart, Mapetex Sel

Building screeds and

preparing substrates: Topcem,

Planicrete, Primer G

Ceramic and marble

installation: Keraflex Maxi S1, Keraflex, Adesilex P9

Grouting joints: Keracolor FF, Ultracolor Plus

*These products are manufactured and distributed in the UAE by Mapei Construction Chemicals.

**These products are manufactured by Polyglass SpA, Mapei Group.

For further information see www.mapei.ae and www.mapei.com



RIYADH METRO

in Saudi Arabia

A COMPLEX SITE REQUIRING INNOVATIVE MAPEPLAN WATERPROOFING MEMBRANES

Riyadh is the capital and most populous city of Saudi Arabia. Estimates suggest that the number of Riyadh's population will grow from about 6 million to more than 8.5 million over the next 10 years. This will require effective ways to meet the needs of the city including those of transportation.

One of the most impressive one is the Riyadh Metro, the biggest urban mass-transit system that has ever been created from scratch, which is expected to be completed by the end of 2018. This rapid transit system will serve the city and consist of 6 metro lines spanning a total length of 176 km with 85 stations.

The project cost 22.5 billion US dollars. The new metro system will play a key role for the city's practicability, reducing traffic congestion and pollution, since it will allow to limit the number of vehicles present on the city's streets, creating a sustainable and efficient means of transport. It is expected to be the backbone of the city's public transport system as it will integrate with an 85-km three-line bus rapid transit (BRT) network.

In June 2013, a shortlist of 3 major global consortia was chosen to build the metro. Contracts were awarded in July 2013, with construction planned to start in 2014 and be completed in 4

years. The ground-breaking ceremony was celebrated on April 4, 2014.

The Riyadh underground railway system is currently being built by numerous construction companies including Bechtel, FCC, Strukton, Salini Impregilo, Larsen & Toubro and Samsung.

THE PROJECT FOR LINE 3

Line 3, which is being executed by the Salini Impregilo/Larsen & Toubro/ Samsung joint venture, runs for 41.58 km, starting from the west (near the Jeddah Expressway) and ending in the east (near the National Guard Camp of Khashm El Aam), for a total of 22 sta-

» Riyadh metro will include 6 lines for a total length of 176 km with 85 stations



LEFT. A render showing the King Abdullah Financial District Western metro station, designed by the Zaha Hadid architectural studio.

RIGHT. Project layout of the Riyadh city transport system.

tions. Most of the line runs underground through the area known as "old Riyadh". The trains that will run on it will have a maximum length of 36.7 m (2 carriages), a capacity of 267 passengers and a maximum speed of 100 km/h.

The Impregilo-Salini group is responsible for all the civil works along with Larsen&Toubro and Nesma, while Ansaldo STS works on the technological aspects.

The intervention also includes two large stations with a prestigious design heritage: Qasr Al Hokm Downtown station, designed by the Norwegian design studio Snøhetta, and King Abdullah Financial District Western station, designed by the Zaha Hadid architectural studio, which will also act as an interchange, including four public levels and a two-storey underground carpark.

MAPEI AT THE BASIS OF THE METRO

Mapei became involved in this building

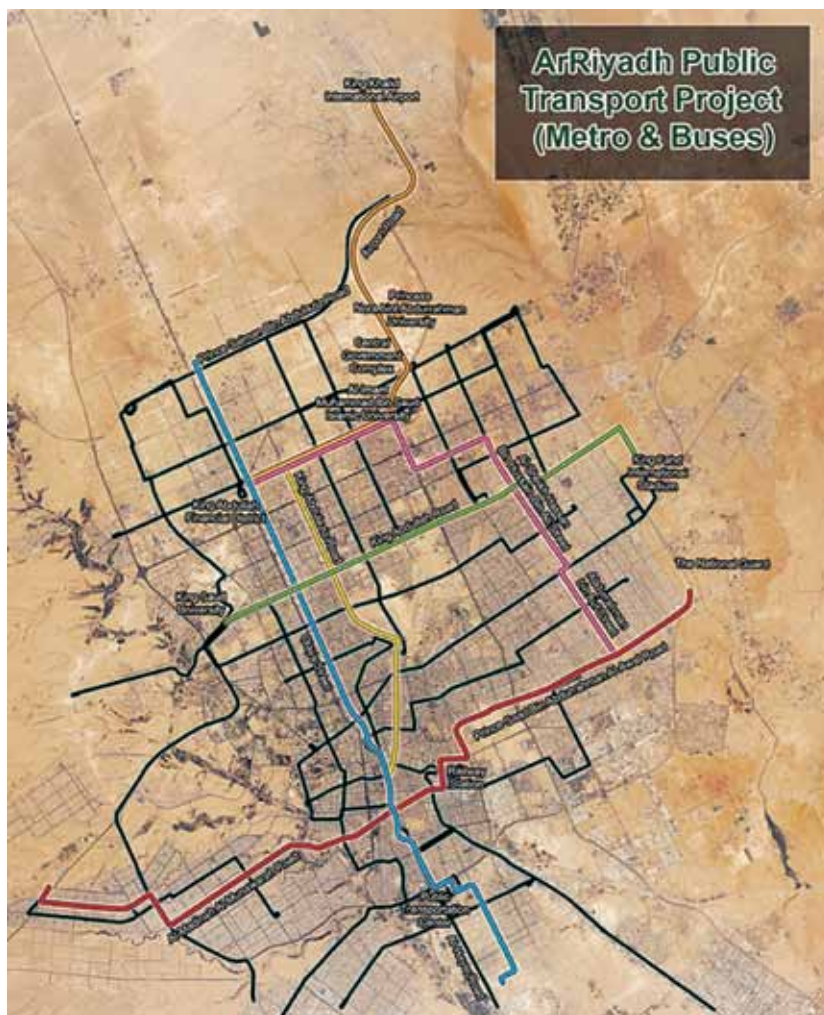
project during the design phase. The company's Technical Services worked closely with the Salini Impregilo and Larsen & Toubro design team to develop a waterproofing system that could meet all the specified requirements and that could be applied directly on site.

The project was unique in many ways: for instance, the underground stations were all under the ground water table level, with some of them even at a depth of 36-40 m. The ground water was contaminated and highly saline. As the stations were being constructed in extremely congested parts of the city, they required diaphragm wall shoring to support the ground before excavation could be carried out. This was coupled with the fact that all the walls and ground slabs were held in place with tension anchors penetrating into the concrete. These anchors were intended to prevent water pressure from causing the

uplift of the structure after completion of the works. A waterproofing system was needed, able to accommodate a few hundreds of penetrations through it.

The Mapei technicians proposed different waterproofing solutions, able to meet several challenges.

The first challenge was to ensure that the waterproofing products would meet the design life of the structure amounting to 120 years. MAPEPLAN TU S PVC-P membrane was subjected to accelerated ageing tests to prove the long-life expectancy. MAPEPLAN TU S membrane was installed loose laid around the structure and compartmentalized with the highly flexible IDROSTOP PVC BEC ME 32T waterstops every 200 m². The waterstops also incorporated IDROSTOP MULTI 11 re-injectable hoses in them. This was intended to ensure that, when casting the concrete, any gap could be filled with MICROCEM





1



2

8000, micro-fine hydraulic binder with pozzolanic action for ground consolidation and ground waterproofing. This ensured that the leakages in any compartment could be effectively reduced. The second challenge was to devise a system which would allow the repair of the membrane in case of damage. A double-layer system was designed with MAPEPLAN TU S 20 and MAPEPLAN PVC PROTECTION 15 membranes.

IN THE SPOTLIGHT MAPEPLAN TU S

It is a PVC-P synthetic waterproofing membrane. MAPEPLAN TU S is a single layer membrane with orange signal layer; it can be applied as a fluid barrier in tunnel and underground structures construction. It is ideal for drill and blast tunnel waterproofing, open cut tunnel waterproofing, and underground structures waterproofing. The presence of the two-colour signal layer (orange/black) allows to highlight any holes or tearing of the membrane during the placing phase. MAPEPLAN TU S performs high mechanical properties and workability and excellent welding characteristics. The product is non-toxic and suitable, therefore, for surfaces in contact with foodstuffs.

These layers were welded at the edges of the compartments to enable injection between the two layers in case of leakage. To facilitate this, MAPEPLAN INJECTION VALVES were installed, 5 in every compartment, to cover the whole surface area of each compartment. These were then filled with MAPEGEL UTT, hydro swelling acrylic resin, to flood the compartment. This resin gels and then swells when it comes in contact with water, thereby keeping the water out of the structure.

The tension anchors penetrating through the slab and the retaining walls posed an immense challenge to the designers, when accommodating the waterproofing system.

A unique solution was found to treat these ground anchors. Collars were fabricated using MAPEPLAN TU S 20

PHOTO 1. Applying MAPEPLAN TU S, MAPEPLAN PVC PROTECTION 15 and MAPEPLAN INJECTION VALVES.

PHOTO 2. A waterstop incorporating IDROSTOP MULTI 11 hoses.

PHOTO 3. Positioning the anchors that penetrate the ground slab.

PHOTOS 4 and 5. A view of the building site of the Qasr Al Hokm Downtown Station and a close up of the anchor treatment.

PHOTO 6. Connection of the waterproofing system at the tunnel entrance.

PHOTO 7. A render of the King Abdullah Financial District Western station.



3



4



5

RIYADH METRO IN FIGURES

41.58 km

TOTAL LENGTH OF LINE 3

176 km

TOTAL LENGTH OF ENTIRE
METROPOLITAN RAIL NETWORK

85

TOTAL NUMBER OF STATIONS

22

NUMBER OF STATIONS ALONG
LINE 3

25.73 km

TRACK RUNNING ON CONCRETE
VIADUCTS

9.73 km

(4 of which tunnelled
with a TBM)

TRACK RUNNING IN TUNNELS

4.10 km

TRACK RUNNING ON THE
SURFACE

114,00 m²

TOTAL SURFACE AREA OF
MULTI-STOREY CAR PARKS

362,000 m²

ROADS AND PARKLAND

membrane. These collars were filled to one third the depth with MAPEGEL UTT which is a hydrophilic gel. The gel and the collar were then encapsulated with PLANIGROUT 300 ME PCT free-flowing grout to contain the swelling action of the MAPEGEL UTT.

This solution for anchors was used for all the stations of Line 3 including the King Abdullah Financial District Western station and Qasr Al Hokm Downtown Station. The same solution was used for the anchors in the shoring diaphragm walls. The work was slow and time consuming but supplied a perfect solution to stop leakage through the anchors.

This article was taken from *Realtà Mapei Middle East & East Africa*, no. 01, the magazine published by Mapei Construction Chemicals L.L.C, whom we would like to thank.

TECHNICAL DATA

Riyadh Metro, Riyadh
(Saudi Arabia)

Period of construction:
2014-2019

**Year of the Mapei
intervention:** 2014

Intervention by Mapei:
supplying waterproofing
products for the stations

Client: ArRiyadh New Mobility

Design: Zaha Hadid Architects,
Snøhetta

Design consultants: IDOM/
One Works/Salini/L&T

Contractor: CWG

Subcontractor: IKK/CRETEC

Mapei co-ordinators: Stefano
Iannacone, Ranbir Khanna,
Dario Casile, Khaled Farouk
Mansour, Mapei Construction
Chemicals L.L.C. (UAE)

MAPEI PRODUCTS

Underground
Waterproofing:

Mapeplan TU S 20*,
Idrostop PVC BEC ME
32T**, Idrostop Multi 11,
Mapeplan Injection Valves*,
Mapeplan PVC Protection*,
Mapegel UTT, Mapeproof
Swell, Microcem 8000,
Planigrout 300 ME PCT**

*These products are manufactured
by Polyglass SpA, Mapei Group.

**These products are
manufactured and distributed
by Mapei Construction
Chemicals L.L.C

For further information
see www.mapei.ae
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PALERMO
2018
ITALIAN CAPITAL
OF CULTURE

PALERMO

Italian Capital of Culture 2018

IT IS AN IMPORTANT YEAR FOR THIS MULTI-FACETED CITY RIGHT IN THE HEART OF THE MEDITERRANEAN

Palermo has been selected as the Italian Capital of Culture for 2018, a city with which Mapei has always enjoyed an incredibly good relationship and which Mapei has helped embellish and renovate down the years through its products.

As mentioned during the opening ceremony for Palermo Italian Capital of Culture 2018, which was held on 29th January at Teatro Massimo, Palermo's beauty and richness comes from all the different dominions that have ruled over the city and the flow of people coming in and out of the city all the time, resulting in an extremely fruitful exchange of culture and customs. This can clearly be seen from the cityscape, local language, city monuments, cuisine and urban fabric.

The event is not just a rich schedule of happenings but also a project taking culture as "capital" to be used for developing the entire community. Culture in all its different facets, not just artistic culture but also a culture for peace, welcoming outsiders, legality, business, innovation, young people, the environment, charity and diversity; all this by bringing together institutions, associations and many other key players in local civil life, moving beyond the city's boundaries and creating a closer synergy with the metropolitan borough and entire region.

Palermo is ready to showcase its various treasures, some better-known than others, for the entire year, entertaining people with concerts and shows of the highest calibre and astounding anybody not yet familiar with its cultural hyper-activism.

The focus of the entire schedule of events planned is Palazzo Sant'Elia, where a Mediterranean-shaped reflective table called "Love difference" designed by Michelangelo Pistoletto has been installed after being brought from its usual home in a large meeting room at the Italian Ministry of Foreign Affairs in Rome.

Among the most eagerly awaited events is the opening of the "Camera delle meraviglie" (Cabinet of Wonders), a charming and mysterious Arab room discovered in a private apartment in the Ballarò neighbourhood.

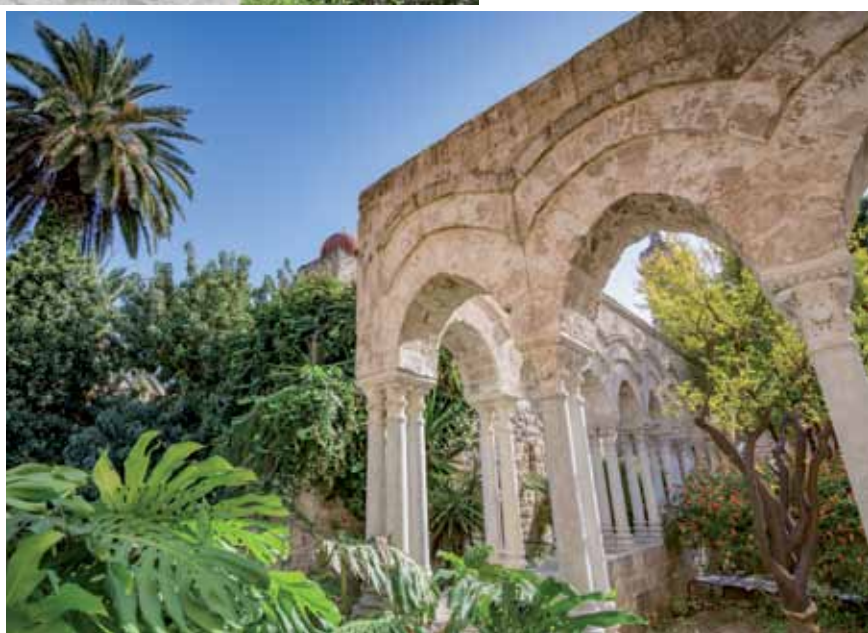
The city streets came to life as they hosted folk concerts from 9th to 10th March to celebrate dialogue between different cultures, an event that culminated in the all-night opening of the UNESCO sites on 10th March. But all this will not come to an end after the city's year as the Italian Capital of Culture draws to a close. Palermo is, in fact, organising an additional 24 special projects to be completed by 2020, ranging from the opening of Al Medina al Aziz Park that will accommodate Palazzo della Zisa, Zisa gardens and various Zisa cultural sites, to the creation of a House-Museum of Rights, a project for a multimedia contemporary art museum focused around the issue of human rights.



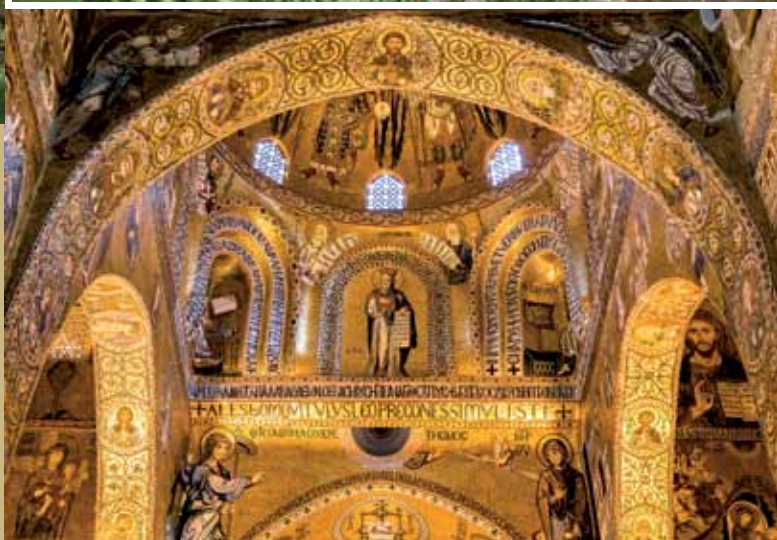
Next year will be Matera's turn to show its treasures as the 2019 European Capital of Culture (see *Realtà Mapei International* no. 67) while in two years Parma will be in the spotlight: this city located in Central Italy was chosen as the Italian Capital of Culture for 2020.



» Not just artistic culture but also a culture for peace, legality, business, innovation and social responsibility



In 2018 Palermo is showcasing its various treasures, some better-known than others, including the Palatine Chapel (right), the Cathedral (top of the page), the Palace of the Normans (above), and Teatro Massimo (left). The latter two buildings were renovated by using Mapei products.



EXPOSED MASONRY?



Two products
for laying and pointing
“exposed” masonry.
A wide range
of colours available.



TUFF

CREAM

IVORY

GREY

DOVE-GREY

BRICK
COLOURED

PINK

Mape-Antique Allettamento

- Suitable for **historical buildings**
- Cement-free
- Resistant to soluble salts

MapeWall Muratura Fine

- Suitable for **new buildings**
- Excellent mechanical performances
- Excellent quality/price ratio

Mape-Antique Allettamento and ***MapeWall Muratura Fine*** are transpirant, natural hydraulic lime-based mortars for laying and pointing “exposed” masonry, available in a range of 7 colours.

EVERYTHING'S **OK** WITH **MAPEI**





BELMONTE RISO PALACE in Palermo

MAPEI PRODUCTS USED FOR
RESTORATION WORK ON ONE OF THE
MOST IMPORTANT BUILDINGS IN PALERMO,
HOME OF THE REGIONAL MUSEUM OF
MODERN AND CONTEMPORARY ART

Palazzo Belmonte Riso (Belmonte Riso Palace) is one of the most important and monumental buildings in the old part of Palermo and overlooks Corso Vittorio Emanuele and Piazza Bologni.

It was built at the end of the eighteenth century by the Princes of the Ventimiglia Belmonte family and is an interesting example of how a private residence of the nobility conjugates the magnificence of the late Baroque era with the rigours of Neoclassicism.

In 1841 the Palazzo was sold to the Riso family and, to this day, a sculpture of the family crest still adorns the main gate.

In 1943, during the Second World War, it was almost razed to

the ground during the bombardments carried out by the Anglo-American armed forces. In 1986, after years of neglect and deterioration, the Palazzo was bought by the Sicilian Regional Government. Restoration work was started in the 1990's and the monument was handed back to the city.

Since 2005, Palazzo Belmonte Riso has been the home of the Sicilian Museum of Modern and Contemporary Art, also known as the RISO.

RESTORATION PROJECT: ARCHITECTURAL CHOICES

The intention of the most recent restoration project in 2004, which was financed by the Sicily Region Department of Cultural Heritage and Sicilian Identity, was to restore the building to its original layout and to make it more accessible by adding annexes and extensions to redefine the spaces in the two internal courtyards. The reconfiguration of the east wing of the Palazzo represented the most significant part of the project. It consisted in the construction of a two-storey extension on the side of the building overlooking the first of the two courtyards, starting from the ground floor where the display areas of the museum are located, in order to maintain a certain level of architectural continuity when connecting the new building to the adjacent existing three-storey building of the south wing of the





Palazzo. The same logic was adopted for the parts of the building overlooking the second courtyard, with the construction, in this case, of a single-storey building. The project also included the adoption of anti-seismic safety measures for both the main structures (walls and arches) and secondary structures (ceilings and jack arches) to improve the overall level of safety in the building and to maintain the structural integrity of the entire building in the event of seismic activity.

DEFINING THE MATERIALS AND MAPEI TECHNICAL SUPPORT

For the construction of the new walls and to point the joints in the walls, it was necessary to use special mortar with three indispensable characteristics. It had to be a class M5 (elasto-mechanical compatibility), lime-based mortar, contain no cement (chemical-physical compatibility) and its colour had to integrate perfectly with the new tuff ashlars. Also, this one single product had to have CE marking and be certified to guarantee the best results possible. The Works Director opted for MAPE-ANTIQUE ALLETTAMENTO, a salt-resistant mortar made from natural hydraulic lime and eco-Pozzolan specifically designed to form transpirant installation layers in load-bearing and buffer walls, including those with “exposed” masonry. This product is a class M5 mortar which meets the minimum requirements of EN 998-2 and is classified G (“Guaranteed performance, general purpose masonry mortar for external use on elements with structural requirements”).

The mortar was chosen in its tuff colour shade and applied with a trowel after saturating the substrates. After laying the installation bed, the tuff ashlars were placed in the correct position by pressing them down slightly into the mortar. The excess mortar was then removed using the trowel and the joints were cleaned with a damp sponge to create “exposed” masonry. The same technique was used for to install the jack arches.

THE DESIGN OF THE ASHLARS AND JACK ARCHES

The connections between the various sections of the walls and the load-bearing structure, and keying of the new tuff ashlars into the old ashlars, were carried out using MAPEFIX VE SF two-component chemical anchor. This product is a mixture of styrene-free synthetic resins and is supplied in single cartridges. The two components are mixed together perfectly as they are extruded via the static mixer screwed to the end of the cartridge. MAPEFIX VE SF is particularly recommended for anchoring steel bars which transmit structural loads in solid and perforated substrates. It is also suitable for use in particularly harsh conditions, such as total immersion in water or in areas exposed to the aggressive action of sea spray and industrial pollution. After drilling a series of holes in the existing substrate, the holes were thoroughly cleaned with compressed air and bottle-brushes. The product was then extruded into the holes, starting from the bottom of the holes, and metal rods were inserted with a rotatory movement to expel all the air until all excess resin came out of the hole.



MAPE-ANTIQUE ALLETTAMENTO was applied by trowel to rebuilt masonry walls, after saturating the substrates. The connections between the various sections of the walls and the load-bearing structure were carried out using MAPEFIX VE SF chemical anchor.





PHOTOS 1 and 2. The external walls of the building before and after the masonry renovation works.

PHOTO 3. MAPE-ANTIQUE ALLETTAMENTO was used to install the jack arches.

IN THE SPOTLIGHT

MAPE-ANTIQUE ALLETTAMENTO

It is a pre-blended, cement-free masonry mortar in powder form made from natural hydraulic lime, Eco-Pozzolan, natural sand, special additives and micro-fibres. It is used to create transpirant installation layers and for pointing on internal and external stone, brick, tuff and mixed "exposed masonry" load-bearing and buffer walls, including those of historical and artistic interest. It is also suitable for new load-bearing and buffer walls or for rebuilding old walls. This product is classified as **G** according to **EN 998-2** standards, class **M5**. It is available in 7 colours.



TECHNICAL DATA

Belmonte Riso Palace,
Palermo (Italy)

Year of construction: 1783

Period of the intervention:
2014-2015

Intervention by Mapei:
supplying products for
renovating and strengthening
masonry walls

Client: Sicily Region

Department for Cultural Heritage
and Sicilian Identity

Project Manager: Lina Bellanca

Design and works direction:

Giuseppe Vanella, Vincenzo
Gaglio, Cesare Chirco

Inspector: Francesco Santalucia

Structural design: Mario
D'Amore, Michele Buttitta

Safety Supervisor: Peter
Candela

Lab tests: Geolab Srl,
MetalControl

Main contractor: Cantieri
Edili Srl

Mapei distributor: Zuccherò
Giuseppe & C. s.n.c.

Mapei coordinators:
Salvatore Costa, Rocco Briglia,
Ezio Vallone, Agenzia Ric. Co
Snc, Mapei SpA (Italy)

MAPEI PRODUCTS

Masonry renovation:

Mape-Antique Allettamento

Chemical anchoring:

Maepfix VE SF 250

For further information
on products visit
www.mapei.com

PALAZZO TOMASI DI LAMPEDUSA

THE CONSERVATIVE RESTORATION
WORK ON AN ANTIQUE
ARISTOCRATIC PALAZZO IN PALERMO
INCLUDED THE APPLICATION OF
MAPEI WATERPROOFING SYSTEMS
AND WALL COATINGS





The current Lampedusa Courtyard was built in 1538 and two of the most important palazzos of the Palermo aristocracy from the sixteenth century were immediately built opposite each other: the palazzo of the Counts of Raccuia, now known as Palazzo Branciforte, and the palazzo of Cesare and Ottavio d'Aragona, now known as Palazzo Lampedusa. The palazzo was inherited by the Tomasi family of Lampedusa in the middle of the 18th century. In April, 1943, bombardments completely destroyed the portico terrace and the central part of the palazzo that connected the north wing, which was also destroyed, and the west wing, which was partially damaged. After the war, a brick and ceramic tile factory was opened inside what remained of the palazzo.

A project was issued in 1981 to create a poly-functional centre with a local library, a kindergarten and a gymnasium, but nothing ever came of it. Finally, in 2010, the design studio PL5 came up with a restoration and renovation project and, thanks to a consortium of 35 buyers that acquired the palazzo, work got under way. The palazzo, once inhabited by Prince Giuseppe Tomasi of Lampedusa, author of the famous Italian novel *The Leopard*, was recreated in the same form as the original building but, because of the severe damage inflicted during the Second World War, with interiors which are obviously different. The design team discussed at length how to approach the intervention: whether it would be better to recover the ruins of the palazzo with period restoration work, or to propose a building along more modern lines. In the end, it was decided to use the first proposal that opted for a more conservative intervention which maintained its original features

LEFT. A view of the internal courtyard of the palace.

ABOVE. ANTIPLUVIOL W was applied on the masonry walls to provide a colourless, water-repellent protective layer.

RIGHT. A view of the palace before the works.



and colours.

The restoration work, which returned the palazzo to its original configuration as an eighteenth century aristocratic home, involved working on the remaining 70% of the south wing, where the writer and his parents had lived, and repairs to the north wing which had been almost completely destroyed, former residence of the writer's grandparents. To bring the building back to its former configuration, the design team based their research on the book *Childhood Memories*, in which Tomasi of Lampedusa described each room of the palazzo in minute detail and also made sketches of the layout of the ground floor.

CHOOSING THE TYPE OF INTERVENTION

Palazzo Lampedusa (with around 6,000 m² of covered area) was redesigned according to current living requirements and



PHOTOS 1 and 2.

The mouldings, window frames and ledges were bonded in place with MAPETHERM AR1.

PHOTO 3.

MAPELASTIC was used for the waterproofing cycle on the terrace.

is now made up of around forty individual apartments. The idea for the restoration work on the missing areas was based on an in-depth study of what the layout would have been before the war. Once the architectural layout of the palazzo had been defined, the next step was to pass to the actual design stage of the restoration work, which was then revisited several times over the course of the following three years. There was a hypothesis to completely restore the palazzo in its original style, with white rendered walls and tuff cornices around all the

openings, as described by Tomasi of Lampedusa, and then a proposal to use more modern language for all the restored areas, with walls with sun-screens made from Corten steel. In the end the designers opted for a more critical restoration, intimately tied to the nature of the architectural forms of the building, and considered the remains of Palazzo Lampedusa particularly important for its bond with the life of the writer. In fact, the building itself was not particularly significant from an architectural point of view: while having a very interesting layout and a pre-sixteenth century and Aragonese background, it did not have outstanding decorative features. The palazzo was actually incomplete in many areas and extension work on the top floor was never finished, leaving the internal side facing the garden incomplete.

Visitors come from all around the world to see the palazzo, not so much for its architectural significance, but for the fact that it was the home of the writer and to search for traces of Italian society of that era, the inspiration behind one of the most important novels in Italian literature.

For this reason it was preferred to carry out a conservative restoration which maintained not only its shape, but also its missing parts. The aim was to restore the palazzo, but also to leave it as it was, proceeding only to restore the functionality of the openings by reinstating balconies, windows and entrances that had been sealed off.

The balconies on the noble floor were rebuilt without re-proposing their original stone supports, but by using ironwork supports shaped and positioned to act as a reminder of the original stone ones.



INTERVENTIONS WITH MAPEI PRODUCTS

As far as the renovation of parts of the walls overlooking the street and of all the internal walls was concerned, except for the wall facing the garden, after lengthy discussions with the architects, a conclusion was reached: Palazzo Lampedusa is characterised by its peculiar distribution of spaces, the layout of the communal areas, the sequence of the courtyards, the portico surroundings, the low buildings, the covered communal pathways and the garden. The conclusion was that the most correct choice would be to return the building to its original state as an historic noble residence, but also to simplify its decorative features. This choice allowed the contemporaneity of the building to be highlighted and to stylise other elements such as the columns. This type of measure was also adopted for other architectural features, such as what must have been the stone balustrades on the terraces being made from metal.



2

The overall result is to have created a palazzo in which you can still clearly identify its original style and previous history, but where the period restoration work is clearly visible by adding stylised eighteenth century features.

Mapei Technical Services worked with the designers and contractors with the aim of proposing just the right products for an intervention of this type. MAPETHERM AR1 one-component cementitious mortar was used to bond the mouldings, window frames and ledges while PLANITOP 510 was used for the wall surfaces, a lime-cement skimming mortar forming a fine-textured, natural finish on renders before decorating the surfaces. After a few days, once the compound was completely dry, the surfaces were finished off with the QUARZOLITE system.

The surfaces were primed with QUARZOLITE BASE COAT coloured acrylic undercoat and then finished off with QUARZOLITE TONACHINO 1.2, a coating product for walls with high resistance to all weather conditions. QUARZOLITE TONACHINO 0.7 was used to finish off all the other external surfaces. To make all the surfaces that had been restored water-repellent, it was recommended to use ANTIPLUVIOL W silane and siloxane-based water-repellent impregnator in watery emulsion.

Waterproofing work was carried out using MAPELASTIC two-component cementitious mortar, which is applied on clean

surfaces and forms a highly flexible, protective waterproof membrane.

KERABOND T cementitious adhesive was used to bond ceramic tiles and the joints between the tiles were grouted with ULTRACOLOR PLUS high-performance grout.

The palazzo has now been turned back into the building loved and written about by Giuseppe Tomasi of Lampedusa.

IN THE SPOTLIGHT QUARZOLITE TONACHINO

It is a flexible, fibre-reinforced, single-spread plaster with a rustic finish, for internal and external application. It is used to decorate and offer protection to walls and to even out surface imperfections. It may be used on any kind of building, even those which are already painted.

QUARZOLITE TONACHINO

is resistant to all climatic conditions and the aggressive attack of smog, salt and sunlight. It complies with the requirements of **EN 15824** ("Specifications for external renders and internal plasters based on organic binders").



TECHNICAL DATA

Palazzo Tomasi di Lampedusa, Palermo (Italy)

Period of construction: late 16th century

Period of the Mapei

intervention: 2015-2016

Intervention by Mapei: supplying products for renovating and finishing the

facades

Design: Studio PL5

Architettura (Alice Franzilla, Rita Franzilla, Giovanni Franzilla)

Works direction: Giovanni Franzilla

Technical direction:

Vito Salamone, Mariano Di Leonardo

Wall coating contractor:

Codim srl

Mapei coordinators: Achille Carcagni, Ezio Vallone, Rocco Briglia, Salvatore Costa, Ric.co Snc, Mapei SpA (Italy)

MAPEI PRODUCTS

Smoothing external walls:

Mapetherm AR1, Planitop 510

Protecting and painting external

walls: Antipluvial W, Quarzolite Base Coat, Quarzolite Tonachino 1.2, Quarzolite Tonachino 0.7

Waterproofing substrates:

Mapelastic

Bonding and grouting ceramic

tiles: Kerabond T, Ultracolor Plus

For further information see

www.mapei.com

PALERMO FAST-TRAM NETWORK

NUMEROUS MAPEI SOLUTIONS FOR A GREAT PIECE OF INFRASTRUCTURE: FROM ADMIXTURES FOR CONCRETE TO ADHESIVES, FROM WATERPROOFING PRODUCTS TO COATINGS

After seventy years the tram system is finally running again in Palermo. The Palermo fast-tram network, inaugurated in 2015, was a great technical challenge that led to the creation of a public transport system worthy of any modern European city: three lines, new bridges, footbridges and workshops are all part of the Palermo City Tram System.

The Palermo tram network connects some of the outlying suburbs of the city to the city's two main rail hubs: Central Station and Notarbartolo Station.

The biggest challenge was to work right in the city itself, that is, to integrate such an important project so that it could coexist with the normal road network and the presence of numerous auxiliary services. A situation that required the highest stand-

ards in quality and safety during every phase of the work.

Right from the very first stages of the design work Mapei was involved in the project, providing proactive support and collaborating with the designers to calibrate the right solutions to meet the requirements of the project.

To make the concrete, for example, the contractors used DYNAMON SX 32 and DYNAMON SX 34 super-plasticising, acrylic polymer-based admixtures for ready-mixed concrete, which allow the amount of mixing water required to be considerably reduced. For the poured concrete used to make the platforms, on the other hand, MAPEFIBRE ST 42 structural polymer fibres were added to the mix to increase its tensile strength and ductility, which from a logistics point of view proved to be a particularly advantageous alternative to traditional steel reinforcement.

Mapei technology was also adopted for the construction of the three footbridges. Once the concrete structures had been cured, they were smoothed with PLANITOP SMOOTH & REPAIR thixotropic cementitious mortar and finished off with QUARZOLITE BASE COAT coloured acrylic undercoat and ELASTOCOLOR PAINT protective, crack-bridging, elastomeric paint.

PHOTO 1. The foundation slab for the tram platforms was cast at night. The concrete was formulated with DYNAMON SX 32 and DYNAMON SX34 admixtures for concrete.

PHOTOS 2 and 3. The stone slabs were bonded onto the platforms with ADESILEX P4 cementitious adhesive.

The marble floorings were installed using KERALASTIC T, a two-component polyurethane adhesive suitable for installing ceramic and stone wall and floor coverings, including on metal substrates and steel sheets. The stone floor coverings for the platforms were installed using ADESILEX P4 high performance, rapid-setting, full-contact cementitious adhesive.

The barriers that separate the actual track from the adjacent roads were anchored in place using MAPEFIX VE SF chemical styrene-free, vinylester anchor, which is used



1



2



3



THE FIGURES

3 LINES

18 KM OF TRACK

17 TRAMS

45,000 M² OF STORAGE-WORKSHOP SPACE

**322,000,000 EUROS
TOTAL INVESTMENT**



PHOTOS 4 and 5. The surfaces of the footbridges were finished off with ELASTOCOLOR PAINT protective paint.

to anchor elements exposed to structural loads and construction bars in concrete.

MAPEFLEX PU 70 SL polyurethane sealant was used to fill part of the joints formed between the boundary lines in contact with the wheeltracks and the road.

Numerous other Mapei systems were used for a wide range of activities. There are also plans to extend the Palermo transport system even further in the future, including a Palermo city underground railway line.

IN THE SPOTLIGHT

DYNAMON SX 32

It is a liquid superplasticizing admixture for quality concrete with high retention of workability.

DYNAMON SX 32 is mainly used for waterproof and durable concrete with high and very high compressive strength with exposure class in compliance with

EN 206-1; for pumped concrete; for ready-mixed concrete with high mechanical performance and high retention of workability in hot weather and/or over long transit time.

TECHNICAL DATA

Palermo city tram service,
Palermo (Italy)

Period of construction:
2008-on-going

Period of the Mapei intervention: 2009-2015

Intervention by Mapei: supplying admixtures for concrete and products for waterproofing, installing ceramic tiles, finishing walls and other building works

Client: Palermo City Council
Original design: V. Mosco & Associati Srl, Hyder Consulting GmbH

Intervention design: Lucio Maria Perilli, Gaspare Mantione, Salvatore di Salvo

Works direction: Fabio Sgarrella (Italconsult)

Main contractor: SIS S.c.p.a. and partners (Bombardier Transportation Italy SpA, EDS Infrastrutture Spa, V. Mosco & Associati Srl)

Mapei coordinators: Alessandro Addia, Salvatore Costa, Ignazio Vallone, Ricco snc, Rocco Briglia, Achille Carcagni, Mapei SpA (Italy)

MAPEI PRODUCTS

Admixtures for concrete:

DMA 2000, Dynamon SX 32, Dynamon SX 34, Mapetard, Mapefibre ST42, Mapeplast NS 20

Installing ceramic tiles:

Adesilex P4, Keraflex Maxi S1, Keralastic T, Ultralite S1,

Sealing joints: Mapeflex PU70 SL, Mapeflex PU 45 (now superseded by MAPEFLEX PU 45 FT)

Coatings: Antipluviol S, Elastocolor Paint, Elastocolor Primer, Quarzolite Base Coat

Waterproofing substrates:

Mapelastic

Chemical anchoring: Mapefix

VE SF

Products for building: Mape-net

150, Lampocem, Eporip, Eco Prim Grip, Planitop 530, Planitop 510, Planicrete, Mapefloor Binder 930, Planitop 580, Planitop Smooth & Repair, Intomap R1.

For further information visit our website www.mapei.com

PALERMO AND BEYOND

PRODUCTS FOR STRUCTURAL STRENGTHENING
AND REPAIR FOR WORKS IN PALERMO AND SICILY



PALERMO-AGRIGENTO TRUNK ROAD

The aim of the "Bolognetta" stretch of roadworks was to upgrade the road that connects Palermo to Agrigento. Even though it is considered to be an expressway, the road itself is unsuitable for intense, high-speed traffic. Once the work has been completed, which was originally scheduled for 2016 and then postponed to the end of this year, the stretch of road involved will become an expressway and have areas with two or four lanes.

Mapei Technical Services provided site assistance for the contractor working on the renovation and protection of the piles and road deck (intrados) and recommended using MAPEFER to protect the reinforcement rods, MAPEGROUT T60 thixotropic mortar mixed with MAPECURE SRA to repair the concrete and MAPELASTIC GUARD cementitious mortar for protecting concrete. The road deck was waterproofed with MAPELASTIC TURBO rapid-drying cementitious mortar, PRIMER 3296 and MAPENET 150 glass fibre mesh, while the rubber joints were treated with PLANITOP SMOOTH & REPAIR R4, MAPEGROUT HI-FLOW TI 20, ADESILEX PG1 and EPOJET epoxy resin.

Renovation work on the St. Leonardo viaduct was carried out with MAPEGROUT FMR-PP thixotropic mortar, mixed with MAPECURE SRA, and with MAPELASTIC GUARD. The reinforced concrete bearing element were repaired with PLANITOP SMOOTH & REPAIR R4, the joints between the precast concrete panels were treated with MAPEGROUT BM and MAPELASTIC GUARD and the tunnel was waterproofed with MAPEPLAN TU 25 and POLYDREN PP 500 (products by the Mapei Group's subsidiary Polyglass). DYNAMON SR56 and MAPECURE SRA admixtures were used to formulate the concrete.

TECHNICAL DATA

Period of the intervention:

2013-ongoing

Client: ANAS (Italian National Autonomous Roads Corporation)

Contractors: CMC Ravenna, Bolognetta SRL

Mapei coordinator: Rocco Briglia, Salvatore Costa, Pasquale Zaffaroni, Paolo Banfo, Ric.co snc., Alessandro Addia, Mapei SpA (Italy)

DRY DOCKS - PALERMO

Inaugurated in 1981, the dry dock in the Port of Palermo (around 400,000 tonnes) was an extension to the old dry dock dating back to 1897. It is made up of a 370 m x 68 m basin with sides measuring 16 m. The work level sits at 3 m above sea level and the total area of the free surface is 25,150 m². In 2006 Fincantieri launched a comprehensive project to upgrade the dock which is still to be completed. The walls and concrete of the structure were severely damaged. Areas of the concrete had become detached, the reinforcement rods were corroded and sea water had infiltrated between the joints. The constant presence of salts on the areas that were not immersed had caused them to deteriorate even more than the areas that were immersed, leading to the combined aggression of chlorides and sulphates, as well as carbonation. Following a series of tests in the Mapei R&D laboratories, the Technical Services Department recommended treating the joints with expansive resins from the RESFOAM and FOAMJET line, MAPEFLEX PU70 SL sealant for its resistance to hydrocarbons, ADESILEX PG1 adhesive for structural bonds and LAMPOSILEX hydraulic binder.

Once all the walls had been hydro-scarified, the uneven areas in the concrete could be seen. Water had infiltrated mainly between the recasting subjected to the highest hydraulic loads and through the cracks and the problem was tackled using FOAMJET 260 LV and RESFOAM 1KM. MAPEFER 1K was recommended to protect the reinforcement rods, the walls were repaired by spraying them with MAPEGROUT EASY FLOW mixed with MAPECURE SRA and, for the waterproofing work, the product chosen was MAPELASTIC FOUNDATION. Work is still ongoing.

TECHNICAL DATA

Period of the intervention: 2007-ongoing

Client: Fincantieri SpA

Contractor: Impresa Ing. Giunta srl

Mapei coordinator: Rocco Briglia,
Salvatore Costa, Pasquale Zaffaroni, Paolo
Banfo, Ric.co Snc., Mapei SpA (Italy)





TERMINI IMERESE PORT

The man-made port at Termini Imerese is made up of an outer breakwater baffle running for a length of 1,800 m almost parallel to the coast, an inner breakwater and a dock that divides the stretch of water into two basins. After being taken over by the Palermo Port Authority, due to it being partially abandoned and having a very low rate of use, work commenced to upgrade the structure and to carry out repair work on the quays.

120,000 m² of asphalt were removed from the dock-side bays and trapezoid shaped jetty, which was stabilised with cement and then spread again, followed by the installation of a polyethylene anti-rising damp filter and concrete slabs. The concrete was applied using Slipform technology whereby the concrete, which in this case was in consistency class S2, is poured directly into the front of the finishing machine without having to position any formwork, which is integrated into the main body of the machine. As the machine advances, it vibrates and compacts the concrete to form a 6 m wide extruded slab.

The concrete mix included DYNAMON SX14, a PCE-based superplasticizing admixture for high quality concrete (waterproof, durable, and with high mechanical strength) with high retention of workability. Thanks to the use of this admixture, the cementitious conglomerate sets uniformly through its entire thickness. Other advantages of using this particular admixture are that it also reduces shrinkage and it helps finishing the surface.



TECHNICAL DATA

Period of the intervention: 2013-2014

Client: Palermo Port Authority

Contractor: Costruzioni Bruno Teodoro SpA

Works director: Paolo Tusa

Mapei coordinator: Alessandro Addia, Salvatore Costa, Ric.co snc, and Rocco Briglia, Mapei SpA (Italy)



CEFALÙ LIGHTHOUSE

The Cefalù lighthouse sits on a rocky crag known as the Rocca opposite the Sicilian port of Presidiana. It is octagonal in shape and is 26.2 m tall, with a rotating lamp that comes on automatically at dusk and emits a bright white light every 5 seconds. The lighthouse was built in 1908 and is under the administration of the Lighthouse and Signalling Division of the Italian Navy. Because of the salty sea air, the render was in very poor condition. Work started on repairs to the external surface of the lighthouse. The first step was to completely remove all the old render until the underlying substrate had been exposed. The masonry was then thoroughly cleaned with fresh water to eliminate all the soluble salts, grease and efflorescence. Mapei Technical Services recommended integrating all the gaps and uneven areas in the surface using MAPE-ANTIQUE ALLETTAMENTO salt-resistant mortar. After saturating the substrate with water, the next step was to apply a 5 mm thick layer of MAPE-ANTIQUE RINZAFFO transpirant scratch-coat mortar over the entire surface to improve adhesion of the render and slow down the transfer of salts towards the de-humidifying render during the first few days while it was still weak. Levelling strips were formed and a rendering machine was used to apply a layer at least 2 mm thick of MAPE-ANTIQUE MC MACCHINA macroporous render. A few hours after applying the render, the surface was finished off with a plastic float. Once the render was fully cured, the surface was protected and painted with SILANCOLOR BASE and SILANCOLOR TONACHINO PLUS coating products in the colour specified by the client. The ledges and terraces were waterproofed with MAPELASTIC two-component mortar.



TECHNICAL DATA

Year of the intervention: 2017

Client: Italian Navy (Italian Minister of Defence)

Contractor: Debole Gaetano srl

Mapei distributor: Nuova Ceramica Rosso

Mapei coordinator: Rocco Briglia, Ezio Vallone, Salvatore Costa, Davide Bandera, Ric.co snc, Mapei SpA (Italy)



The Giorgio Amarelli Liquorice Museum showcases the Amarelli family's successful business of harvesting, processing and selling liquorice which dates back to the 16th century.



GIORGIO AMARELLI LIQUORICE MUSEUM in Rossano

AESTHETICS AND FUNCTIONALITY FOR “SENSORIAL” RESIN FLOORS TO WITHSTAND INTENSE PEDESTRIAN USE IN THE FACTORY STORE

There is documentary evidence showing that, as far back as the 16th century, the Amarelli family from Rossano (Southern Italy) was already harvesting and selling liquorice. In 1731 the family founded their first extra-agricultural facility to extract juice from the roots of liquorice plants, a product unique to the Calabria area.

The story of the family's successful business over the last three centuries is on display at the Giorgio Amarelli Museum of Liquorice which, since 2001, has been complementing the family's home in a fifteenth-century mansion house.

In 2001 the museum won the coveted “Premio Guggenheim Impresa e Cultura” (Guggenheim Award for Business and Culture) and, in 2004, the Italian Postal Service dedicated a stamp to the museum for its “Italian Heritage and Culture” series of special edition postage stamps.

In 2017 a new factory store was built to welcome visitors before taking their tour of the Amarelli museum and production facility.

Mapei supplied their own brand products for the liquorice-coloured resin floors and cementitious systems for wall coverings, turning the idea of the man behind the design of this intervention, the architect Geo Lanza, into concrete reality.

The type of resin chosen for the flooring in this large open-space area creates a feeling of warmth and fluidity, in line with the exciting journey the visitors encounter during their visit to the production unit and the museum of liquorice.

The colour was expertly created in the Mapei Research & Development Laboratories, taking inspiration from a precise point in the cooking of the liquorice roots during one of the phases of the process.

The high flow of visitors, around sixty thousand every year, was a valid motive for choosing a Mapei product system with the capacity to withstand intense foot traffic.

STUNNING RESIN FLOORING WITH DECOR SYSTEM 70

Mapei's DECOR SYSTEM 70 was chosen to make the resin flooring, a solvent-free, epoxy system applied in layers from 1.5 to 3 mm thick, which is used to create decorative floorings (including those in showrooms) with a trowel-effect finish and excellent resistance to wear.

The preliminary preparation work on the substrates was vitally important and involved the application of a layer of TOPCEM PRONTO ready-to-use, normal-setting, controlled-shrinkage mortar with high thermal efficiency for quick-drying (4 days) screeds. The mortar was applied to create an unbonded screed using a sheet to avoid rising damp. It was also reinforced at the mid-point with an electro-welded mesh.

Once the specified drying time for the screed had been respected, the surface was grinded with a special grinding machine and, once all the dust had been removed with an industrial vacuum cleaner, a coat of PRIMER SN, two-component, pre-fillerized epoxy primer, was applied. MAPENET 150, alkali-



PHOTOS 1 and 2. After building the screeds with PRIMER SN, MAPENET 150 mesh was embedded in it and the surface was broadcast with QUARTZ 0.5.

PHOTO 3. Applying MAPEFLOOR DECOR 700 tinted with MAPECOLOR PASTE.

PHOTO 4. The finishing coat was completed with MAPEFLOOR FINISH 50N and MAPELUX OPACA wax.

resistant glass fibre mesh, was embedded in the primer and the entire surface was broadcast with QUARTZ 0.5.

After removing all the excess quartz sand, the substrate was sanded and all the dust was removed. Work then continued with the application of a second coat of PRIMER SN to completely cover the mesh and, while the primer was still wet, the surface was again broadcast with QUARTZ 0.5.

The substrate needed to be sanded down again and, after removing all the dust with a vacuum cleaner, three coats of MAPEFLOOR DECOR 700 (fillerized with 30% by weight of QUARTZ 0.25 and tinted with MAPECOLOR PASTE) was applied.

Only at this point could the "liquorice colour effect" phase be undertaken. This was achieved by applying MAPEFLOOR FINISH 58 W mixed with just the right amount of oxide, mother of pearl and silver powdered aluminium, which was spread over the surface with an American trowel and finished off with a sponge.

The final finishing steps involved the application of two coats of MAPEFLOOR FINISH 50 N with an American trowel followed by two coats of MAPELUX OPACA double-reticulating, high-strength matt metallic wax.

ULTRATOP LOFT FOR THE WALLS

In the service area, 15 m² of walls were coated in "liquorice colour effect" using the ULTRATOP LOFT system to create decorative surfaces with a trowelled or mottled effect.

After applying two coats of PRIMER LT, acrylic primer (diluted 1:1 by weight with water) with a roller on the lime-based renders, followed by two coats of PRIMER GRIP WHITE, an American trowel was used to apply a first coat of ULTRATOP LOFT F, one-component trowellable coarse-textured cementitious paste, on the surfaces.

After sanding the substrate and removing all the dust with a vacuum cleaner, a second and then a third coat of ULTRATOP LOFT W tinted to form a "liquorice-effect" finish were applied.

After sanding the substrate again and removing the dust with a vacuum cleaner, the finishing operations were carried out by applying two coats of MAPEFLOOR FINISH 58W, matt polyurethane finish, with a short-haired (mohair type) roller.

The application of MAPELUX OPACA, double-reticulating metallic wax, completed this intervention, which was carried out to perfection.





» ULTRATOP LOFT W tinted to create a “liquorice- effect”



IN THE SPOTLIGHT ULTRATOP LOFT W

It is a one-component, trowelable, fine-grained cementitious paste applied in layers up to 2 mm to create decorative interior floors and walls with a pronounced mottled effect. Thanks to its ease of use, versatility and excellent resistance to abrasion, this product is ideal for creating floors subjected to intense pedestrian traffic in areas such as shops, restaurants, reception areas, private homes, cafes, hotels and showrooms, and in all areas relating to interior decorating in the residential and commercial building sector. The consistency of the product, the reduced thickness of the coat applied, and the possibility of being applied also on vertical surfaces and of combining it with a wide range of colours, allow an infinite variety of original coatings to be created.



TECHNICAL DATA
Factory store at the
Giorgio Amarelli Liquorice
Museum, Rossano (Italy)
Year of construction: 2017
Period of the Mapei
intervention: 2017
Intervention by Mapei:
 supplying products to create
 cementitious walls and resin
 floorings
Client: Amarelli family

Design: Geo Lanza
Works direction: SLD
 Studiolaranzadesign
Main contractor: Costruzioni
 Molino Srl
Screed contractor: Natale
 Bruno
Cementitious and resin
coverings contractor:
 Leonardo Laino
Mapei distributor: Oranges
 Edilizia

Mapei coordinators:
 Vincenzo Nicastri, Mirco
 Malvasi, Agenzia GN
 rappresentanze, Mapei SpA
 (Italy)

MAPEI PRODUCTS

Building screeds: Topcem
 Pronto

Building resin floorings: Primer
 SN, Mapenet 150, Mapefloor
 Decor 700, Mapefloor Finish

58 W, Mapefloor Finish 50 N,
 Mapelux Opaca, Quartz 0.25,
 Quartz 0.5, Mapecolor Paste
Applying cementitious wall
coverings: Primer Grip White,
 Primer LT, Ultratop Loft F,
 Ultratop Loft W, Mapefloor
 Finish 58 W

For further information on
 products visit www.mapei.com

ENHANCING THE HISTORICAL AND ARCHITECTURAL HERITAGE

AN AGREEMENT WAS MADE BETWEEN MAPEI AND THE ASSOCIATION OF ITALIAN HISTORICAL HOUSES



"Architecture is a thing of art, a phenomenon of the emotions, laying outside questions of construction and beyond them", claimed the famous architect Le Corbusier. Art represents the greatness of human creativity, the ability certain brilliantly talented people have to aesthetically embody sensations and feelings in a pure way, with skill and naturalness. Mapei has always had close ties with the world of culture, art and architecture in its entirety. Buildings of notable historical and artistic importance call for suitable reinforcement, repair and renovation work. Thanks to all the experience it has gained working on renovation projects for prestigious buildings all over the world, Mapei has gradually developed a range of products for the repair and reinforcement of masonry buildings that are focused on conserving our existing heritage. This heritage is a vital part of a nation's cultural identity, since it represents its past and, as such, it needs to be protected and enhanced without allowing it to fall into disrepair or be destroyed.

For this purpose and also to provide lots of people with its know-how, Mapei has set up an important working partnership over the years with the ADSI (Associazione Dimore Storiche Italiane) Association of Historical Italian Houses.

The ADSI was originally founded in Rome on 4th March 1977 and still plays a key role in raising awareness about the conservation, enhancement and management of historical private houses.

The ADSI website now has a new space allowing members and/or anybody interested to get directly in contact with Mapei's Technical Services department.

A brand-new option called "Technical Assistance" (see FIG.1) has been included in the sidebar menu on the left on the home-

page, which, when selected, will take you to a new page on the website, where, after entering your personal details, you can ask Mapei technicians questions, apply for on-site inspections/technical assistance or simply get information, all exclusively free of charge (see FIG.2).

It will also be possible to simply click on the Mapei logo and be taken directly to the webpage about solutions for repairing and renovating historical buildings on Mapei's official website. For further information on these subjects, you can write to restoration@mapei.it



A wall that needs renovating,
a client that expects
only the best,
an eco-sustainable
and certified
product.

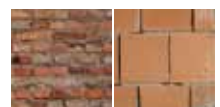


Mape-Antique line

Making the difference between being and **WELLBEING**

To help you **consolidate, dehumidify, renovate** and **render sustainably**, Mapei has a complete range of products at your disposal to promote wellbeing in both existing buildings and new builds. Work well with **Mape-Antique** and live even better.

EVERYTHING'S **OK** WITH **MAPEI**



Ancient & Modern

Learn more on mapei.com

MAPEI
ADHESIVES • SEALANTS • CHEMICAL PRODUCTS FOR BUILDING



CHEMICAL ANCHORS:

easy to choose and use

From Mapei's experience in the construction industry a range of products that are unique for their bonding strength and reliability. Easy-to-choose solutions with extraordinary versatility: just few products to cover all the various types of anchoring required by designers and on site.

Heavy loads

MAPEFIX PE SF

Two-component, styrene-free polyester resin in a single cartridge with static mixer, certified as a chemical anchor for metal bars in rough holes in various building materials, such as concrete, stone and solid, semisolid, perforated and mixed masonry. Ideal for anchoring aerials, signs, window and door fittings, plant equipment and sanitary fittings.



Light loads

MAPEFIX PE WALL

Two-component, styrene-free polyester resin in a single cartridge with static mixer, certified as a chemical anchor for metal bars in rough holes in solid, semi-solid, perforated and mixed masonry.



The science of anchoring.



Structural loads

MAPEFIX EP 470 SEISMIC

Two-component pure epoxy resin at a ratio of 2:1, certified for chemical anchors for threaded bar and rebar in rough or smooth (core drilled) holes in all types of building material such as concrete, wood and all types of masonry. Also certified for supplementary reinforcing bars in reinforced concrete and for anchoring elements subjected to seismic loads (classes C1 and C2).

Ideal for all types of structural strengthening work, construction joints, for use in aggressive environments, damp areas and areas below the water line and for static, dynamic or seismic loads.



The competence by Mapel.



Structural loads

MAPEFIX EP

Two-component, styrene-free pure epoxy resin in a cartridge with 2 compartments and static mixer, certified as a chemical anchor for metal bars in rough and smooth holes (cored holes) in all types of building materials, such as concrete, stone, wood and all types of masonry, and for anchoring supplementary reinforcing steel in reinforced concrete (connecting bars) and for anchoring elements subjected to seismic loads (class C1 and C2). Ideal for structural strengthening work and for anchoring all types of elements, including in aggressive environments, damp areas and areas below the water line and for static, dynamic or seismic loads.

Structural loads

MAPEFIX VE SF

Two-component, styrene and solvent-free vinylester resin, certified as a chemical anchor for metal bars in rough holes in all types of building materials, such as concrete, stone, wood and all types of masonry, and for anchoring supplementary reinforcing steel in reinforced concrete (connecting bars) and for anchoring elements subjected to seismic loads (class C1). Ideal for structural strengthening work and for anchoring all types of elements, including aggressive environments, damp areas and areas below the water line and for static, dynamic or seismic loads.



MAPEFIX:

anchoring solutions

VERSATILE PRODUCTS INTEGRATED INTO THE MAPEI SYSTEMS FOR REPAIR AND STRUCTURAL STRENGTHENING

The market for chemical anchoring products is in constant growth. Mapei's proposal for this sector is the MAPEFIX range, which guarantees a firm, reliable and performances confirmed by ETA certification and CE mark. Fabio Guerini, Mapei Product Manager for elastic adhesives and sealants, talks about the latest developments in the range.

Can we start by taking stock of the trend for this category of products in 2017 compared with 2016?

The MAPEFIX range of chemical anchors by Mapei grew by 15% in Italy and by more than 20% on overseas markets, well beyond the rate of growth for the specific reference sector. The reason for this unquestionable success is mainly the way these products are integrated into the Mapei range of repair and structural strengthening systems, resulting in the creation of complete, effective technical solutions that fully satisfy the requirements of designers and contractors.

Over the course of 2017, what has changed in Mapei's offer in this category of product? Has the range been extended? If that is the case, is the aim to target and capture new clients? And if so, what types of client?

The MAPEFIX range, which already included various chemical formulates such as polyester resins, vinylester resins and epoxy resins, was enhanced even further over the course of 2017 with the introduction of new and larger packs to meet the requirements of particular segments of users. The new 585 and 825 ml sizes are just one example. These are aimed at users operating on

larger sites where larger volume packs allow significant savings to be made in terms of application times and reduce the amount of packaging material to dispose of.

Another example of our will to reach segments of ultra-specialised users are the new multi-product MAPEFIX COMBIBOX kits with chemical anchors, dedicated accessory items and work clothes presented in a handy, pre-filled plastic container, which are aimed at those who use chemical anchors constantly.

The introduction of a new range of MAPEI GUN hand held and electric caulking guns, for use specifically with MAPEFIX chemical anchors and aimed at specialists in the field of chemical anchors, completes the new offers presented over the course of 2017.

Which trends are having an impact on demand?

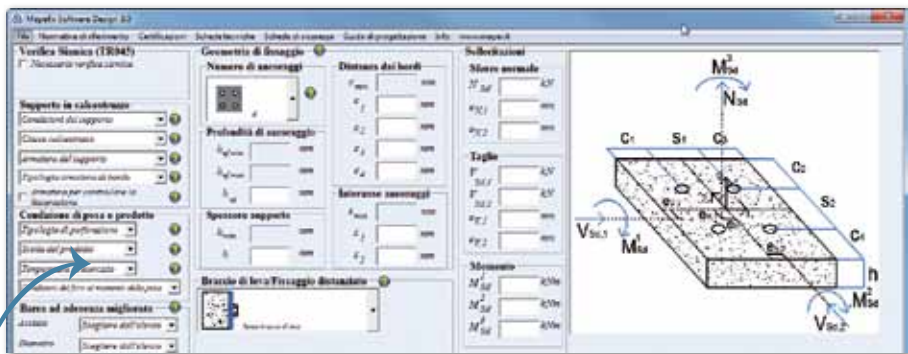
The growing popularity of chemical anchors is undoubtedly determined by their practicality and wide range of use compared with traditional mechanical anchoring systems. Increasing the pool of potential users of this type of product leads inevitably to the creation of new and a higher number of segments

of users: sophisticated users constantly looking for the best performance properties, other users who are looking for multi-purpose products or those who are purely interested in the best price/performance ratio. This is why, alongside multi-certified chemical anchors which also withstand dynamic stresses typical of areas at risk of seismic activity, products which combine a wide range of uses (suitable for threaded and corrugated rods, for forming anchors in both tensioned and compressed zones, suitable for wet and dry substrates or for use in both hot and cold climates) are highly appreciated.

What new ideas has Mapei launched or is about to launch on the market and what activities have been planned to support the launch?

Keeping the range of products updated for technical or commercial reasons is an ongoing and necessary process. This is why we also have various updates in the pipeline for 2018 to target specific users and designers. And it is precisely for the latter group that Mapei recently updated its proprietary Mapefix Software Design calculation program, which is now available in version 3.0, with the aim to provide engineers and designers with a free and practical tool to verify the correct dimensions of a chemical anchor according to specific design requirements.

The new Mapefix combibox multi-product kit



Mapefix

DEFINITELY ANCHORED!



The **Mapei** range of certified chemical anchors for all your design and site needs: light, heavy, structural and seismic loads.



ETA certification and CE marking

EVERYTHING'S **OK** WITH **MAPEI**

Learn more on mapei.com



A GOLDEN RESIDENCE

on the Gold Coast

MAPEI PRODUCTS CONTRIBUTED TO INSTALL TIMBER FLOORS IN A SUPER LUXURIOUS PRIVATE HOME IN AUSTRALIA



In early September 2015, an Australian entrepreneur living on Queensland's Gold Coast (Eastern Australia) contracted design company Artnow International to manage the installation of a unique timber floor in a special room in his 4.5 million-Euro private residence. This project, which led to the creation of an ultimate parquetry timber flooring, was designed by Artnow International in conjunction with contractors Hilston Wood Flooring and Scribed Flooring. Approximately 20,000 cuts of timber parquetry were completed to produce around 7000 individual pieces of timber which were meticulously assembled to create a true work of art. Brass inlays created a stunning border.

The room is approximately 80 m² and has a unique boomerang shape with eleven 900 mm x 900 mm windows in the timber floor looking down into the super car garage that houses an amazing array of cars including Ferrari's, Rolls Royce and Lamborghini's.

SUBSTRATE PREPARATION

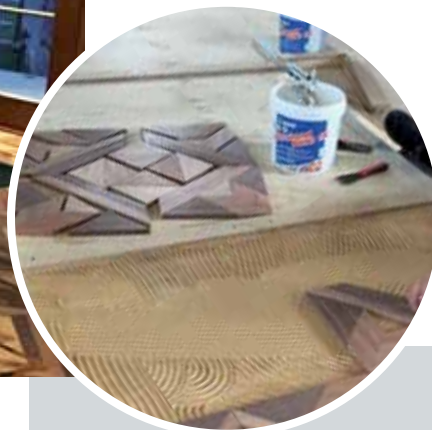
This project started in September 2015 with prototype samples of the geometric patterned parquetry flooring presented to the customer. The floor was handed over to the customer in March 2016.

In preparation for the levelling of the original concrete floor, the floor contractors applied a coat of ECO PRIM T as primer. This is a solvent-free, easily applied acrylic resin-based primer in water dispersion, with excellent bonding, water and ageing resistance characteristics. It is used in interiors to improve adhesion of levelling compounds on all absorbent and non-absorbent surfaces. ECO PRIM T is easily applied by brush or roller. It is not flammable and shows a very low emission of volatile organic compounds (VOC) and therefore it is



LEFT. A view of the floor after completion of the installation works.

BELOW. Installing over 7000 pieces of parquetry with ULTRABOND P990 1K.



EMICODE EC1 Plus-certified by GEV and absolutely harmless to the health of the installer and the end-user.

Once the layer of ECO PRIM T had dried, the surfaces were levelled with ULTRAPLAN levelling and smoothing compound. ULTRAPLAN is classified as CT-C30-F7-A2₁-s1 according to EN 13813 standard. It is used in interiors for levelling and smoothing differences in thicknesses from 1 to 10 mm on new or existing substrates, preparing them to receive all kinds of flooring where a high resistance to loads and traffic is required. ULTRAPLAN is especially suitable for areas subject to wheeled chairs. Mixed with water, ULTRAPLAN becomes a fluid and easily workable mortar, perfectly self-levelling, with high bond strength to the substrate and ultra-fast drying. ULTRAPLAN can be spread in thicknesses up to 10 mm per coat without shrinkage, cracking or crazing, and develops very high compressive and flexural strength, as well as excellent resistance to indentation and abrasion. The installation of the floor covering can begin approx. 12 hours after the application of ULTRAPLAN, regardless of thickness.

BONDING THE TIMBER FLOOR

After initial trials were accepted by the owner, the floor contractor used ULTRABOND P990 1K adhesive to install over 7000 pieces of parquetry timber. This product is a one-component, solvent-free, ready-to-use elastic polyurethane adhesive with an extremely low emission level of volatile organic compounds (VOC).

ULTRABOND P990 1K is used for bonding pre-finished parquetry, pin-wheels and jointed planks on cementitious screeds, screeds made using MAPECEM, MAPECEM PRONTO, TOPCEM, TOPCEM PRONTO and similar products, and anhydrite screeds, as well as on old wooden floors, ceramic, marble, etc.. It is also suitable for heated floors. The finished floor of the room in this private residence was meticulously sanded which resulted in the highest possible level of sanding (within millimetres of tolerance) for the brass inlays to be professionally fitted.

This timber flooring project won "Residential Floor of the Year - Site Installed" and "Overall Floor of the Year" awards during the Australasian Timber Flooring Associations Awards Night in 2016.

IN THE SPOTLIGHT ULTRABOND P990 1K

It is a moisture curing, polyurethane resin-based adhesive, used for bonding all size and formats of jointed, pre-finished solid timber parquetry with a ply backing. It has the following characteristics: ready-to-use one-component product, does not require catalyser and successive mixing; suitable for floor-layers allergic to epoxy-polyurethane products; easy to apply, even at low temperatures; 30% higher yield compared with conventional two-component products, thanks to the low viscosity and easy trowelability of the adhesive, even at low temperatures; excellent rib stability and excellent buttering on the back of timber tiles; extremely low expansion; does not contain solvents or substances which give off unpleasant odours; low environmental impact, certified by the Green Building Council of Australia and awarded the **EC1 R Plus** certification by the **GEV** Institut as a product with an extremely low emission level of volatile organic compounds (VOC).



TECHNICAL DATA

Private residence, Gold Coast, Queensland (Australia)
Period of renovation: 2015-2016
Period of the Mapei intervention: 2015-2016
Intervention by Mapei:

supplying products for substrate preparation and installation of timber floors
Design: Artnow International
Project manager: Artnow International
Floor contractor: Hilston Wood Floors and Scribed

Flooring
Mapei distributor: Floorsanders Trade Suppliers
Mapei coordinator: Troy Bartlett, Mapei Australia

MAPEI PRODUCTS
Substrate preparation: Eco

Prim T, Ultraplan
Installing timber floors:
Ultrabond P990 1K

For further information on products see www.mapei.com and www.mapei.com.au



CADEL EVANS GREAT OCEAN ROAD RACE 2018

Cadel Evans is considered the greatest Australian cyclist of the modern era and is the only Australian to win the prestigious Tour de France. Born 14 February 1977 in Katherine (Northern Australia), Cadel was a champion mountain biker, early in his career, winning the World Cup in 1998 and 1999 and placing seventh in the men's cross-country mountain bike race at the 2000 Olympics in Sydney. Later, Cadel Evans' achievements in road racing have broken new ground for Australian cyclists. Cadel Evans joined the Mapei Professional Cycling Team back in 2002 and continued to train at the Mapei Sports Centre in Italy under the encouragement and guidance of Professor Aldo Sassi, the former Director of the Centre, a man who helped Cadel make the transition from mountain biker to grand tourer. After Aldo Sassi's death in 2010, Cadel continued training at the Mapei Sports Centre under the eye of Andrea Morelli, Head of the Analysis Movement Lab. After winning the Tour de France in 2011, Evans dedicated his victory to the late Aldo Sassi. 2011 was the year Cadel wore the yellow jersey into Paris, becoming the first ever Australian winner of the event. Cadel is now one of only four cyclists in the world to have finished on the podium of all three Grand Tours (the Tour de France, Giro d'Italia and Vuelta a España) as well as winning the UCI Road World Championships.

Cadel retired from professional cycling on 1st February 2015, after finishing fifth in the inaugural Cadel Evans Great Ocean



Road Race in Victoria, an event named in his honour.

Cadel Evans is also one of the leading figures in the sport globally and an inspiration to peers and fans alike. One of his most satisfying achievements has been the role he has played in the staggering growth in popularity and participation in cycling in Australia. Residing in Barwon Heads (near Geelong, in the State of Victoria, in Southern Australia) when in Australia, Cadel is still a regular feature on the roads that comprise the course of the Cadel Evans Great Ocean Road Race and the Swisse People's Ride.

THE RACE

Inspired by Europe's prestigious one-day classic races, the Cadel Evans Great Ocean Road Race is the first of its kind in Australia. It has rapidly been embraced at a local and international level as a unique competition and spectator experience. The inaugural Road Race was held in 2015. Each year, the Elite races gain more creditability among the professional ranks.



The Elite Men's road race reached the pinnacle of world cycling after it was elevated to feature on the UCI WorldTour calendar from 2017 to 2019. The 2018 UCI World Tour is a competition that is scheduled to include thirty-seven road cycling events throughout the 2018 men's cycling season.

The Elite Women's race was sanctioned by the UCI for the first time in 2016 and is aspiring towards UCI Women's World Tour classification in the years to come.

In 2017, the event was extended to four days following the extremely successful launch of the Towards Zero Race Melbourne.

IN THE FACING PAGE.

The winners of the Cadel Evans Great Ocean Road Race 2018 Elite Men race.

IN THIS PAGE.

Cadel Evans enthusiastically again took part in the 2018 edition of the Race, supported by Mapei Australia's staff.



THE PUBLIC

Year on year, the community — at a local, national and international level — has stepped-up its support and enthusiasm for the Cadel Evans Great Ocean Road Race. Each year around 100,000 spectators have lined the race roads, while the Swiss People's Ride continues to draw strong interest from around Australia and internationally.

The Cadel Evans Great Ocean Road Race captivated spectators again this year over the weekend of 27th and 28th January 2018 with over 100,000 people lining the streets of Geelong, Barwon Heads, Torquay and around the Great Ocean Road. The Women's Sprint Jersey was won by Australian cyclist Chloe Hosking from Team Alé-Cipollini (ALE) while the Men's Sprint Jersey was won by Russian cyclist Pavel Kochetkov from Team Katusha-Alpecin (KTA). Chloe Hosking was also the overall race winner in the Women's Race and the Men's Race was won by Australian cyclist Jay McCarthy from Team Bora-Hansgrohe.

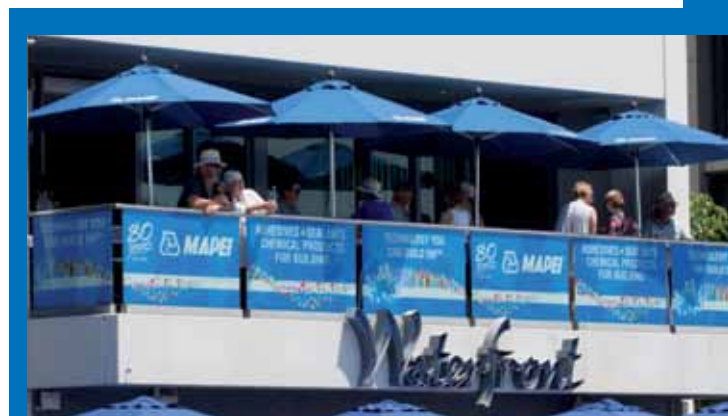
Meanwhile, around Australia and throughout the world the international cycling community and sport fanatics have been able to enjoy all the action and spectacular backdrops of some of Victoria's Surf most picturesque locations as the race passes by including coastal towns and regions. This was made possible through local channels' live broadcast of the race around Australia and simulcast via streaming application. Internationally the race was shown in 140 countries.

...AND MAPEI

Mapei Group continues its sponsorship of major cycling events including the UCI Road World Championships which are held in a different country each year (this year the race is held in Innsbruck, Austria). Mapei Australia, the local subsidiary of the Group, hosted the UCI Road World Championships in Geelong when it came to Australia for the first time in 2010.

Mapei could not possibly miss the Cadel Evans Great Ocean Road Race for various reasons. First and foremost due to the great friendship it has had for over 10 years now with the Australian champion, but also due to its close ties with Australia and the world of professional cycling. Mapei's support for this event allowed the company to express its gratitude towards an icon of Australian sport, who has represented Mapei with distinction over twelve years. After supporting the race in all its previous editions, Mapei was again proud to be involved as an Official Partner of this event and welcomed over 500 customers to its VIP Hospitality venue in Geelong which this year was positioned right in front of the Start/Finish line and overlooking the beautiful Corio Bay.

Mapei Australia was also excited to be a first time sponsor of the Intermediate Sprint Events for both the Men's and Women's races and awarded special Sprint Jerseys to the winners immediately after their race.



The Mapei VIP Hospitality venue hosted plenty of guests in front of the Start/Finish line.



2019: THE YEAR FOR RELAUNCH

NUMEROUS INTERNATIONAL SPORT EVENTS WILL TAKE PLACE IN ITALY

2019 will be an extremely busy year for sports fans in Italy. The country will be hosting a number of international sports events starting with:

- XXX edition of the Universiade from 3rd to 14th July 2019 in Campania Region (Southern Italy);
- XXII edition of the European Under 21 Football Championships from 16th to 30th June 2019;
- XXI edition of the European Masters Athletics Championships from 5th to 15th September 2019;
- Mantova, Vercelli and Livorno will be the 2019 "European Cities of Sport".

THE 2019 UNIVERSIADE

Thanks to the Italian Government's support for the bid and working partnerships with Italian universities, universities in the Campania region, the CUSI (Italian University Sports Centre) and CONI (Italian National Olympic Committee), the FISU (Fédération Internationale du Sport Universitaire) chose the city of Naples to host the summer edition of the 2019 Universiade.

So, the Campania Region will be hosting the XXX edition of the Universiade, a multidisciplinary sports event for university athletes from all over the world, from 3rd to 14th July 2019. Second only to the Olympic Games in terms of importance and the number of athletes taking part, the summer event (Summer Universiade) is considered by many to be on a par with, if not more important than, the Winter Olympics. Over the years the event has increasingly become a kind of international meeting bringing together sport and culture. Indeed, the word "Universiade" comes from a combination of the words "Università (University)" and "Olimpiade (Olympics)" to encompass one of the underlying concepts of any form of sport: universality.

The decision to choose Naples to host the 2019 Universiade is an extraordinary opportunity for the city, Campania region



and, above all, the whole of Italy to promote its values and remarkable assets on a global scale, at the same time redeveloping all its sports facilities in need of maintenance. Hosting the Universiade in Italy in 2019 also commemorates anniversaries of some of Italy's finest contributions to university sport, such as:

- 70th anniversary of the founding of the FISU (Fédération Internationale du Sport Universitaire), first established in Merano (Northern Italy) in 1949;
- 60th anniversary of the first edition of the Universiade organised in the city of Turin (Northern Italy) in 1959;
- 40th anniversary of the Italian sprinter Pietro Mennea's 200 metres world record set during the Mexico Universiade in 1979.

The 2019 Universiade will provide a unique opportunity to modernise and redevelop the sports facilities hosting the vari-



HING ITALIAN SPORTS FACILITIES

ous competitions in the Campania region, starting with those constructions that are historical assets of inestimable value for the host cities, such as the prestigious Collana Stadium in the city of Naples. The events will be held at various sports facilities in several different cities, such as Naples, Avellino, Salerno, Benevento and Caserta, so modernisation work will require a notable contribution from each body involved.

A SPORT SYSTEM SPECIFICATION CENTRE

With just over a year to go until the event, a Sport System Specification Centre has been set up in the headquarters of Saces (the sole distributor of Mapei products in Campania) providing support for architectural designers, clients and specialist contractors requiring technical consultancy from expert staff to help carry out the modernisation work on the sports facilities to be used for the Universiade (and other projects too!). The bespoke space in the headquarters of Saces follows in the wake of other successful specification centres set up in both London (see *Realtà Mapei International* no. 54 and 59) and Milan, where architectural designers meet regularly with Mapei technicians, who are at hand to help them out with the most complex projects.

A Sport System Specification Centre has been set up in the headquarters of Saces, Mapei's sole distributor in Campania.



One of the first results of the technical service provided by Mapei was the modernisation of the basketball and volleyball arenas at the University Multisport Centre (CUS) in Naples. Consultancy from Mapei technicians helped the architectural designers and works management to tackle problems connected with preparing the substrates ready for installing the new wooden flooring.

Redeveloped sports surfaces at CUS in Naples are the first facilities to be completed using national funds for sports buildings specially allocated for organising the 2019 Universiade, and they officially opened last autumn at a ceremony attended by the President of the Campania Region, Vincenzo De Luca, the Chancellors of various university campuses in Naples (Gaetano Manfredi, Elda Morlicchio and Alberto Carotenuto),





ABOVE. Mapei provided products to prepare the substrates and install wooden flooring in the basketball and volleyball arenas at the University Multisport Centre (CUS) in Naples.

Raimondo Pasquino, President of the A.R.U (Regional Agency for Universiade), Lorenzo Lentini, President of the C.U.S.I., the Naples City Counsellor for Sport and Heritage Ciro Borriello, and Elio Cosentino, President of CUS Naples.

Mapei technology was also successfully used to redevelop other facilities for hosting competitions involved in the 2019 Universiade, such as R. Menti Stadium in Castellammare di Stabia and Partenio Stadium in Avellino, to mention just the most important.

THE UEFA EUROPEAN UNDER 21 FOOTBALL CHAMPIONSHIP

The UEFA European Under-21 Football Championship is a competition organised by UEFA, the Union of European Football Associations. It is held every two years for Europe's best footballers who are no older than 21 when the qualifying stage begins. Italy has been the most successful nation since it became an Under-21 instead of Under-23 competition in 1976 and has won the European Championship five times.

The group qualifying stage for the 54 nations taking part in the XXII edition will finish in the autumn, when we will know which 11 teams, in addition to Italy that automatically qualifies as the host nation, will be taking part in the Championship from 16th to 30th June 2019. The matches will be held in six different Italian cities: Bologna (Dall'Ara Stadium), Cesena (Orogel Stadium-Dino Manuzzi), Reggio Emilia (Mapei Stadium-Città del Tricolore), Trieste (Nereo Rocco Stadium), Udine (Friuli Stadium-Dacia Arena) and, lastly, Serravalle in the Republic of San Marino (San Marino Stadium). On 20th July UEFA and the organising committee announced that the stadium in Udine (see *Realità Mapei International* no. 66) has been selected to host the final. The tournament will be played one year before the 2020 Summer Olympic Games in Tokyo and will decide which European teams qualify for the Men's Olympic football tournament.

Important modernisation work will be carried out on the facilities hosting the competitions (some of the work has already begun) and, once again, Mapei products featuring specialist technology for sports facilities will provide building contractors with the help they need for all the redevelopment work to be carried out in the relatively short summer break in the Italian football championship.

EUROPEAN MASTERS ATHLETICS CHAMPIONSHIP

The province of Venice will host the 21st edition of the European Masters Athletics Championships for athletes over the age of 35. The cities involved are Jesolo (Armando Picchi Stadium), Caorle (Giovanni Chiggiato Stadium) and Eraclea (City Stadium) for all the track races from 5th to 15th September 2019. Thousands of athletes over the age of 35 from over 40 European countries are expected to take part in the event.

THE 2019 EUROPEAN CITIES OF SPORT

After carrying out various inspections, ACEP Europe has announced the list of winning Italian cities for 2019: Mantova, Livorno and Vercelli have been chosen as European Cities of Sport 2019. ACES, a non-profit organisation based in Brussels, has been designating European Capitals of Sport since 2001, as well as other awards for smaller cities, such as

INTERVIEW



GIUSEPPE PUTTINI
General Manager
of SACES S.r.l.

What exactly are the roles of you and of Saces for Mapei?

My role in Saces is that of General Manager. Our company was founded by my father in 1972 so we will shortly be celebrating fifty years of doing business. We have been collaborating with Mapei, however, for more than sixty years, because a relationship had already been formed between the companies and families through the sales point of building products my grandfather opened in the 1940's. Saces is the sole distributor for Mapei in the Campania Region (Southern

Italy), which means that all Mapei materials sold in this region, either directly or through other outlets or distributors, is handled by our sales network. But our commitment is not limited to simply trading the complete range of Mapei products and those of their subsidiaries, Polyglass and VAGA. We also offer our clients technical support, both before and after a sale.

So the way Saces is structured also includes a highly specialised team covering the entire Campania area. What type of technical service is available for



ABOVE. The Friuli Stadium, also known as Dacia Arena, is the home ground of Udinese Serie A team. MAPECOAT TNS URBAN was chosen to coat the concrete floor during renovation works in 2013-2016.

European Cities of Sport (for places with over 25,000 inhabitants, set up in 2007), European Towns of Sport (for boroughs with under 25,000 inhabitants, set up in 2010) and European Communities of Sport (combinations of boroughs, set up in 2014). It is worth noting that there are no financial rewards involved, but a real boost in terms of place's image, so these prizes are awarded by ACES Europe based around principles of responsibility and ethics. Bearing in mind that sport brings people together and can improve anybody's quality of life and health, various town/city boroughs have been encouraged to promote sport for its local inhabitants.

Once again Mapei technology used for developing sports facilities is helping far-sighted borough councils interested in investing in sports facilities to the great benefit of their local community. We will devote more pages to these facilities in the next issues of *Realtà Mapei International*.

Wherever there is sport... Mapei Sport System Technology is there too, a global partner for any kind of sports surface.



For further information on sport surfaces please email us at: sport-technology@mapei.it

designers, clients and contractors?

The technical support we offer our clients could be described as multi-level, in that it is structured to provide several types of intervention:

- the Mapei Technical Centre which offers the most diverse type of clients (from designers to floor installers and end users) a technical consultancy service either by phone or at our showroom in Naples.
- a consultancy service during the design and tender specification phase in the offices of the clients' and contractors' engineers.
- on-site support by carrying out site surveys

when Mapei materials are being used, or even afterwards if required.

Also, with the collaboration and support of Mapei SpA, we organise conventions and refresher courses for professionals around every two weeks at our training centre in Marcanise (Province of Caserta, Southern Italy), which are considered valid by professional organisations towards training credits.

In what way is the Mapei-Saces technical service actually supporting the organisation of the 2019 Universiade

from a technical perspective?

We are already waiting at the start line with our team of technicians and specialists to support the event in every way possible. For example, we have partially updated our showroom by dedicating a large area for products used in the sports facilities sector. Unfortunately, however, even though a fund of 250 million Euros has been set aside, and in spite of there not being much time left and a lot still needs to be done to modernise and upgrade the existing facilities, there is still very little activity, apart from a few conventions and preliminary meetings.

IACHINI:

“MAPEI DESERVES THE BEST”

SASSUOLO'S TEAM MANAGER WANTS EVEN MORE EFFORT IN THE END OF SEASON MATCHES

“I am proud to be Sassuolo's manager – so Beppe Iachini has often said since taking charge of the team in late November - a dynamic and extremely well-organised club with the backing of a prestigious industrial group. The owner, Giorgio Squinzi, makes sure we have everything we need. Mapei has created a fabulous working environment here at the club, too. Our league position now at the end of March is not very good: we will do our utmost to get out of trouble, it is what Mapei deserves. Sassuolo must stay in the Italian Serie A”. Sassuolo went almost



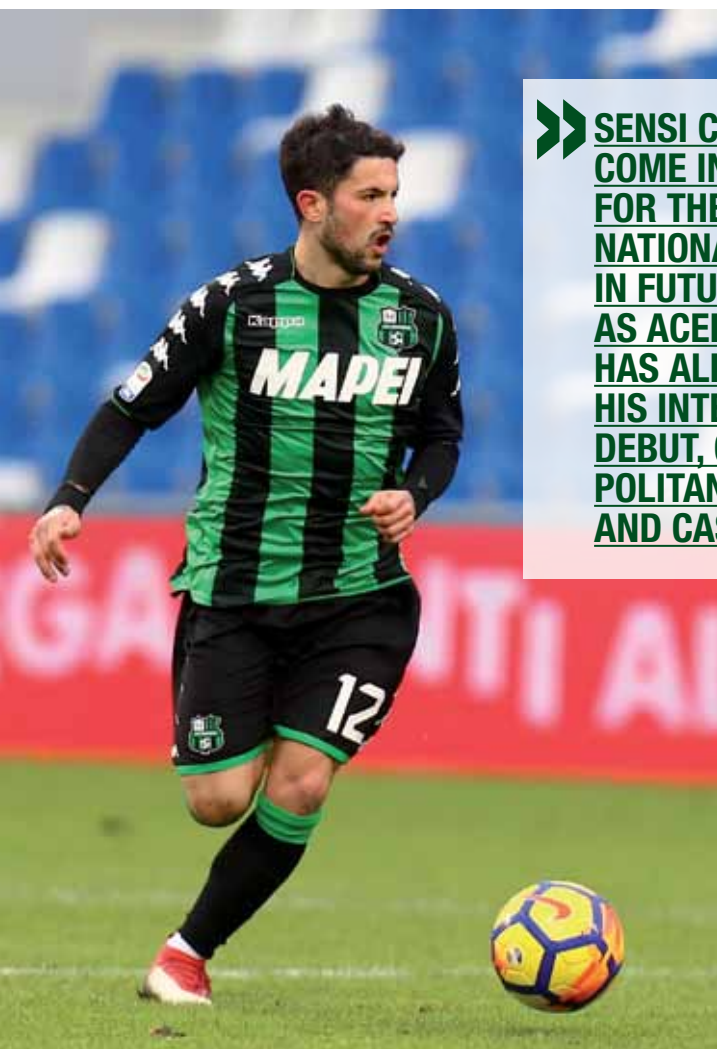
three months without winning after Christmas. The worst run of results since the club's first season in the Italian Serie A back in 2013-14. “During my first five games as Sassuolo's team manager – so Iachini, who himself played for Ascoli, Verona, Fiorentina and Venezia in the Italian Serie A, is quick to note - we collected ten points, as many as a team aiming to get the top of the table. Unfortunately, we then missed three penalties and hit the woodwork eight times and a lot of other incidents went against us. But that is not all: based on the statistics for the 20 teams in the Italian Serie A, Sassuolo is ranked ninth in terms of the number of attacking opportunities created. That means we are in the top half of the table, whereas, in actual fact, here we are in March in danger of getting relegated to the Serie B un-

less we really pull our socks up and start playing better. Sadly, we have failed to take our chances, most notably in home games like the 0-0 draw against Cagliari, and that is one of the things we really have to work hard on in training”.

Sassuolo then lost 2-1 against Bologna at Dall'Ara Stadium. The former Sassuolo player Poli gave Bologna the lead in the 12th minute before Babacar equalised in the 38th minute. Pulgar then went on to score the winning goal right at the end of the game. This defeat needs to be avenged: “We played really well, and we definitely deserved to win on points.

The problem is that with just one minute

of regular time to play, the referee awarded a non-existent free kick to Bologna. Once again we really failed to turn things in our favour. That is just the way things go sometimes in football”. The following Sunday Lazio beat Sassuolo 3-0 at Mapei Stadium, thanks to two goals by Milinkovic-Savic and another by Immobile. After the fixture against Chievo in Verona was cancelled following the tragic death of Davide Astori (Fiorentina), Sassuolo played a couple more games. The match against Spal at Mapei Stadium ended in a 1-1 draw. Spal took the lead through Antenucci in the 27th minute, but Iachini's men managed to equalise in the 31st minute when Babacar scored from



➤ **SENSI COULD COME IN USEFUL FOR THE ITALIAN NATIONAL TEAM IN FUTURE, AS WELL AS ACERBI, WHO HAS ALREADY MADE HIS INTERNATIONAL DEBUT, GOLDANIGA, POLITANO, BERARDI AND CASSATA**

the penalty spot. The referee then awarded Sassuolo another penalty in the 31st minute but Sassuolo's midfielder player Politano failed to convert it.

So, Mr Iachini, who was supposed to take the second penalty that Politano ended up taking (and missing)?

After some special training I designated three players to take our penalties: Babacar, Acerbi and Politano. But since Babacar had just taken one and was slightly hesitant about stepping up to the spot again just a few minutes later and since Acerbi was not feeling great, Politano was designated to take it and unfortunately missed”.

The team manager then went on to note that: “From February to March we could easily have won at least four or five more points, but if we work hard in training and play with greater intensity, we can keep on improving.” In the next game at Udine, Sassuolo won 2-1. Ali Adnan's own goal gave Sassuolo the lead in the 42nd minute but then Udinese equalised through Fofana before half-time. Then Sensi scored the winning goal for Sassuolo in the 29th minute of the second half. “The team clearly played better at Udine – so Iachini noted - all over the pitch.”.

Babacar has been at Sassuolo since the January transfer window. Are you happy with him?

“Yes, he is an important player and has clearly improved. He came to us after being regularly on the bench at Fiorentina, so he had not played a full 90 minutes for several months. Here with us, he is learning how to keep his concentration for the entire 90 minutes.”.

Another player you bought during the winter transfer window is the central defender Lemos, although you have only used him very sparingly.

“It is harder for a new defender to fit into the way a team plays than it is for a striker. If a striker makes a mistake, then he just



ABOVE. Goldaniga, who can play anywhere in defense, was one of our best players during the mid-season period.

BELOW, LEFT. Sassuolo's central defender Acerbi.

loses possession of the ball, but even the slightest mistake by defender can be fatal. The other team can take advantage of that mistake and score. Lemos can definitely improve and he is working hard”.

The Italian national team is going through a major transition period. Which Sassuolo players can you recommend to Gigi Di Biagio or the next team manager to be appointed in June?

“First and foremost, Acerbi, who has already played for Italy and is a central defender of great quality. Another defender, who, I believe, is ready for the national team is Goldaniga. Up front, Politano is the obvious choice to potentially play for Italy, without forgetting Berardi of course. In other positions we have some young players who are maturing fast, like Sensi and Cas-sata”.

In the friendly against Bassano before the big match against Napoli, the first-team players only played 60 minutes at most. All except for Berardi, who played the entire 90 minutes. Did Berardi play the entire game because he is going through a slightly bad patch at the moment?

“He did not play the entire match as some sort of punishment. I played him for 90 minutes because he had already missed two games because of a two-match ban and, including the league game that was cancelled because of Astori's death, Berardi had not played a full game for almost a month. He needed to concentrate for 90 minutes and play two full halves to test his fitness”.

In Serie A there are teams battling for a place in the Champions League that play with one or two strikers. You began playing with three men up front, although recently you seem to have reverted back to a more standard 3-5-2 formation. What are your tactics?

“In training we practice both formations, so that we are ready to change tactics depending on our opponents or what happens during a match. We are well aware that we need to play to our strengths, but we are always ready to change tactics if that gives us an edge”.

SOCIAL
MEDIAand **SASSUOLO**
what a following!GREAT SUCCESS FOR THE CLUB'S
WEB TV CHANNEL, TOO

Social media are more popular than ever. The Internet and social media are going crazy and Sassuolo is making great use of these wonderful sounding boards: the company is at the cutting-edge when it comes to communicating through the web and cell phones. "SassuoloChannel – so Chiara Bellori, from Sassuolo Calcio's social media development team - officially opened on YouTube on 5th April 2011, when our team was still in the Italian Serie B, and since summer 2014 it has been incorporated on the sassuolocalcio.it website as a Web TV channel. Everybody in Sassuolo Calcio's Communications Department works on it; they handle the content, filming and editing".

What are the most viewed film clips?

"Products connected with the summer training camp are definitely the most popular content on SassuoloChannel" – Chiara Bellori went on to say. "The most viewed YouTube video is the entertaining "Russian-Neapolitan lesson with Cannavaro and Floro Flores", while the episodes of #EstateNeroverde, a summer magazine that keeps a close track of pre-season training, are extremely popular with fans on the Web TV channel. SassuoloChannel provides across-the-board information, so it also covers the youth teams and ladies football".

What was the most unusual video clip?

The "CannaVAR" or, in other words, an entertaining analysis of



The Communication Department team at Sassuolo Calcio: from left on, Massimo Pecchini, Greta Spagnuolo, Chiara Bellori, Massimo Paroli.

the VAR (Video Assistant Referee) system featuring Paolo Cannavaro with the help of Domenico Berardi, Francesco Magnanelli, Alessandro Matri and Federico Peluso".

How many "Likes" does Sassuolo get on Facebook?

"A grand total of 257,000, almost seven times the entire population of the city of Sassuolo". Chiara Bellori is also in charge of Sassuolo's official social media accounts, working with Massimo Paroli, Massimo Pecchini and Greta Spagnuolo on the content. Sassuolo is also a big hit on Twitter: "There have been over 4 million viewings over the last six months – so Chiara pointed out - corresponding to a 24% increase in followers compared to January 2017. We have 246,000 followers on Twitter and 79,000 on Instagram". For a long time, Paolo Cannavaro was the most popular Sassuolo player on social media; since he left for China, Federico Peluso and Alessandro Matri have topped the popularity stakes. "Alex Matri has an incredible 677,000 followers for his Instagram profile", Bellori also noted.

Social media can be a two-edged sword: do the team's fans use them to claim and make protests?

"Like all fans, Sassuolo supporters are emotional and are affected by the team's results. Criticism is welcome, but there is a fair play policy that must be conformed to, otherwise you will be "sanctioned" by the moderators".

Do Sassuolo followers on social media suggest team tactics or possible transfer deals?

"Yes, it is rather like a "virtual sports bar" and there is certainly no lack of tactical advice or suggestions for the transfer market".

Does the club have any rules the players must respect as regards using social media?

"The players sign a team rules contract at the beginning of the season, which also includes the use of social media and restrictions on certain sensitive content about politics, religion, health care, etc..".



Alex Matri has an incredible 677.000 followers for his Instagram profile





EUROPA LEAGUE

ATALANTA AND BORUSSIA LIGHT UP “MAPEI STADIUM”

This season Atalanta has played its home games in the Europa League at the Mapei Stadium in Reggio Emilia (Central Italy). The team from Bergamo (Northern Italy), which is named after the swift-footed Greek goddess, was eliminated from the tournament after drawing 1-1 against Borussia Dortmund in the return match of the round of the last 16 played at the Mapei Stadium.

Thanks to the combined efforts of the team from Germany and Atalanta, Mapei Stadium and the city of Reggio Emilia enjoyed a really exciting evening of sport.

Borussia Dortmund is a famous old club that has won an UEFA Champions League, and Intercontinental Cup, an UEFA Cup Winners' Cup, eight German league titles, four German Cups and five editions of the German Super Cup. So, Atlanta was taking on one of the giants of European football and it did so with the support of hordes of fans from Bergamo and the surrounding province that travelled to the stadium owned by Mapei. On a cold and misty evening, a crowd of 18,495, watched the game, including 2000 German supporters.

A crowd of 20,000, including spectators at the match and people working at the stadium, filled the bars and restaurants. About half of the German people who came to watch the game spent at least one night in accommodation facilities in the surrounding area.

For the Mapei Group the “Stadium” is also an investment in its corporate image and the game was also watched by a large television audience. Sky's live TV broadcast in Italy was a real success: “The average number of viewers - so we were told by Giovanni Bruno, the Director of Sky Sport - was 524,000, with overall viewing figures of 1,600,000 throughout the game”. Networks in countries where Mapei has manufacturing plants

Over 18,000 spectators crowded the Mapei Stadium for the Atalanta-Borussia Dortmund match.



and high sales also broadcast the match. Millions of TV viewers in Germany, North America and Asian countries enjoyed the exciting game and were able to admire Mapei Stadium, whose facilities were given high marks by UEFA officials.

In the away game in Germany, Borussia Dortmund won 3-2. Nevertheless, on the eve of the return match the black-and-blues were really up for the game: “The match at Mapei Stadium - so the president of Atalanta, Antonio Percassi, announced - will definitely be a festival of football, an evening's entertainment that nobody will ever forget. The magnificent adventure we have embarked upon this season has been made possible partly thanks to Giorgio Squinzi and everyone at Sassuolo, as well as the local authorities in Reggio Emilia: on behalf of myself and everybody at Atalanta Football Club, I would like to express my most sincere and heartfelt thanks to everybody”.

Atalanta took the lead in the 11th minute through Toloï but in the 37th minute of the second half Borussia Dortmund equalised.

“The result is a cold shower that is even more freezing than the snow that is falling”, so Atlanta's managing staff stated. “We deserved to qualify. But it has been a fabulous experience and we are proud of ourselves”, so Percassi added. Atalanta may well qualify for the 2018-19 Europa League: so, there is a real chance they will be back playing their home games at Mapei Stadium next season.



IN THIS PAGE. Sofia Goggia (above and below, left) and Federica Brignone (below) training at the Mapei Sport Research Centre.



THERE IS A BIT OF MAPEI IN THE ITALIAN SKI TEAM'S SUCCESSES

MAPEI SPORT CENTRE
AND THE ALPINE SKIING
SECTOR OF THE ITALIAN
WINTER SPORTS
FEDERATION ARE
CONTINUING
THEIR PARTNERSHIP



Talking about her future when she was guest of honour at the 7th convention organised by the Mapei Sport Centre on 27th May last year, Sofia Goggia made her intentions quite clear: "I'm overwhelmed by my popularity, but I have not lost sight of my priorities; at the moment I am working on my physical fitness and building up ready for the biggest event of the year, the Winter Olympics, when I want to be on top form." The skier from Bergamo (Northern Italy) was as good as her word and won the Olympic gold medal in the Downhill Alpine skiing race.

Overall the 2017/2018 season was quite successful for the Italian ski team. It is also true to say that the Italian team is now very much female-driven, thanks to the very determined, smiling faces of Sofia Goggia and Federica Brignone. Five of the 26 podiums achieved by the Italian team came from the men's sector. Italian skiers won seven times, but Dominik Paris was the only man to win; all the other victories came from either Goggia or Brignone.

Italy finished in third place in the nations' rankings with 6.682 with Austria finishing top with 10.725 points followed by Switzerland with 8.441.

Sofia Goggia was unquestionably Italy's top skier, winning an Olympic gold medal in the downhill and winning three out of seven wins for Italy, also coming second four times out of 10 second places for the Italian team and third twice out of the 9 times an Italian skier finished on the lowest step of the podium. In other words, nine of the twenty-six Italian podiums during the season were hers. It is safe to say that Sofia clearly has great talent in all the various disciplines and could now focus on trying to win the overall World Cup after finishing fourth

this year with 958 points.

Federica Brignone, bronze medallist in the Olympic giant slalom and a three-time winner in the World Cup, as well as coming second once and third twice, is also a multitasking skier.

Nevertheless, the striking thing about the Italian women's team is the number of top-class athletes who have made it onto the podium: Manuela Moelgg came third three times but has, in fact, decided to call it a day and end her career. Other top athletes include Nadia Fanchini, Marta Bassino, Irene Curtoni and Johanna Schnarf.

The event in which Italy is least successful is the men's slalom, while the team already has some excellent performers in both the giant slalom and speed events. Nevertheless, the speed events - and perhaps even more so such technical races as the giant and special slaloms - have turned out to be less successful this year for the Italian boys with only one victory by Dominik Paris in Bormio, his second place in Garmisch, and Christof Innerhofer's second place in Åre.

Peter Fill also had a very successful season winning the men's combined.

MAPEI SPORT'S SCIENTIFIC CONTRIBUTION

Down the years Mapei Sport has developed specific tests for monitoring alpine skiing athletes. This is one of the reasons why Italian skiers taking part in the World Cup, European Cup and junior events (about fifty athletes in total) come to the Mapei Sports Research Centre in Olgiate Olona (Northern Italy) for physiological testing.

Alpine skiing traditionally has four main events: the downhill (DH), super-giant (SG), giant slalom (GS) and spe-

cial slalom (SL), although other events have emerged over the years, such as snowboarding and freestyle skiing. On average these events last from 60 to 90 seconds in the case of the GS and SL and up to approximately 2 minutes for the DH and SG. Skiers reach extremely high speeds in World Cup races (up to 160 km/h in the DH) and the slopes are extremely steep (particularly for the SL). This means the physical qualities required for each speciality are quite different. In the case of fast races (DH and SG) performance is more closely linked to the athlete's ability to maintain the best possible aerodynamic position. In the case of the SL and GS, it is more important to be able to make very quick and agile turns one after the other in quick succession. Finally, it is worth remembering that most alpine skiing races take place at altitude, where there

Skiers undergo a series of tests aimed at measuring their physical attributes

is relatively less oxygen available. All this explains why alpine skiing is considered to be an extremely complex sport and assessing the athletic qualities of skiers is inevitably equally complex and elaborate. In May-June (at the beginning of the preparation period), athletes from the Italian national team underwent an initial barrage of assessments with the same tests being repeated just before the start of the competitive period (October-November). During these assessment sessions, skiers undergo a series of tests aimed at measuring the physical attributes considered to be most important for performing at the highest level on snow.

The successes of the Italian National Alpine Ski team, who visit the Mapei Sport Research Centre for regular lab tests, were a real thrill for the staff headed by Dr. Claudio Pecci, the Centre's Director, who are proud to have played some small part in reaching such prestigious goals.

Now that the winter season is over, the Italian Winter Sports Federation (FISI) and Mapei Sport have plenty of other

Italy's 26 podiums IN THE 2017/2018 SEASON

Sofia Goggia - SG Ladies - Åre (Swe) - 15/03/18

Federica Brignone - AC Ladies - Crans-Montana (Che) - 04/03/18

Sofia Goggia - DH Ladies - Cortina (Ita) - 19/01/18

Sofia Goggia - DH Ladies - Bad Kleinkirchheim (Aut) - 14/01/18

Federica Brignone - SG Ladies - Bad Kleinkirchheim (Aut) - 13/01/18

Federica Brignone - GS Ladies - Lienz (Aut) - 29/12/17

Dominik Paris - DH Men - Bormio (Ita) - 28/12/17

1st

Christof Innerhofer - SG Men - Åre (Swe) - 15/03/18

Sofia Goggia - DH Ladies - Åre (Swe) - 14/03/18

Sofia Goggia - DH Ladies - Garmisch (Deu) - 04/02/18

Sofia Goggia - DH Ladies - Garmisch (Deu) - 03/02/18

Dominik Paris - DH Men - Garmisch-Partenkirchen (Deu) - 27/01/18

Marta Bassino - AC Ladies - Lenzerheide (Che) - 26/01/18

Johanna Schnarf - SG Ladies - Cortina (Ita) - 21/01/18

Federica Brignone - DH Ladies - Bad Kleinkirchheim (Aut) - 14/01/18

Peter Fill - AC Men - Bormio (Ita) - 29/12/17

Sofia Goggia - SG Ladies - Val d'Isere (Fra) - 16/12/17

2nd

Federica Brignone - GS Ladies - Kronplatz (Ita) - 23/01/18

Nadia Fanchini - DH Ladies - Bad Kleinkirchheim (Aut) - 14/01/18

Peter Fill - AC Men - Wengen (Che) - 12/01/18

Sofia Goggia - GS Ladies - Kranjska Gora (Svn) - 06/01/18

Irene Curtoni - PSL Ladies - Courchevel (Fra) - 20/12/17

Manuela Moelgg - GS Ladies - Courchevel (Fra) - 19/12/17

Sofia Goggia - SG Ladies - Val d'Isere (Fra) - 17/12/17

Manuela Moelgg - GS Ladies - Killington (Usa) - 25/11/17

Manuela Moelgg - GS Ladies - Soelden (Aut) - 28/10/17

3rd

targets in their sights and, as regards the Olympics, planning needs to begin straight away in view of Beijing 2022.

Sofia Goggia begun looking ahead to the future: "The World Championships will be taking place next year but not until February, so I will try and win as many races in the World Cup before then. I always feel good on the slopes at Åre, but all that can change in a year. I've al-

ways worked hard, because talent is a good starting point, but hard work and strategy are vital. I hope all those young kids who dream of being skiers keep on believing in themselves, have fun and try their hardest".

Wise words indeed from Sofia, who clearly realises that in sport, just like the rest of life, you need to fight all the time and never rest on your laurels.

RESEARCH CENTRE
MAPEI SPORT

TECHNICAL-SCIENTIFIC PARTNER



Mapei Sport is proud to provide its expertise to the **Italian National Alpine Ski Team** and would like to congratulate **Sofia Goggia, Federica Brignone** and **Nadia Fanchini** on their great victories. All our staff are ready to work together to achieve even more prestigious goals.

The MAPEI SPORT Research Centre
is headquartered in Olgiate Olona (Province of Varese, Italy), via Busto Fagnano, no. 38, tel. +39 0331.575757
www.mapeisport.it | reception@mapeisport.it | Managing and Medical Director Claudio Pecci

A GRANT AT MILAN POLYTECHNIC

AN INITIATIVE PROMOTED BY SOROPTIMIST,
THE WINNER IS AN UKRAINIAN STUDENT

Mapei has decided to join forces with Soroptimist International d'Italia Club Milano Fondatore to sponsor an international grant for a postgraduate degree course at Milan Polytechnic in either Building Engineering or Civil engineering. The grant is reserved for a Ukrainian student for the 2017-2018 and 2018-2019 academic years. The grant has been awarded to the student Anastasiia Deineko, who is studying for a postgraduate degree in Civil Engineering at Milan Polytechnic.

The architect Francesca Tinelli, a Past President of Soroptimist Milano, will be mentoring this project together with Professor Mariagiovanna Sami, an Honorary Professor at Milan Polytechnic.

Anastasiia Deineko, born in 1991, studied at the Donbas National Academy of Civil Engineering and Architecture in Ukraine. After graduating with honours from the Architectural and Building Lyceum, in 2008 she entered at the Faculty of Civil Engineering, focusing in Industrial and Civil Engineering. In 2012 she received Bachelor Degree with honours on Civil Engineering.

The course at Milan Polytechnic looks at general issues together with topics related to geo-technology, hydraulics, structural engineering, transport infrastructures and surveying/monitoring, providing an in-depth overview of key topics in civil engineering. The subjects in question meets the demands of the working world both domestically and on a European level, focusing on technical matters perfectly in synch with specialisations in this sector.



Soroptimist International

Soroptimist International is an association of women highly qualified in their professions, that acts through projects for the promotion of human rights, a better condition of the status of women and the acceptance of diversities. The term Soroptimist derives from the Latin words soror and optima.

The Organization's support is for a world where women can realize their individual and common potential, their aims and have equal opportunities of creating strong pacific communities. The Soroptimists foster activities and create opportunities in order to change the lives of women through the global net of members and international co-operation.

Set up in Oakland in the USA in 1921, Soroptimist International now operates in 132 countries and has over 3000 clubs with a total of approximately 90.000 members.

Building, winning and providing a helping hand IN UKRAINE

IN JUST TWELVE YEARS, THE UKRAINIAN SUBSIDIARY OF THE GROUP HAS GAINED AN ENVIABLE POSITION ON THE BUILDING MARKET... AND THAT IS NOT ALL

Mapei is close to the Ukraine, both from afar and in the country itself. Its support from afar comes in the form of a grant awarded to the young student Anastasiia Deineko, as mentioned in the facing page. In the country itself, the company has been operating on Ukrainian soil since 2000, when it began marketing building products and solutions for installing ceramics and stone.

Mapei Ukraine L.L.C., the Group's Ukrainian subsidiary, was first established in 2006 and since then it has continued to grow and strengthen its position on the local market. It now supplies customers all over the country and, after just twelve years in business, it has attained a leading role on the market as the top brand in the sector for high-quality building products. Testimony to this great achievement are all the prestigious architectural projects that Mapei Ukraine L.L.C. has been involved in, supplying quality products and systems for Kiev Velodrome, Nemo Dolphinarium, Salon Formula Wellness Spa and Mozart Hotel in Odessa, the Towers residential complex and Terra and Most City shopping

malls in Dnipro, the Toyota showroom in Simferopol (Crimea) and many others.

The subsidiary took another step forward with its expansion plans in 2009: Mapei Ukraine L.L.C. broke onto Georgia's building materials market, where it began successfully working with leading contractors and major distributors. This can be seen from the major building projects for which it has supplied innovative solutions, such as the Batumi Dolphinarium and the great Zhinvali Hydroelectric Dam along Aragvi River in the Caucasian mountains.

The Ukrainian subsidiary can now boast 56 staff working in offices covering over 400 m² in Kiev and Dnipro (the third most populated city in Ukraine), an over 2780 m² distribution centre approximately 15 km from Kiev, and a turnover of approximately 4.9 million Euros.

Mapei Ukraine L.L.C. is, in turn, very closely engaged in the field of social responsibility: most notably, it provides support for children from struggling families in Ladanka, near Kiev, covering the costs of their education.

The Ukrainian subsidiary has also caught

the eye in the world of sports: thanks to its partnership with one of the leading distributors in Odessa, Uspeh-Plus, Mapei Ukraine L.L.C. became the main sponsor of Khimik ladies' volleyball team in 2014, which has won the national championships seven years in a row.

PHOTO 1. The headquarters of Mapei Ukraine L.L.C. in Kiev.

PHOTO 2. The Khimik ladies' volleyball team, sponsored by Mapei Ukraine L.L.C., has won the national championships seven years in a row.



PROJECTS IN UKRAINE

MAPEI UKRAINE L.L.C., THE GROUP'S UKRAINIAN SUBSIDIARY, SUPPLIED HIGH-QUALITY PRODUCTS FOR NUMEROUS PRESTIGIOUS ARCHITECTURAL PROJECTS IN UKRAINE. YOU FIND SOME EXAMPLES ON THESE PAGES.



OCEAN PLAZA KIEV

Opened in 2012, Ocean Plaza is one of the largest shopping centres in Ukraine as well as in Eastern Europe. Mapei Technical Service Department was contacted to help build the shelved fountain located in the entrance hall. The structure of the fountain was skimmed with a cement slurry mixed with PLANICRETE latex. The surface was then waterproofed with MAPELASTIC cementitious mortar, while the lamps and drainage outlets were waterproofed with MAPEPROOF SWELL. The terraces that form the fountain were covered with glass mosaics bonded with KERAPOXY and KERALASTIC. The joints were grouted with KERAPOXY DESIGN. MAPESIL AC and MAPEFLEX PU45 were used to seal the joints. The natural stone floorings used to cover the three main shopping floors of the centre were protected against wear from intense traffic using MAPELUX OPACA metallic wax.



VELODROME KIEV

The racing track of the Kiev Velodrome was inaugurated in 1913 on the occasion of the 300th anniversary of the Romanov royal family. The track, which is 286 m long, 8 m wide around the bends with a slope of 38°, was renovated using Mapei solutions in 2015. The cracks in the substrates were sealed with EPORIP adhesive and reinforced by injecting them with EPOJET epoxy resin. Once the substrate was perfectly dry, the damaged concrete was repaired with MAPEFLOOR I 910. The final choice for the track was MAPECOAT TNS URBAN SYSTEM. A first coat of white MAPECOAT TNS URBAN 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. When the substrate was perfectly dry, lines were painted 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.



NEMO DOLPHINARIUM ODESSA

The Nemo Resort&Spa cultural and wellness complex was built in 2005 and hosts to an oceanarium, a beach, a hotel and a dolphin therapy centre. The dolphinarium is home for South American sea-lions, common sea-lions and bottlenose dolphins. Because of the rapid deterioration of the structure, a thorough renovation of the dolphinarium was carried out in 2015. To repair the damaged concrete elements in the spectator stands and pool, MAPEFER 1K was used to provide anti-corrosion protection for the steel reinforcement and MAPEGROUT FAST-SET to repair the deteriorated areas of concrete in the substrate. MAPEPROOF SWELL was used on the areas and elements with infiltrations of water. The essential product used to waterproof the surfaces in the pool was PURTOP 1000, a solvent-free, pure polyurea-based membrane. PRIMER EP RUSTOP was applied on the metal components and features and PRIMER SN on cementitious substrates, while EPORIP was used for the construction joints and to monolithically seal cracks in the surface of the screeds. The expansion joints were sealed with MAPEFLEX MS45.

ILYICH IRON AND STEEL WORKS MARIUPOL

Ilyich Iron and Steel Works of Mariupol is one of the largest integrated steel producing enterprises in Ukraine. It has an annual production capacity of around 6.1 million tonnes of steel, 12 million tonnes of agglomerates, more than 5.5 million tonnes of pig iron and more than 5 million tonnes of rolled products.

The concrete slabs, that cover the cold-lamination shop, were produced in 1962, and after many years of service were badly deteriorated and the reinforcement was partially rusted: a structural strengthening system was needed. The first step was the application of MAPEWRAP PRIMER 1 on the longitudinal ribs. MAPEWRAP 11 was then used to smooth the surfaces, followed by three layers of MAPEWRAP C UNI-AX carbon fibre fabric impregnated with MAPEWRAP 31 adhesive. As for the transversal ribs, MAPEWRAP PRIMER 1 was used for consolidating the substrate and MAPEWRAP 11 was used for smoothing the surfaces, followed by a layer of MAPEWRAP C UNI-AX impregnated with MAPEWRAP 31. U-shaped reinforcement elements were then applied on the longitudinal ribs with the application of MAPEWRAP PRIMER 1, MAPEWRAP 11 and of one layer of MAPEWRAP C UNI-AX impregnated with MAPEWRAP 31.



POTHOLES and the city slalom

SNOW, RAIN, COLD
WEATHER AND INSUFFICIENT
MAINTENANCE: MANY
CITIES ARE IN A STATE OF
EMERGENCY

A problem that torments drivers, cyclists, motorcyclists and pedestrians alike, and not only during the winter months: it seems that asphalt crumbles and potholes appear every time it rains. This is a serious problem that compromises everybody's safety, but why do potholes form? We can't always blame them on atmospheric agents or bad weather during the winter. In certain cases, people seem to be resigned to potholes as a direct consequence of the winter weather, but potholes shouldn't really appear at all and they should be the exception rather than the rule. If potholes do appear, then it means something hasn't worked as it should have. The solution for councils and public bodies responsible for road maintenance could be to apply new technologies, carry out checks on all work carried out and implement a long-term plan of efficient road maintenance. Also, in order to rationalise the number of interventions and save on their overall cost, maintenance work on underground systems (drainage, water, gas and electricity) should be coordinated with the road maintenance schedule so that work is not constantly carried out on road surfaces.



*Repairing
asphalt roads
quickly, without
interrupting the
flow of traffic*

ASPHALT ROAD SURFACES

Roads are made up of several layers starting from the base up to the actual road surface, whose job is to protect the road from traffic and climatic variations to guarantee its service life and impermeability. Apart from climatic factors, wear on road surfaces is also caused by the loads from passing traffic that forms cracks and furrows in the road and makes them less resistant. Rainwater then breaks up the granular material on the surface, separates the bitumen from the aggregate and holes appear. Research and technology have also obviously come a long way regarding base layers and asphalt road surfaces, making them more resistant and, as a result, able to withstand heavier loads so that they crack and break up less frequently.

INTERVENTIONS WITH MAPEI PRODUCTS

The Mapei R&D laboratories have been developing a series of products which contribute towards more effective maintenance work on roads and in service areas.

REPAIRING ASPHALT ROADS

Amongst the products available to carry out maintenance work quickly, that are also easy to apply, there is MAPE-ASPHALT REPAIR 0/8, a one-component, ready-to-use, reactive asphalt for repairing potholes in roads. This product hardens when it comes into contact with water and is used to repair asphalt road surfaces and industrial floors quickly without interrupting the flow of traffic so that repaired roads can be reopened and put back into service quickly. Also, it may be applied during cold weather and may be used to repair both the wear layer (if the potholes are not too deep) and the substrates (if the potholes are deeper). It is resistant to freezing weather and rain, it does not soften during hot weather and guarantees a durable repair that remains stable over the years, very similar to traditional hot-applied asphalt.



RENOVATING STONE ROADS

MAPESTONE, a system for renovating and installing modern road surfaces, is made up of a complete range of products for installing and grouting stone slabs, paving units, cobblestones, and cube setts. It is highly durable, strong and resistant to chemicals, freeze/thaw cycles, de-icing salts and seawater, thereby helping to reduce the amount of maintenance required and deterioration of road surfaces. The wide range of products in the MAPESTONE line has been further extended with the addition of two new products developed for building architectural deformable and draining stone surfaces: MAPESTONE JOINT, a solvent-free, non-flammable polyurethane binder for sealing joints between blocks, setts and cobblestones, and MAPESTONE JOINT CLEANER, a specific odourless cleaner for residues of MAPESTONE JOINT.



*Specific solutions
for stone roads*



STONE ROAD SURFACES

Another matter is the question of stone surfaces. They are often found on roads, piazzas and pavements in old city centres and, while they are aesthetically more attractive, they can cause quite a few problems if the most appropriate products and installation techniques are not employed. Porphyry cube setts and stone slabs are laid on sand or a sand/cement mixture and are often "displaced" due to mechanical stresses and loads from passing cars and lorries, which then provokes subsidence in the uneven, weak substrate. This is caused by de-icing salts that break up the surface of the filling between the blocks or slabs allowing water to penetrate into the joints, by freeze/thaw cycles and even by poor workmanship. At this point, once the winter is over, roads and pavements have areas with slabs that have been displaced or become detached, leaving holes in the paving. Not to mention the considerable repair costs and the resulting inconvenience for local inhabitants.



SOLVE THE PROBLEM OF HOLES? YES, WE CAN

Pot-holes are a nightmare for every driver, motorcyclist, cyclist and pedestrian. With this article we would like to answer three technical questions on the subject of road surfaces



What is the general stratigraphy for an asphalt road surface?

Starting from the base, roads are made up of various layers:

- embankment
- stabilised layer: it forms part of the foundations and distributes the loads transmitted to the ground
- mixed cemented layer: it makes the road structure more rigid, reduces permanent deformations and increases its resistance to fatigue
- bituminous layer: it protects the road structure from traffic and seasonal climatic variations and guarantees the service life and waterproofness of the road.

The bituminous conglomerate, that is the top layer, is in turn made up of three layers, that, starting from the lower layer, are:

- base layer (25-30 cm thick): it withstands loads without being subject to permanent deformation;
- binder (6-10 cm thick): it "binds" the base layer to the next layer;
- wear layer (around 4 cm thick): it withstands loads and provides adherence and waterproofness.

Why do potholes or damage in general form in the road surface?

Various factors contribute to the deterioration of road surfaces and amongst the most significant causes are environmental factors and loads from traffic. In fact, ultra-violet rays from the sun cause the bitumen to slowly harden and reduce its elasticity and, as a result, cracks form when the surface contracts as the temperature decreases. The traffic causes gaps and cracks in the road structure, water penetrates into the gaps and then seeps down into the structure under the surface of the road and softens it, making it less resistant. Also, the pressure of the water quickly erodes the structure of the granular material, causing the bitumen to separate from the asphalt aggregate. The immediate result is the formation of potholes and deterioration of the surface of roads and pavements.

Then snow, ice and de-icing salts are the final straw. In fact, once the snow has been cleared, it is a common sight to see maintenance teams, armed with cold-applied bituminous tar, trying to repair the deepest and most dangerous potholes.

How to solve the problem?

In the latest few years Mapei Research & Development Laboratories have been developing a range of products for providing an effective contribution to road maintenance. MAPE-ASPHALT REPAIR 0/8 is a pre-blended, solvent-free, ready-to-use reactive asphalt which is applied cold. It is ideal for repairing holes in roads and motorways. It hardens in exposed areas when in contact with water so that road surfaces may be repaired quickly without interrupting the flow of traffic. With MAPE-ASPHALT REPAIR 0/8, holes from 20 mm to 70 mm deep may be repaired with a single layer. Deeper cavities may be repaired by applying several separate layers, but each single layer must be wetted and compacted accordingly. Once hardened, MAPE-ASPHALT REPAIR 0/8 does not soften, even at high temperatures, it is resistant to freezing weather, rain and guarantees a durable, stable repair.

For further details see *Realtà Mapei International* no. 43 and 57.

URBAN SYSTEMS

RAPID AND LONG-LASTING PRODUCTS FOR **ROAD REPAIRS**



Mape-Asphalt Repair 0/8

COLD-APPLIED REACTIVE ASPHALT FOR LONG-LASTING REPAIRS TO POTHOLES

Hardens by reacting with moisture in the air and upon contact with water.

Traffic passing over the repaired area will further compact the product without damaging it.

Does not soften once hardened, even at high temperatures.

Resistant to freezing weather and rain and guarantees a durable, stable repair similar to conventional hot-applied asphalt.

Mapestone System

READY-MIXED MORTARS FOR LOCALISED REPAIRS TO DECORATIVE STONE ROAD SURFACES

High mechanical strength.

Resistant to freezing weather, de-icing salts and seawater spray.

Complies with current standards.



EVERYTHING'S **OK**
WITH **MAPEI**

Learn more on mapei.com

 **MAPEI®**
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING



ReStelvio MAPEI 2018

SUNDAY, 8th JULY

BORMIO - STELVIO PASS

+ **STELVIO** × **TUTTI**

**E-BIKE RIDE WITH
A DEDICATED START GRID**

in collaboration with
Stelvio National Park

8.50 A.M. **HALF MARATHON**
(for FIDAL's and sport promotion institution's members only)

9.00 A.M. **RUNNING EVENT OPEN TO ALL**

9.10 A.M. **NON-COMPETITIVE E-BIKE RIDE
WITH A DEDICATED START GRID**

9.15 A.M. **RE STELVIO - MAPEI COMPETITIVE CYCLE RACE
34TH EDITION**
(for FCI's and Italian National Cycling
Commission' members only)
Start for the Female Cycle Race

9.30 A.M. **RE STELVIO - MAPEI COMPETITIVE CYCLE RACE
34TH EDITION**
(for FCI's and Italian National Cycling
Commission' members only)
Start for the Male Cycle Race

AFTERWARDS **"ALDO SASSI" MEMORIAL BIKE RIDE**
(for all those interested, alongside champions of the former
Mapei Professional Cycling Team and other sport VIPs)
TWINNED WITH "PEDALA CON ALDO" OCTOBER 21ST, 2018

2.00 P.M. **TIMELIMIT FOR ALL PARTICIPANTS**

4.00 P.M. **PRIZE-GIVING CEREMONY** in Piazza Kuerc, Bormio

**A FREE TRAINING SCHEDULE FOR RUNNERS
AND CYCLISTS IS AVAILABLE FROM: www.mapeisport.it**

COURSE

**A 21.097 km climb from BORMIO (1,225 m a.s.l.)
to the STELVIO PASS (2,758 m a.s.l.)**
Difference in level: 1,533 m.

STARTING LINE: VIA AL FORTE (BORMIO CITY CENTRE)
RETURN FROM STELVIO PASS TO BORMIO
STARTING FROM 2.00 P.M.

ENTRIES

FROM APRIL 1ST TO JULY 5TH

at the web site www.usbormiese.com or else at the
Unione Sportiva Bormiese headquarters, Via Manzoni, Bormio
Maximum amount of entries: 3,000

Entry fee:

30 euros, for entries from 1ST April to June 30TH;
40 euros, for entries from July 1ST to July 5TH

The fee includes:

- **Re Stelvio-Mapei jersey, which you are kindly requested to wear**
- Clothes transport service up to the Stelvio Pass
- Refreshment points alongside the course and at the finish line
- Shuttle bus service from the Stelvio Pass to Bormio (for athletes)
- Commemorative medal
- Photo and race certificate, both available and downloadable
- Personal race time

N.B. Free entry on the website www.mapei.it
for Mapei customers using their customer code
and for readers of Realtà Mapei using their Realtà Mapei code

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