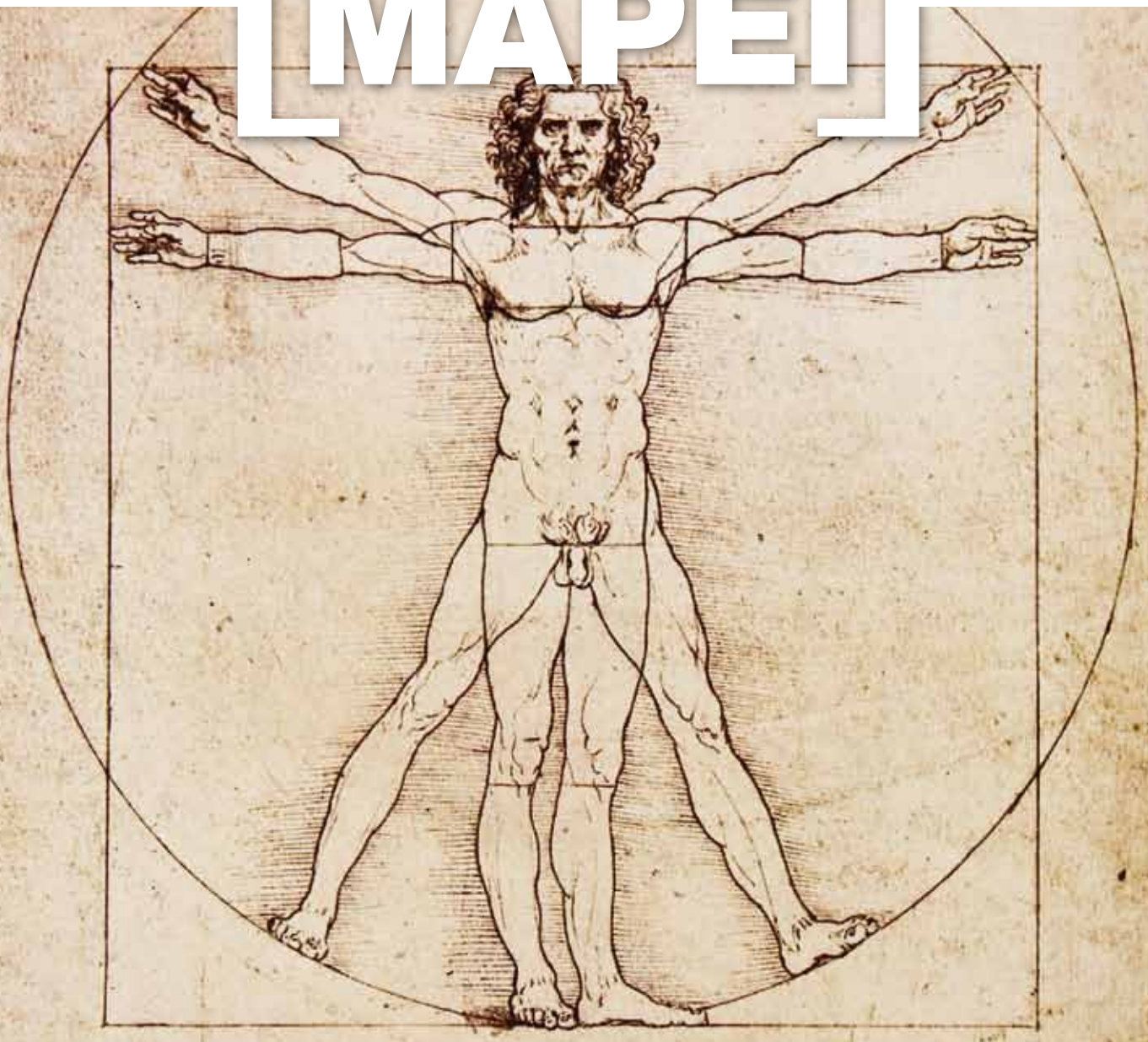
Realtà MAPEI

INTERNATIONAL

ISSUE 75



Year XX - No. 75 - June 2019

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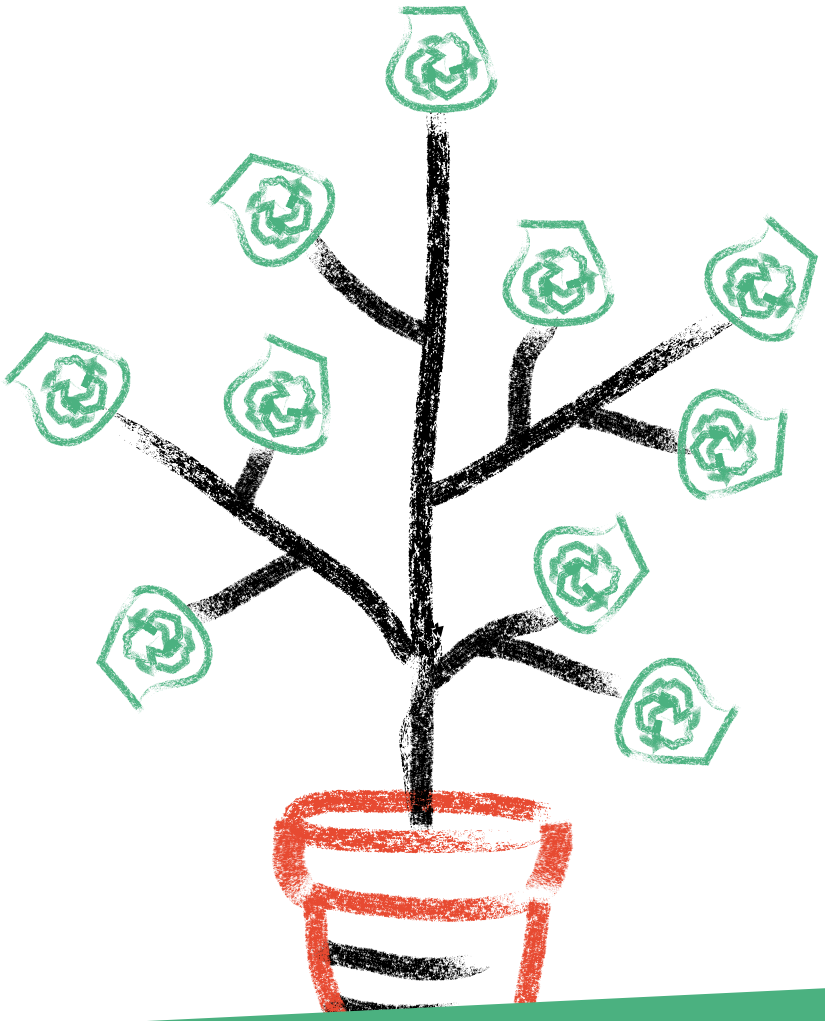

Constructing with **eco-sustainable** criteria is a fundamental commitment: **Mapei** has always invested in Research & Development so that the products we have available for designers, contractors, installers and clients are **safe**, **reliable** and **durable** and have the **lowest impact possible on our health and on the environment**.

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ADRIANA SPAZZOLI
Realtà Mapei International's
Editor in chief

Invest to grow: Mapei is committed

Dear readers,

"Invest to grow". This has always been Mapei's corporate policy as Giorgio Squinzi, CEO of the Group, has frequently pointed out. 2019 is Leonardo da Vinci's year: Italy (and the whole world) is commemorating Leonardo's genius 500 years after his death, so *Realtà Mapei International* decided to focus on what he can teach us and the modernity of his thinking by pointing out that lots of his projects and brilliant ideas have actually come to life. Decisive innovative thinking to support economic growth and the development of society as a whole.

FROM MAPEI FOOTBALL CENTER TO MAPEI WORLD PARIS: THE NEW PROJECTS ARE COMING TO LIFE

I said "invest to grow": in this issue of *Realtà Mapei International* we wanted to showcase many examples of how Mapei (in very different and contrasting fields) has applied this corporate policy. Let's take, for example, sport. Over the last few weeks, Mapei Football Center officially opened in Sassuolo, a major new project that has given Sassuolo Calcio an important new home and rounds off investment in the local region following the construction of Mapei Stadium in Reggio Emilia, a jewel in the crown for both cities in Central Italy.

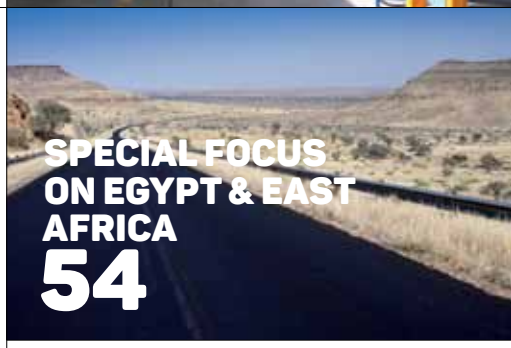
After sport we come to culture. Matera, European Capital of Culture 2019, is another example of Mapei's commitment to helping a community grow. Commitment that extends to contributions to create places where innovation, education and corporate culture can come together: as in the case of Mapei World Paris, which recently opened in the capital of France.

These are just some of the topics being presented in this issue of *Realtà Mapei International* that is full of other interesting news: from the opening of new subsidiaries in Egypt and East Africa (emerging markets for major enterprises and the building industry) to projects in the realm of social responsibility.

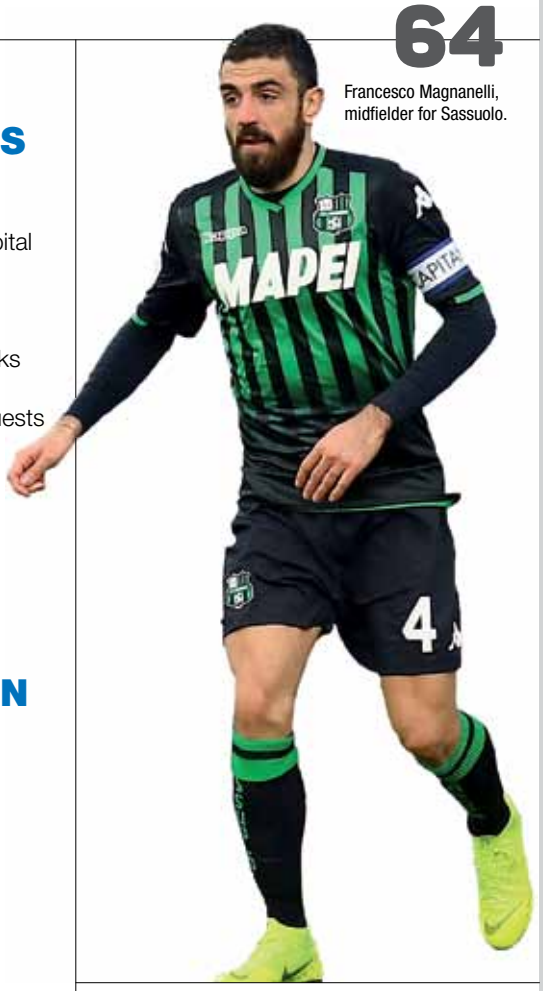
We have made some changes to our magazine's graphics starting with the summary that is now on two pages and makes it easier to find the articles you are interested in.

Enjoy your reading and your holidays

SUMMARY



SPORT DIVISION 64



Francesco Magnanelli, midfielder for Sassuolo.

IN THE SPOTLIGHT

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COVER STORY
An "ideal path" is linking Leonardo's thinking and work to the technological challenges facing modern-day industry and a company like Mapei that has made research and innovation its greatest strength. We follow it in a special section of the magazine 500 years after the genius' death.

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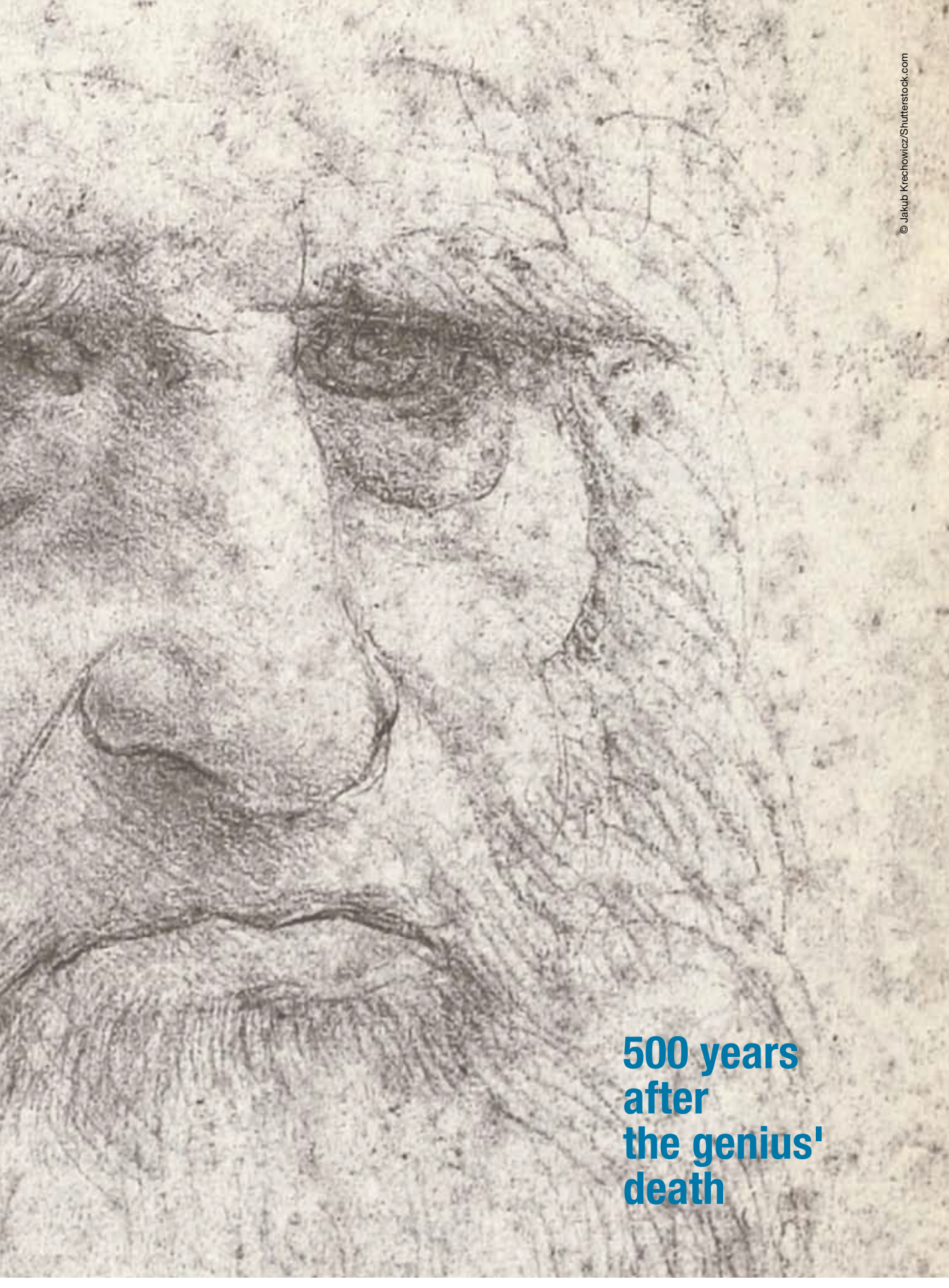
LEONARDO'S MODERNITY

AN "IDEAL PATH" IS LINKING LEONARDO'S THINKING AND WORK TO THE TECHNOLOGICAL CHALLENGES FACING MODERN-DAY INDUSTRY AND A COMPANY LIKE MAPEI THAT HAS MADE RESEARCH AND INNOVATION ITS GREATEST STRENGTH

Leonardo rightly takes his place in the history of civilisation due to his multifaceted genius but leaving aside his fame as a great artist, he was also undeniably a superb designer, architect and town-planner, who developed an approach that was both creative and scientific. He made a vital contribution to the science of building and plenty of examples of his extraordinary invention can be found in the city of Milan: from his design proposals for the Cathedral and engineering studies for the Navigli network of canals to his ingenious plans for canal locks that were well ahead of their time.

The thread connecting Leonardo's genius to the modern-day world is even more evident in the building industry as chemicals applied to building are becoming an increasingly crucial factor in taking on the challenges posed by innovation, sustainability and respect for the environment. In relation to these matters, one of the most "contemporary" features emerging from the Leonardo's biography is his love of water and nature.

This means there is an "ideal" pathway linking Leonardo's thinking and work to both the technological challenges facing modern-day industry and a company like Mapei that has made research and innovation its greatest strength on global markets. Mapei is a market leader in the production of chemical materials and systems for the construction of buildings along sustainable lines. Technology and innovation are vital in chemicals used in the building industry for improving the properties of building materials and reducing their environmental impact. The links between yesterday and today, between Leonardo and Mapei, are not just confined to science and technology but also extend to art and culture. Mapei has made its commitment to art and culture a corporate "credo" with very deep roots stretching way back to when the company's founder, Rodolfo Squinzi, expressed his firm belief that "work can never be separated from art and passion".



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500 years after the genius' death

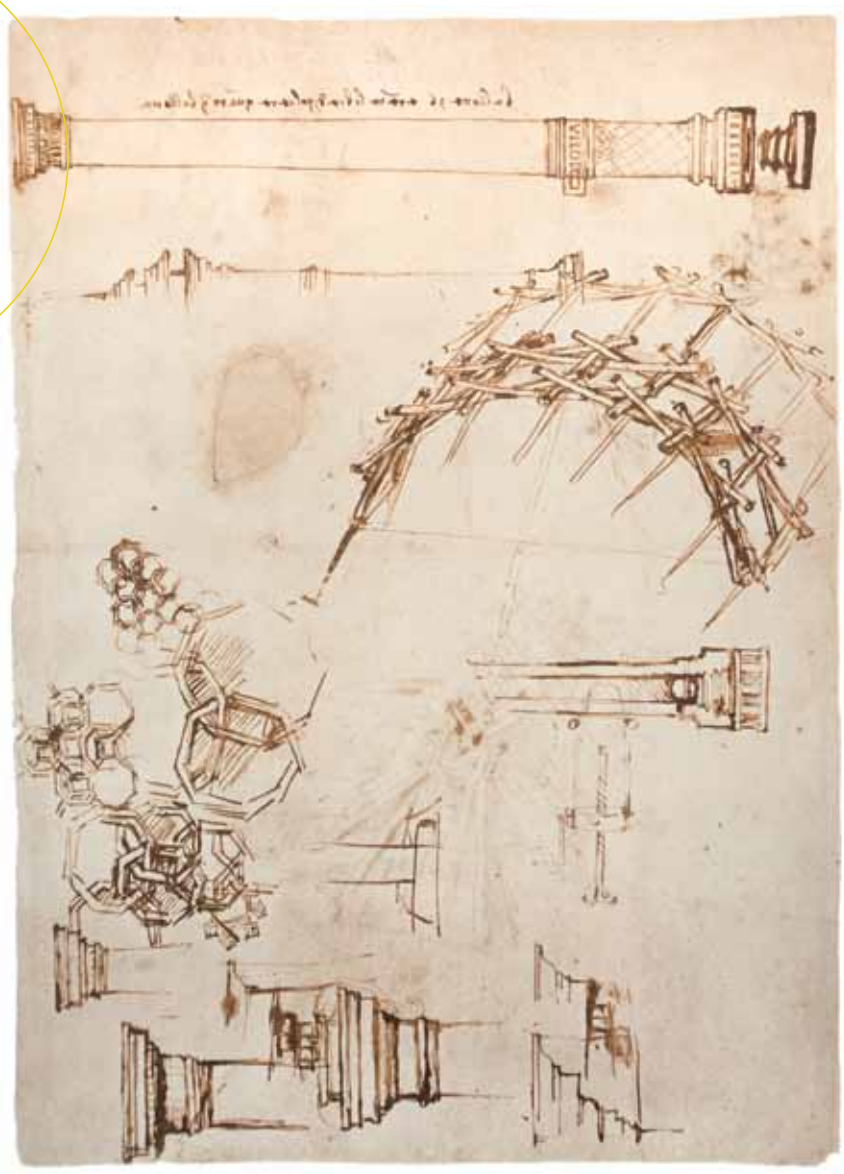
YESTERDAY'S IDEAS... ...TODAY'S PROJECTS

Born in Vinci near Florence on 15th April 1452, Leonardo is mainly famous as a painter, but his codes - sheets of paper containing notes, drawings and projects designed over the years - deal with botany, anatomy, geometry, musical instruments, robots, issues related to hydraulics, weaponry, flying machines and fossils.
After an apprenticeship at the workshop owned by the famous painter and sculptor Andrea Verrocchio, he worked for several courts in Italy until he eventually came to Milan, where he created most of his masterpieces. These include "The Last Supper" commissioned by Duke Ludovico Sforza (also known as "il Moro") to fresco the refectory in Santa Maria delle Grazie Church.
His projects were often ahead of their time and could not be constructed back then, such as his study for a flying machine. Some of his projects were also so big, ambitious and expensive that it was impossible to create them, like his equestrian monument to Francesco Sforza, Duke Ludovico il Moro's father, which was gigantic in size.
He died in Amboise in France on 2nd May 1519, where he was a guest of Francis I, who had summoned him to court to be the "king's first painter, architect and engineer".
The link between Leonardo and the age in which we live is visible not only in his drawings that have stood the test of time and technology – the studies of water basins, waterflows and human anatomy – but, most significantly, in his constant research into everything around him, without ever shying away from even what, at the time, seemed like impossible and totally unfeasible challenges.
We wanted to draw a parallel between Leonardo's studies and certain works involving Mapei products to emphasise just how contemporary his works and love of research still are, a distinctive trait of the Mapei Group.

Leonardo's drawings at pages 7-11 were taken from the Atlantic Codex

THE SINGLE-SPAN BRIDGES
Da Vinci bridge in Norway

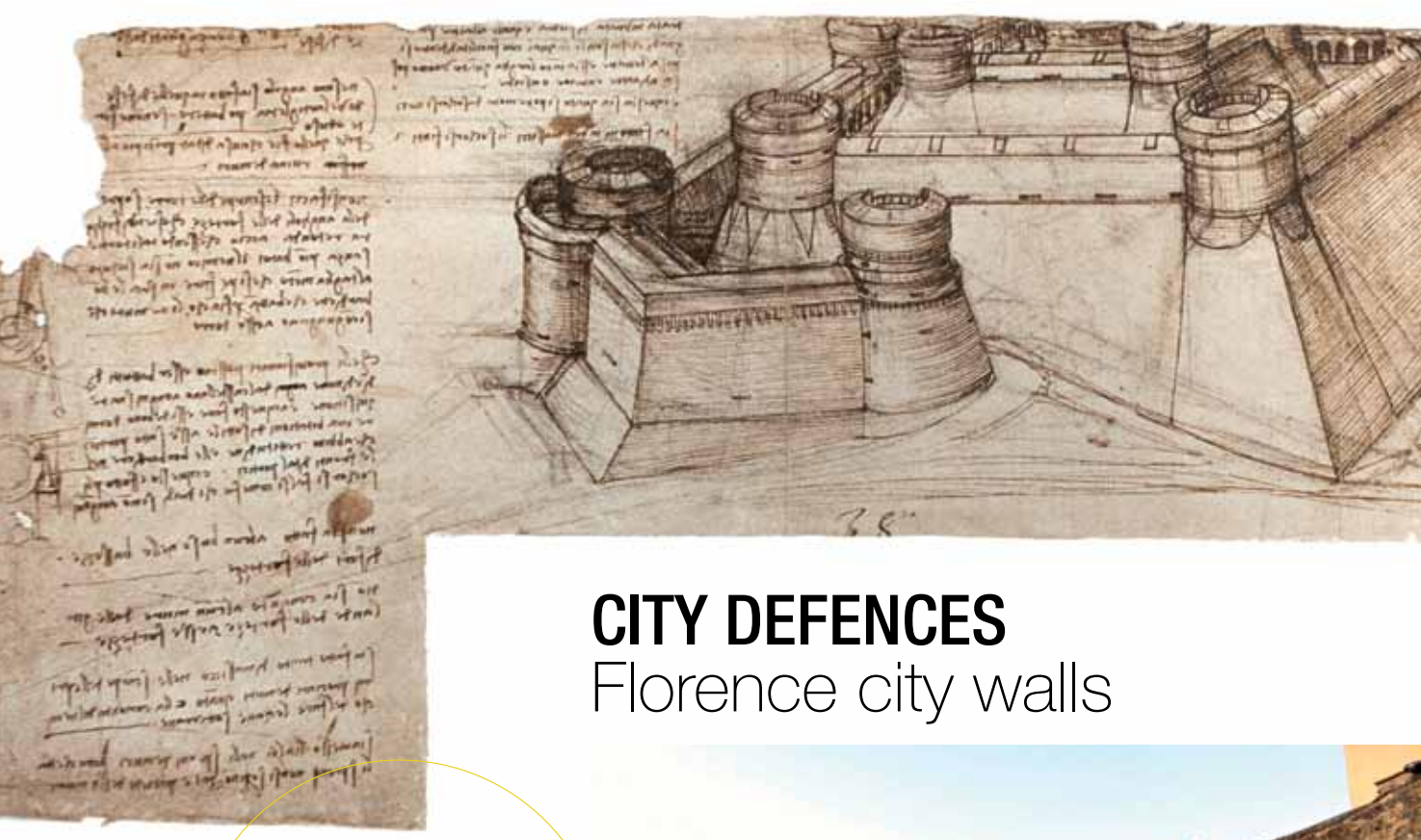
➤ **LEONARDO DESIGNED MANY BRIDGES,** INCLUDING THE ROTATING ARCHED BRIDGE, THE HORIZONTAL RETRACTABLE BRIDGE TO ALLOW BOATS TO PASS THROUGH, AND THE TEMPORARY ROTATING BRIDGE THAT IS EASY AND QUICK TO BUILD.



At the time of Leonardo bridges played an important role in military logistics to move troops and supplies and were often a determining factor in the outcome of battles. This is why in Leonardo's various codes bridges are often part of the repertoire of drawings dedicated to war machines. They were usually designed to be built from wood and were intended to be temporary and only used when necessary. In 1502 Leonardo made an unsuccessful pitch to Sultan Bayezid II of Turkey for the so-called Galata bridge, a single-span structure that was designed to reach a length of 350 m. The design was characterised by a double support for the bridgeheads in the form of a swallowtail, which is better at withstanding transversal loads, in this case made from solid stone. Based on drawings that specialists of the time considered impossible to build, the bridge was meant to cross the Golden Horn and connect Galata to Constantinople.

The bridge was built 500 years later in Ås, a city in Norway to the south of Oslo. In 1994, while visiting an exhibition, the artist Vebjørn Sand was struck by the modernity of the lines of a bridge designed by Leonardo and managed to convince the Norwegian highways authority to build it. At the end of 2001 the bridge, the first ever example of a public work built according to a design by Leonardo, was inaugurated and was named **Da Vinci bridge**. Even though the original design was followed as closely as possible in terms of structure and form, the bridge, design-ed for pedestrians and cyclists, differs for its size and the materials used. It is 67 m long, the structure is made from wood rather than stone and it sits on three arched pylons, also made from wood. Mapei also took part in the construction of the bridge by supplying admixtures for the concrete.

The Da Vinci bridge was built in Ås, in Norway, by using a design by Leonardo Da Vinci.



CITY DEFENCES
Florence city walls

➤ **THE ATLANTIC CODEX** CONTAINS THE "CURRICULUM VITAE" SENT BY LEONARDO TO DUKE LUDOVICO IL MORO WHICH, AMONGST OTHER THINGS, HIGHLIGHTS HIS ABILITY AS A MILITARY ARCHITECT AND ENGINEER.

Florence city walls were renovated by using Mapei solutions for masonry repair.

Amongst Leonardo's numerous interests, his study of cities and city defences certainly couldn't be left out. A number of sketches, drawn during the period he was called to Milan by Duke Ludovico il Moro, document his research into innovations for civil architecture and fortresses: in two drawings, which are now conserved in Paris, he designed two particularly high lookout towers for the Sforza Castle in Milan.

In 1502 Leonardo was on the payroll of the military leader and politician Cesare Borgia as a military architect and engineer and, when he arrived in Cesena (Central Italy), his various tasks included measuring and updating the fortifications of the cities in the Romagna region (Central Italy) that had been conquered.

The history of many Italian cities is closely connected to their defence systems and fortifications. One of the many examples is the city of Florence. In 2005 restoration work was carried out on the remains of the **city walls built in Florence** in 1312 and 1325. This intervention was carried out on the stretch of wall running from Porta San Frediano to Torrino di Verzaia (75 m).

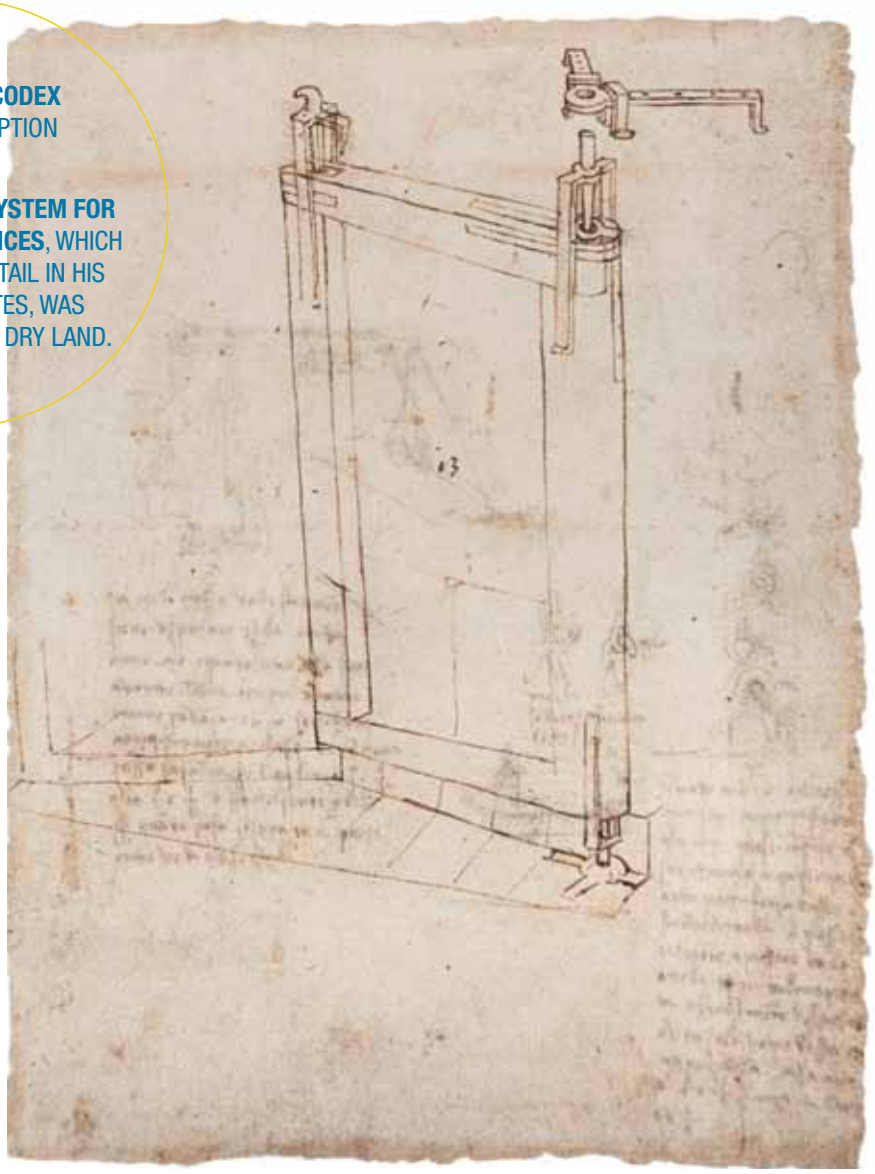
The entire zone is now under the protection of the Local Heritage Authority. Because of the poor condition of the walls the restoration work was not easy and consisted mainly in consolidating the structure. According to methods used at the time, the construction involved a combination of stones, gravel and sand from the rivers Arno and Mugnone to create a type of dry wall; the original binder was made from very fine, crumbly off-white mortar. After cleaning and preparing the substrates, the mixed stonework making up the walls was repointed.

Mapei successfully proposed MAPE-ANTIQUE, a line of products including cement-free rendering mortars and binders, specifically formulated for use in dehumidifying work, including on walls of significant historical value.

LOCK GATES
Panama Canal

➤ **THE ATLANTIC CODEX** CONTAINS A DESCRIPTION OF LOCK GATES.

➤ **THE OPENING SYSTEM FOR THE GATE AND SLUICES**, WHICH IS DESCRIBED IN DETAIL IN HIS DRAWINGS AND NOTES, WAS CARRIED OUT FROM DRY LAND.



The numerous designs contained in Leonardo's codes are a testimony of his interest in hydraulic works. He carried out important studies on basins during the first few years of his stay in Milan while visiting the nearby city of Pavia and the Bereguardo Canal.

He also designed several improvements, such as the steps and the insertion of a lower gate to be included in the corner gates.

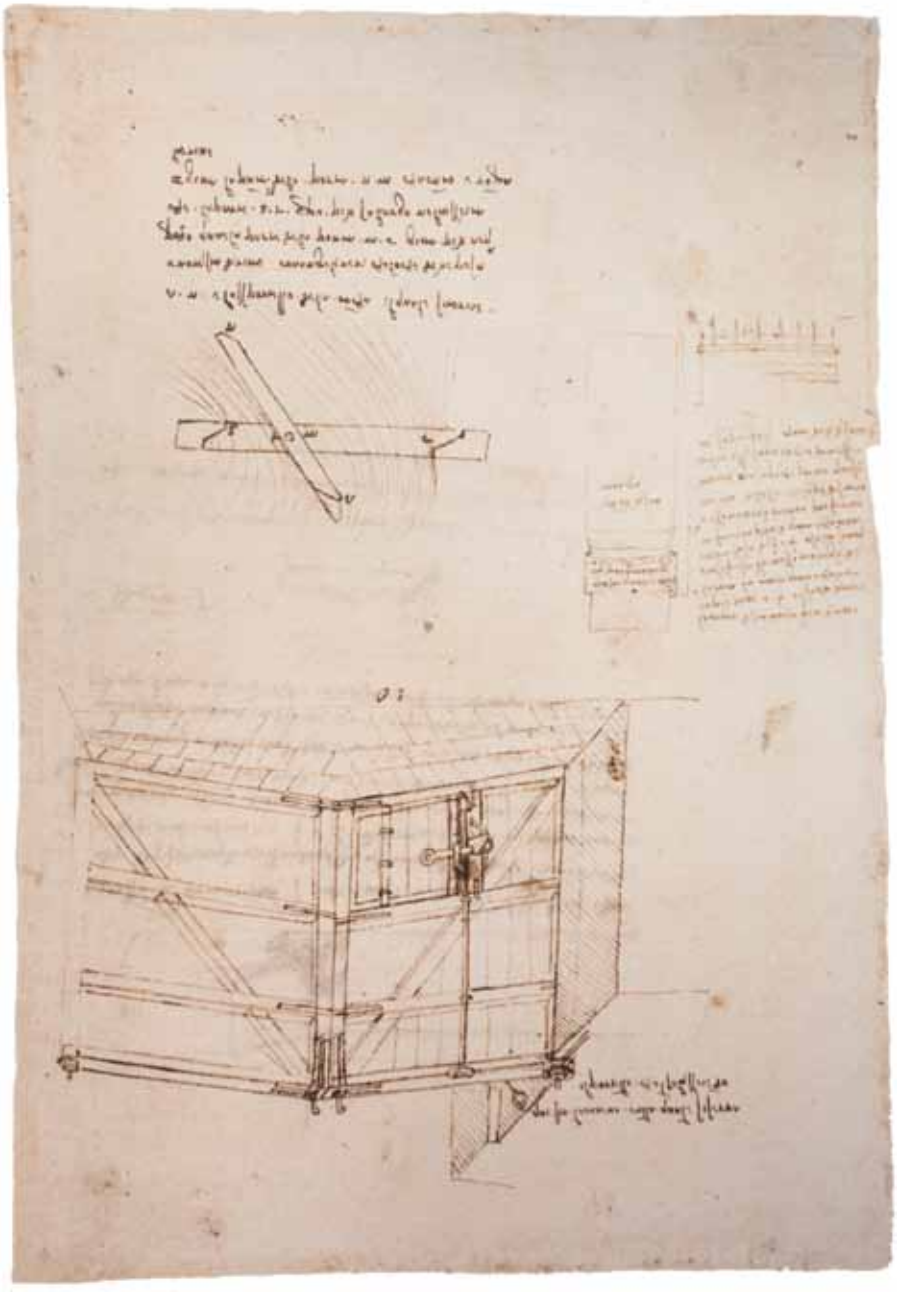
After many centuries lock systems are still being used in important projects, such as the major construction works for the **Panama Canal**. Based on a lock system, the Canal (81.1 km long) was built between 1907 and 1920 to facilitate the passage of ships from the Pacific Ocean to the Atlantic Ocean and avoid having to circumnavigate South America.

Operation of the canal is based on a system of 6 locks with 16 gigantic steel sluice gates which are able to open or close off the water chambers the ships use to climb around 27 m in just a few minutes.

Construction work on the new Canal started in 2009 so that even larger ships would be able to pass through. It was handed over in 2016 and, in terms of complexity and figures, the Canal is the most important feat of engineering achieved in recent decades. The project introduced a system of large communicating basins to save 60% of the water needed for every operation of the locks whereas, with the old canal, all the water used when ships pass through would have been discharged into the ocean.

The Mapei Group took part in this site by supplying admixtures for the concrete used to construct the locks for the new Canal and to restore the existing locks, as well as supplying membranes to waterproof the auxiliary basins (see the dedicated articles in *Realtà Mapei International* no. 38, 40, 42, 56).

The Panama Canal, whose extension was completed in 2016.



DAMS
Three Gorges Dam in China

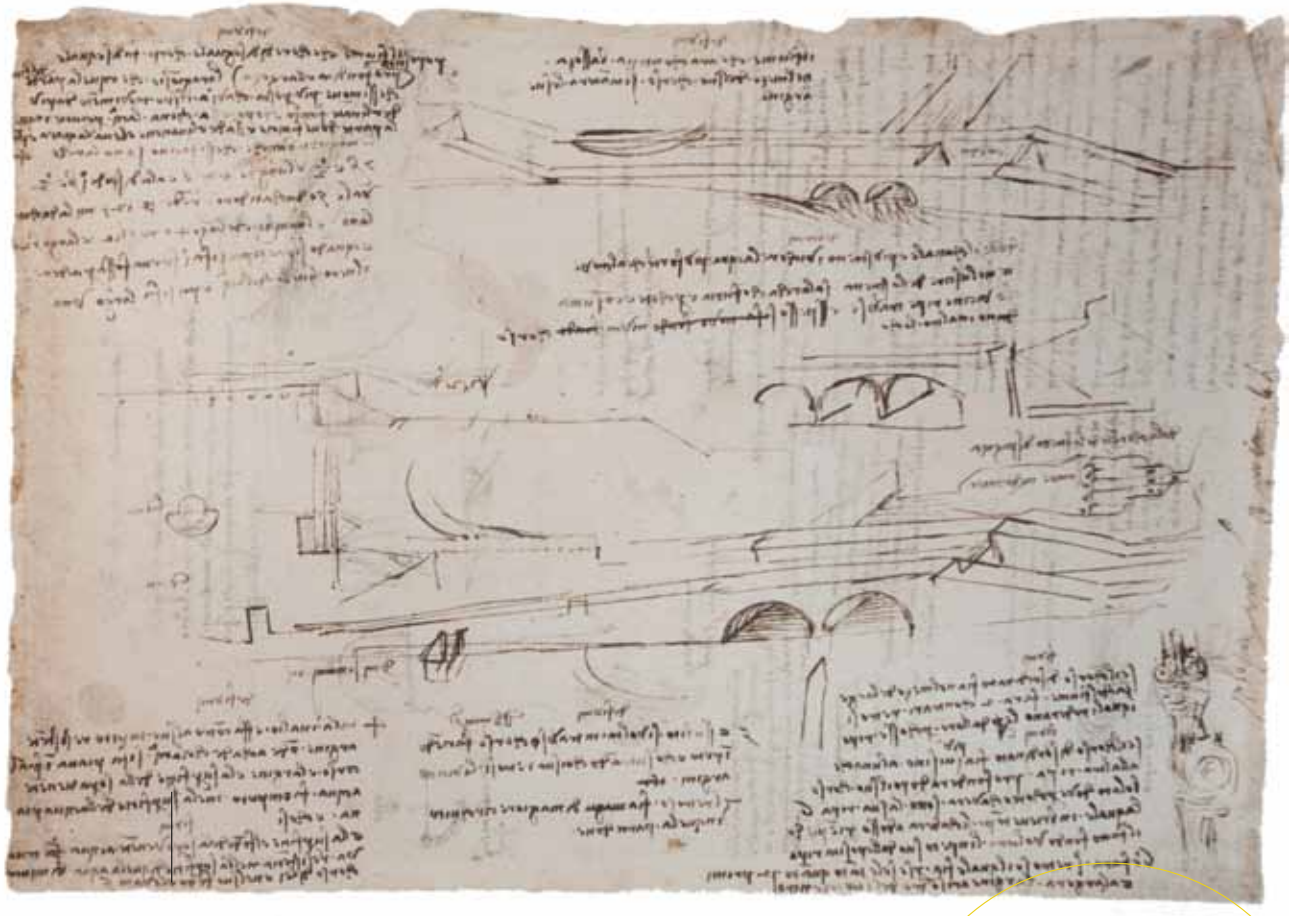
In 1500 Leonardo left Milan during the French occupation and, after a brief stay in Mantua (Northern Italy), moved to Venice where he was commissioned to design a system of defences against the Turkish threat. Using his studies of water, Leonardo came up with the idea for a mobile dam to be installed at the confluence between the River Isonzo and the River Vipacco that would be able to flood the defences of an enemy on dry land.

Over the course of the centuries dams have completely changed the economy and landscape of many countries. One of the most recent examples is the spectacular **Three Gorges Dam** in China. In 2009 the River Yangtze, was sealed off with a dam system, creating a 600 km long lake extending over an area of more than 1,000 km^2 with a capacity of 39 billion m^3. It is known as the Three Gorges Dam, which takes its name from three gorges the river flows through - the Qutang Gorge, the Wuxia Gorge and the Xiling Gorge - and it is also the most powerful hydroelectric power station in the world, with an installed capacity of 22,500 megawatts.

According to the Chinese government, construction of the dam was necessary to reduce the risk of flooding, to make the upper part of the Yangtze navigable and to produce electricity, indispensable for the development of local industry. The dam itself is 185 m tall and its overall length is more than 2,000 m. Mapei took part in the construction of the spillways by supplying admixtures for concrete. The contractor asked for concrete with high mechanical properties and limited risk of cracks formation and the solution was found with the use of the first nanostructural superplasticiser, the forefather of the Dynamon line of admixtures launched by Mapei (see *Realtà Mapei International* no. 20).

The Three Gorges Dam was built along the Yangtze River.

➤ **IN THE LEICESTER CODEX, WATER IS A VERY IMPORTANT THEME** AND IS DEVELOPED ALONG VARIOUS LINES: HYDRAULICS, GEOLOGY, PHYSICS AND COSMOLOGY.



CITY CANALS
Navigli canal network in Milan

LEONARDO OFTEN USED THE NAVIGLI CANALS TO TRAVEL AROUND THE CITY AND TESTIMONY OF HIS INTEREST FOR THE CANAL SYSTEM CAN BE FOUND IN DRAWINGS AND RESEARCH WORK CONTAINED IN THE ATLANTIC CODE.

The Navigli canal network in Milan was started in the 12th century, the idea being to create a system of man-made canals for defence purposes, to supply water and to transport goods. Leonardo developed them and proposed a series of expansion projects and new inventions; between 1506 and 1513 he was particularly interested in the basin of the S. Marco Canal. The aim was to connect Naviglio Martesana to the inner network of canals through two locks, one at S. Marco and one at Incoronata. In so doing, it would then have been possible to cross the city on water and then, at a later date, connect the River Adda to the River Ticino. Amongst all Leonardo's ideas the ones that deserve to be highlighted here more than most are those connected to the basins, including the lower sluice that can be manoeuvred by the towpath, to decrease or increase the flow-rate of the water. Of the original Navigli system, the only ones that can still be seen are Naviglio Martesana, Naviglio Pavese and Naviglio Grande.
A pilot site was started on **Naviglio Grande** in 2004 to find more reliable non-destructive techniques to successfully intervene on the static functionality of the walls of the canal banks. As for the masonry wall worked on, Mapei supplied the MAPE-ANTIQUE system, a complete range of cement-free products for restoring damp or deteriorated masonry. The results of this test campaign were satisfactory and, in 2006, a site was set up for the static consolidation and conservative restoration of the banks of Naviglio Grande.

Mapei took part in the conservative restoration of the Naviglio Grande Canal in Milan.

Milan surrounded by the Re de Fossi trench at the end of the fifteenth century.

MILAN "OPEN CITY"

LEONARDO CHOSE THE CANALS AS THE FOCAL POINT FOR EXPANDING A CITY THAT HAD BECOME AN ECONOMIC-CULTURAL POWERHOUSE IN EUROPE

Milan's first urban plan dates back to the latter half of the 15th century, when the Navigli canal loop – now planned to be re-opened - was being converted from a defensive trench into a ship canal system. The system had so much urban potential that Leonardo da Vinci chose it as the linchpin for his expansion plans for the city he put forward to Duke Ludovico Maria Sforza, also known as "Il Moro", in 1493.

So why was Leonardo's plan based around the loop of Navigli canals? Mainly because this defensive trench, excavated during the latter half of the year 1000, ran right around the city of Milan (240 hectares) and was about to become the city's most important transport infrastructure. How and why the canal loop was being converted into an intermodal canal was something Leonardo had seen for himself. He had also heard directly from the hydraulic engineers and the people in charge of the waterways why the walls, gates and posterns built in the fourteenth century to replace the embankments along the insides of the trench were gradually being knocked down and cleared. The reason was simply to allow carts and carriages to reach the banks of the trench (18/24 m wide) so that they could transport the goods (stone, timber, mortar, wine) to their destination after they had reached Milan so quickly (thanks to the water current) on vessels sailing along the so-called Big Canal (Naviglio Grande) whose water came from Lake Maggiore via the River Ticino.

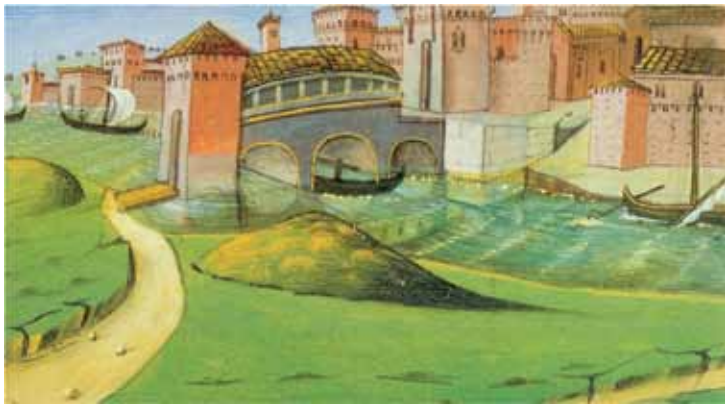
The other focal point for Leonardo's expansion plan was a defensive trench excavated 500/700 m from the ring of canals, the so-called 'Re de Fossi' (King of the trenches, due to its size and the fact it was wider than the trench itself), which the Visconti family (who ruled in Milan from 1277 to 1477) had begun working on when they started to knock down the 14th century walls to strengthen the city's defences.

Leonardo had already decided to scale his urban development scheme around two artificial waterways, the canal ring and Re de Fossi trench. This set the boundaries within which he intended to expand Milan based on a far-sighted urban scheme ingeniously designed solely in terms of space. The question inevitably arising is: why did a genius like him plan to expand Milan over such a vast area? The answer is that Milan was highly populated and had become an economic-cultural powerhouse on the European stage.

In order to connect Milan to the River Po using two rivers lying an equal distance from the city, Duke Francesco Sforza had already extended the Naviglio Grande so that it now flowed right into the third dock in the nearby city of Pavia by creating the Naviglio di Bereguardo canal in 1457. In 1464 the Duke decided to create the Naviglio della Martesana canal along the River Adda, so that Milan could be connected to the main tributaries of the River Po and the Navigli canal loop became the focal point of the canal system.

In 1465, Duke Sforza himself decided to reduce the width of the trench from 18/24 m to 11/12 m to meet traders' demands for more space for storing their goods and merchandise transported by water, the so-called 'sciostre e soste' (storage plac-

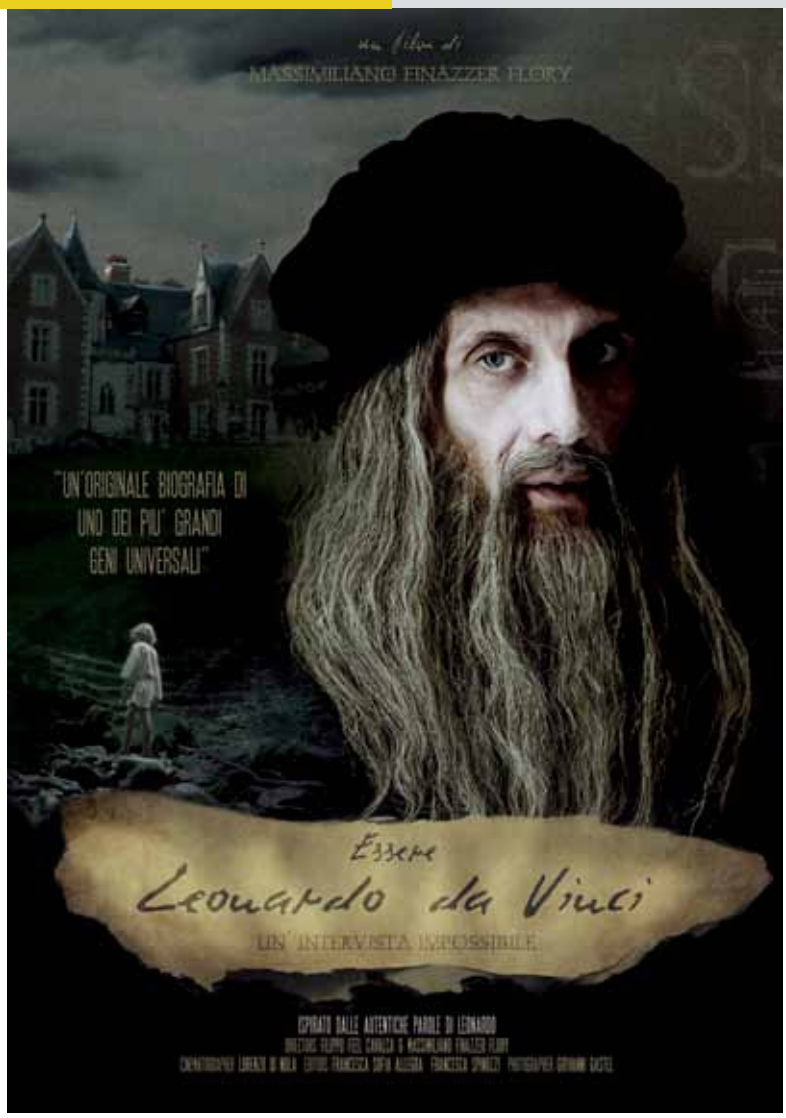
es and warehouses), which were constructed along the inside bank of the trench and created the layout of an authentic intermodal port for loading/unloading operations.
So, when the Leonardo came to the city, the shortened inner bank of the canal loop was already being transformed into a trading hub that was so much more than just a circular warehouse. The trench-canal was by now an exceptional transport infrastructure, which also supplied water serving irrigation purposes and driving machinery: it is no coincidence that Leonardo chose it as a focal point in his plans to connect the old city to the new city he had in mind for the future. Nowadays it might be used again, no longer for transporting goods, but rather as a public-tourist transport facility of the highest order.
In the latter half of the 15th century, Milan had more inhabitants than the other European cities, trading was booming, and interesting new crops were being planted like marcite (winter meadows), rice and mulberries. There was also an abundance of waterwheels used for fulling cloths, preparing paper, sawing timber, beating metals and grinding corn.
Leonardo arrived in Milan in 1482, a hard-working and overpopulated city that was expanding beyond the ring of the Navigli canals.
Even after the plague hit a third of the city's population in 1484-5, Milan was still the most densely populated city in Europe in a very confined space and, after the ravages of the plague, the city soon returned to life although - as Leonardo noted – some of its neighbourhoods were so densely packed that "the people looked like goats, one on top of the other, creating a terrible stench everywhere."
In any case, lots of important building work was carried out in 1492: as well as the timeless Cathedral "factory", Cà Granda hospital was extended, work began on constructing a new tribune in Santa Maria delle Grazie Church, and architect Lazzaro Palazzi started constructing the Lazzaretto hospital while also working on the 'Re de Fossi'.
With exquisite foresight, this was the moment Leonardo chose to put forward his plan to expand the city "across an area - so Leonardo emphasised - around the old confines, separated and at the same time served by the wonderful canal". A plan that encompassed the entire peripheral loop between the circle of canals and Re de Fossi, where the first villages were being built outside the mediaeval walls. A plan based on a clear understanding of how things stood, a practical enterprise on a vast scale. Over the following four centuries the city of Milan was, indeed, extended over the area first proposed by Leonardo. Expansion was focused around the inner-city potential of its circular port, which catered - so its creator claimed – for Ludovico il Moro's ambitious projects to design innovative new housing. An extremely modern plan with the first houses to be located on the outside bank of Naviglio canal, complete with their own terraces, attics and toilets. Leonardo had no plans to flatten or demolish the inner-city (surrounded by the canal). On the contrary, he was determined to enhance and expand the city so as to improve and embellish it, without taking into account all the little towns and villages that had sprung up beyond the Naviglio. Perhaps he thought he could adopt the same kind of approach he was using in the nearby city of Vigevano to create the new city square and castle entrance by knocking down the old mediaeval settlement? Hardly surprisingly, then, Leonardo drew one part of the city as an urban centre with its own porticoed square incorporating a market. If Duke Ludovico had implemented Leonardo's model, he would have built a square like Vigevano's that made him at least as eternally renowned as the square itself.


View inspired by Milan by Cristoforo de Predis, 1476.

» IN 1493 LEONARDO DA VINCI PUT FORWARD HIS PLAN FOR EXTENDING THE CITY TO DUKE LUDOVICO IL MORO

Leonardo's vision might have been influenced by Niccolò Machiavelli's utopian aspirations, so the walls vanished along with the very idea of a fortified city. Leonardo's expansion plans did not, in fact, contemplate new walls, it was not a plan for a fortified city even though Milan, with all its villages outside the mediaeval walls, was indeed defenceless. Instead of fortifying the city, Leonardo wanted it to be open and accessible, so waterways were given the same status as roads.
Leonardo decided to use the ring of canals, a kind of circular port where goods arrived by water to be distributed across the land by cart or carriage to the city and all its surrounding villages, as the real focus of his urban expansion project. Indeed, Leonardo's urban development scheme used the canals not just for transporting goods but also for watering gardens, breeding fish and cleaning the city. Back in those days there was not much water in the canals and there was plenty of conflict as to whether they should be used for sailing, irrigation or supplying power. Very wisely, Leonardo turned to the wealthiest families to help extend Naviglio della Martesana canal and increase the flow of water into the circle of canals.
Reinforcement work required to increase the amount of water flowing into the canals and provide the necessary channels for expanding and developing the city of Milan. A process that did, indeed gradually, take place over a period of four centuries from the 15th century onwards, including the covering of the Re de Fossi trench and knocking down of the city ramparts, as Milan once again became an open city as it was envisaged by Leonardo da Vinci in 1493.

Empio Malara. President of the Associazione Amici dei Navigli (Friends of the Navigli Association)



Leonardo's genius in a film sponsored by Mapei

To celebrate the 500th centenary of Leonardo da Vinci's death, Mapei has paid tribute to the memory of this great genius by treating its friends, customers and partners to a showing of a short film entitled *Essere Leonardo da Vinci. Un'intervista Impossibile (Being Leonardo da Vinci. An Impossible Interview)* sponsored by Mapei and a guided tour of the "Leonardo da Vinci Parade" exhibition. The event took place on Friday 15th February 2019 at the Leonardo da Vinci National Museum of Science and Technology in Milan, which is sponsored by Mapei as a Technical Partner.

The film - by and starring Massimiliano Finazzer Flory in partnership with RAI Cinema – is inspired by Leonardo's own words, focusing on excellence as a benchmark: Leonardo (who was a trailblazing scientist, painter and designer) and his inventions changed how we think about art, technology and science.

The film - which comes under the patronage of the Italian National Committee for celebrations commemorating the 500th anniversary of Leonardo da Vinci's death - has won several awards, some in the United States, including Best Indie Filmmaker at the Top Shorts Film Festival in January 2019 and the 2019 New York Film Awards.

The ideal thread connecting Leonardo's thoughts and works to the technological challenges facing modern-day industry is part of Mapei's corporate culture, a company that has always been aware of the decisive role of chemicals applied to the building industry in taking on the challenges posed by innovation and sustainability.

Leonardo's legacy: tradition and innovation

A CONVERSATION WITH THE ITALIAN DIRECTOR AND ACTOR MASSIMILIANO FINAZZER FLORY

Massimiliano Finazzer Flory, an actor, playwright and director, made his acting debut on stage in projects dealing with the story of the "Aeneid" and the Rainer Maria Rilke's journeys.
During his career he has frequently focused on the relationship between literature, philosophy, art, and music, like, for instance, in his stage rendition of Alessandro Manzoni's novel "The Betrothed", a short film entitled "Paris Baudelaire, poetic promenade", and a stage musical called "Verdi reads Verdi". His work in the realm of culture has earned him numerous national and international awards.
A Councillor for the arts and culture for the Milan City Council from 2008 to 2011, he also worked for newspapers as a journalist and for editing houses as an editor of special book series.
In January 2019 he wrote and directed a short film entitled "Being Leonardo da Vinci. An impossible interview", sponsored by Mapei, which won several awards. A film unique of its kind about Leonardo da Vinci to commemorate the 500th anniversary of the death of this universal genius.

Your keen interest in Leonardo da Vinci's life and works was recently represented on stage. How did you get the idea to make a film about the great genius from Tuscany, playing the role (in the kind of language spoken in the Renaissance) of such a complex and multifaceted character?
Film is a medium that gives you the chance to bring together shadow, light and perspective, all subjects that Leonardo was also extremely interested in, that allow the present, the past and the possible to interact through a storyline... Leonardo is a legendary figure, partly created by himself, and the medium of film allows us to move along the lines of a kind of universal culture so characteristic and typical of Leonardo himself.

"Being Leonardo da Vinci. An impossible interview" is now coming to Italy after its short-film version has already won several awards abroad. Why has it been so successful?
Outside of Italy, Leonardo is the great inventor and genius who brought together beauty and creativity, imagination and discovery.
These ingredients lie at the very foundations of cultures that have drawn inspiration from this great genius, such as the United States or Japan, countries which, nevertheless, are still amazed by his works, something which, alas, can no longer be said about Italy.

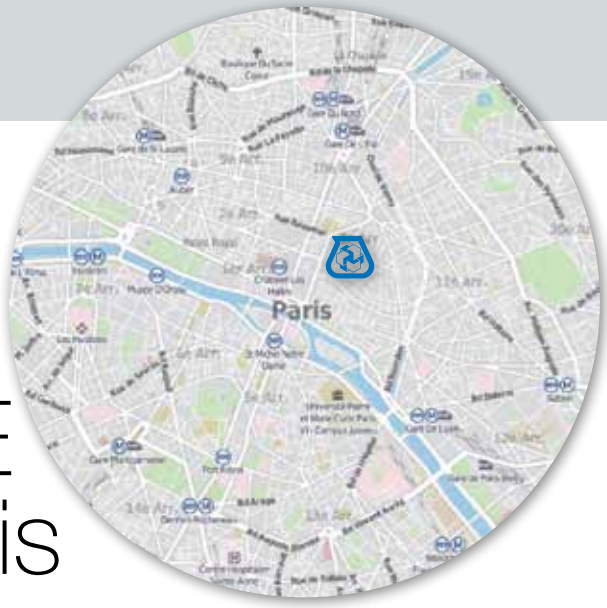
How did you feel playing Leonardo and what did you gain from this experience? Is there anything about Leonardo that you particularly relate to?
Being Leonardo was truly inspiring... he used to say, "all our knowledge comes from feelings". So, first you must love if you want to feel and then you need to understand if you want to listen.
Experience is the key to exploring our soul, which, according to Leonardo, has an orderly place in our body, far from confusion. Leonardo the man, the character I play, is constantly battling with himself, but he does it with irony and without taking himself too seriously, so he really enjoys the intense pleasure that comes from thinking.

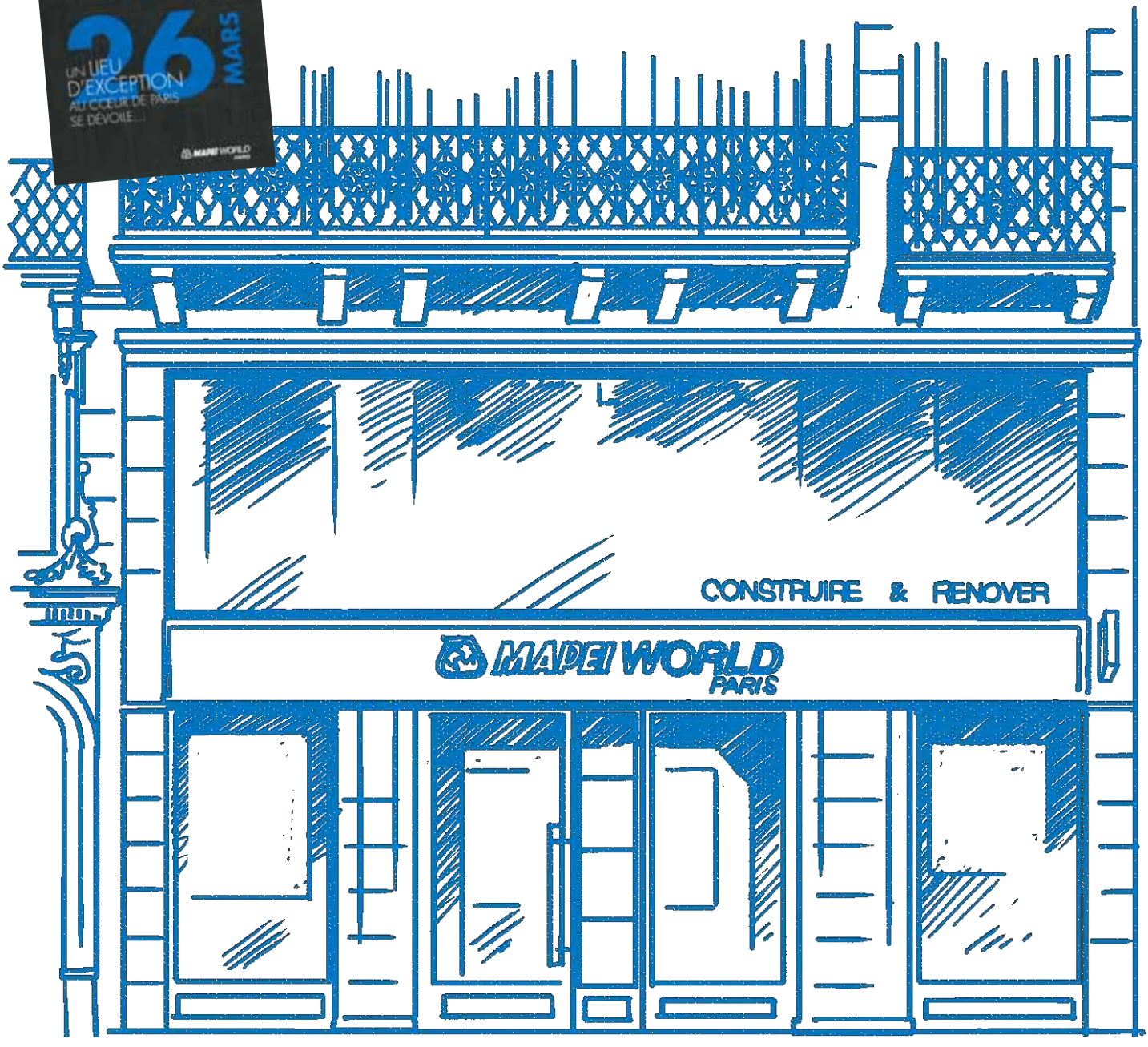
What would Leonardo have to say today and how would he feel if he could see how Milan, for example, has changed and transformed?
The great genius would be delighted to see how the city has taken on its own identity by interacting with nature and architecture, which, in my opinion, is the way in which urban processes unfold in our age.
The city's verticality should be filtered through Green Technology, meaning our smart cities are increasingly linked with experimentation into new materials and new colours corresponding to people's passions.

Chemicals applied to the building industry is increasingly decisive for taking on the challenges posed by innovation, sustainability and eco-friendliness. Can we draw inspiration from any aspect of Leonardo's attitude to the environment and nature?
Leonardo was a scientist who empirically focused on experimentation as the point of interaction between tried-and-trusted tradition and the innovation we now need. It may be said (and I have done so both in film and on stage) that Leonardo was the first eco-designer in history, who drew on water, air, soil and energy to improve the quality of life.

Mapei has always focused on research and innovation to conquer global markets, drawing inspiration from the words of its founder, Rodolfo Squinzi, who used to say that "work can never be separated from art and passion". Do you share this idea, and do you think it echoes what Leonardo stood for?
Leonardo always claimed that a desire for knowledge is natural in a good person, so he saw his own visionary thinking as almost an ethical commitment. He always worked from the evidence. In this respect, a genius knows they will always be posthumous.
Research and innovation give rise to a kind of immortality that art has to offer, and work strives for.

A PLACE OF EXCELLENCE in the heart of Paris





"La galerie" area in the Mapei World Paris centre displays a wide range of information about the company's products. Other spaces of the Centre are devoted to co-working, training and an introductory overview of Mapei.

MAPEI WORLD PARIS OPENED LAST MARCH, JUST 10 MINUTES' WALK FROM THE GEORGES POMPIDOU CENTRE

"Mapei World Paris" is a new lively, training and working place created by the Mapei Group in a European city that sets the benchmark in the building and design industries. The new facility, which opened last March, is located in a rapidly evolving area of Paris, just 10 minutes' walk from the Georges Pompidou National Centre of Art and Culture designed by Renzo Piano, Gianfranco Franchini and Richard Rogers. Following the opening of Mapei Specification Centres in London and Milan, now Paris has a multi-purpose space showcasing Mapei's leadership and unique role in the building world.

Yet another space exemplifying Mapei's determination to work closely with designers to meet their needs and bring their ideas to fruition. And not just designers: Mapei World Paris is also designed for architects, distributors of products for the building industry, contractors, installers, site managers and institutional bodies… in a nutshell, all the key players in the French and international building industry.

Mapei World Paris plans to become a key player on the French and global modern-day architectural scene.

It is no coincidence that it is located in Paris: as well as boasting famous contemporary works of architecture (like the Bercy 2 Shopping Mall, Arab World Institute, Cartier Foundation, Vuitton Foundation, Musee du Quai Branly and D2 Tower), the capital of France will also host the 2024 Olympic Games and plans to show off its "grandeur" at this global event. The futuristic project devised for the Olympic Games includes 3 billion Euro investment in infrastructures to be used both to redevelop existing facilities and creates temporary sites at strategic points around the city. The innovative idea is to bring the games to the very heart of Paris. This means that there will be no need to build mega-structures in the region's suburbs and the French capital will be a key player hosting Olympic sports in a truly beautiful setting.

Mapei was bound to be present in such a crucial environment, supplying its wide range of solutions for designing and constructing all kinds of buildings.

MAPEI WORLD PARIS WILL SET THE BENCHMARK FOR THE DESIGN AND BUILDING INDUSTRIES

DIVERSE SPACES, DIVERSE PURPOSES

Mapei France hopes that opening this new facility will make its brand even more visible and well-known both domestically and around the world, providing its partners with more information about its products and common issues in the building industry, encouraging the exchange of work experience between professionals in the sector, strengthening business partnerships and promoting the "Mapei spirit" even further afield through special events.

This new workplace is divided into several spaces, each devoted to different activities, like drawing specifications, training, co-working and the (even informal) sharing of information.

The ground floor holds the "boîte" or box, an area that allows visitors to delve into the world of Mapei and discover its history, values, operations and solutions. With the help of digital content, the "boîte" provides an introduction into the world of Mapei through a very special and digital experience. A wall illustrating Mapei's DNA retraces the main

FROM TRAINING TO CO-WORKING: PLENTY OF AREAS FOR MEETING AND EXCHANGING INFORMATION

stepping-stones in its corporate history and business successes assisted by a map showing the Group's subsidiaries and manufacturing plants all over the world. Samples of Mapei systems and products are also on display, providing an overview of the various solutions the company offers people working in the building industry. Here visitors can also find interactive content about the world of sport. The whole basement is dedicated to training and hosts the local "Mapei Academy". The training spaces provide to installers expert advices and knowledge with theoretical sessions and practical demonstrations, all carried out in special individual boxes. This approach allows installers to learn, experiment and apply, to become familiar with the best solutions for their day-to-day work. The mezzanine level contains the Specification Center, a space allocated for designers and clients interested in discussing projects and sharing experiences in a co-working setting. This is an extremely important area because it allows Mapei technicians to study various aspects of projects right from the

earliest phases, so that they can solve miscellaneous construction problems with the help of designers. In this same place, a corner bar called "Expresso" allows to exchange ideas around a good Italian coffee. The second floor accommodates two spaces for meetings, a conference room with a capacity of up to 20 people and a meeting space for smaller groups. These premises are designed to facilitate and reinforce relations with potential customers and business partners.

Mapei solutions, such as wall coatings and flooring systems, have been used in the premises. Entering Mapei World Paris is an enjoyable way of finding out and fully understanding a whole range of clear and simple information, thanks also to a selection of minimalist furniture that fits in perfectly.

THE OPENING CEREMONY

The presentation of the new Mapei World Paris to the public was a three-day event providing guests with plenty of information and entertainment. Everything began on the afternoon of 26th March, when a press conference was held for specialist journalists. Speeches were given by Veronica Squinzi, Global Development Director of the Mapei Group, Christophe Jeauneau, Managing Director of Mapei France, Béatrice Gladel, Marketing Manager of Mapei France, and Stéphanie Eskinazi, Head of Communication and Digital Information in Mapei France's Marketing Department. Journalists were told why this new facility has been opened and shown around its spaces.

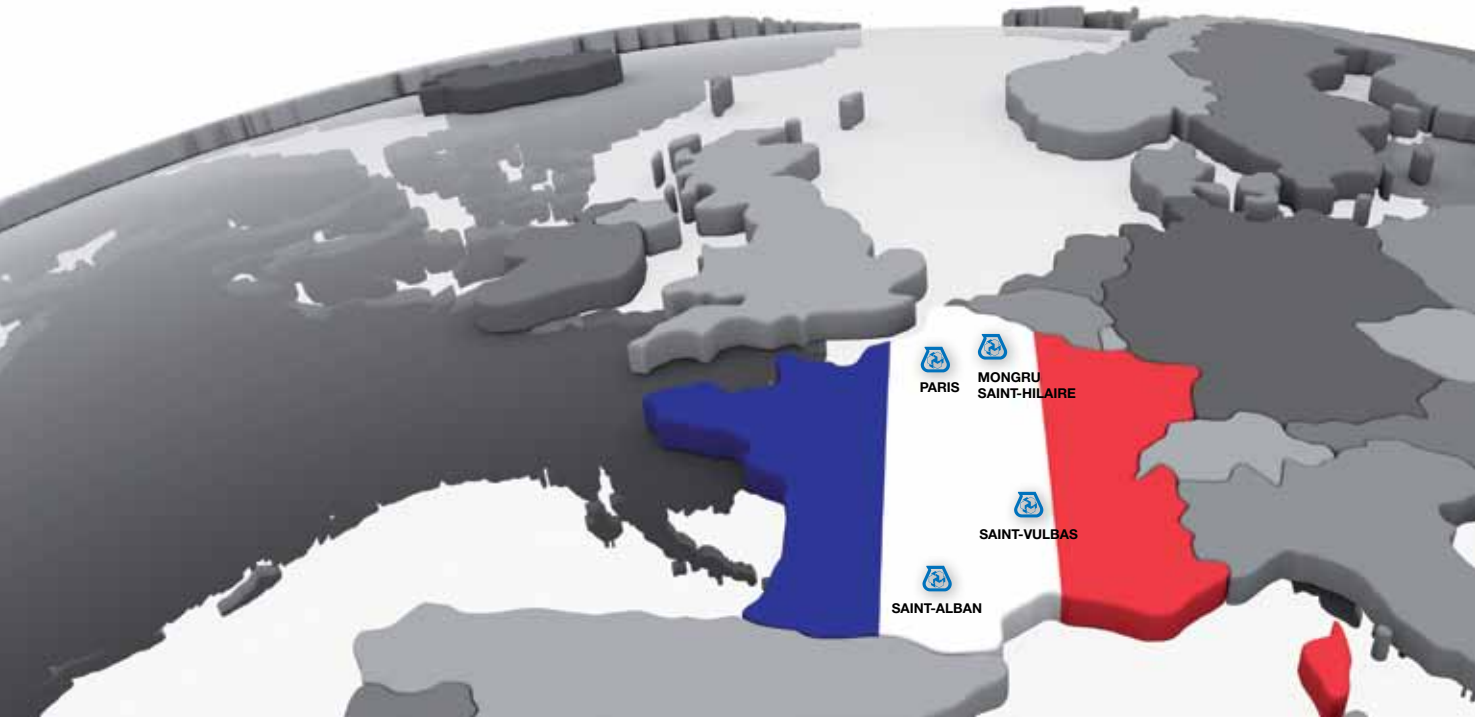
At 6.30 p.m. the facility opened its doors to customers - mainly architects and designers – and Mapei France's business partners: Veronica Squinzi and Christophe Jeauneau explained how this new facility fits into Mapei's plans to strengthen and boost its operations in France, a country were the Group has been operating for a long time. Refreshments were served to draw the evening to a close and a thought-reader provided plenty of entertainment for everybody taking part. More guests (85 over three days) were welcomed to the Mapei World Paris over the next few days and entertained with tours around the various areas, music, photo sessions and special meals. It is time you came to visit the new centre in Paris or other similar facilities opened by Mapei in key areas (see the dedicated article in this issue of the magazine).

The opening ceremony was hosted by Veronica Squinzi, the Mapei Group's Global Development Director, and Chistophe Jeauneau, Managing Director of Mapei France (in the photo on the left), who officially welcomed all the guests.

Marco Manzoni. Project Manager, Marketing Department, Mapei SpA (Italy)

SUSTAINABILITY AND QUALI

THE GROUP HAS BEEN OPERATING IN KEY AREAS OF THE COUNTRY SINCE 1984



1984

MAPEI FRANCE IS FOUNDED

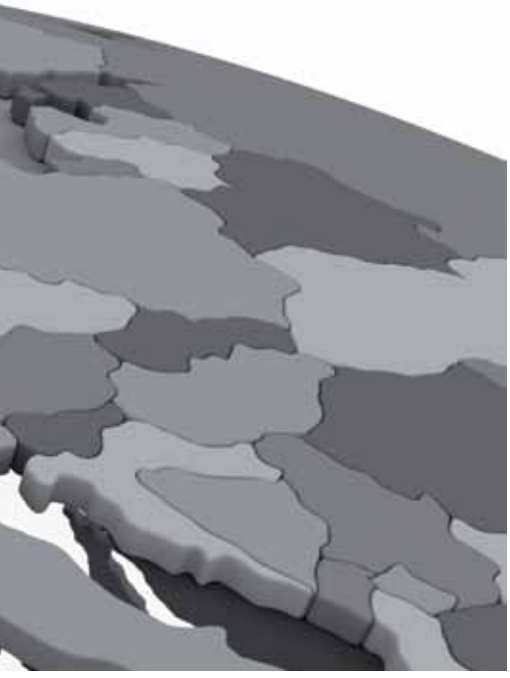
1989

Opening of the manufacturing plant in Saint-Alban (Haute-Garrone)

1994

Opening of the plant in Montgru Saint-Hilaire (Hauts-de-France)

TY: CHAMPIONS IN FRANCE



The opening of its new **Mapei World Paris** last March (see the dedicated article in this issue of the magazine) in the French capital allowed the Mapei Group to extend its operations right into the heart of France and its most famous symbol. This is actually just the final stage in a fifteen-year-long process of integration into the very nerve centres of the French economy. Ever since Mapei began its internationalisation operations, it has wanted to invest in France: it set up Mapei France in 1984, the Group's third subsidiary outside Italy.

Mapei France was first established in **Saint-Alban**, near Toulouse, in the south-west of the country. It then opened a plant in the same area in 1989, mainly focused on powder products and adhesive pastes, primarily aimed at meeting the French market's needs in terms of products for installing ceramics and then for installing resilient and textile materials. The facility in Saint-Alban also includes the headquarters, a strategic marketing department, technical services, various training facilities, and one of the Group's Research & Development laboratories.

Not long after that in 1994, the Group decided to open a second plant, this time in **Montgru Saint-Hilaire** in the north of the country, to cover the French market more effectively. The plant is strategically located: as well as being able to supply the whole of the north of the country, it can also, on one hand, draw on a local supply of sand (to be used as a raw material) and, on the other, exploit its border location to export Mapei products to other countries, such as Benelux. It is specialised in manufacturing powder materials, admixtures for concrete and "do-it-yourself" systems, a sales channel fully exploited by Mapei France. The plant is also equipped with a laboratory for admixtures for concrete and a quality control laboratory.

In 2012 the Group decided to open a third manufacturing plant in **Saint-Vulbas** in the Lyon area, to cover Eastern France and cut down the transport time. The production unit is equipped with cutting-edge machinery (a gravity plant, bagging machinery, plastic bagging and automatic palletizer) and is one of the most innovative of the Group. This plant focuses its activity on powder materials, especially those with large grain size.

Thanks to these structures (and, who

Opening of the plant in Saint-Vulbas (Auvergne-Rhone-Alpes)

2012

Opening of the Mapei World Paris

2019

ABOVE. The Mapei facility in Saint-Alban also encloses a Research & Development Laboratory and a Quality Control Laboratory.

Facts and figures for Mapei France

93
MILLION EUROS
TURNOVER IN 2018

300
STAFF

3
PRODUCTION UNITS
TOULOUSE SAINT-ALBAN, MONTGRU SAINT-HILAIRE AND LYON SAINT VULBAS

1
MAPEI WORLD PARIS
IN PARIS

knows, perhaps also thanks to their patron "saints": Saint-Alban, Saint-Hilaire and Saint-Vulbas), Mapei France can offer its clients an efficient distribution service for its solutions for installing ceramics, stone materials, resilient and textile materials and wood, products for concrete repair, systems for cementitious and resin floors, mortars for masonry renovation, cement additives and admixtures for concrete, products for major works and infrastructures, and solutions for underground works and the marine industry.

This wide range of materials and the contribution of its over 300 staff helped raise its turnover which totalled 93 million Euros in 2018.

Today Mapei France's latest "frontier" is spaces serving designers, architects, installers and distributors: Mapei World Paris fits into this framework perfectly.

Meanwhile, we can say that Mapei has everything in order to become a leading player on the French market, even at a time when both the French economy and the French building industry are only growing slowly (1.5% in 2018).

Further downscaling in growth is expected this year, when investments will probably grow more slowly than the average across Europe. According to forecasts, the French GDP will grow by 1.3% in 2019 and by 1.5% in 2020.

A QUALITY SUBSIDIARY

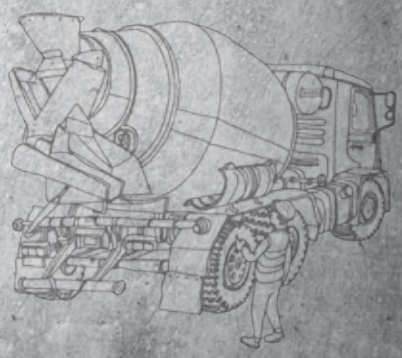
Mapei France has always paid very careful attention to sustainability, quality and health. It is a founding member of Green Building Council France, the French branch of the Green Building Council. Mapei France can boast ISO 9001 certification for quality management. All Mapei manufacturing plants in France were awarded BS OHSAS 18001 certification in 2011 for their health and safety at work management system. The plant in Saint-Alban has been holding the ISO 14001 certification since 2005 for its environmental management system and obtained in 2011 a Certiquality certification for its voluntary commitment to raising the safeguard of the environment and the health and safety of its staff. By joining the French FRET 21 program, Mapei France commits to reduce the greenhouse gases due to its transport operations by 10% in three years, saving 500 tons of CO_2 per year.

SUSTAINABLE CONCRETE SOLUTIONS

RE-CONLINE

RE-CON AGG 100
RE-CON AGG 200

RE-CON ZERØ EVO



Using sustainable concrete means consuming the least amount of natural resources as possible. Which is why Mapei has developed the **RE-CON** line of products: **RE-CON ZERØ EVO** to **recover all leftover concrete from mixer trucks** and **RE-CON AGG** for mixing concrete made with aggregates containing clay or recycled aggregates from demolition work. **Constructing a sustainable future together**.

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

Learn more on **mapei.com**

MAPEI®
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

Ultralite®

TAKE YOUR WORK LIGHTLY.

Ultralite Flex, **Ultralite S1**, **Ultralite S1 Quick**, **Ultralite S2**, **Ultralite S2 Quick**: a line of **lightweight** cementitious adhesives with extraordinary performance features for all types of ceramic tiles: **Improved workability**, **less tiring to apply**, **quicker application**, **lighter bags** and **packaging with handles** for easier handling.

25 kg

just 15 kg!

EVERYTHING'S OK WITH MAPEI

Learn more on **mapei.com**

MAPEI®
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

Working closely with our customers and on major projects

Q&A WITH CHRISTOPHE JEAUNEAU, GENERAL MANAGER OF MAPEI FRANCE

Why is Mapei World Paris important for Mapei's strategy in France?
The opening of Mapei World Paris is an important event in Mapei's history in France.This project came from a desire to be at the heart of major Parisian projects and close to decision-makers in line with our « closer to you » strategy and to be acknowledged as a major player in France and worldwide.
With Mapei World Paris Paris, we strengthen our partnership with all players in the building industry, providing them with information, training, and Mapei products/solutions and expertise in one single place. Mapei World Paris is designed around different spaces for interaction, specifications, coworking and training. It is also a lively place hosting events and animation.
We will develop these spaces and content to adapt to our customers' evolving needs.

Who is Mapei World Paris designed for?
Mapei World Paris is addressed to all our customers: architects and designers, companies, industrialists, retailers, and also DIYers who can find information, expert advice and training. Furthermore, we are working with our business and sports partners, training organizations and schools, suppliers, manufacturers, federations and institutions to organize joint events, conferences and meetings.

Why did you choose this location?
It was essential to be in the center of Paris, to get closer to our customers, partners and decision makers. We chose Boulevard Sébastopol, a centric, dynamic and much-frequented district, very close to metro and train stations. Mapei World Paris is also near the Maison de l'Architecture (Architecture House) and Arts et Métiers Museum.
The 500 m^2 building, located in front of a park, has a beautiful natural stone façade, typical of the Haussmann period. We have kept the original fittings, like the natural stone flooring in the basement and the beautiful handrail made of wrought iron. These materials blend in very well with the Mapei cementitious and resin floorings, concrete, wood and metal that cover the Mapei World Paris spaces.

Which key French building projects is Mapei France currently involved in?
We are involved in the construction of tunnels along the Grand Paris Express transport system and the Lyon-Turin railway line, some of the most important infrastructure projects in Europe, supplying expertise and solutions for underground works. We are, of course, getting ready for the 2024 Paris Olympic Games. We are also participating in key projects in other cities, like the redevelopment of the Lyon La Part-Dieu district and the exhibition park in Toulouse.

At a time when the national economy is growing more slowly, what opportunities are there for Mapei in France?
Despite a complex economic context, building has remained at a high rate with 400 000 new houses constructed in 2018. Moreover, our market is changing with new competitors on the market: this transformation could also open up new opportunities. To strengthen our position, we are remaining customer-oriented, getting closer to our customers and offering new services. We are also strengthening the green side of our operations to reduce energy consumption and the impact on health and the environment and to optimize costs. With the French FRET 21 program we just signed for example, we are committed to reducing CO_2 emissions from our transport operations over 3 years, corresponding to over 500 tons of CO_2 each year.

How important is investment in strengthening Mapei France's position on the market?
As Giorgio Squinzi, CEO of the Mapei Group, has often said, it is vital to "never stop pedaling". Investment and innovation enable us to maintain and reinforce our business partnerships and also be more attractive. That is why we continue to invest in new equipment and infrastructures like Mapei World Paris, but also in new markets like DIY stores that are now widespread in France. We are also developing new services to facilitate partners and end users' jobs. Mapei Chantier by Mapei Academy is a good example: our team goes to worksites or retail point of sales to inform, welcome and train our partners and customers with a trailer fully equipped with slabs for applying products, Mapei materials and technical documentation. Comfort is also very important in the development of our new products and packaging. That is why we have launched easy SPRINT opening. Thanks to a strip on the top of the bag, craftsmen and end-users can open bags smoothly and easily in one second. We are also launching ULTRALITE MULTI and ULTRALITE MULTIFLEX, cementitious mortars in 15 kg bags that can be mixed in fluid or normal consistency and are easily adaptable worksite characteristics. The bags also feature a handle for better handling the products.

How is the private building industry performing in France?
Since the beginning of the year, housing work has decreased by 7.8% and multi-unit buildings by 7.1%. On the other hand, thanks to key projects, the overall situation is promising: publics works are still robust and the production of ready-mix concrete has increased by 3%.

Which are the most promising Mapei product lines in France?
We are specifically strengthening our expertise in solutions for concrete repair, sewerage and public and underground works to contribute to key projects in these fields. We are also strengthening our position on the decorative and industrial markets, especially with our coatings and systems for resin and cementitious floors. Finally, we are also focused on new markets for Mapei in France with the solutions for the marine industry.

L'Isle-Adam-Francilienne (France)
A16 MOTORWAY

MAPESHIELD GALVANIC CATHODIC PROTECTION SUCCESSFULLY DEPLOYED TO PREVENT CORROSION TO STEEL REINFORCEMENT

Construction work started in 2017 to extend the A16 motorway from L'Isle-Adam, a town to the north of Paris, to the Francilienne ring-road running around Paris, and to make journeys simpler, improve the flow of traffic, increase the level of safety on the roads and stimulate growth in the local economy.
The construction company awarded the contract carried out several interventions such as the expansion of a structure and the integration of a slip road. The designers contacted the local Mapei team to get more information on the company's anti-corrosion system with galvanic anodes to protect new and existing steel reinforcement from corrosion.
Mapei technicians recommended using MAPESHIELD I, a system of pure zinc anodes coated with a special conductive paste used to provide galvanic cathodic protection against corrosion in steel reinforcement in both new structures and structures being repaired. Following a meeting on site between technicians from Mapei and the contractor to explain how the system would be installed, work got underway.

IN THE SPOTLIGHT

MAPESHIELD I

Pure zinc anodes coated with a special conductive paste, for galvanic cathodic protection. MAPESHIELD I is particularly recommended for protecting reinforcement rods against corrosion on both structures requiring repair work and new reinforced concrete structures.
MAPESHIELD I is made up of a multi-layered zinc core with a large surface area, covered with a special conductive paste which keeps the system active over the years. After connecting it to the reinforcement rods with metallic stays, a difference in potential is created between the steel and the zinc which stops corrosion and impedes its formation, even in aggressive environments.

LEFT. The La Croix Verte roundabout where the work was carried out.
PHOTO 1. The MAPESHIELD I anodes were fastened to the steel reinforcement.
PHOTO 2. The anodes were placed at a pitch of 50 cm.

GALVANIC CATHODIC PROTECTION BY MAPEI

MAPESHIELD anodes have several advantages: they may be used as a preventative measure on new structures and on existing structures in need of repair and they may be strategically positioned in specific areas where there is a higher risk of corrosion. What is more, no maintenance is required during their normal service life and they may also be monitored during operation by installing a simple control system.
After removing the old concrete from the parts of the structures damaged by corrosion, 36 MAPESHIELD I anodes were installed along a 19.5 m stretch of the steel reinforcement requiring protection. Each anode was fastened to the structure with metallic fasteners and placed at a pitch of 50 cm.
The concrete was poured after checking the electrical continuity between the reinforcement and the anodes and making sure that enough space had been left under the anodes.
The contractors expressed their satisfaction with the work carried out. According to the head of the project, the system proved to be so effective and intuitive in terms of application, it will be taken into consideration for work on the next sites with the same kind of problem.

TECHNICAL DATA
L'Isle-Adam-Franciliennne section of the A16 motorway, France
Year of construction: 1991
Year of the Mapei intervention: 2018
Intervention by Mapei: supplying products for galvanic cathodic protection of steel reinforcement
Client: SANEF
Design: Setec Seria
Contractor: Consortium Groupement NGE / RAZEL-BEC (Kevin Vieira, Ingénieur travaux)
Mapei coordinator: Florian Houedikin, Mapei France

MAPEI PRODUCT
Galvanic cathodic protection of steel reinforcement: Mapeshield I

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

Cannes (France)

PALAIS DES FESTIVALS ET DES CONGRÈS

EVERY YEAR, THE BUILDING HOSTS MORE THAN 120 SHOWS AND 45 EVENTS, INCLUDING THE WORLD-FAMOUS FILM FESTIVAL

© Semec-Fabre

LEFT. The new stairway now allows spectators to go in and out at the same time. **RIGHT.** KERAFLEX S1 and ULTRACOLOR PLUS were used to install the porcelain tiles and grout the joints, respectively.

The Palais des Festivals et des Congrès was inaugurated in 1982 following an international request for tenders, which was awarded to the architects Hubert Bennet and Francois Druet. Since 2013 a complete restyling of the building has been ongoing. The work has to be divided into three stages and was carried out during the summer months of 2013, 2014 and 2015. The second stage, in 2014, was considered to be the most important and involved the foyer of the Grand Auditorium Louis Lumière and the Grand Auditorium itself. The foyer was completely renovated to make it larger and new flooring was also installed to replace the old carpet, along with an imposing two-way staircase. Inside the Gran Auditorium Louis Lumière – where the opening and closing ceremonies of the Cinema Festival are held – the 2,300 seats were replaced with a bespoke model designed specifically for the Palais.

LONG-LASTING FLOORS

For the complete renewal of the flooring in the foyer of the Grand Auditorium, the foyer terrace and the staircase (1,500 m^2), the flooring contractor decided to choose Mapei installation products.

As a replacement for the old carpet that was there beforehand in the foyer of the Grand Auditorium, the designer opted for flooring made from porcelain tiles, a material considered to be strong, elegant and long-lasting. The tiles chosen (measuring 120x60 cm) were in a white colour with shades of grey and were installed with grey KERAFLEX S1 adhesive with Low Dust technology, which helps to considerably reduce the amount of dust given off during mixing. This adhesive is the French counterpart of KERAFLEX MAXI S1, available on the international market.

Tile joints were then grouted with the silver-grey shade of ULTRACOLOR PLUS, a high-performance, anti-efflorescence, quick-setting and drying, polymer-modified mortar with water-repellent Drop-Effect® and mould-resistant BioBlock® technology, for joints from 2 to 20 mm wide. ULTRACOLOR PLUS was chosen not only for its excellent performance properties, but also because it is one of the products developed with Fast Track technology, which helps carry out restoration work on floor and walls very quickly.

All the joints around the edge of the floor and the expansion joints were sealed with MAPESIL AC, pure, mould-resistant, acetic, silicone sealant with BioBlock® technology.

The designer also chose the silver grey option for the sealant, the same colour as used for the ULTRACOLOR PLUS grout, to create the impression of a single colour surface.

This article was first published in Mapei & Vous no. 43, the magazine printed by Mapei France, whom we would like to thank.

TECHNICAL DATA

Palais des Festivals et des Congrès, Cannes, (France)
Original design: Hubert Bennet and Francois Druet
Year of construction: 1982
Year of the intervention: 2014
Intervention by Mapei: supplying products for installing porcelain tiles, grouting joints and sealing expansion joints
Design: Archidev (Patrick Fagnoni)
Client: Cannes City Council
Main contrator: Eiffage Construction Côte d'Azur
Photos: SEMEC-Fabre, Martek International
Installation company: Martek International
Mapei coordinator: Jimmy Fischer, Mapei France

MAPEI PRODUCTS

Bonding porcelain tiles: Keraflex S1*
Grouting tile joints: Ultracolor Plus
Sealing expansion joints: Mapesil AC

*This product is manufactured and distributed on the French market by Mapei France

For further information on products visit www.mapei.fr and www.mapei.com

Floirac-Bordeaux (France)

ARKEA ARENA

THE ARENA IS CONSIDERED ONE OF THE FINEST ENTERTAINMENT VENUES IN FRANCE AND ITS CONCRETE SHELL POSED QUITE A TECHNICAL CHALLENGE

ABOVE. NIVOPATE Fin smoothing compound was used for the finishing of the external concrete shell.
RIGHT. 350 bespoke wooden forms were made specifically for this site and then recycled.

The new Arkea entertainment hall in Floirac, a town in the Bordeaux Métropole area, was inaugurated in January last year. The Arena was designed by the architect Rudy Ricciotti and hosts around one hundred artistic and sporting events every year. Its construction proved to be quite a challenge from both an architectural and technical point of view and Mapei took part in the project by supplying various solutions and systems. Right from the very start, the client and designer wanted the construction of the Arkea Arena to be a part of a more comprehensive project of sustainable development. First, priority was given to local employment, with more than 80% of the activity carried out by enterprises based in New Aquitaine region. Then, some of the construction materials were recycled or completely reconditioned: for instance, the formworks used to form the concrete shells were mainly recycled by transforming it mainly into fuel for biomass power stations, while the remainder was used to make panels. The structure was also awarded HQ (Haute Qualité Environmentale) certification, which promotes and rewards good performance levels in terms of energy consumption and environmental impact.

A TECHNICALLY SOPHISTICATED AND COMPLEX PROJECT

All the projects designed by the architect Rudy Ricciotti are a homage to concrete, a crude material that he loves so much and manages to exalt to the full: the MuCEM (Museum of European and Mediterranean Civilisations) in Marseille, the Jean Bouin Stadium in Paris and the Jean Cocteau Museum in Menton. In the case of the Arkea Arena, Ricciotti has imaginated an enormous smooth, white pebble sitting on the banks of the River Garonne; an architectural form made up of curved lines, “perforated” by horizontal slits and illuminated at night by a LED lighting system. The main area in which shows and sporting events take place has been designed along the lines of an amphitheatre and has excellent acoustics. A system of motors allows the spectator stands to be retractable so their layout can be changed very quickly. The number of seats available varies from 2,500 to 11,300, depending on the type of event.

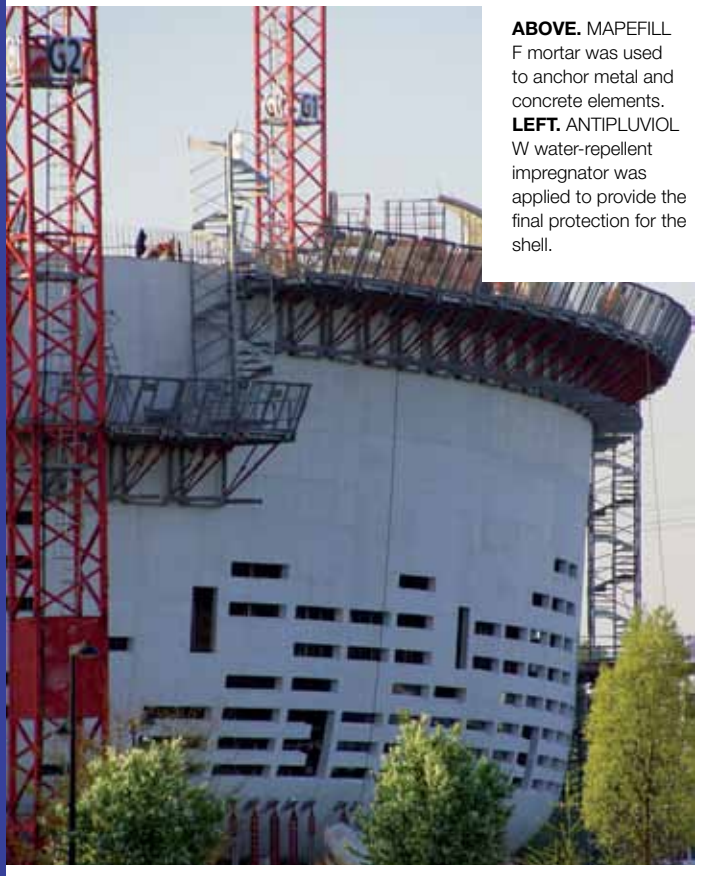
WHITE CONCRETE AT THE HEART OF THE PROJECT

Almost two years of work, 3 cranes operating at the same time on site, a workforce of 120, which increased to 200 in peak periods, 125,000 working hours and more than 10,000 m^3 of white concrete placed. These are the figures of the technical and aesthetic challenges the main contractor had to tackle in order to build this curved concrete structure, with the same shade of white extending over its entire surface.
Most stadiums and arenas for entertainment events are covered with either metal or glass, whereas here the preference was concrete. As Ricciotti declared, "We could have built the Arena using precast concrete elements assembled on site, but we would never have been able to achieve the desired effect. And this is the reason why we relied on the more complex technique of using concrete cast on site”.
Even though the technique of casting concrete on site is undoubtedly a more complex option, it allows for better control of the final result. Formulated and supplied by Lafarge Beton, the white concrete was cast directly into 350 large wooden formworks designed especially for this site over a period of ten months.
In order to get a good final result and make sure the same shade of white was created over the entire surface of the building, Mapei France Technical Services recommended to use NIVOPATE Fin and coloured NIVOPATE Fin, which are manufactured and distributed on the French market by Mapei France. These products are smoothing compounds in paste which are mixed with cement or plaster. They are easy to apply in layers from 0 to 50 mm thick and it make the final colour

IN THE SPOTLIGHT

ANTIPLUVIOL W

It is a silane and siloxane-based dispersing agent in watery emulsion, characterized by its high capacity to penetrate all absorbent mineral materials used in the building industry to make them water repellent. It provides a colourless protective coat for cementitious renders, cellular cement, facing bricks, natural and artificial stone against the eroding action of driving rain.



ABOVE. MAPEFILL F mortar was used to anchor metal and concrete elements.
LEFT. ANTIPLUVIOL W water-repellent impregnator was applied to provide the final protection for the shell.

homogeneous, depending on the type of binder used.
To complete the intervention on the shell, the white concrete surface (4.800 m^2) was protected with ANTIPLUVIOL W, a colourless water-repellent impregnator based on silicon compounds in water solution.
To carry out minor repairs on the vertical and internal surfaces (stairways, walls and columns) of some precast concrete elements, it was recommended to apply PLANITOP 350 (class R2 semi-rapid-setting mortar), PLANITOP 450 (class R4 normal-setting mortar) and PLANITOP 400 F (class R3 rapid-setting mortar). All these mortars are manufactured and distributed on the French market by Mapei France.
Another technical challenge was the the metallic structure. In fact, the spectator stands in the Arkea Arena were also made from cast concrete. The roof is supported by a structure with two main beams, with one of them 55 m in length and the other 82 m in length. To lift the beams and the sections of the framework, a 700-ton crane was required, and it took a whole month to assemble it inside the Arena. While the other cranes were positioning the last formwork, MAPEFILL F high-performance mortar was used to anchor and seal the metallic structures and pre-cast concrete stairs in place.

This article was taken from Mapei & Vous no. 48, the in-house magazine published by Mapei France, whom we would like to thank.

TECHNICAL DATA
Arkea Arena, Floirac (France)
Period of construction: 2016-2018
Period of the intervention: 2016-2018
Intervention by Mapei: supplying products for repairing concrete, protecting and finishing concrete surfaces and anchoring metal structures
Design: Rudy Ricciotti
Client: Senso (Lagardère Live Entertainment)
Main contractor: Bouygues Bâtiment Centre Sud-Ouest
Mapei distributor: Technobat Aquitaine
Mapei coordinator: Christophe Souverain, Mapei France

MAPEI PRODUCTS
Concrete repair: Planitop 350*, Planitop 400 F,* Planitop 450*
Smoothing and finishing concrete substrates: Antipluviol W, coloured Nivopate Fin*, Nivopate Fin*;
Anchoring and sealing metallic structures and concrete elements: Mapefill F

* These products are manufactured and distributed on the French market by Mapei France.

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

Do you need a substrate that's **smooth** and **ready** to receive **ceramic** and **stone** after a short time? The solution is **Planitop Fast 330**, the **cementitious** levelling **mortar** that's also perfect for installing large format ceramic tiles and stone slabs.

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MORE WORK/ INTERACTION FACILITIES FOR PROFESSIONALS OF THE BUILDING INDUSTRY

Mapei believes it is vitally important to support the professionals of the building industry, which is why it has carefully structured not only in Paris but also in Italy and other cities, providing the chance to dialogue and interact with people requiring specific information to enhance their work.
Product quality is important for Mapei: that is why the company invests in Research & Development to design eco-friendly products of the highest standard in terms of durability. But products alone are not enough: detailed information about products is required to draw up specifications and, more importantly, to use these products properly. This means training takes on a key role.

Specification Center LONDON

Officially opened in July 2015, the Mapei Specification Centre in London is completely focused on the world of design, a booming industry in the United Kingdom. It can boast a strategic location: it is, in fact, situated in the Clerkenwell district, one of the most important hubs of global design with an extremely high concentration of design/architecture firms and creative enterprises in general (see ***Realtà Mapei International*** no. 54). The Centre arranges meetings and provides training sessions for architects and designers, partly drawing on the facility's carefully targeted layout: all the Mapei product lines are on display here, with progress slabs, panels and photos of prestigious building projects showcasing the strengths and qualities of all these products.

- **Address:** 6 Great Sutton Street, Clerkenwell, EC1V 0BX, London, United Kingdom
- **Email:** clerkenwell@mapei.co.uk

Specification Center MILAN

One of the capitals of global design could not be without its Mapei Specification Centre at the Group's own corporate headquarters. This facility, located inside a large showroom, is the ideal place for meeting architects and designers. With the help of samples to make it easier to understand the products available, Mapei technicians welcome professionals and help them find the ideal solution for their requirements (see *Realtà Mapei International* no. 69). The facility is completed by its own auditorium for holding courses and seminars and a room for practical courses to help everybody working in the building industry make the right choices

- **Address:** viale Jenner 4, 20159 Milan (Italy)
- **Email:** mapei@mapei.it

Specification Center CIVITANOVA MARCHE

The Mapei Specification Centre in Civitanova Marche (Central Italy) features an ideal position to make Mapei's knowhow and solutions widely known in an area struck by earthquakes in the latest few years. The facility is structured to accommodate training courses and technical meetings. The space's flexibility and extensive displays of samples of Mapei products (used for everything from foundations to roofs) create the ideal setting for realizing designers' ideas from the earliest stages of a project.

- **Address:** via Luigi Versilia 38/40, 62012 Civitanova Marche (Italy)
- **Email:** civitanova.ufficio@mapei.it

Specification Center PISA

The facility is located in a rapidly expanding area of Pisa, extremely well connected to the Liguria region and the other areas belonging to Tuscany. It is designed to be a training centre for installers and designers offering technical/practical courses on key building issues. The samples on display allow people working in the industry to see all the solutions Mapei has to offer and actually touch them with their own hands.

- **Address:** via Gargalone 6, 56121 Pisa (Italy)
- **Email:** f.falciani@mapei.it

Specification Center ROME

This "Mapei Villa" is located in the EUR district of Rome. Thanks to various spaces devoted to miscellaneous operations, it can cater for all kinds of professionals, particularly designers, who can find out about the numerous products on display in the showroom so they can go about their work as effectively as possible. A team of technicians is ready to answer any questions regarding everything from project design to building work.

- **Address:** viale Libano 28, 00144 Roma (Italy)
- **Email:** mapei@mapei.it

Specification Center SASSUOLO

he offices and training facility, ideal for tackling issues related to the world of ceramics and the building industry in general, are located in Sassuolo, right in the middle of the Italian ceramic district. Constant interaction with ceramic manufacturers allows Mapei to upgrade its own products to help all those looking for innovation in the world of ceramics. The large training space is an ideal location for installers and technicians to learn how to use all these products.

- **Address:** via Valle D'Aosta 46, 41049 Sassuolo (Italy)
- **Email:** mapei@mapei.it

Specification Centers NAPLES and MARCIANISE

Mapei also operates in Southern Italy through its facilities in Marcianise and Naples. The offices in Marcianise include a seminar room that can accommodate approximately 100 people. 9 seminars attended by 650 professional people and 7 installation training sessions were organised in 2018. The facility located in Corso Lucci in Naples is equipped with an approximately 300 m² Specification Centre to provide people working in the building industry with all the information required to help them choose the very best products.

- **Address:** corso Lucci 24, 80142 Napoli (Italy); via Gaetano Marzotto, 81025 Zona industriale Marcianise nord (Cesena, Italy)
- **Email:** saces@saces.it

Specification Center LECCE

Thanks to a spacious training room, a showroom displaying samples of the most important Mapei products, and various offices for holding technical meetings, this is a benchmark facility showcasing Mapei's know-how to the south of Italy. Mapei staff at the centre can take on every aspect of design from the smallest constructions to the most important building operations.

- **Address:** via Adriatica, 2/B, 73100 Lecce (Italy)
- **Email:** ufficio.lecce@mapei.it

MATERA 2019 "EUROPEAN CAPITAL OF CULTURE"

"This is an important day for Matera and for Italy. It is also a proud day for Europe that is showing it knows how to acknowledge and promote its different cultures and for the people of Matera, the Basilicata region and everybody who has helped make Matera one of the 2019 European Capitals of Culture. A proud day for Italy as one of its most prominent places will be the focus of attention across an entire continent. The city also symbolises the South of Italy as it strives to innovate and grow, repairing old wounds and promoting new projects". That is what the President of the Italian Republic, Sergio Mattarella, had to say last January at the opening ceremony for the city of Matera (in Southern Italy), European Capital of Culture 2019, during which the city was magically illuminated by 2000 "little lamps". The event marked the beginning of 50 weeks during which this city will host a packed schedule of arts and cultural events. The city has been getting ready since 2014 to host this important project promoted by the European Union, and it will soon reap the rewards of all its meticulous preparations: being awarded such an honour is not just an unmistakable opportunity for financial growth, it also provides the chance to promote its historical heritage that will become made more "accessible" to ordinary people, within everybody's reach. Being European Capital of Culture will have positive repercussions on the entire region. It will enable local people to showcase their skills, boost the city's image, enhance its tourist appeal, impact positively on its cultural infrastructures and, above all, stimulate economic growth. 2019 will be an extraordinary year, not just for the so-called "City of Stones" but also for the whole of the Basilicata region, whose economy will be boosted by an estimated over 1 billion Euros. A year that will witness all kinds of different enterprises in various different realms, over three-hundred days of events specifically aimed at promoting the immense historical, artistic and innovation-driven heritage of a truly fascinating city.

"Matera, once a national embarrassment, will be the pride of Europe", so it has been frequently been written recently to sum up the distinctive history of both a city and region in southern Italy, which, until a few decades ago, were renowned for being backwards and behind the times. This area really came to fame all over the world back in 1945 when the Italian novelist Carlo Levi wrote his masterful story entitled *Cristo si è fermato a Eboli* (Christ stopped in Eboli), showing the difficult situation of people living in

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these areas back then.
Fortunately, we can now tell a totally different story about Southern Italy. The Mayor of Matera, Raffaello de Ruggieri, described the rapid process of development underway as follows: "Matera has become a symbol of a new attitude in the South of Italy, which no longer complains and is well aware of the energy being unleashed as it builds its future. We plan to invest 170 million Euros. We want to invest in people's culture, turning country neighbourhoods into digital neighbourhoods".Carefully targeted projects to promote a kind of growth that does not forget the city's past.
Mapei's contribution is a tailor-made event for its own clients and its involvement in various building projects in the city (see *Realtà Mapei International* no. 67). We will tell you all about it over the next few pages.

Research and cutting-edge materials for restoration work

AN INTERVIEW WITH GIANLUCA D'ALESSANDRO, OWNER OF D'ALESSANDRO RESTAURI

Gianluca D'Alessandro with his wife Enza Pallotta.

The D'Alessandro Restauri company has been working in the restoration sector for a number of years and took part in several projects in Matera to consolidate and restore numerous buildings and places of worship. It was also involved in work carried out on the historical paving of the city (see Realtà Mapei International no. 67).

Is it essential to have in-depth knowledge of construction methods adopted in the past to implement the right restoration techniques?
Knowing about the construction systems and materials of a building you are working on is indispensable in order to have the right approach to a restoration project. In fact, all the operational decisions that are made to carry out the work and choose which materials to use derive from this initial analysis, and they all have to be compatible with the original materials that make up the structure. What is more, each monument, even if it is situated in the same geographical location, has its own particular and distinctive characteristics. After studying a restoration project and carefully observing the monument to be restored, by exploiting all the knowledge about construction methods and specific local characteristics, you reach a level of knowledge that allows you to pick out the best products to use, after carrying out laboratory test campaigns.

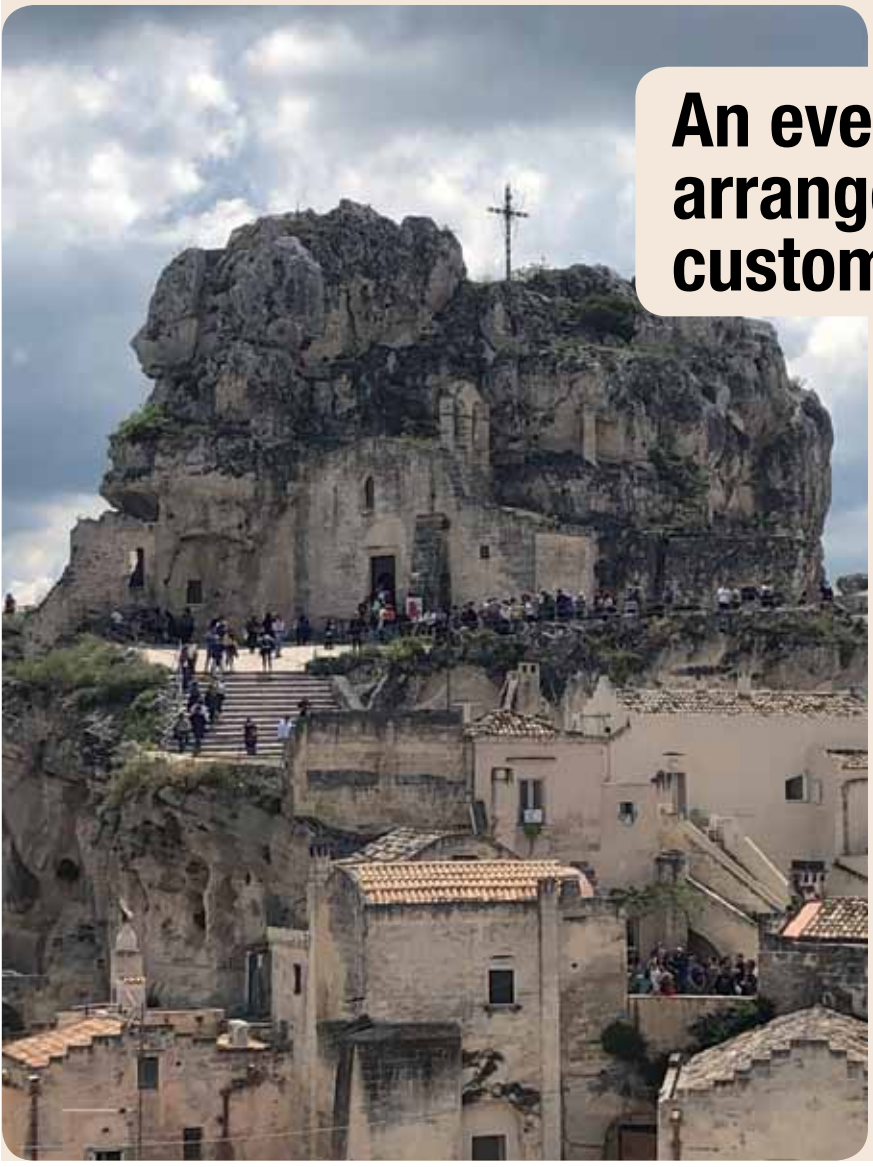
What kind of problems were you faced with in Matera when you had to intervene on buildings which were not only of considerable historical and artistic value, but also situated in such a unique location?
Firstly, the actual setting up of the site. In highly complex contexts from a morphological point of view, as is the case with Matera, it can prove to be complicated, for example, to select a suitable area for the site equipment and logistics, and then there is also the problem of transporting materials. One of the biggest problems is the presence of voids and hollows below ground level, which sometimes nobody even knows about. Besides, the particular architectural details and features of each building, the presence of highly porous materials, and the problems caused by its hygrometric conditions make restoration work a rather delicate process which require in-depth knowledge of the building you are working on.

You are also collaborating with the University of Basilicata to test various products – including those from Mapei – on three churches in Matera. How important is research work into restoration methods?
Collaborating with universities is an essential component of a company's activity, in that it forms the link between working practices and theoretical research, allowing you to raise the level of the quality of your operations. Our collaboration with the University of Basilicata involves experimental research work into new products for surface consolidation/protection and, above all, an analysis of the processes for their application. In fact, choosing Matera as a pilot site for this experimental research work is precisely the type of challenge that confirms the theory of the complexity of actions required to carry out restoration work.

When working on a restoration project, how much of a help is it to be able to count on cutting-edge products such as those supplied by Mapei?
The reliability of materials is fundamental, in terms of both their compatibility with the existing materials and the durability of the effectiveness of the intervention over the years. And this consideration becomes even more important in particularly complex situations such as the Sassi area of Matera where you also have to evaluate their state of conservation and their hygrometric conditions, which have a considerable impact on all renovation operations. The way the Mapei network is organised is very important, with the availability of specialised technicians in various sectors. The support provided by the Mapei Research laboratories is quite remarkable, in terms of both professionalism and the instruments they are equipped with, and they are available to work alongside our team to help them choose the most compatible and reliable cycles for each problem we are faced with. The reliability of a historical brand, one which is open to research and innovation, is a very important prerogative in order to conserve the historical and artistic heritage we are commissioned to work on.

What was the most complex and interesting project you have worked on?
The Cathedral of Santa Maria della Bruna, without a doubt, and not only for the complexity of a monument dating back almost 800 years, which certainly put to the test all those involved in the work due to the presence of different substrates and different coating and decorative layers, but also for the need to carry out restoration work by following a "logical thread", that is, to make each and every historical feature recognisable without "encroaching" on any of the others. The intervention on Palazzo Zicari (see the article in the previous pages) was also an interesting challenge, including of a structural nature, as well as the work we carried out on several churches in the Sassi area, because of their historical context. I have always said that a complex job that has been carried out well is a team effort by a group of designers, contractors, craftsmen, technicians, electricians, restorers, carpenters, builders and suppliers that have all worked with passion, dedication and professionalism. The work carried out by Local Heritage Authorities is also very important; they monitor all restoration work. Using Mapei materials is a winning choice because these products are renowned and their validity is acknowledged by all Local Heritage Authorities.

An event specially arranged for Mapei customers



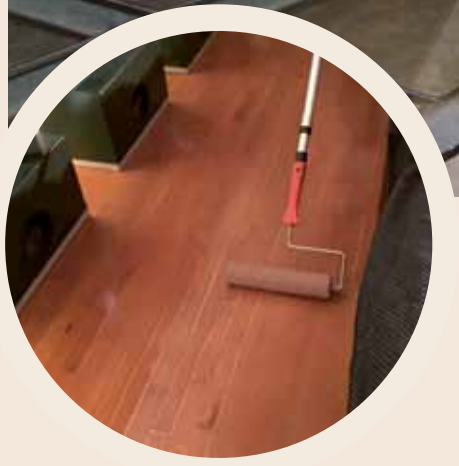
On 1st June, a group of Mapei customers from southern Italy took part in an exclusive event in the striking setting of Casa Cava in Matera, (see article on the following page).
After enjoying an aperitif, the guests moved on to the theatre where, after a speech by Marco Squinzi, the Group's Research & Development Director, the racing car driver, Rachele Somaschini, talked about her battle against cystic fibrosis. The guests then watched a video about the city of Matera and numerous building projects carried out with the help of Mapei products. The guests were then treated to a show entitled "Tonight we will be talking about love", during which the Italian actor Michele Placido and the singer Daniela Sornatale entertained the audience with poems and monologues taken from works by Dante Alighieri, Pablo Neruda and Eugenio Montale and songs by the Italian singer Mina.
The following day guests visited the city in the company of tourist guides and Mapei experts, who described various operations carried out using the company products on a number of building projects, as you can read in the following pages.

A few pictures showing the event and tours organised for Mapei guests on 1st and 2nd June in Matera. The event provided the chance to strengthen ties with clients from the south of Italy in the European Capital of Culture.

IN THE SPOTLIGHT

ULTRACOAT HIGH TRAFFIC

It is a two-component, 100% polyurethane water-based varnish with high resistance to wear and abrasion and with low emission of volatile organic compounds (VOC) for wooden floors. It is used as a highly protective, wear and abrasion-resistant finish for solid and pre-sanded wooden floors and wooden floors requiring repair. Suitable for use in civil and commercial environments, including those subject to extremely high pedestrian traffic (public offices, shopping centres, airports, exhibition halls, etc.).



CASA CAVA

WOODEN FLOORING RETURNS TO ITS ORIGINAL SPLENDOUR AND FUNCTIONALITY IN THIS UNIQUE THEATRE DUG INTO THE ROCKS

It is difficult to imagine that, in a not too distant past, Matera, the 2019 European Capital of Culture, was considered to be a symbol of backwardness and underdevelopment in the southern part of Italy. And yet the evocative Sassi, or cave dwellings with their timeless charm dug into the tuff rock-face of certain areas of the town, had been abandoned for more than thirty years and were in a precarious state. It was only in 1986 that legislation was passed by the Italian Government to decree the recovery of the Sassi, marking the starting point of the rebirth of this antique city which, in 1993, was declared a UNESCO World Heritage Site.

Amongst the numerous initiatives promoted over the years was the recovery of Casa Cava, an underground architectural complex dating back to post-medieval times: an ancient pit-like cave, part of which was also used as a dwelling place.

The complex, which had been abandoned many years previously and used as a tip, was handed back to the city in 2011 after being completely restored. The restoration work commenced in 2007 under the guidance of the Sassi Office of Matera, and when it was handed back it had been completely transformed into an unusual and spectacular space of more than 900 m^2, featuring a theatre and a cultural centre, with an auditorium inside the complex with seating for 140 spectators. It was a very delicate architectural intervention, harmonious and at the same time modern, so as not to alter the charm of the ancient tuff shell (which still bore the visible marks of the extracted stone), while adapting it to fulfil its new functional requirements.

Wooden floors in the theatre were renovated by using ULTRACOAT PREMIUM BASE basecoat and ULTRACOAT HIGH TRAFFIC varnish. This system ensured that the renovated floor coudl meet the C_{fl}-s1 fire reaction rating.

A successful restoration that received official recognition: in fact, Casa Cava received an award at the 13th edition of the prestigious International Award Architecture in Stone.

RENOVATING WOODEN FLOORING

Mapei products were supplied for the restoration and renovation of 200 m^2 of wooden flooring made up of 14 mm thick solid beech wood planks, all set in a raised steel support structure over the substrate.

One of the main requirements was that the wooden floor needed to have C_{fl}-s1 fire reaction rating and this was met by employing Mapei products and following a specific procedure.

The first step was to sand the wooden panels with sanding disks. The surfaces were then treated with a coat of ULTRACOAT PREMIUM BASE two-component, water-based basecoat with high insulating properties, very low emission of volatile organic compounds and zero NMP (N-Methyl-pyrrolidone) content, which is part of the ULTRACOAT line for finishing wooden floors.

After sanding the surface of the wooden flooring with 180 grit, the cycle was completed by applying two coats of ULTRACOAT HIGH TRAFFIC two-component, water-based varnish (10 gloss).

TECHNICAL DATA
Casa Cava Sasso Barisano, Matera (Italy)
Year of renovation: 2017
Year of the Mapei intervention: 2017
Intervention by Mapei: supplying products for renovating wooden floors
Client: Matera City Council
Design and works direction: Emanuele Lamacchia
Main contractor: Costruzioni Industriali Srl
Installation company: Montillo Parquet Srl
Mapei distributor: Monitillo Parquet Srl
Mapei coordinators: Michelangelo Occhiogrosso, Francesco Dragone, Giovanni Villani, Mapei SpA (Italy)

MAPEI PRODUCTS
Renovating wooden floors: Ultracoat Premium Base, Ultracoat High Traffic

For further information on products see www.mapei.com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Matera: from history to new projects

A SELECTION OF RECENT RENOVATION, CONSOLIDATION AND REFURBISHMENT WORKS IN THE CITY

1. TRAMONTANO CASTLE

Tramontano Castle is located on Lapillo Hill, overlooking the old town centre of Matera, and has been the subject of ongoing restoration work since 2008. To create a new waterproofing layer MAPEFLEX BLACKFILL bitumen sealant has been used under the stone covering, MAPESLOPE mortar has been used to even out the screed, all the expansion joints have been waterproofed with MAPEBAND tape, MAPELASTIC TURBO mortar and MAPETEX SEL fabric, and the stone covering has been installed with KERAFLEX MAXI S1 adhesive.

2. CHURCH OF SAN PIETRO CAVEOSO

The church can be found at the base of a cliff known as the Rupe dell'Idris, overlooking Sasso Caveoso and, together with Sasso Barisano, make up the area known as the "Sassi di Matera". Over the centuries the church has been modified several times and, in the 17th century, it was completely refurbished. In 1987 the Basilicata Region Heritage Authority launched a new series of works to consolidate and restore the structure. Products from the MAPEWRAP SYSTEM line were used for the work on the tuff-covered pillars, the ideal solution for the repair and static strengthening of structures in poor condition.

3. MUSEUM-WORKSHOP OF RURAL CULTURE

The Museum-workshop of Rural Culture in Matera was recently extended to twice its former size. MAPE-ANTIQUE STRUTTURALE NHL mortar was used to consolidate large portions of the masonry and PLANITOP HDM RESTAURO pre-blended, fibre-reinforced, high-ductility hydraulic lime (NHL) and Eco-Pozzolan based mortar, combined with MAPEGRID G 220 mesh, was used for structural strengthening work. CONSOLIDANTE ETS was


5


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used to consolidate internal surfaces in all the interiors.

4. STREET PAVING - VIA D'ADDOZIO

The aim the renovation work on the paving in the old town centre (see *Realtà Mapei International* no. 67) was to conserve its historic and artistic value by re-using the original materials to get a better colour match and a more regular layout. The 7 cm thick flagstones were installed with cement mixed with PLANICRETE synthetic-rubber latex, while MAPESTONE PFS2 pre-blended mortar was used to grout the joints.

5. COMMUNAL CINEMA AND THEATRE

The communal cinema and theatre inside Palazzo dell'Annunziata, which dates back to the eighteenth century, was renovated. The floor inside the theatre on the first floor was coated with the ULTRATOP LOFT system. The substrate was first prepared with PRIMER SN, fully broadcast with QUARTZ 0.5 quartz sand and MAPENET 150 mesh was embedded into the primer.
A first coat of ULTRATOP LOFT F, coarse-textured cementitious paste tinted with UTRATOP EASYCOLOR colouring solution, was then applied. After its drying, the surfaces were sanded, dust was removed and PRIMER LT was applied followed by a coat of ULTRATOP LOFT W.
ULTRATOP BASE COAT was used to regularize the coat absorption, followed by MAPEFLOOR FINISH 58 W to finish off the surfaces.

6. HIGHER ACADEMY OF RESTORATION (FORMER SANTA LUCIA CONVENT)

The new base in Matera for the Higher Academy of the Institute of Conservation and Restoration was inaugurated in 2017 inside the former Santa Lucia Nova Convent.
The internal façade was restored with MAPE-ANTIQUE ALLETTAMENTO salt-resistant masonry mortar.
Resin flooring was installed inside the institute using the epoxy coating system MAPEFLOOR SYSTEM 35 F, which comprised the application of a mix made from natural aggregates and MAPEFLOOR I 350 SL epoxy binder pigmented on site with MAPECOLOR PASTE (Ral 1015) colouring paste.

7. MULINO ALVINO PASTA WORKS

The home of the Mulino Alvino pasta works is a 19th century building. Renovation works included waterproofing the roofs. After removing the roof coverings, the cuts in the previous bitumen membrane were sealed with MAPEFLEX BLACKFILL bitumen sealant. After building a screed with MAPESLOPE, the substrate was waterproofed with two layers of MAPELASTIC and MAPENET 150 mesh embedded between them. The main facades were treated with SILEXCOLOR PRIMER, mixed with red-coloured oxides.

8. SPORTING CLUB MATERA

Sporting Club Matera offers three tennis courts, two indoor and one outdoor, which were recently transformed by resurfacing them with resin (they were previously in synthetic grass) using systems from the MAPECOAT TNS range. For this particular project the products used included MAPECOAT TNS PROFESSIONAL acrylic resin-based flooring system, which includes MAPECOAT TNS WHITE BASE COAT semi-flexible acrylic resin basecoat and a finishing coat of MAPECOAT TNS FINISH 3. The playing areas of the courts were marked out with MAPECOAT TNS LINE.


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9. PALAZZO CAROPRESO

In 2018 the tuff facades of Palazzo Caropreso, dating back to the nineteenth century, were completely restored.
The surfaces of the building, which were damaged by mould and mildew, were treated with SILANCOLOR CLEANER PLUS hygienising detergent and MAPE-ANTIQUE ALLETTAMENTO salt-resistant masonry was used to fill the larger gaps in the surfaces.
The surfaces were then finished off with coloured SILEXCOLOR BASE COAT silicate undercoat and silicate-based SILEXCOLOR PAINT.

10. BELL-TOWER OF SANTA MARIA DELLA BRUNA CATHEDRAL

The bell-tower of this cathedral has undergone restoration and consolidation work. Bands made from MAPEWRAP C UNI AX 600/40 carbon fibre fabric were applied on the structure; the pinnacle was strengthened with MAPE-ANTIQUE STRUTTURALE NHL reinforced with MAPENET EM 30 alkali-resistant glass fibre mesh; the ashlars for the exposed walls were pointed with MAPE-ANTIQUE ALLETTAMENTO combined with MAPEI STEEL DRY 316 and the surface of the façade was protected with ANTIPLUVIOL S water-repellent impregnating finish. The cathedral itself had previously been involved in restoration works which made use of Mapei products for consolidating the wooden beams and truss, strengthening the dome over the presbitery, repairing masonry and installing marble floors (see *Realtà Mapei International* no. 67).

11. ST. ELIGIO CHURCH

Restoration work was completed in March this year on the exterior of the church dedicated to St. Eligio.
Work included restoration of the main facade of the church, which involved the use of MAPE-ANTIQUE ALLETTAMENTO, a salt-resistant masonry mortar made from natural hydraulic lime and Eco-Pozzolan. The façade was then protected with ANTIPLUVIOL W, a colourless, silane and siloxane-based water-repellent impregnator in watery emulsion.

12. MUSEUM OF DEMOGRAPHICS AND ETHNOGRAPHIC ANTHROPOLOGY

The system of itineraries through the Museum of Demographics and Ethnographic Anthropology is an articulated project regarding the Sasso Caveoso.
The floors of the itineraries were coated with the MAPEFLOOR I500 W epoxy formulate in water dispersion. After applying a first coat of MAPEFLOOR I500 W (fully broadcast with QUARTZ O.5), a second coat was applied, using the same product, this time tinted with MAPECOLOR PASTE (RAL 1015). MAPECOAT I600 W was then applied to form a final protective coat of the surface.

13. ZICARI HOTEL

An antique palazzo, which had been built in the Sasso Caveoso and abandoned for years, has been transformed into a hotel by carrying out restoration, renovation and consolidation work. Mapei products were supplied for structural strengthening work, finishing operations and the installation of terracotta floorings.
While carrying out the strengthening work, a layer of render was applied made from MAPE-ANTIQUE STRUTTURALE NHL mortar reinforced with MAPENET EM30 alkali-resistant glass fibre mesh; MAPE-ANTIQUE ALLETTAMENTO mortar was also used for masonry renovation.


12


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MAPEI PRODUCTS AND SYSTEMS FOR STRENGTHENING AND PROTECTING BUILDINGS

Do you need to renovate your home, a shop or an industrial building? Are you looking for quality products and innovative solutions? Choose Mapei, **choose reliability**, **durability** and r**espect for the environment**.

Strengthen & Insulate with Mapei and take advantage of tax deductions (**of up to 85%**) for combined anti-seismic upgrading and energy efficiency interventions.

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MAPEI®
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

MAPECOAT broadcast worldwide

THE RICCIONE-SAN MARINO TIME TRIAL BEGAN ON THE NEW PINK-COLOURED CYCLE PATH BY MAPEI

Mapei's range of products for the building industry includes solutions that are ideal for sports facilities of every type and size, including, of course, cycle paths. In view of the 2019 Tour of Italy (Giro d'Italia), Mapei has studied a new product for covering the cycle path along the Lungomare della Libertà promenade in Riccione (Central Italy). The ninth stage of the Tour, an individual time trial from Riccione to San Marino (34.800 km) initially set off along the cycle track in Lungomare della Libertà. As a tribute to the Tour of Italy (which has pink as its symbolic colour), Riccione City Council asked for Mapei's help in building the cycle path in the colour pink.

Mapei technicians suggested using MAPECOAT TNS EXTREME, a new, rapid-filming, two-component, epoxy-acrylic coating ideal for cycle-pedestrian paths and road surfaces. MAPECOAT TNS EXTREME's most distinctive traits are its resistance to foot traffic, high durability and high performance. It also dries very quickly, is extremely versatile, and available in any desired colour.
MAPECOAT TNS EXTREME was supplied in the colour pink 80118 from the Mapei Master Collection to cover an area of 2300 m^2 over a 1000-m stretch of cycle path. MAPECOAT TNS PRIMER EPW was also used to apply MAPECOAT TNS EXTREME to the existing

A new, rapid-filming, two-component, epoxy-acrylic coating for cycle-pedestrian paths and road surfaces

asphalt substrate. This is a two-component, epoxy resin-based primer in water dispersion which can be used as adhesion promoter for absorbent, porous cementitious substrates, existing playing surfaces, as well as a primer for products from the MAPECOAT TNS line.

Despite the rainy weather, thousands of sports fans lined the first part of the route as the riders sped along the pink cycle path. People on all five continents could admire TV footage of the cycle path either live or recorded. YouTube and social networks also provided further coverage. The Riccione-San Marino time trial was won by the Slovenian rider Primoz Roglic and the Italian Valerio Conti wore the pink jersey at the end of the race at Monte Titano. The 2019 Tour of Italy ended in Verona and was won by Richard Carapaz.

TECHNICAL DATA
Lungomare della Libertà cycle path, Riccione (Italy)
Year of the intervention: 2019
Intervention by Mapei: supplying products for laying the cycle path
Client: Riccione City Council
Main contractor: Pesaresi
Flooring contractor: Olimpia Costruzioni Srl
Photos: Luca Bettini, Giulio Semprini
Mapei coordinators: Marco Cattuzzo, Fabio Costanzi, Angelo Nobili, Mapei SpA (Italy)

MAPEI PRODUCTS
Preparing the substrates:
Mapecoat TNS Primer EPW
Laying the cycle path: Mapecoat TNS Extreme

For further information on products see www.mapei.com

50 YEARS OF POLYGLASS

THE COMPANY SUPPLIES WATERPROOFING MEMBRANES ALL OVER THE WORLD

Founded in 1969 in Ponte di Piave (Northern Italy), Polyglass is one of the leading European manufacturers of waterproofing membranes. Polyglass celebrates an extremely important anniversary in 2019: 50 years of business and innovation in the field of waterproofing in which research, technological progress, a tailored customer service and respect for both people and the environment are the underlying values that have allowed the company to make such an impact on both the Italian and international markets. It has achieved this success thanks to women and men whose professionalism and expertise have made it possible to study, manufacture and sell high-quality materials admired and exported worldwide.

An international enterprise whose DNA and background are 100% Italian. Polyglass has been operating with great passion, intuition and dedication since the 1960s. After beginning as a craft industry, the company soon developed into an industrial concern and has been operating worldwide since the end of the 1970s, most notably in the United States. Intent on always coming up with the very best solutions, the Polyglass team has gradually focused more and more on scientific research and technological progress. Today Polyglass is part of the Mapei Group with eight offices in Italy, United Kingdom, USA and globally, so that it can provide technical assistance on-site all over the world.

Its anniversary year officially began at a Sales Staff Meeting hosted by Veronica Squinzi, President of Polyglass and Global Development Director of the Mapei Group.

The company's 50th anniversary provides an important opportunity to emphasise its transparency and professional ethics in developing innovative solutions for waterproofing and constantly improving its business operations. "Adding value" has always been at the very focus of Polyglass mission, added value that the company pledges to apply to all of its products: bituminous membranes, self-adhesive membranes, ultra-light membranes, synthetic membranes in PVC-P and TPO/FPO, and a whole range of waterproofing accessories. Incoming raw materials used for making Polyglass products undergo daily laboratory testing. Tests are also carried out both during the manufacturing process and on the finished products. Environmentally-friendly changes have been introduced into Polyglass plants that manufacture over 100 million m² of membranes annually all over the world, all certified in accordance with leading international standards. Hard work, enthusiasm, attention to detail and constant scientific research have made Polyglass one of the most important international companies in its sector.

100
Million m²
MEMBRANES MANUFACTURED WORLDWIDE

2
Billion m²
WATERPROOFED ROOFS WORLDWIDE

500
Staff
WORLDWIDE

2008
THE YEAR POLYGLASS JOINED THE MAPEI GROUP

A few pictures showing the special events celebrating the company's anniversary this year.


MEAZZA STADIUM – MILAN (ITALY)


OKURA HOUSE - AUCKLAND (NEW ZEALAND)

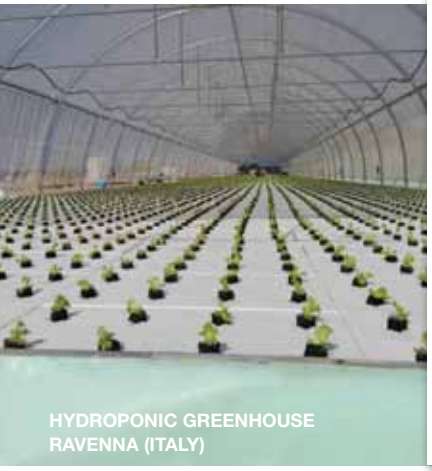

ZERO PAVILION, EXPO 2015 – MILAN (ITALY)

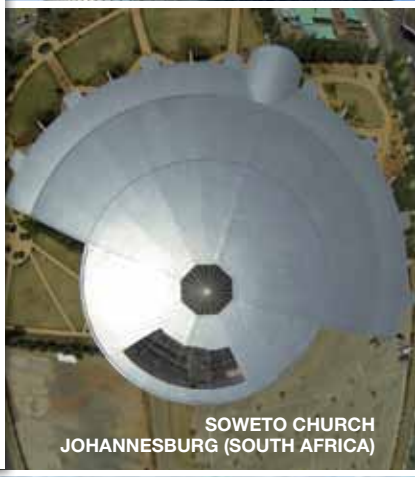

SPORTS ARENA – PADUA (ITALY)

Global operations

Polyglass been involved in numerous prestigious building projects over the last few years. They include the "doubling in size" of the Panama Canal, a project that included the use of approximately 800,000 m² of special synthetic membranes (equivalent in size to over 100 football pitches) to waterproof the huge water basins of the Canal. MAPEPLAN synthetic membranes were also used to waterproof the 55,000 m² roof of the Siemens plant in Fürth (Germany); BROOF-certified fireproof products were applied in the Padua Sports Arena; several Polyglass solutions were also used in the Okura House in New Zealand, on the roofs of Giuseppe Meazza Stadium in Milan (a landmark for football in the city), in the structures of the Zero Pavilion at the Milan Expo (designed by the architect Michele De Lucchi), as well as in the innovative 99,000 m² hydroponic crop-growing greenhouses in Ravenna (central Italy) and the hanging garden in Viale Sarca in Milan. Bituminous membranes were also used to waterproof the roofs of the Generali Tower, one of the three skyscrapers in the City Life neighbourhood of Milan, designed by the Zaha Hadid studio.
The roof of Soweto Church in Johannesburg (South Africa) was waterproofed using a special protective paint (POLYPAINT ALU) from the Polyglass Special Products range that provides supplementary solutions.


GENERALI TOWER – MILAN (ITALY)


HYDROPONIC GREENHOUSE
RAVENNA (ITALY)


SOWETO CHURCH
JOHANNESBURG (SOUTH AFRICA)


HANGING GARDEN – MILAN (ITALY)


PANAMA CANAL – PANAMA


SIEMENS PLANT – FÜRTH (GERMANY)

Cape Town (South Africa)

CAPE TOWN SILOS

INNOVATIVE WATERPROOFING PRODUCTS FOR REDEVELOPING A FORMER INDUSTRIAL AREA

Polyglass, a Mapei Group's subsidiary, supplied branded waterproofing products for the foundations and roofs of a prestigious redevelopment project in the Silo District in Cape Town, South Africa. This monumental project, inaugurated on the 22nd of September 2017, is an excellent example of the conversion of an industrial area, in this case the historical industrial port area and waterfront in Cape Town. Work on the Grain Silo got underway in 2013 when the owners of the Victoria & Alfred Waterfront Holdings were looking for a suitable destination for this imposing, symbolic structure that had been a feature of the city skyline for decades. Since the start of the 1990's, this former warehouse dating back to 1921 with its imposing 57-m-high structure, had been the capital's commercial centre and a supply, storage and export hub for the wheat grown and harvested in the country. Consisting of 42 concrete silos located near the historic Victoria & Alfred Waterfront area of the city, it now attracts up to 100,000 visitors every day.

The new Grain Silo, which is situated inside the Silo District, was created thanks to the collaboration between Victoria & Alfred Waterfront Holdings and Jochen Zeitz, a German manager and owner of one of the world's most prestigious collections of contemporary African art.

Development of this project was awarded to the Heatherwick design studio from London, which came up with a plan to redevelop the structure and create a home for the Zeitz Museum of Contemporary Art Africa (Zeitz MOCAA), the biggest museum in the world for contemporary African art.

The Grain Silo complex extends over an area of 9,500 m², 6,000 of which are used for 80 art galleries, a rooftop sculpture garden, storage areas, bookshops, reading rooms and bars. The top 6 floors are set aside for rooms for The Silo Hotel.

Heatherwick deisgn studio decided to conserve the industrial character and memories of the building by highlighting the geometric forms of the concrete silos and embellishing them with modern materials.

The Silo District includes an entire area of 80,000 m² made up of various new structures: Silo 1 is a commercial building and the head offices of Allan Gray (a major South African investment company), Silos 2 and 3 have 31 and 79 apartments, respectively, Silo 4 is home of the first Virgin Classic Health Club in the province, Silo 5 has been turned into office space and, lastly, Silo 6 has been converted into the Radisson RED Hotel. The complex itself has won numerous awards (six SAPOA, or South African Property Owners Association awards, and three Best Overall awards) for its excellence in the real-estate sector, commercial profitability, aesthetics, innovative design, functionality and environmental sustainability.

A partial view of the new Silo District in Cape Town.

Waterproofing work on one of the terraces in the Silo District.

The foundations for Silo 1 from above.

Application of a REOXTHENE® membrane in one of the silos.

WATERPROOFING AT DIFFERENT LEVELS

Because of the particular forms involved and the sheer size of the project, the designers specified the use of high-quality products that would guarantee durability, elasticity and excellent mechanical properties. The best solution to comply with all these requirements was a waterproofing system made up of products from the REOXTHENE® and ADESO® lines. These products have been available on the South African market for more than ten years and have already been used for a number of important projects. What is more, EVOLIGHT S and SPIDER P have also been awarded Agrément South Africa certification (No. 2017/557 and No. 2018/574, respectively) for waterproofing non-combustible substrates, such as flat or sloping (<60°) roofs, terraces, balconies and various other types of roofs, foundations and retaining walls. The intervention by Polyglass involved all the waterproofing work at different levels in numerous buildings of the district: from the roofs of the buildings to external piazzas, and from terraces to structures below ground level for the underground carparks. For the paved roofs with a heavy protective layer, the waterproofing system was made up of a double layer of 3 mm and 4 mm EVOLIGHT S membrane. For the green roofs and the structures below ground level for the underground carparks, on the other hand, a different two-layer system was adopted, this time with a first layer of EVOLIGHT S and a second layer of 4 mm ANTIRADICE LIGHT P. These membranes are part of the REOXTHENE® line and are made from the latest generation of distilled bitumen-based compound with ultralight technology, and a high percentage of polymers to guarantee several advantages, including a higher level of durability over the years. ANTIRADICE LIGHT P is a dual-function, plastomeric membrane: apart from waterproofing structures, it is also resistant to root penetration and is certified as compliant with EN 13948 standard. EVOLIGHT S and ANTIRADICE LIGHT P are also recommended for use on foundations to prevent rising damp.

Another waterproofing product used for the roofs was SPIDER P, a plastomeric membrane from the ADESO® line which, thanks to its self-adhesive backing, can be installed without using heat or a blow-torch. SPIDER P has excellent dimensional stability, mechanical properties and is easy to work with on site.

By using Polyglass membranes, the structures of this ambitious redevelopment project in the Silo District will remain protected against water infiltrations for years.

TECHNICAL DATA

Cape Town Silos, Cape Town (South Africa)
Year of construction: 1921
Period of the intervention: 2013-2017
Intervention by Polyglass: waterproofing roofs and underground structures
Client: Victoria & Alfred Waterfront Holdings (Pty) Ltd
Design: VDMMA (Van Der Merwe Miszewski Architects), Peerutin Architects, Rick Brown Architect, Jacobs Parker Architects Heatherwick, Heatherwick Studio
Contractors: WBHO, NMC and Group 5
Waterproofing companies: Haefele waterproofing, Storm waterproofing
Waterproofing consultant: Freddie Mc Lennan, Waterproofing Warehouse Pty Ltd
Polyglass coordinator: Andrea Storani, Polyglass SpA (Italy)

POLYGLASS PRODUCTS

Waterproofing paved roofs: Evolight S
Waterproofing roofs and structures below ground level: Antiradice Light P, Spider P

For further information on products see www.polyglass.com

INFRASTRUCTURES, A REAL DRIVER OF GROWTH FOR AFRICA

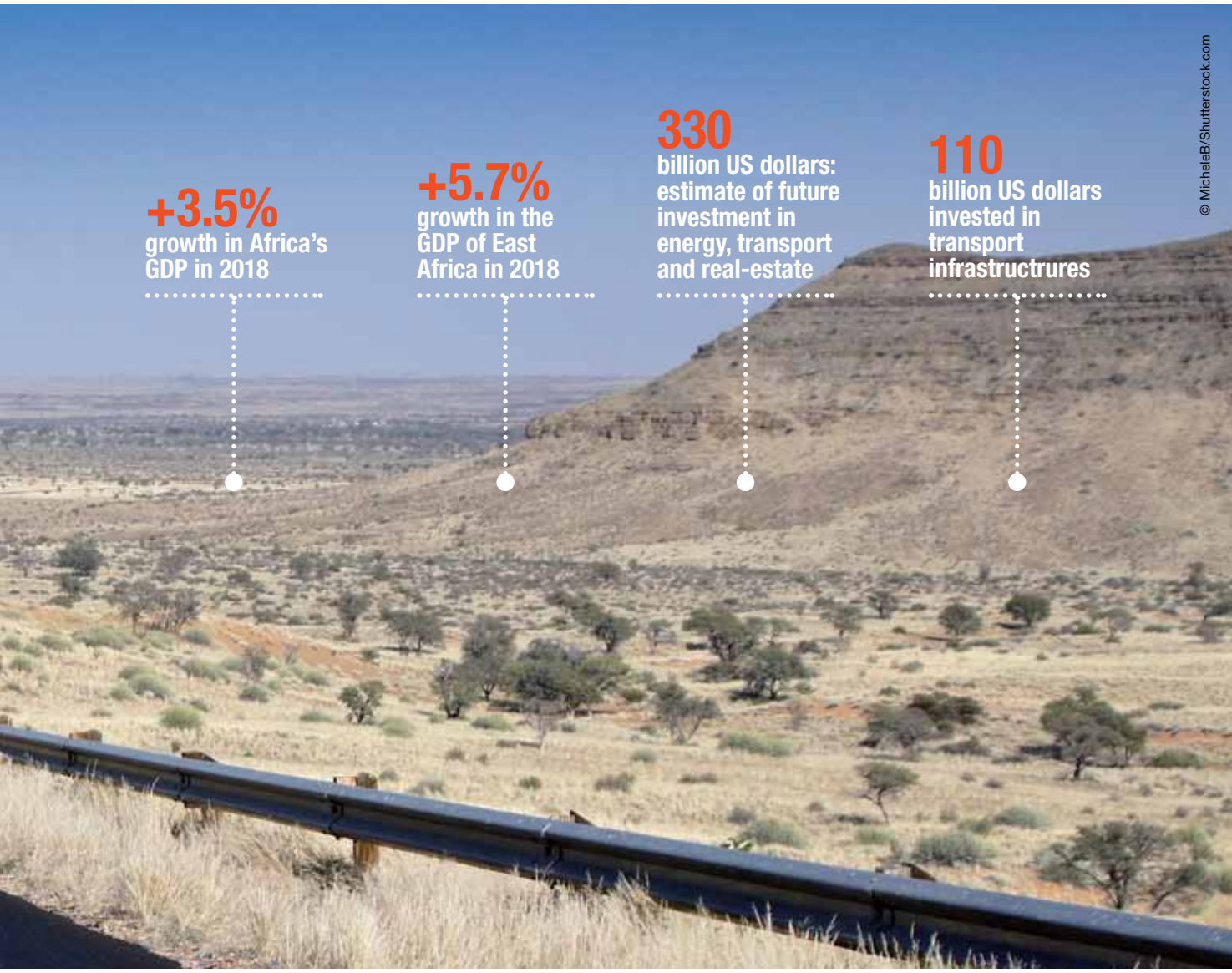
MAPEI PLANS TO BE A LEADING PLAYER IN PROJECTS AIMED AT BOOSTING THE CONTINENT'S TRANSPORT, ENERGY AND REAL-ESTATE INDUSTRIES

There is an ancient Ethiopian proverb that says: "The elephant does not limp when walking on thorns".

For whoever had the opportunity to visit the African continent it is easy to imagine the sunset in the savannah, and the peace at the end of a day as a line of elephants slowly but steadily walk to reach their place. One step after the other, without running but never stopping nor stumbling.

Mapei's road to Africa started in the desert of Dubai almost ten years ago. At that time the local market of the UAE was badly hit by the effect of the economic crisis which originated in the US. The real estate market, that was enjoying a booming, speculative phase, saw a sharp downturn with residential prices in the Emirate of Dubai falling by more than 50% over a period of a few months. In those days Mapei was opening its brand-new production facility in Dubai Investment Park, the first investment of the Group in the Middle East. Notwithstanding the difficult situation of the market, Mapei has continued to invest in people, infrastructure and innovation following on from the original project and the Dubai-located subsidiary has now become the headquarters for the region. Today, after ten years of continuous growth, Mapei in Dubai is well equipped with a strong regional team allowing the Group to move towards the African continent. Africa is actually not entirely new to Mapei, as the Group has been already present with a local subsidiary in South Africa since 2009 and in Egypt through Vinavil who manufactures raw materials in Suez. Mapei has also worked on mega projects such as the Grand Ethiopian Renaissance Dam (see the dedicated article in this issue of the magazine). It's now the time to take further steps forward.

Africa represents a huge opportunity for the Mapei Group. The current population of the Sub-Saharan region is already two times the one living in Europe (only 50 years ago it was exactly



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the opposite) and experts estimate that it will double in the next 30-40 years reaching two billion people. If one adds the almost 200 million people currently living in North Africa, a picture begins to emerge showing how the world focus is moving South. Overall Africa's economy continues to strengthen reaching an estimated 3.5% GDP growth in 2018. Looking closer at the continent, Eastern Africa countries are leading this growth reaching +5.7% in 2018 and estimated to exceed +6% by 2020. Northern African countries, with Egypt leading, are following with almost 5% GDP growth in 2018 and expected to be accountable for over 40% of the total African growth in 2019. Their contribution of investments to GDP growth has more than tripled in the last 3 years, reaching almost 50% of the total.

An important driver of this growth is represented by the strategy of integration among the different countries in the African continent decided and put forward by several African political leaders: a borderless Africa, more competitive in the global trade and with accelerated growth. African integration means reducing the infrastructural gap, investing in roads, ports, railways, pipelines as well as reducing tariff and non tariff barriers among the members. A number of Trade Agreements and sub-region organizations have been signed and created by several African countries like the Common Market for Eastern and Southern Africa (COMESA) or the East African Community (EAC): such agreements have started reducing or even eliminating duties among members but the road for an integrated market is still long.

The infrastructural gap in Africa is still huge considering, for example, that Africa's density of paved road is just one fifth of the world average. For this reason, 40% of the 500 most important projects in the continent are related to transport, accounting for 110 billion US dollars: it is almost the same amount as projects related to energy and real estate. A total value of 330 billion US dollars, 60% of which located in East or North Africa.

With the establishment of new subsidiaries in Egypt and Kenya, Mapei wants to be an active player in this development, bringing its quality, technology and technical support to the African construction industry. The road will be full of thorns but, like the Ethiopian elephant, our step will be steady and sure.

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

Cairo's big building plans

MAJOR BUILDING OPERATIONS AND A BOOST FOR THE URBAN-RESIDENTIAL BUILDING INDUSTRY

According to Oxford Business Group, the construction sector in Egypt remains one of the most important contributors to the domestic economy.

A large part of the government's growth strategy after the 2011 revolution focuses on heavy spending on new projects, from the New Administrative Capital to the Suez Canal Economic Development Zone. This government-led stimulus has benefits beyond the potential to boost economic growth: many projects will fulfil a real need within the country, from mitigating the massive housing deficit to improving the domestic transport network.

For example, the power projects in the pipeline in Egypt are worth 117.4 billion US dollars and transport projects are worth 57.4 billion US dollars. In total, the country has a projects market which is worth 395.7 billion US dollars. Construction takes the largest share of deal values, with projects worth 129 billion US dollars.

Given all these demand drivers, it is perhaps unsurprising that the Egyptian market is forecast to remain on an upward curve for some time to come. According to a forecast by Timetric, a business information service, the sector is expected to grow at a compound annual rate of 8.03% between 2017 and 2021.

The government's plans for city and home building alone should provide a steady stream of contracts to many local firms. The New Urban Communities Authority (NUCA), a newly established government body overseeing the development of Egypt's new cities, has already started working on numerous projects, including developments in Al Alamein City, Assiut Hill, the New Administrative Capital and West Qena. There are 11 Egyptian contractors working on these major projects, including national heavyweights Orascom Construction and Arab Contractors. Nuca is overseeing the completion of 17,000 units at the new site. Moreover, Mostafa Kemal Madbouly, the current Prime Minister of Egypt, confirmed during a local construction conference in March 2017 that there are several projects scheduled for completion in the lead-up to 2022 which are worth over 65.9 billion US dollars.

Numerous building projects are currently underway or have been completed in Egypt, such as the new Egyptian Administrative Capital; the Al-Alamain Development project aimed at creating a "second Alexandria in Egypt" as an international tourist destination; the new Economic Zone along the Suez Canal, which over 80 Chinese companies are involved in.

Looking further south, it can clearly be seen that the building industry in the whole of East Africa will grow at a notable rate over the next ten years due to the high number of projects already under way, such as the standard gauge railway line connecting Mombasa to Nairobi and Kenya to Uganda, Rwanda and South Sudan; the LAPSSET Project aimed at linking Lamu Port in Kenya to South Sudan and Ethiopia; Lamu Port itself; the construction of various motorways in Kenya, Sudan and Ethiopia; a number of "resort cities" such as Lamu, Isiolo and Lokichogo and airports serving them; Konza Tech City in Kenya; the extension to power stations for exploiting geothermal energy; the construction of major shopping centres like Two Rivers Mall in Kenya.

Once these projects are completed, the major transformation of these areas of Africa will be clear to everybody.

Hassan Bouhadi. Regional Project Development Manager, Mapei Construction Chemicals LLC

LEFT. The "newborn" staff at Mapei Egypt.
ABOVE. Veronica Squinzi, Global Development Director of the Mapei Group, during her recent visit to the new Egyptian subsidiary.

Mapei focuses on Egypt

AN EXPERT TEAM AND SUITABLE FACILITIES: THE NEW SUBSIDIARY IS UP AND RUNNING

On the 7th of December, 2017 Mapei Egypt for Construction Chemicals SAE was formally founded and incorporated as the 82nd subsidiary of the Group. Mapei Egypt is the second company of the Group in Egypt, following Vinavil Egypt for Chemicals SAE. With already 20 years of experience in the Egyptian market, Vinavil Egypt produces polyvinyl acetate and styrene-acrylic emulsions, a strategic raw material utilized in several industries, such those manufacturing paints, adhesives, and textiles.

After a few years of social and political unrest in Egypt, following the so called "Arab Springs" in 2011, the country regained political stability and the outlook for the construction industry became increasingly positive. It was boosted further still by governmental investment plans. Both were key factors in the decision for the Group to directly enter the Egyptian market along with its core business: the production and supply of construction chemicals.

This renewed business environment materialized in the New Investments Law, proposed and put forward by the Egyptian Minister of Investment and International Cooperation, increasing the number of guarantees and incentives for foreign investors, and setting a solid base for Mapei to plan for long-term investment in the country.

Immediately after the incorporation, the commercial offices of Vinavil Egypt and of Mapei Egypt have been combined in the strategic location of New Cairo, the newly developed business area where many large national and multinational companies have based their operations. Easily accessible from Cairo International Airport and the Cairo-Suez road, the new offices are planned to be home for the Mapei Group in the years to come.

The first activities for the newly born Mapei Egypt, which is managed by Amgad El Harouni, has been to consolidate and re-organize the sales of Cement Additives, that have been setting the standards for the Egyptian market for the last decade.

Meanwhile, a new division for Admixtures for Concrete has also been created with the support of the Mapei Group's Headquarters and Regional team.

In the meanwhile, the starting team has been carefully selected and trained in the Group's Dubai-based regional office.

The country has been divided into 3 focus regions: Cairo and upper Egypt, Alexandria and Delta, Suez and the Canal. For each region a specific strategy and targets were set for regional teams to develop the market effectively in line with the corporate strategy: the country is wide, and opportunities are numerous, so it is very important not to disperse energies, especially in a startup phase.

To support the sales and target big projects from the design stage, a local specification team has been created: guided and coordinated by the Regional team, it supports local and international architects, contractors, and consultants in selecting the best solutions for the requirements at hand. A serviced warehouse has been identified which will allow Mapei Egypt to have a complete range of high-quality construction chemicals available for the Egyptian market

A good team, good premises and a growing market: a formula that can only lead to success!

Andrea Perini. Regional Area Manager, Mapei Group

Chemical products for the booming Egyptian building industry

The construction industry in Egypt is expected to continue expanding strongly over the period 2019-2021, with plenty of investments in infrastructures, residential and energy projects. The transport infrastructures and housing sectors will be the key growth drivers. The current increase of the country's energy production and the government's commitment to improve the healthcare facilities are also expected to support investments in construction. The Egyptian construction chemicals market was valued at nearly 140 million US dollars in 2018 and is projected to reach 150 million US dollars by 2020: a growing market that has attracted new players to compete with major multinationals with long lasting presence in Egypt as well as local historical companies. A highly competitive market that Mapei will challenge with its values before than with products: quality, sustainability and transparency, supported by highly professional technical support. The uniquely wide range of products that Mapei Egypt can offer the market will be a strong added value to the newly born professional team. Major projects in the pipeline are an opportunity for Mapei Egypt to achieve a sustainable growing business for the coming years. In addition, our presence in the Cement Additives business as a market leader and the fast-growing business of Concrete Admixtures are milestones for Mapei Egypt's success.

Amgad El Harouni. General Manager of Mapei Egypt for Construction Chemicals SAE

Opportunities and challenges in East Africa

LOTS OF PUBLIC AND PRIVATE INVESTMENTS ARE IN THE PIPELINE, CHALLENGES ARE THERE TOO

The East African construction sector is growing and will continue to grow, influenced by two primary factors: there is a huge deficit in infrastructure and the populations are increasing in all the East African nations. Throughout the region there is a chronic shortage of modern functioning roads and road construction continues unabated. At the Kenya Coast, new cable stay bridges are planned to link the Island of Mombasa with the main highway to Tanzania; in Uganda a new highway is planned between Kampala and the border town of Jinja and will complement the existing highway between the main Airport of Entebbe and the capital.
As for ports, new container terminals at Mombasa Port are making it the largest port on the East Coast of Africa. In Tanzania a 10 billion US dollar investment will make the Bagamoyo Port the largest port in East Africa.
As for railways, the first phase of the standard gauge railway linking Mombasa with Nairobi is now complete and operational, and new stretches linking Nairobi with the Uganda border are under construction. In Ethiopia new links between Djibouti Port and Addis Ababa and on to northern Ethiopia are the impetus for national growth. In Tanzania new railways are being constructed from Dar es Salaam through to Rwanda and ultimately on to the Congo and the Lake Port of Mwanza. Besides, most of Nairobi is now 4G enabled, and Kenya has one of the most advanced mobile banking services.
As for power production, the geothermal power opportunities coming from the Rift Valley will have 26% of Kenya's energy requirements coming from thermals by 2030. Kenya also has unique wind power potential. The Lake Turkana power project valued at 700 million US dollars is the largest private investment in Kenya's history. By 2030 more than 9% of Kenya's power production will come from wind power as more projects come on stream. Ethiopia also shows the greatest potential for hydropower (over 260,000 GWh). Currently under construction is the GERD (Grand Ethiopian Renaissance Dam, see the dedicated article in the following pages), and soon to start is the Koysha Hydroelectric Dam. In Tanzania the new Steigler Gorge Dam is soon to start and in Kenya the Grand Falls Dam is in the pipeline.
As for airports, in Ethiopia a further 320 million US dollars is being spent on Addis Ababa Airport to increase capacity to 20 million a year; in Tanzania the third terminal is under construction at Dar es Salaam and the Kilimanjaro Airport will double its capacity in Northern Tanzania.

Mapei East Africa: the beginnings

Among the different countries in East Africa, Kenya was selected as the ideal place to take a direct step into the Sub Saharan region. Not only because of its business opportunities and economic growth, but also due to the easiness of doing business, legal background, currency freedom, good infrastructural level and easy access to the region. For all that and more, Kenya is regarded as the regional hub for trade, finance and manufacturing in East Africa, where many large international corporations have chosen to set up their African headquarters.
Besides, the Kenya Vision 2030 aims to transform Kenya into a newly industrializing, middle-income country that provides a high quality of life and a clean secure environment; this vision recognizes the construction sector as a major enabler that will drive the country to become globally competitive and prosperous by 2030.
For those reasons, a new subsidiary of the Group was born under the blue sky of Nairobi in the summer of 2018: Mapei East Africa Ltd. The first few months were spent on setting up the premises and looking for the best locations to start our operations. The area of Riverside 14, centrally located in Westlands (one of Nairobi's best commercial centers) was selected to host our offices, training center and showroom, located on the 6th floor of the Grosvenor building. Today Mapei East Africa's offices in Nairobi are in perfect position to overlook not only Kenya but the whole of East Africa, from Ethiopia to Tanzania, from Kenya to Uganda, Rwanda and Burundi.
The search for a warehouse was more challenging and it took us some time, as the outskirts of the capital are full of locally called "godowns", small warehouses that were neither suitable for our needs nor well located. We eventually decided to move into a new development area called Tatu City. Located 35 km north east of

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A view of Nairobi, where the Mapei Group recently opened its East African subsidiary.

In Uganda, 400 million US dollars are being spent to modernize and expand the International Airport in Entebbe; in Rwanda, the government is investing over 1 billion US dollars for building the new Bugesera International Airport north of Kigali. Doing business in East Africa does not come without its challenges. Governmental regulations are meant to keep business in check and ensure that they follow common rules. However, African countries rank low on the World Bank 'Doing Business' ratings. Some governments in East Africa are becoming very supportive of new investments, but generally African countries need to do more to make new investment come. Most African countries have abundant labour but finding skilled or qualified staff can be a challenge. The logistics of moving product around the East Africa region is also a challenge. With limited road infrastructure, often of poor quality, and clogged border posts and ports the moving of products is difficult at best, and time consuming.

The future of the East African construction sector is very promising. It is becoming evident that construction companies like Mapei that offer superior construction materials are more likely to win contracts in the long run.

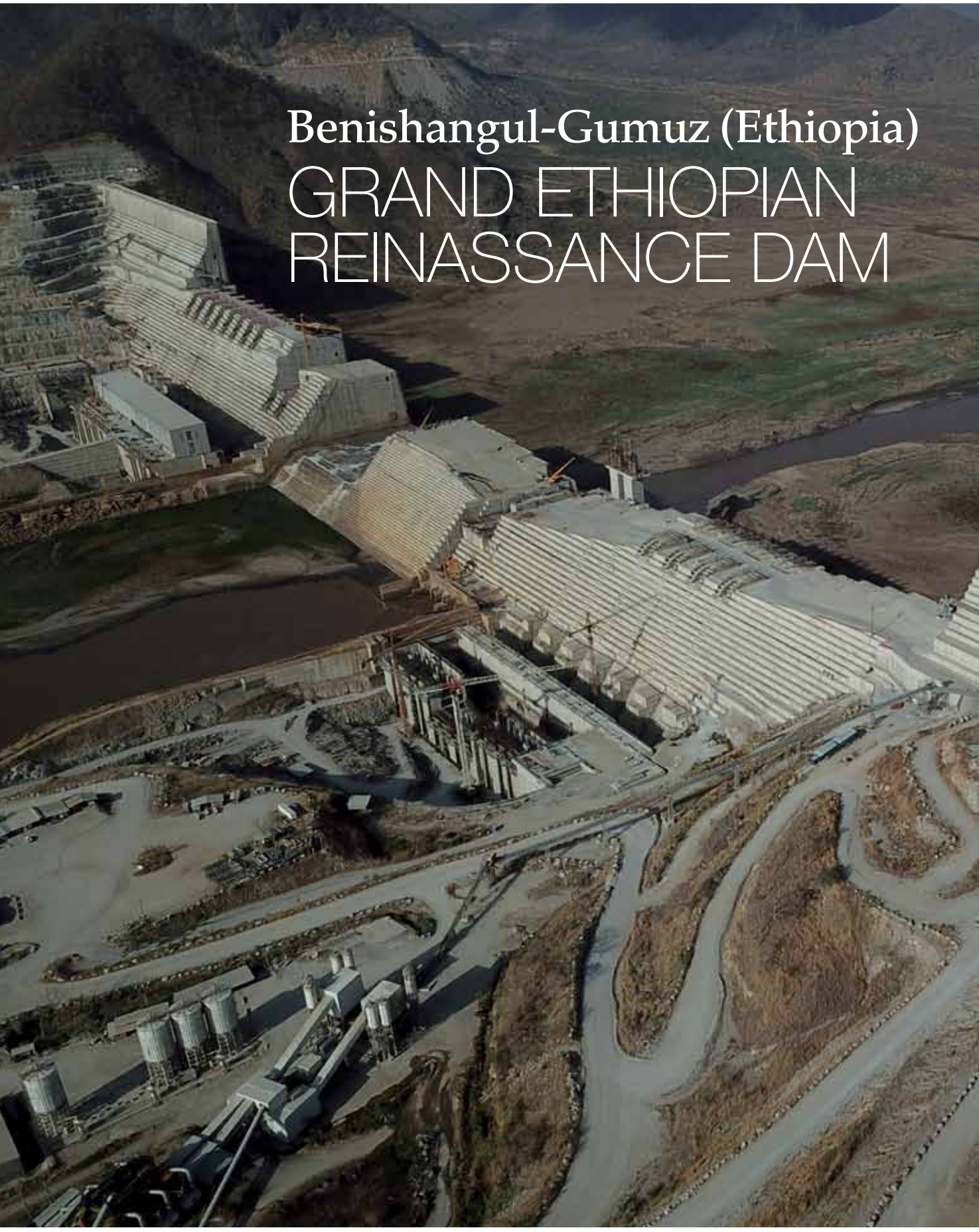
Graham Dean. Business Development Manager in charge of East Africa, Mapei Construction Chemicals LLC

LEFT. The new Mapei East Africa team.
BELOW. The Mapei East Africa team was lately involved in a training event that took place last May at the subsidiary's premises.

Nairobi, out of the traffic-congested Mombasa Road, the newly built premises in Tatu City are the ideal place for setting up our operations in Kenya. A state-of-the-art modern warehouse that allows our clients in the region to have access to Mapei products just in time, without having to wait for the long and sometimes cumbersome process of importing the goods.

Other than organizing the required physical spaces, the focus has been on the new team. Selecting the right people for a startup operation can as well be challenging, because in addition to the technical skills we were searching for, we needed enthusiastic and energetic personalities that are eager to grow and develop from the very scratch a newly born company under a global player name. Now, having the core team on board, we have the right people to start our first steps to success, and the family will grow together with the business!

Hani Petro. General Manager of Mapei East Africa Ltd



Benishangul-Gumuz (Ethiopia)

GRAND ETHIOPIAN REINASSANCE DAM

THE LARGEST HYDROELECTRIC PLANT IN AFRICA WILL COUNTERACT THE AREA'S LACK OF ENERGY RESOURCES

Along the Blue Nile – one of the major tributaries of the River Nile – around 500 km north-west of the capital of Ethiopia, Addis Ababa, in the Benishangul-Gumaz region, the Grand Ethiopian Renaissance Dam (GERD) is taking shape. Once work has been completed it will be the largest dam on the African continent (the seventh largest in the world) and will triple the amount of energy produced in Ethiopia. It is being built by Salini Impregilo and, upon completion, will be about 1,800 m long and 155 m high. The reservoir that will form behind the dam will have a total volume of 74,000 million m^3 and will cover an area of 1,874 km^2. It is owned by the Ethiopian government and will be able to produce the same amount of electrical energy as the entire Horn of Africa.

The project includes the construction of a main dam made from roller-compacted concrete (RCC), with two hydroelectric power stations on the two banks of the river with 16 Francis turbines, for a total installed capacity of 6.45 GW and a design capacity of over 16,000 GWh/year. There will also be a concrete surface spillway with a capacity of 15,000 m^3/s, a 5 km-long saddle-dam made from rock-fill and other infrastructures to provide access to the dam, such as roads and bridges.

Mapei is also taking part in the construction of the dam by supplying admixtures for RCC and CVC (conventional vibrated) concrete with high quality performances and long workability retention, which is particularly required in hot weather during the day (+40°C). The products supplied included MAPETARD PLUS, a liquid retarding admixture used to mantain the workability of concrete and control setting times in the production of RCC; DYNAMON SR3, a superplasticizer for ready-mixed concrete with long slump retention; MAPEFLUID N280 set-retarding liquid superplasticizer for impermeable, durable, and high strength concrete.

TECHNICAL DATA
Grand Ethiopian Reinassance Dam, Benishangul-Gumuz (Ethiopia)
Period of construction: early 2010
Period of the intervention: 2013-2016
Intervention by Mapei: supplying admixtures for concrete
Client: Ethiopian Electric Power
Design: Studio Pietrangeli Consulting engineers
Main contractor: Salini Impregilo
Mapei coordinators: Pasquale Zaffaroni, Francesco Surico, Roberto Saccone, Mapei SpA (Italy)

MAPEI PRODUCTS
Admixtures for concrete:
Mapetard Plus, Dynamon SR3, Mapefluid N280

For further information see www.mapei.com

Antony Offenberg. General Manager, Mapei South Africa Pty Ltd.

South Africa: a "bridge" into the sub-saharan market

MAPEI HAS BEEN OPERATING IN THE COUNTRY SINCE 2009 THROUGH A SUBSIDIARY, A PRODUCTION PLANT AND LOTS OF PROJECTS

Mapei South Africa was founded in Johannesburg in 2009. It was set up as part of the Group's internationalisation strategy and its development plans both in this economically powerful country and right across sub-Saharan Africa.
Since then, the subsidiary has stood out for its technical expertise and focus on customers and quality. This has enabled it to rapidly expand its portfolio of customers and increase its share of the local market. In very little time Mapei South Africa has become one of the main suppliers of adhesives and chemical products for the building industry all over the country, contributing to such prestigious building projects as the renovation of First National Bank Stadium (or Soccer City), which hosted the 2010 World Cup, the 102 Rivonia Road commercial office development, Carnival City casino and entertainment centre, and the Lavender hills sports facility in Cape Town.

A CUTTING-EDGE PLANT

In 2017 Mapei South Africa opened a manufacturing plant with a total surface of 15,000 m^2 in Germiston, about 30 km southeast of Johannesburg, to meet the rising demand for building products.
"The subsidiary's growth is primarily explained by its focus on quality and market demands, as well as its ability to develop solutions tailor-made for its customers", so Antony Offenberg told us, General Manager of Mapei South Africa. "We realised our customers needed extensive stocks of high-quality products to carry out their projects throughout the sub-Saharan region. They were also looking for materials meeting high-quality standards. For example, our liquid admixtures for concrete can boast SABS certification issued by the South African National Standards Association, which guarantees their quality and reliability. We decided to move beyond these demands, and the new cutting-edge manufacturing plant, expert technical assistance service, quality control laboratory and special training areas are the direct result of this decision. In such a tricky economic context as South Africa, we have kept on investing to enhance our ability to support the building industry ready for when the economy begins to expand again. The production facility allows us to meet the needs of professionals in the industry, working on large-scale projects and infrastructures", so Mr Offenberg went on to say. The Mapei South Africa plant manufactures powder and liquid products to supply all its customers with building materials (admixtures for concrete, cement additives, adhesives, mortars for repair work, etc.) in handy packages or bulk when dealing with large quantities of produce. All manufacturing operations are carried out in accordance with the most stringent safety, quality and eco-sustainability standards.

CONSTANT TRAINING

Training is a particularly important issue for Mapei South Africa. The subsidiary's staff and experts in the industry organise training courses and sessions either at the subsidiary's own facilities, the customers' offices or directly on building sites.
Mapei South Africa has its own training centre inside the plant in Germiston, which includes a 58-seat auditorium fitted with modern video equipment, a

IN THE FACING PAGE. The Mapei South Africa manufacturing plant in Germiston.

IN THIS PAGE. Since 2017 Mapei South Africa has had its own spacious training centre, encompassing an auditorium, showroom and testing room, where lots of training courses have been held for people working in the industry.

showroom displaying explanatory charts and product samples, a hospitality area for customers and partners, and a testing room where practical demonstrations are organised. The centre was built in 2017 and since the end of the year it has constantly been used for hosting courses and events.

"Training people who use our products is vitally important for us", so Geoffrey Green told us, Marketing Manager of Mapei South Africa. "We need to make sure that people using our materials know what they are doing. For example, in 2018 we organised various training sessions about solutions for waterproofing and repairing concrete and every session was sold out". The course for installing large-size ceramic tiles, the first-ever in South Africa, was organised this year by Mapei South Africa: a resounding success, attracting plenty of professionals operating in the industry.

Mapei South Africa has been member of the South African Green Building Council since July 2009, which shows the subsidiary's environmental commitment.

The South African subsidiary is also involved in local trade fairs for the building industry, such as Decorex, KZN construction, and Totally Concrete.

MAPEI SOUTH AFRICA: FACTS & FIGURES

2009
THE YEAR IT WAS SET UP IN JOHANNESBURG

1
MANUFACTURING PLANT IN GERMISTON OPENED IN 2017

70
STAFF

7
MILLION EUROS TURNOVER IN 2018

Various Mapei products were used to renovate the First National Bank Stadium (also called Soccer City), which hosted the 2010 World Cup.

MAPEI FOOTBALL CENTER IS

THE NEW TRAINING CENTRE WAS OFFICIALLY OPENED IN SASSUOLO. IT ENCLOSES 6 FOOTBALL PITCHES

© Filippo Romano

Sassuolo has a new cutting-edge training centre: "Mapei Football Center" covers an area of 45,000 square metres. It was designed by Giancarlo Floridi and Angelo Lunati (architects from Onsite-studio) and built by Colombo Costruzioni. According to experts, it is one of the best and most modern training centres in Europe, worthy of a big club. Mapei Football Center was built in 16 months and is the result of a forty-year contract drawn up between Sassuolo Calcio and the City of Sassuolo for a plot of land (owned by the town council and used for promoting sport) located in a place called Cà Marta.

The official opening ceremony on the 10th of June was attended by Giorgio Squinzi, CEO of the Mapei Group, Adriana Spazzoli, Mapei Group's Director of Operational Marketing and Communication and Vice President of Sassuolo Calcio, Giancarlo Giorgetti, Undersecretary of State at the Presidency of the Italian Council of Ministers, Stefano Bonaccini, President of the Emilia Romagna Regional Council, and Gian Francesco Menani, the Mayor of Sassuolo. Others attending the ceremony included, of course, Carlo Rossi, President of Sassuolo Calcio, Giovanni Carnevali, Sassuolo's Managing and General Director, the Technical Area Director Giovanni Rossi, the team manager Roberto De Zerbi, and other members of staff.

"Our training centre - so Giorgio Squinzi told us - is another significant stepping-stone in helping Sassuolo progress. I would like to see Sassuolo finish in the top 5-6 positions in the Italian Serie A every season, so that the team would at least qualify for the Europa League. I dream of seeing Sassuolo in the Champions League, that is our real goal". Ms Spazzoli focused on the importance of this new facility on a social level as a facility that will also serve the local community in Sassuolo: "As regards the company's close relations with the surrounding territory, this training centre represents our way of interpreting social responsibility".

BUSINESS CARD

Giovanni Carnevali is enthusiastic about the complex accommodating the new facility: "We are a young club, but we have already qualified for the Europa League and we are about to begin our seventh season in the Italian Serie A. We also have our own wonderful football ground, Mapei Stadium in Reggio Emilia (Central Italy), and the Mapei Sport Centre in Olgiate Olona (Northern Italy), another cutting-edge facility of the very highest calibre. Mapei Football Center will also act as a kind of business card for our operations on the transfer market. Before signing for the club, many players think about various factors, including its facilities: our new training centre will help us attract top players to the club". Team manager Mr De Zerbi also spoke at the official opening cer-

NOW UP AND RUNNING

A few pictures of the Mapei Football Center, which was opened on the 10th of June. The ceremony was attended (see the picture above, right) by Giovanni Carnevali, General and Managing Director of Sassuolo Calcio, Adriana Spazzoli, Mapei Group's Director of Operational Marketing and Communication and Vice President of Sassuolo Calcio, Giorgio Squinzi, CEO of the Mapei Group and owner of Sassuolo Calcio, Stefano Bonaccini, President of the Emilia Romagna Regional Council, Gian Francesco Menani, Mayor of Sassuolo, and Carlo Rossi, President of Sassuolo Calcio.
BELOW, FROM TOP TO BOTTOM. Giorgio Squinzi, owner of Sassuolo Calcio, and Adriana Spazzoli, Vice President of Sassuolo Calcio; Veronica Squinzi, Mapei Group's Global Development Director, and architect Giancarlo Floridi, Onsitestudio; Simona Giorgetta, Mapei Group's Real Estate Coordinator, and Marco Squinzi, Mapei Group's Director of Research & Development.

emony: "For people like me who think team loyalty is important, having a facility like this is crucial. There are rumours going around at the moment that I might be moving to some big-city team. I have always said that I am already at a big club: Sassuolo is definitely in that category, as is proven by this new training facility".

NATURAL AND SYNTHETIC GRASS PITCHES

Members of the media, authorities and sports people were taken on a tour of Mapei Football Centre, which encompasses 6 playing fields (3 new grass pitches), a new synthetic grass pitch and two existing pitches (one made of grass and the other a renovated synthetic grass pitch). One of the playing fields has a 170-seat stand and a 70-m^2 room serving refreshments. There is also a four-story building covering an overall area of 6000 m^2. The building is 110 m long and stands between the 2 main playing fields. There is a perfect view of both pitches from this building. The building's underground level holds locker rooms and a swimming pool, level "zero" contains a gym, locker room, medical-physiotherapy facility, conference room and entrance. Level 1 is for the youth teams and is equipped with a gym, locker rooms, a medical-physiotherapy facility and offices. Level 2 holds the offices of Unione Sportiva Sassuolo Calcio. "We have a total of 21 teams, including the first team that plays in the men's Serie A, women's teams and youth teams - so Carlo Rossi pointed out - we needed a facility like this". During part 2 of the opening ceremony in the afternoon, the general public got the chance to look around the new facility in Cà Marta. A total of 1000 Sassuolo fans and sports people in general were given a tour around the playing fields and building. The youngest got the chance to enjoy the exciting experience of walking out on Sassuolo's playing fields. Sassuolo staff also organised entertainment for very young children. In the late afternoon, Giancarlo Giorgetti, visited Mapei Football Center, about which he later had plenty of flattering things to say. A special event for Sassuolo's sponsors was the main attraction during "part 3" of the event in the evening and included the visit of the center and official speeches.

In the next issue of Realtà Mapei International we will publish a detailed article on the new Mapei Football Center.

CARNEVALI: "THE FANS SHOULD BE PROUD OF US"

SASSUOLO CONTINUES ITS RUN IN THE ITALIAN SERIE A

Sassuolo finished eleventh in its sixth season in the Italian Serie A. This is the same position the team finished in the 2017-18 season. "Our fans should applaud us, we did really well. We performed well in the 2018-19 League Championship, finishing eleventh was a fine achievement. - so Giovanni Carnevali pointed out, Sassuolo's Managing and General Director - For a recently established club to play seven seasons in a row in the Serie A is already a record". Giovanni has plenty of flattering things to say after analysing the season: "It is not just the Sassuolo first team that battles it out against the big clubs in the Serie A, the youth squad has also performed well this season and will be playing in the Primavera 1 Tim again next year. Sassuolo can boast a fine group of young teams and then there is the women's sector. Overall we can be pleased with what we have achieved and look forward to the future".

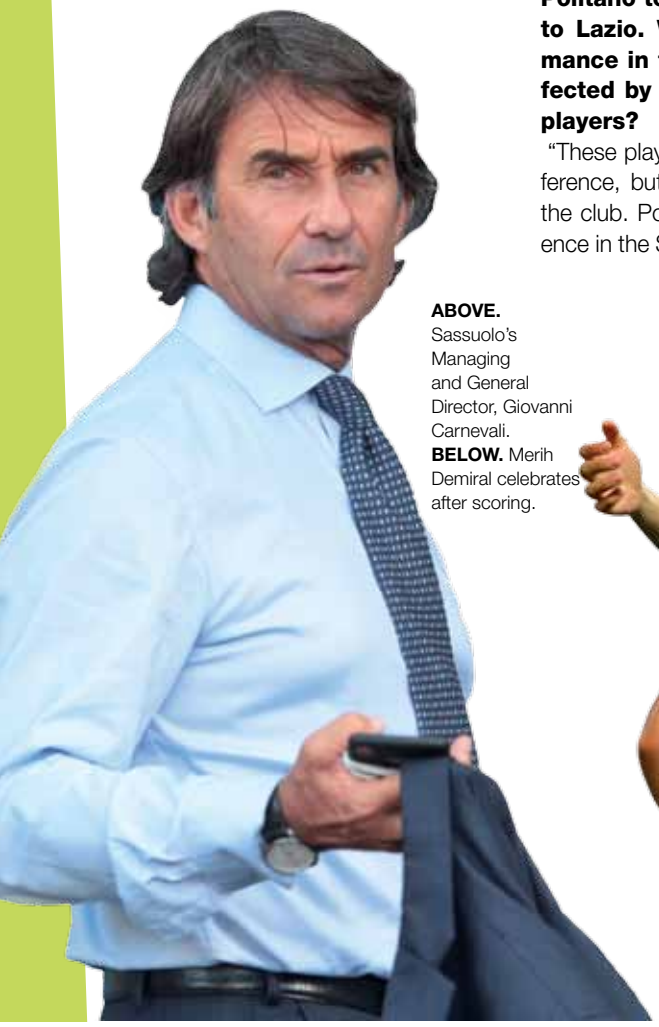
Carnevali, last season you sold Politano to Inter Milan and Acerbi to Lazio. Was the team's performance in the 2108-19 season affected by no longer having these players?

"These players might have made a difference, but I could not keep them at the club. Politano has plenty of experience in the Serie A and wanted to join a big club and he was one of Inter Milan's best players this year. Last summer was certainly one of Acerbi's last chances to join a big city club and he also did really well: he won the Italy Cup playing for Lazio. We tried to replace these big names with young and up-and-coming players".

Domenico Berardi has played for Sassuolo for seven seasons now. He won the Italian Serie B with the team in 2012-13.

"Berardi was excellent this season, more mature both on and off the pitch. He often comes in for plenty of undeserved criticism".

Nevertheless,
Berardi had a poor end to the season: he was even sent off in the last match against Atalanta.



ABOVE. Sassuolo's Managing and General Director, Giovanni Carnevali.
BELOW. Merih Demiral celebrates after scoring.

FROM LEFT. The attacker Jeremie Boga in the match against Fiorentina and the midfielder Manuel Locatelli against Frosinone.

"He did not deserve to be sent off, although, unfortunately, that did not come across very clearly on TV. Berardi was the least responsible for the scuffle that broke out and the behaviour of one of the members of Atalanta technical staff made things a lot worse".

This incident ruined the last game of the season: Atalanta won 3 – 1.
"It was like two separate matches: Sassuolo took the lead in the first half after Berardi scored a magnificent goal but then Atalanta equalised. Domenico was then unfairly dismissed at the end of the first half. In the second half the Atalanta team was highly motivated to qualify for the Champions League and scored more goals when Sassuolo was down to ten men. We ended up playing with nine men from the 80th minute onwards".

Carnevali, lots of Sassuolo's best performances last season coincided with Alfred Duncan being at his best. Is he a key midfield player?
"He was certainly a key player in Sassuolo's best performances. Unfortunately, Duncan suffered a number of injuries and, since he is such a strong, powerful and highly muscular athlete, he takes longer to get fit again".

And how did your other midfielder, Manuel Locatelli, perform?
"Unfortunately transfer negotiations to sign Locatelli from AC Milan took much longer than expected in summer 2018. It all meant that Manuel did not join the club until much later than expected and missed out on the team's summer preseason training. Once the season began, he fitted in nicely with the team and showed his great qualities. He is a midfielder with great prospects on a European level".

Would it be right to label your wing forward Jeremie Boga a "revelation"?
"Definitely, even though he still has not shown his full technical potential. He was out for two months with an injury.".

At the end of the season the club owner, Giorgio Squinzi, claimed that team manager De Zerbi needs to focus on the defence. What you think about that?
"Mr Squinzi is right to expect a lot, encouraging us to work on specific aspects of our play to keep on improving. As regards the goals we conceded, let's not forget that we are an attack-minded team. We scored 53 goals, quite a lot, and to do that we probably allow our opponents chances to score. We are one of the teams with the highest number of different goal-scorers. We play to entertain our fans, but that inevitably means there is a risk of conceding goals".

During its first few seasons in the Serie A, Sassuolo stood out for the number of Italian players in the team. Why have you recently started recruiting foreign players?
"Good point. Some new and very complicated rules force us and other mid/low-table clubs to have more foreign players in our squads if we want to perform at the highest level. In the past teams like Inter Milan, Juventus and AC Milan gave us their best young Italian players and we played them regularly. Now, due to the new regulations, every team must have young players in their squad, including a certain number of players that have come through the youth system. The big clubs hold onto these players, so we have to recruit foreign players".

Italy's new team manager, Roberto Mancini, has already called up Sensi, Berardi and other Sassuolo players to represent their country. Are there any other Sassuolo players you would recommend to Mancini?
"We are honoured by Mancini's attention to our players. We do not need to give him any further tips or suggestions, he came to see us at Mapei Stadium and knows how we work. We believe that Mancini will pick and make the most of those players in our squad that deserve to represent their country. Incidentally, a number of our players have also been called up for the various Italian youth teams".

Lots of Sassuolo players have been mentioned as being of interest to big Italian and foreign clubs for the 2019-20 season. Does that worry you?
"Two things need to be said. Firstly, we are extremely pleased to have put together a squad of great players that lots of big clubs are interested in. It proves we have been working well. Secondly, we must do everything we can to keep our most talented players, so that we can be competitive again next season and in the future in general".

Work out and performance: different strategies

THE 9TH MAPEI SPORT RESEARCH CENTRE CONFERENCE AND THE NEW GRANT FOR GRADUATES IN MOTOR SCIENCES

It is easy to associate sports with happiness and passion, but it is rather more surprising to discover from scientific data that the more athletes enjoy sport, the better they perform in terms of results. Training overload is not the ideal way to get the best possible results in competition and a well-organised game will get you to run better and stave off injuries.

These are just some of the considerations that emerged during a very busy morning of scientific talks and debate at the 9th Mapei Sport Research Centre Conference entitled *"Training and performance: Team sports and individual sports, different strategies".*

This eagerly awaited annual event was a great success attracting over 350 people - including students, sport experts and ordinary sports fans - who gathered at the Conference Centre in Malpensa Trade Fair centre in Busto Arsizio (Province of Varese, Northern Italy) to listen with great interest to talks given by trainers, doctors and athletes involved in sport at the highest level worldwide.

SPORT AND RESEARCH

Mapei Group's Operational Marketing and Communication Director, Adriana Spazzoli, welcomed everybody in the packed hall and introduced the day's events, also speaking on behalf of the Group's CEO, Mr. Giorgio Squinzi: "I'm delighted to see so many young people for whom sport should not just be about winning at all costs but a way of applying themselves to be adopted in the rest of their lives. Keep going along this path".

The Director of the Mapei Sports Research Centre, Claudio Pecci, reminded everybody of the motto inspiring his team on a daily basis: "We work together in the name of successful, healthy and educational sport; research is one of our priorities, while focusing on promoting carefully validated scientific knowledge to help spread an increasingly rational approach to both competitive and health-oriented sport".

The President of Varese Chamber of Commerce, Fabio Lunghi, pointed out that Mapei Sport is something the Province of Varese is rightly proud of, a facility of the very highest international standard.

The full schedule of events began with a talk on the "Relationship between training load and performance in a top-level footballer during the preseason", given by Antonio Gualtieri, one of the trainers in Juventus Football Club's Sport Science Department.

The well-known Australian researcher, Aaron Coutts, a Professor in Sports and Exercise Science who works at the Sydney University of Technology, gave an interesting talk entitled "Man vs. Machine: assessing the efficacy of coach and computer-led athlete monitoring systems for making training decision".

ABOVE. Mapei Group's Operational Marketing and Communication Director, Adriana Spazzoli, opened and closed the event.
IN THESE PAGES. The event was attended by Italian and international sport champions, trainers, managers and researchers that were hosted by Claudio Pecci, Director of Mapei Sport (above, left).

As regards the world of professional cycling, the Swedish head coach from the Trek Segafredo professional cycling team, Mattias Reck, talked about "How to train for the Hell in the North, the legendary Paris-Roubaix race".

THE ROUNDTABLE

The roundtable focusing on experience out in the field featured an interesting debate involving the manager of Sassuolo football team, Roberto De Zerbi, the former cycling champion Ivan Basso, now one of the managers of Kometa Cycling Team, Ermanno Rampinini - head of Mapei Sport's Human Performance Lab (HPL) and an expert on team sports like football, basketball and skiing – and Andrea Morelli, head of the Analysis Movement Lab and Head of Cycling at the Mapei Sport Centre. Answering questions posed by the sports journalist Pier Augusto Stagi, Sassuolo's team manager explained that "everything that can help players improve should be used and it is important to raise and lower the intensity of training sessions". "Before coming to Sassuolo - so Mr. De Zerbi went on to say - I always relied on my eyes, my visual perception; now, thanks to the scientific tools and expertise provided by Mapei Sport, I can be much more precise and detailed in my analyses".
In contrast, Ivan Basso focused on a different aspect: "The things that cycling and football have in common are using your head and teamwork; communication is vital in any team, every member must know exactly what to do to be useful to the team".
The key message emerging from the discussions, further emphasised by Adriana Spazzoli at the end of the debate, is that, in both individual and team sports, science and passion must move hand-in-hand with a focus on people. "Because humanity - that feeling underlying mutual solidarity, understanding and tolerance towards others - can, like other feelings, be nourished and developed by good examples and education", so Ms. Spazzoli concluded to a loud round of applause.

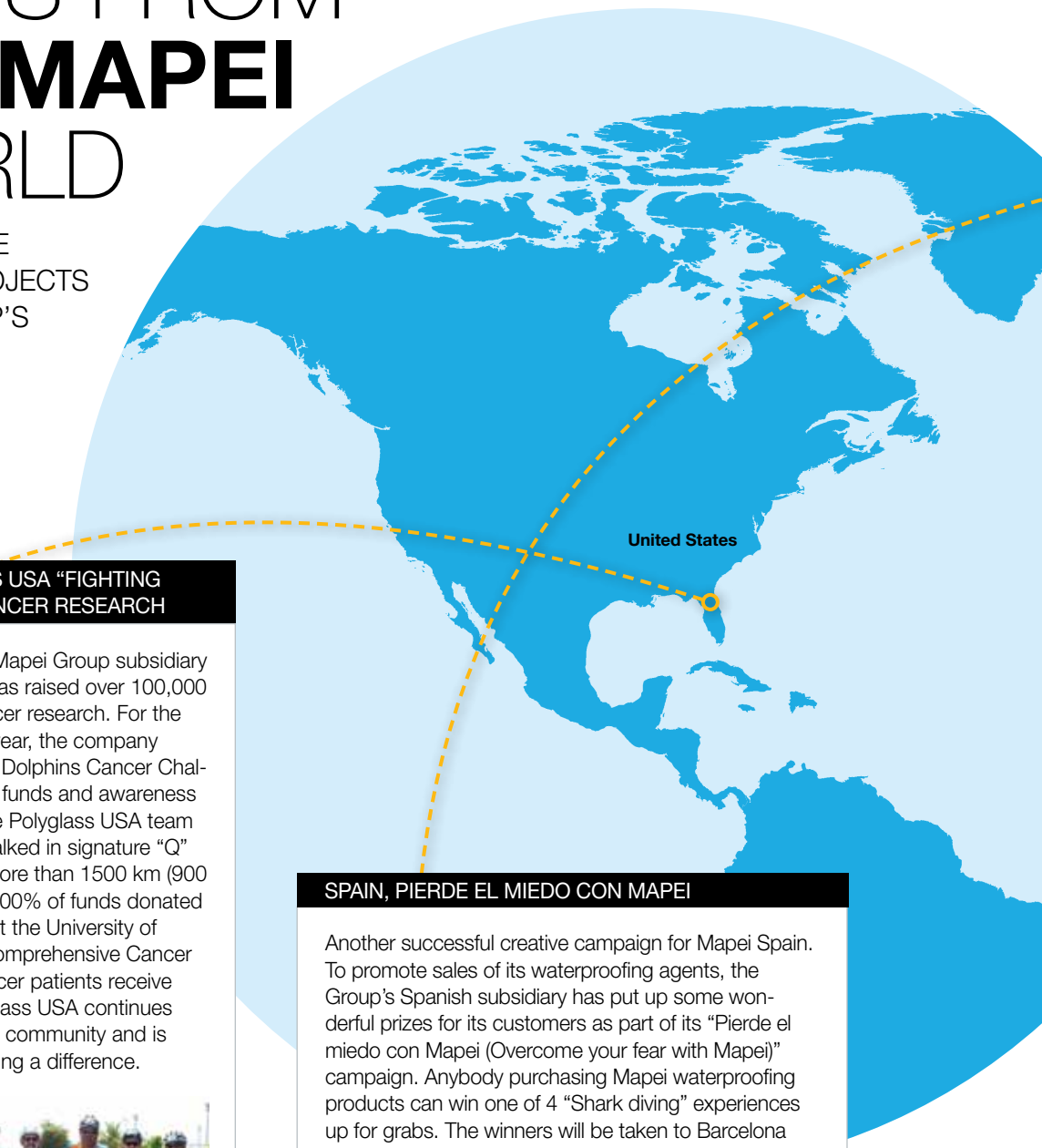
8TH "ALDO SASSI" RESEARCH GRANT FOR GRADUATES IN THE MOTOR SCIENCES

Graduates in motor sciences got the chance to examine the various details of the 8th "Aldo Sassi" Research Grant, which were outlined by Amilcare Collina from Mapei and Paola Vago from Università Cattolica del Sacro Cuore in Milan. Supported by Mapei - in the realm of "exercise physiology - sport sciences" - in partnership with the Varese Sport Commission, the project, promoted by the Varese Chamber of Commerce, is entitled the "Relationship between workloads and physical performance in cyclists". The methodological guidelines underpinning it were illustrated by Andrea Bosio, the Head of Mapei Sport's scientific research sector. The graduate in Motor Sciences, Marco Martin, winner of last year's grant (in the picture with Marina Sassi), outlined the results of the work he has carried out over the last twelve months at the Mapei Sport laboratories and on football pitches.

Amilcare Collina (Mapei SpA), Valter Sinapi (Varese Sport Commision), Marina Sassi (Aldo Sassi's wife), Paola Vago (Università Cattolica del Sacro Cuore) and Claudio Pecci (Mapei Sport).

NEWS FROM THE **MAPEI** WORLD

EVENTS, TRADE FAIRS AND PROJECTS BY THE GROUP'S SUBSIDIARIES



USA, POLYGLASS USA "FIGHTING PARTNER" IN CANCER RESEARCH

Polyglass USA, a Mapei Group subsidiary based in Florida, has raised over 100,000 US dollars for cancer research. For the third consecutive year, the company partnered with the Dolphins Cancer Challenge to help raise funds and awareness for all cancers. The Polyglass USA team cycled, ran and walked in signature "Q" t-shirts covering more than 1500 km (900 miles) for charity. 100% of funds donated goes to research at the University of Miami Sylvester Comprehensive Cancer Center, where cancer patients receive quality care. Polyglass USA continues to give back to the community and is committed to making a difference.

SPAIN, PIERDE EL MIEDO CON MAPEI

Another successful creative campaign for Mapei Spain. To promote sales of its waterproofing agents, the Group's Spanish subsidiary has put up some wonderful prizes for its customers as part of its "Pierde el miedo con Mapei (Overcome your fear with Mapei)" campaign. Anybody purchasing Mapei waterproofing products can win one of 4 "Shark diving" experiences up for grabs. The winners will be taken to Barcelona Aquarium, where they will be taught basic scuba-diving skills before diving into tanks full of over 1000 marine species including, obviously, sharks. The campaign follows in the wake of last year's competition, whose winners got the chance to enjoy the excitement of a parachute jump accompanied by expert instructors.

TURKEY, MAPEPLAN COMPARTMENT SYSTEM

The winners of the sixteenth edition of the "Insulation Industry Achievement Awards" (that the Turkish magazine Yalıtım awards to the very best the waterproofing and thermal/acoustic insulation industry has to offer) were announced on 10th May in Istanbul. MAPEPLAN COMPARTMENT SYSTEM was awarded the prize for the "Best waterproofing agents of the year". The system includes a PVC-P membrane and various accessories and was recently used in prestigious building projects in Turkey, such as the construction of Galataport involving the redevelopment of an area of Istanbul covering 1.2 km along the Bosporus Strait. In this case, the system was used to waterproof over 40,000 m² of foundations of various buildings.

ITALY, MAPEI TAKES PART IN THE FIRST EDITION OF MILANO OUTDOOR WEEK

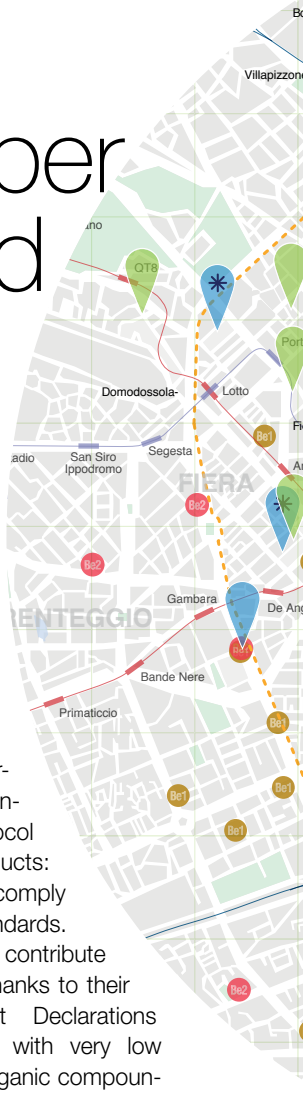
The first edition of MOW - Milan Outdoor Week, seven days of meetings with experts, manufacturers of outdoor equipment and company testimonials on issues related to sustainability – took place from 22nd-26th May.
Mapei showcased its solutions for architectural road surfaces in stone and exposed aggregate concrete paving, systems for urban design, thermal insulation systems, and coatings for facades, etc. On 23rd May, Mapei took part in a meeting entitled "Public greenery and eco-sustainability" talking about the use of its systems for creating road surfaces and pavements in city centres.

SINGAPORE, MAPEI FAR EAST TURNS 30

To celebrate its 30th anniversary, Mapei Far East, the Group's subsidiary in Singapore, designed two new versions of its logo to be used for various means of communication (web, social media, advertising, trade fairs etc.) and a video showing interviews with Marcel Smit (Mapei Group's Regional Director for the Asia Pacific Region) and Michael Ang (Sales Director of Mapei Far East).
As well as being broadcast on various channels, the video was also shown on 14th June at the end of a buffet dinner Mapei Far East organised for over 300 customers, providing refreshments and special entertainment.

Increasing number of LEED-certified buildings

LEADERSHIP IN BUSINESS AND SUSTAINABILITY: AN AWARD TO MAPEI



For some time now designers, architects and contractors have been focusing on the sustainability of buildings; more specifically, the number of buildings with LEED (Leadership in Environmental and Energy Design) certification have increased exponentially both in Europe and Italy.

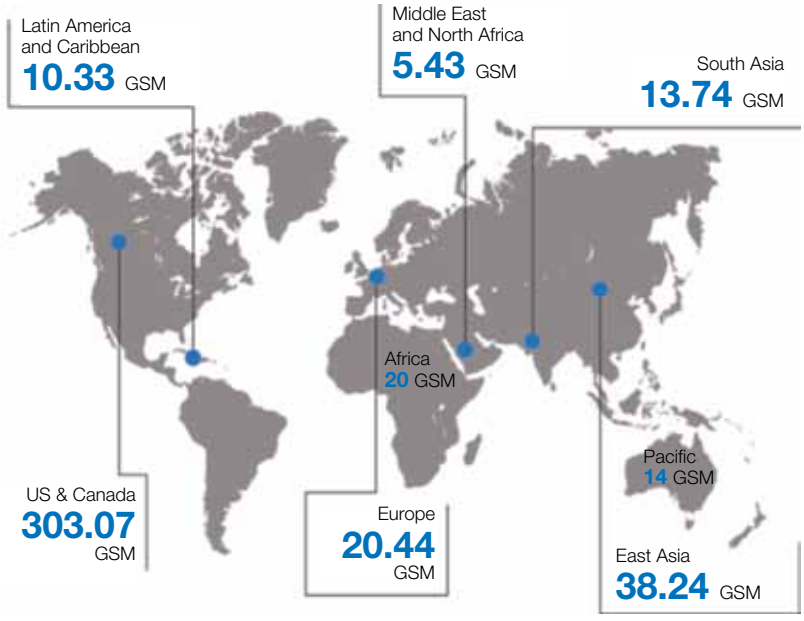
LEED v4 is the latest version of the LEED protocol (developed by Green Building Council US), which allows a building to be certified as eco-sustainable in accordance with the requirements and credits outlined in this document.

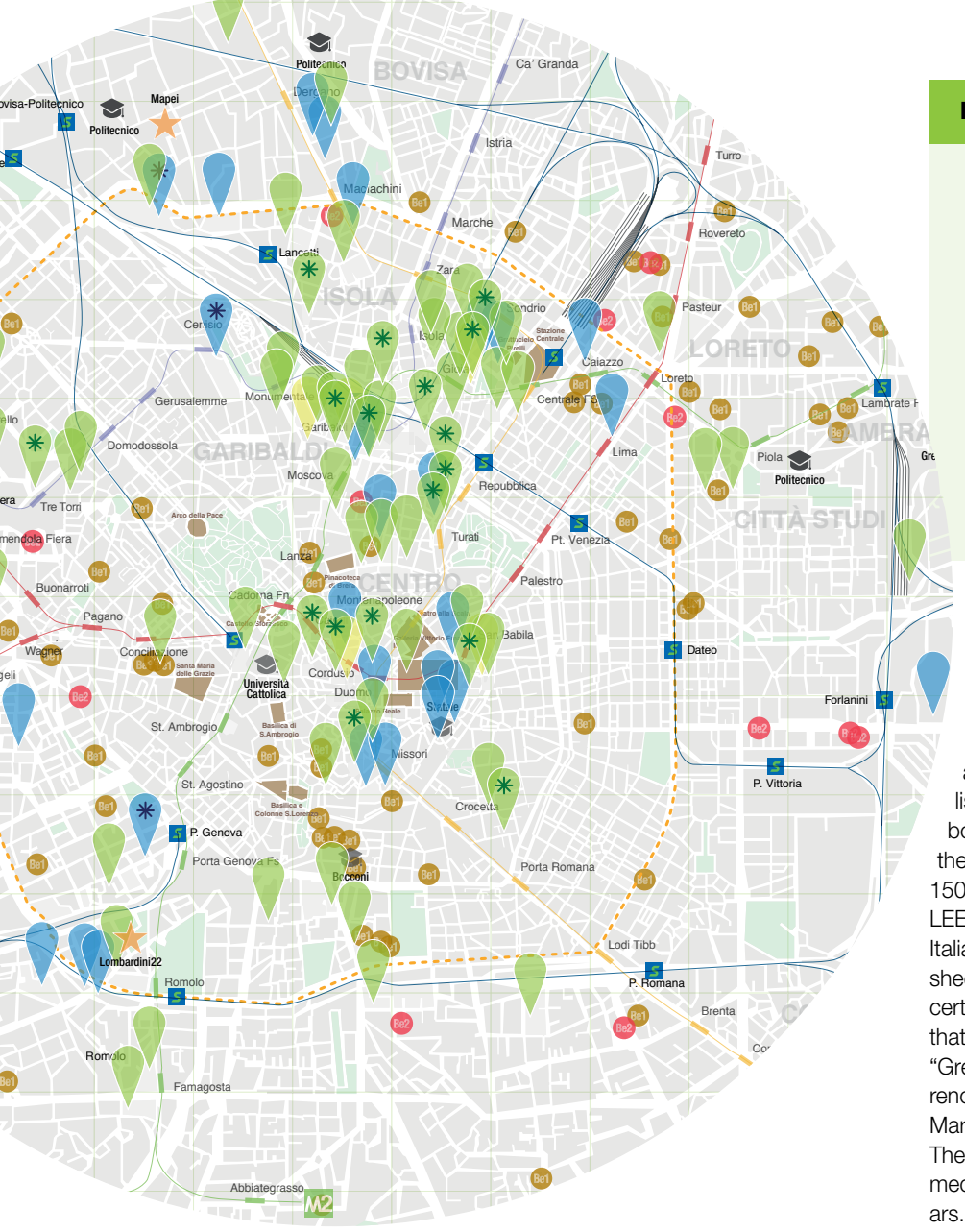
LEED is the world's most widespread rating for eco-sustainable buildings worldwide: the number of square metres built in accordance with this protocol up to 2015 was over 350 million.

LEED considers the whole building project, focusing on various issues such as the building site, savings on water/energy resources, and maintenance. The protocol also applies to products: everything used must comply with the requested standards. Mapei products can contribute to important credits, thanks to their Environmental Product Declarations (EPDs) and products with very low emissions of volatile organic compoun-

LEED IS BOOMING WORLDWIDE

Surface areas (in millions of square metres) taken up by buildings that have been awarded LEED certification (2015 statistics, source: U.S. Green Building Council)





ABOVE. A map of Milan indicating all LEED-certified buildings.
LEFT. Mapei SpA's Environmental Sustainability team with the GBC Italia award: from left, Laura Carettoni, Mikaela Decio, Marco Mazzetti.

KEY LINE

- LEED registered and certified building
- LEED certification for building complexes
- BREEAM registered and certified building
- BREEM certification for building complexes
- WELL registered and certified building
- BE1 - Tender 2017: funding for energy improvement measures - application accepted
- GBC District registered and certified building
- BE2 -Tender 2018/20 - funding for energy improvement measures - application accepted

ds (VOCs), guaranteeing the end user's comfort and well-being.

The LEED declarations can be downloaded from the Italian Mapei website (www.mapei.it), where all the environmental features are listed. This tool is very often used by both architects and designers: over the last year, there have been over 1500 downloads.

LEED is not just global: GBC Italia (the Italian Green Building Council) published maps of Milan indicating all LEED-certified buildings (and building projects that will be LEED-certified) during its "Green Cities: the New Normal" conference held at Milan Polytechnic on 21st March 2019.

There is no doubt that LEED has boomed in Milan, too, over the last few years. These maps were also sponsored by Mapei, member of Green Building Council Italia and its steering committee. There are plenty of Mapei reference projects in these cutting-edge buildings that look to the future with an eye to energy saving, reducing CO_2 emissions into the air, and providing comfort and well-being for their inhabitants.

As part of the Green Building Council Italia's projects, Italy's leading sustainable initiatives were awarded special commendations on Friday, 22nd March, in Milan. A prize-giving ceremony that focused on the work and boom in the Green Building movement on various fronts: Mapei was rewarded for its Leadership in Business and Sustainability.

LEED

LEED is the acronym of Leadership in Environmental and Energy Design and is the most widespread rating for eco-sustainable buildings in the world. Mapei products contribute to important credits to obtain this certification, thanks to EPDs (type III environmental declarations) and products with low VOC (volatile organic compounds) emissions. For any further information: sustainability@mapei.it

Mikaela Decio. Environmental Sustainability Manager, Mapei SpA

Commitment and projects for sustainable development in Africa

E4IMPACT AND THE EDUCATIONAL EMPOWERMENT SA TRUST TO CREATE BUSINESS PEOPLE AND HELP SOCIETY

Supporting a business approach capable of helping Africa develop through a major business partnership with African universities to train a new generation of highly socially driven business people. This is the aim of the E4Impact Foundation (an abbreviation standing for "Entrepreneurship for Africa"), which was set up in 2015 in partnership with Milan's Catholic University and leading Italian business players like Securfin, Salini-Impregilo, the Bracco Group and, of course, Mapei.

Subsequently, other important players like Eni, Lisa, Intesa Sanpaolo and GeFi also decided to lend their support to this project.

The E4Impact Foundation, chaired by Letizia Maria Brichetto Arnaboldi Moratti since it was first established, plans to extend its support for African countries from the current figure of 7 different countries to a total of 15 by 2020, eventually training over 500 new business people every year.

It wants to set the benchmark for impact-generating entrepreneurship in Africa and create opportunities for partnerships between Italian and African businesses.

The Foundation's operations help achieve many of the Goals of the 2030 Agenda for Sustainable Development set by the United Nations, particularly those connected with high-quality education, decent work, economic growth, eliminating poverty and hunger.

TRUST IN SOUTH AFRICA

E4Impact is not the only project in Africa designed to help local development that Mapei is involved in. A Trust (called "Educational Empowerment Sa Trust") was set up in South Africa in December 2016 for the specific purpose of carrying out charity work in the country and Mapei has transferred 25,01% of shares of its subsidiary Mapei South Africa, supporting the projects economically.

As part of this Trust, Mapei can work even more closely with the local communities in which it operates and contribute to their development.

Mapei has always carried out charity work for external associations and focused on staff training in its own South African subsidiary through special in-house training courses.

Recently, in addition to the projects already underway, new activities have been started, such as a food program to help children at a local primary school, university scholarships for young women enrolled in engineering programs and entrepreneurial training courses for young women and students.

In support of Burkina Faso

ALONGSIDE THE QUEEN OF PEACE ASSOCIATION TO IMPROVE THE LIFE OF THOSE MOST IN NEED, WHATEVER THEIR ETHNIC ORIGIN

Mapei has chosen to work alongside numerous associations operating at a local level in various parts of the developing world with the aim of providing support and assistance to local communities. One such example is to sell building materials (adhesives, cementitious mortars and paints for exteriors) for the symbolic price of around 7 Euros per tonne to the Queen of Peace association, which has launched various social projects for the children of Burkina Faso. The association is committed to helping countries from the sub-Saharan region of Africa and Burkina Faso, the fourth poorest country in the world according to the UNO.

The materials donated by Mapei are helping to make projects by the Queen of Peace organisation to become a reality in a part of Burkina Faso bordering Ghana, such as the college in Pikieco, which resulted in the inauguration of a middle school on the 5th of January. Thanks to the construction of a further 6 buildings, the college is part of the Burkina Faso Ministry of Education's study programme, with training courses to show people how to make the most of local resources to cultivate the land, rear animals and manufacture soap from shea butter. In 2019 work is scheduled to start on the construction of an IT laboratory with its own library, a structure that is considered a must in educational centres according to a disposition issued by the Ministry of Education for Burkina Faso.

THE TIEBELÉ HEALTH CENTRE

Meanwhile, over the course of 2018, the Health Centre in Tiebelé achieved important goals. In the middle of June, 2018, the first 3 Benedictine nuns moved into their quarters in a building painted with yellow QUARZOLITE PAINT by Mapei. The photovoltaic system was commissioned and now supplies energy to the entire Health Centre. And also the Dispensary became fully operational: between 35 and 50 patients are treated there every day and the two wards with eight beds are usually fully occupied. In the middle of December, 2018 the new maternity ward was opened. The water system was installed and is now fully operational, as are the electrics. There is also the "château d'eau", complete with a 10,000-litre storage tank, which was painted in Bordeaux red with QUARZOLITE PAINT by Mapei.

The most important project for 2019 will be the construction of the CREN, a centre providing support and advice on nutrition for undernourished children.

AFRICA ON STAGE IN MILAN

For several years now Mapei has been sponsoring No'hma Theatre in Milan, originally founded by Teresa Pomodoro. This theatre (offering free entry) organises shows on cultural-social issues. During the 2018-19 season No'hma hosted six important premieres: "Africa Project: the myriad nuances of the red clay continent", a series of African productions providing greater insight into this gigantic continent with its civil wars, everyday life and age-old traditions. For further information about the theatre: www.nohma.org.

The Elixir of Love for children at La Scala Theatre in Milan

DONIZETTI'S MUSIC AND BEL CANTO FOR MAPEI'S LITTLE FRIENDS INVITED TO THE OPERA

A SINGLE SECRET TEAR FROM HER EYE DID SPRING: AS IF SHE ENVIED ALL THE YOUTHS THAT LAUGHINGLY PASSED HER BY. WHAT MORE SEARCHING NEED I DO? SHE LOVES ME! YES, SHE LOVES ME, I SEE IT. I SEE IT

A short rendition of the famous opera "The Elixir of Love" was specially performed for young children at La Scala Theatre last February. The children also had the chanche to meet the artists in the foyer after the show.

Once again Mapei is partnering La Scala Theatre in Milan. It is helping promote and spread an awareness of music and opera singing to young people, who are so important to the company. About 50 young kids were invited to come and watch an opera specially adapted for them, accompanied by their parents.

The project entitled "Great Performances for Kids" consists of a short rendition of a famous opera at La Scala Theatre specially performed for young children. This year's opera was Gaetano Donizetti's *L'Elisir D'Amore* (The Elixir of Love).

The great interest shown in this event has encouraged the Theatre to schedule 25 performances. The project has the firm backing of the CEO and Artistic Director, Alexander Pereira, and has been one of the biggest successes over the last few seasons at La Scala Theatre.

This special adaptation of Donizetti's music for a 20-piece orchestra, lasting approximately an hour to keep it within a child's attention span, was curated by Alexander Krampe.

Pietro Mianiti conducted the Orchestra of La Scala Theatre, which also provided the young soloists. Grischa Asagaroff was responsible for the staging (in September 2019 he will also be staging *L'Elisir d'Amore* as part of the main season of the La Scala Theatre) and Luigi Perego was responsible for the costumes and set designs.

The end result was a bright and original staging of the opera that was even advertised on tram no.1 that passes in front of the Theatre in Piazza della Scala in Milan.

A joint children's and adults' schedule had already been organised for both *Die Zauberflöte* (The Magic Flute) and Die *Entführung aus dem Serail* (The Abduction from the Seraglio), together with an invitation to both the children and their parents to come back to see the original. The fact that both renditions had the same stage director underlines the continuity between the events.

L'Elisir d'Amore involved most students from the Theatre School's Music Department - as well as lots of students from the Staging-Workshops Department. The students of set design helped to create all the different sets and the would-be tailors contributed to design the costumes for the main characters on stage. This was perfectly in line with the La Scala Academy's standard teaching method: allowing students to benefit from hands-on training under the supervision of great maestros, who can really help them develop by passing on the skills required for embarking on a professional career.

La Scala Theatre has, in this way, supplemented its cultural promotion service with a carefully structured project for opening up the realm of opera to young people, something already tried out on slightly older people through La Scala Under 30 project and now completed by a schedule of important operas for young children and their families.

150,000 children have now had the chance since 2014 to watch an opera specially adapted for them performed in the magnificent building designed by Piermarini, even meeting the artists in the foyer after the shows.

All this joy and happiness also mark the beginning of a regular event that Mapei is happy to support: providing youngsters with the chance to experience something new in the knowledge that this great Theatre is not just accessible to them, it actually belongs to them, too.

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WALL COATINGS AS PART OF INTEGRATED SYSTEMS IN THE BUILDING INDUSTRY

Singapore University of Technology and Design.

What do we mean by the term "wall coatings"?
This term refers to smooth paints or textured coatings used to finish off walls. They are mixtures with a consistency that may be more or less fluid and are made from various substances of either mineral or synthetic origin that form a seamless, adherent coat when applied on a substrate. Their main aim is to coat the surfaces on which they are applied to protect them against wear during use and from atmospheric agents, and also to enhance their appearance from an aesthetic point of view by using different colours and textures.

What is the distinctive characteristic of Mapei wall coatings?
Wall coatings are not finished products; they only become so once they have been applied to a substrate. It's quite clear, therefore, that you need to have a thorough knowledge of materials and the interactions that take place between "substrates" and "finishing coats". Mapei is in a position to propose coatings as part of a complete system in which the various products work together in perfect synergy.

How do you choose the right wall coating to avoid having problems?
In most cases, the "diseases" that occur on facades are due to a rather superficial approach being taken when proposing finishing products, that is to say, without adopting an integrated and global approach. As a result there are various phenomena related to incompatibility between the substrate and the finishing product, which, when combined with the use of a product with insufficient performance characteristics, are responsible for the deterioration of buildings. Since a coating product is generally the last layer or coat to be applied, it is the first, and at times the only, "visible" part of potential problems or damage caused by employing inadequate or poor performing product cycles. Mapei Central Analysis Laboratory has the capacity to examine the various pathologies encountered in constructions, identify the cause of deterioration and verify the effectiveness of solutions. When coating products and paints are specifically developed to be perfectly compatible with repair cycles for surfaces, not only do they solve the technological problems of substrates, they also maintain their aesthetic value for longer.

What are the main causes of the deterioration of wall coatings? And what are the systems to overcome them?
- Elastomechanical incompatibility: sometimes mistakes are made during the design phase regarding the use of materials with an incompatible modulus of elasticity, which over the years can lead to cracking and rainwater infiltration into masonry. Thanks to their properties, such as elasticity and water-repellence, products from the ELASTOCOLOR line are able to provide a solution.
- Chemical-physical erosion: UV rays, acid rain and smog are amongst the main factors that contribute to the rapid deterioration of coatings. The QUARZOLITE system consists of products based on acrylic resin- and micro-quartz, with good filling properties and high mechanical resistance that give surfaces a higher level of durability and protection.
- Biological deterioration: because of climate change, the phenomenon that causes the formation of mildew and mould on buildings has become a widespread problem. In the SILANCOLOR PLUS system, over time, the water-repellence of siloxanes combined with BioBlock technology overcomes the problems connected with this kind of deterioration.
- Rising damp: this type of problem is encountered especially in areas close to lakes or the sea. It affects many residential and listed buildings and tends to damage both the paintwork and the underlying substrate. The synergic action of Pozzolan-based MAPE-ANTIQUE dehumidifying systems and coating products from the SILEXCOLOR and SILANCOLOR lines are the ideal and complete solution for restoring and protecting masonry.

Paolo Sala, Product Manager for the Wall Coatings Line, Mapei SpA

3 PRODUCTS IN THE SPOTLIGHT

SOLUTIONS FOR BLOCKING RISING DAMP, ANTI-STAIN TREATMENT FOR CONCRETE AND SKIMMING AND STRENGTHENING FACING WALLS

MAPESTOP CREAM

It is a solvent-free, ready-to-use hydrophobising gel made from monomeric silane. The product is injected into a series of holes drilled in the masonry using simple extrusion equipment. After injecting **MAPESTOP CREAM**, it spreads inside the masonry and forms a water-repellent barrier that blocks the rising damp. It is used for forming horizontal chemical barriers to restore old, compact stone, brick, tuff, concrete and mixed masonry, including masonry of historical and artistic interest, and recently built masonry with capillary rising damp and soluble salts. This system is used to block and/or considerably reduce rising damp travelling from elements below ground level through the capillary pores present in all construction materials.

BLOCKING RISING DAMP

MAPECRETE STAIN PROTECTION

It is a hydro-oil repellent and anti-stain treatment that drastically reduces the absorption of oily substances and watery solutions and is used to create an efficient anti-stain effect on concrete, cementitious substrates and natural stone surfaces in general. **MAPECRETE STAIN PROTECTION** penetrates well even into substrates with low porosity. It does not form a film on the treated surface and, as a result, the appearance of the surface remains unchanged. It may be used in commercial areas for designing and re-qualifying floorings. **MAPECRETE STAIN PROTECTION** may also be used on cementitious screeds and polished industrial floors, such as "terrazzo" made with both natural or artificial aggregates.

ANTI-STAIN TREATMENT FOR CONCRETE

PLANITOP INTONACO ARMATO

It is a two-component, ready-mixed, high-ductility, fibre-reinforced, natural hydraulic lime (NHL) and Eco-Pozzolan mortar, particularly recommended for levelling off the surface of stone, bricks and tuff, and for the structural strengthening of facing walls, including when extra strengthening mesh is not applied. **PLANITOP INTONACO ARMATO** adheres very strongly and forms a tough, compact layer that is impermeable to water and aggressive gases in the surrounding atmosphere while remaining permeable to water vapour. It is classified as M15 type masonry mortar according to EN 998-2 standard and as type GP category CS IV render according to EN 998-1 standard.

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