

INTERNATIONAL

# Realtà MAPEI

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**GUIDO PALMIERI**  
*Realtà Mapei  
International's*  
Editor-in-Chief

## Realtà Mapei: 30 years at your side

*Realtà Mapei* is now 30 years old. The first issue of the magazine (first only in Italian) was published in June 1991, following a brilliant idea by Adriana Spazzoli, the Mapei Group's former Director of Marketing and Communication, who edited this two-monthly magazine until she passed away in November 2019. If we reread her editorial, we can see just how up-to-date it still is so many years later: "Do you work up to 10 hours-a-day - so Adriana Spazzoli wrote - but love your job so much you still take time out to read about it and keep up-to-date professionally? If your answer to that question is yes, then *Realtà Mapei* is for you. It is a two-monthly journal providing a direct link between Mapei and everybody working in the building industry".

### **CITIES ARE CHANGING APPEARANCE: A SPECIAL FOCUS ON MAPEI SOLUTIONS USED IN URBAN OPEN SPACES**

Now, 30 years later, the world of communication (even in business) has undergone profound changes in terms of its contents, graphics and vocabulary. *Realtà Mapei*, which has tracked and kept up with these changes, still has the same goal: as Adriana Spazzoli wrote in the editorial of the first issue, the goal of this two-monthly magazine is "to communicate with installers, distributors, contractors and designers to draw on their reciprocal experience to get to the very heart of technical issues". It is, therefore, an important "work tool" for players in the building industry, a sector which has always been - particularly at crisis points like the present moment - the driving force behind the economy.

And all this also applies to *Realtà Mapei International*, the English version of the magazine set up 10 years after *Realtà Mapei* that has now been around for 20 years. 20 years of information focused on the worldwide building industry. *Realtà Mapei* is looking ahead to talk about all the trends and innovations under way. In this issue we have focused on open urban spaces, that combination of operations (everything from landscaping and urban design to the redevelopment of abandoned areas) that cities are undertaking globally to make themselves more beautiful, welcoming and inhabitable.

1991 was also an important year for Mapei Kft., the Hungarian subsidiary of the Group, when it first began operating in Hungary: 30 years of steady growth have allowed the company to take up leading role in the building industry.

And finally, Mapei's involvement in sport. Casting a glance back into the past (the five incredible victories of the Mapei Professional Cycling Team in the Paris-Roubaix race) and another into the present and future: Sassuolo's excellent 2020/2021 season crowned by a young talent from the youth team programme (Giacomo Raspadori) being called up for the Italian national team taking part in the European Championships.

Enjoy your reading



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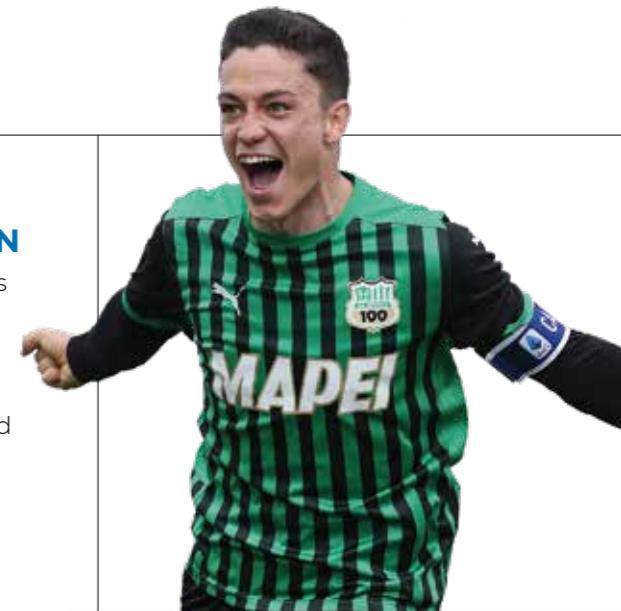
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**Cover story**  
This issue encloses a special section on Mapei solutions for urban open spaces and plenty of examples of squares, streets, playgrounds and cycle paths, where Mapei products were used. In the picture, a street in San Cristóbal de La Laguna, Tenerife (Spain). (see pag. 20-21)

**Editor in chief**  
Guido Palmieri

**Editorial contributors and English translation**  
Martyn Anderson, Nicholas John Bartram, Federica Pozzi, Tiziano Tiziani, Federica Tomasi, Alessandro Brambilla

**Production and editorial coordination**  
Metella Iaconello

**Social media**  
Francesca Molteni

**Graphic designer**  
Barbara Mennuni

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Via Cafiero, 22 - 20158 Milan (Italy)  
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website = www.mapei.com  
E-mail = realtamapei@mapei.it

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# A new look for our cities



The need for open spaces that are welcoming and pleasant to be in from an aesthetic viewpoint has never been more pressing than over the last year. The health emergency has highlighted a need that has actually been evident in cities for some time now: the call for open spaces to be lived in and shared. A need that has been met by de-

signers and local authorities, who have authorised the redevelopment of both small and large open spaces in the belief that the quality of metropolitan life depends on the possibility of making good use of well-designed environments geared to socialising. The need to design spaces that last, are furnished with high-quality features and re-

quire little maintenance calls into play sustainability, now a vital issue in design and in any kind of socio-economic intervention. A subject that is extremely important to Mapei and the "Urban open spaces special" in this issue of *Realtà Mapei International* will be examining it in all its various facets. Squares, city centres, sports facilities, and

parks: Mapei has provided technical support and innovative products for all kinds of building operations, ensuring work is completed rapidly with the least impact on and maximum respect for existing structures. All this with the aim of catering for miscellaneous design needs, with a special focus on sustainability and beautiful results.



# Natural, artificial, vegetable materials: the real challenge

WE SPOKE WITH THE LANDSCAPE ARCHITECT, FRANCO GIORGETTA

## Street furniture and urban décor are becoming increasingly important calling cards for cities: what is your opinion?

I'd like to start by making a slight distinction. All too often, when we talk about form and architecture with reference to open spaces, it is often called or confused with "street furniture", which is something different. In fact, this is rather a collection or catalogue of individual objects, that are used as accessories to decorate open spaces. Their significance can vary, as can the way they coordinate with an open space, and one of the most striking examples of this is the catalogue of objects designed under the guidance of Adolphe Alphand for the transformation of Paris in the mid-19<sup>th</sup> century, which included every element and feature imaginable, from benches to monumental gates, from street lights to newsstands and billboards, from rubbish bins to kiosks.

Compared with these elements, which are decorative features in the true sense of the word, a more important role in the design, or style, of open spaces is played by the materials used; natural, artificial, vegetable, and particularly paving which, because it normally extends over such a large area, it tends to characterise the quality, including the expressive quality, and functionality of the space.

As for the importance of the quality of spaces to help appreciate a city or neighbourhood, I need to stress how open spaces play a vital role, and I would say it has always been that way: there's no need to even mention places such as Piazza Navona or Piazza di Spagna in Rome, Piazza del Campo in Siena, and Times Square in New York. Maybe in more modern times, when industrial cities were growing in the period following the Second World War, urban planners had all but

forgotten their role but, in more recent times, more and more focus has been put on them again.

## Which are the most virtuous examples in Europe and around the world? And in Italy?

There are certain cornerstones of contemporary architecture's approach to open spaces and the landscape, such as the work done along the banks of the river running through Bordeaux, where the Garonne estuary used to be an industrial area of the port, whereas today it has become the fulcrum of city life, with the creation of the extraordinary Miroir d'Eau, the central piazza, designed by Michel Corajoud, and then kilometres of parkland, gardens, equipment and warehouses converted into spaces open to the public with

restaurants, cultural activities and sports facilities.

Other projects just as significant, but dating back a little further, was the transformation of the London Docklands area and the old port in Genoa, which was transformed by Renzo Piano from being a run-

down, decommissioned industrial area into the heart of the city, a space that never closes, which every day becomes a hub for tourists, cultural events, congresses, exhibitions, shows, sports events, sailing, dining and shopping, from the Aquarium to the old Cotton Warehouses, from Piazza delle Feste to the Porta Siberia fortress, right down to the Trade Fair area.

In the centre of Milan, meanwhile, the most significant project is the transformation of the former Varesine railway works at Porta Nuova, with a system at the heart of it all formed by the lively Piazza Gae Aulenti, the "Trees Library" park and Piazza Lombardia, home of the local government offices. We can see around us other examples of rundown and decommissioned or abandoned

**"Spend wisely at the outset to guarantee low maintenance costs: the golden rule when redeveloping outdoor spaces"**

areas that have been transformed.

Amongst these examples there are cornerstones and important reference projects, such as the transformation of the Millennium Park in Chicago, which was originally a station and railway hub and is now a magnificent public park in the heart of downtown Chicago with really high quality, stunning architecture. But what has met with even more public approval is the transformation in New York of the West Side Line, a stretch of elevated railway in the western part of Manhattan, into a garden and city park, now known as the High Line.

## Over the last few years there has been a new awareness of the importance of communal spaces in cities: what stage are we at in this process of cultural change and in the implementation and execution of projects?

If we put to one side the desire to amaze at all costs, with all kinds of extravagant proposals, we are noticing the development of projects that are constantly improving, they are becoming more and more selective and more technically valid.

## Style, form, design, but also a search for new materials. How important are these choices in making cities more welcoming and liveable?

Choosing which materials and technical solutions to use is very important.

Open spaces are almost always public spaces, or become so by means of a deed of transfer or easement once construction work has been completed by private developers.

However, because of the high cost of maintaining these spaces, and local authorities not having resources to carry out adequate maintenance, projects need to use durable, resistant materials that are able to provide and maintain proper performance properties over time, without losing their characteristics and technical or aesthetic qualities.

The landscape architect  
Franco Giorgetta.



**"Priority interventions? Parks and gardens! Plenty of city parks and gardens and soft transport."**

## Sustainability and urban spaces are becoming more and more closely associated. In your opinion, what interventions should be prioritised in cities to take us in the right direction?

Sustainability: ecological, social and economic sustainability. Ecological and social basically means reducing our carbon footprint, that is, making the widest use possible of materials with raw materials and production processes, as well as transport options and application methods, with "low environmental impact", paying careful attention to the hidden aspects of the impact they have, and on the use of materials and equipment which, if manufactured abroad, may conceal the fact that they severely damage the ecosystem and employ low-wage labour.

As far as economic issues are concerned, we need to be forward-thinking and careful about putting too much emphasis on the initial benefits of sustainability, while economic benefits must be calculated across the entire life cycle of a building or structure, including the final disposal of materials. Spend wisely at the outset to guarantee a long service life with low maintenance costs; this should be the golden rule. Which interventions should be prioritised? Parks and gardens! Plenty of parks and gardens in cities, and soft mobility. More pedestrian zones and cycle lanes, backed up by an extensive network of underground or elevated rail transport, without falling into the easy trap, and enticing promises, of apparently harmless electric vehicles, which are proclaimed as being emission-free, while disguising the fact that emissions are generated elsewhere (such as



**“Choosing the right technical solutions is crucial: a project must employ durable and resistant products”**

in fossil-fuel driven power stations that pollute other areas) to produce the energy required to manufacture, move and dispose of them.

**On the subject of cities of the future, we shouldn't overlook the issue of redeveloping outlying neighbourhoods and suburbs. How can landscape architecture contribute to the regeneration of such areas?**

Redeveloping external spaces can make a significant contribution to redeveloping rundown areas in the poorer parts of cities. It provides the opportunity for redevelopment work in places with areas that need to be reclaimed, but this can only happen by means of a series of other kinds and types of concerted action. To put it more simply, a nice piazza may help a little, but it certainly doesn't get rid of poverty.

**Redevelopment projects on street furniture and décor are usually entrusted to local councils, but the private sector can also make a significant contribution. What is your opinion?**

In Italy, most of the projects and plans for public open spaces rely on the initiative of private developers of urban regeneration programmes, normally under the control and in cooperation with local authorities. But the private sector does play a significant role in development plans, or redevelopment plans, for public open spaces.

Then there are areas in which residents can play a direct role, as individuals or in the form of groups and organisations, to stimulate or by taking direct action, like what happened in New York with the Guerrilla Gardening groups, which has also been replicated in Milan, or through a more peaceful approach such as the community gardens initiative on the Lower East Side in New York.

**STUDIO GIORGETTA**

The design studio founded by Franco Giorgetta commenced activities in 1965 as part of the Italian contingent for the Florales flower show in Ghent (Belgium), and then continued with various design projects, research work, exhibitions and teaching roles. Since 2005 Franco Giorgetta has been working alongside his daughter, who is also an architect, Simona. Right from the start, Studio Giorgetta specialised in landscape architecture and their portfolio includes various important projects and achievements. These include recent work for the city park in the area that once hosted the Falck manufacturing activities in Sesto San Giovanni (Italy) with Michel Corajoud and the Renzo Piano Building Workshop, the parks system around Cascina Merlata and the outdoor spaces and gardens for the new Lombardy Region office block in Milan as well as the new Parliament House in Malta, consultancy work for the regeneration of Varese station (Italy), parkland around the Uptown residential project in Milan and the Emergency Hospital in Entebbe (Uganda), that opened this year, in mid-April.



The Miroir d'Eau in front of Place de la Bourse in Bordeaux (France), designed by Michel Corajoud.

# Better urban landscapes for a more developed society

THE ARCHITECT MARGHERITA BRIANZA (P'ARCNOUVEAU STUDIO) TELLS US ABOUT THE PARADIGMS OF LANDSCAPE DESIGN

It is my deeply held belief that the landscape, particularly the cityscape, is a measure of how advanced a society is, and there can be no escaping this fact. A more developed society can create the best urban landscapes. A society will only decide to invest in the landscape and in things offering no immediate financial return if it really feels the need, and has the financial resources, to do so. A good public space generates a very deep sense of belonging. The cityscape is for everybody, whereas a work of architecture is usually for a private party, and this distinction makes a real difference even when it comes to designing the landscape, something that must provide a solution to multiple needs and cater for prevailing aesthetic taste. I recently read that social beings want to enjoy “public spaces and universal sentiments”. I totally agree with this definition.

I will begin my thoughts by referring to the most emblematic of all public places, Italian urban squares. An example I always draw on is the main square in Ascoli Piceno (Central Italy), which is a perfect setting for institutional works of architecture, whose tiny shifts and dis-alignments create an empty space full of different meanings, those injected by the institutions themselves (Church and State).

This kind of clear-cut consent has now vanished and so we need to find some meaning to support and give substance to how we design the landscape.

In my opinion, there can be no doubt that the main issues guiding landscape design are those connected with the familiar definition of sustainability in three key realms: the environment, economy and society. For space to be urban it must serve a wide variety of people, there is no real added value in a project unless it makes

a real contribution to the challenge posed by climate change. Above all, the landscape must be economically viable on a much longer time-frame.

Maintaining a public space over time, in real and architectural terms, is the part of the design phase most people are least familiar with, but it has the biggest impact on our feelings of affection towards a place.



Margherita Brianza and Luca Manzocchi, partners at P'Arcnouveau design studio (Milan).

The use of material is part of this complex framework. The issue is extremely interesting because, unlike architecture viewed in building terms, material in the landscape comes under notable physical stress and strain and, in our region of the planet, must achieve the impossible aim of remaining exactly as it is without any maintenance. Something I believe is a utopian dream.

I think it would actually be more appropriate to talk

about material and materiality, the signifier and the signified, or, in other words, the very substance of what the landscape is made of. Returning briefly to the gigantic issue of the challenge posed by climate change, I believe this does not just mean incorporating trees and vegetation in our cities. It is also vital to understand how to use material to create a more organic vision of our urban environment, a more transient vision that is as indeterminate as the very substance of nature itself.

Cutting-edge research will have to focus on discovering tenacious but not compact materials that can help restore rainwater to the waterbed, materials that help us construct a different, more natural, more definite and more welcoming vision of the cityscape, materials capable of creating a green urban environment without (once again referring to nature) having to ask nature itself to bend to our will and climb up above all the concrete we have built.



# A new green area in Viale Jenner

THE AREA IN FRONT OF THE GROUP'S HEADQUARTERS WAS REDEVELOPED BY USING PLANTS, FLOWERS AND A FOUNTAIN IN PARTNERSHIP WITH MILAN CITY COUNCIL

A new lease of life for the traffic island adjacent to Mapei head office in Viale Jenner in Milan. Thanks to work carried out by the company, to a design by the landscape architect Franco Giorgetta, the initial stretch of Piazzale Maciachini has been transformed into a small green oasis (around 700 m<sup>2</sup>) with a lovely, gushing fountain.

After serving as a carpark and a location for service equipment for many years, the area has been redeveloped by the landscaping company Peverelli and is now home to an assortment of plants suited to the areas under the shade of the sycamore trees, such as long-stalked and leafy grasses (*Pennisetum alopecuroides* and *Miscanthus sinensis*) or a row of blue Fescue. A series of triangular and trapezoidal figures in a variety of colours, made from patches of grass in different contrasting colours, form a geometric pattern to give it all an even more pleasant look. A fountain with a vertical jet of water sitting on a triangular platform, and magnolias with flowers in striking colours, complete the overall picture which, to quote Franco Giorgetta, "Draws people's attention for a moment and puts a smile on the faces of passers-by".

The project is part of an initiative promoted by Milan City Council called "Adopt and take care of our

*Public Green Areas*", a joint-collaboration between public bodies and private citizens to make Milan more beautiful and green. "We are grateful to the Squinzi family for proposing this project for the regeneration of a stretch of Viale Jenner that numerous Milan residents have to cross every day", declared Pierfrancesco Maran, Deputy Mayor for Urban Planning, Green Areas and Agriculture of the City of Milan during the opening ceremony on the 10<sup>th</sup> of June. "By eliminating the aqueduct, our aim was to restore aesthetic and environmental qualities to the parterre and the project we are inaugurating today answers those needs to the full, and demonstrates once again how synergy between public and private is fundamental in taking care of the city".

And for Mapei, too, which has such a strong bond with Milan, the city where the mother company was founded and grew, this is an important example of participating and sharing: "We are really proud to have carried out this regeneration project and we wish to dedicate it to our dear Giorgio and Adriana Squinzi, who desired it so much", commented Veronica Squinzi, Mapei's CEO. "We learned from them that business must play an active role in the life of the community".



Products from the Mapei Color Paving® system were used to create the decorative concrete platforms (left). PLANISEAL WR 100 (right) ensured hydrophobising protection for the fountain.

## Decorative concrete platforms

To make the triangular platforms decorating the area, products from the Mapei Color Paving® system were chosen: the concrete was made from a special mix of natural coloured (white, yellow, green) aggregates blended with COLOR PAVING ADMIX ready-mixed multi-purpose powdered admixture in the Natural and Yellow shades, along with MAPECOLOR PIGMENT, powdered colorants made from synthetic metal oxides that give the cementitious matrix a more homogeneous and stable colour (the Green shade in this case). The surface was treated with the surface-set retardant MAPEWASH PO2 Blue, which provides good protection from atmospheric agents. A coat of water and oil-repellent MAPECRETE FAST PROTECTION was then applied to ensure good protection with a consolidating effect, while the hydrophobising protection of the fountain was ensured with the application of PLANISEAL WR 100.

## THE DESIGN BY FRANCO GIORGETTA

### Gardens get their own back

Replacing roads and cars with trees and flowers is a wonderful idea which, launched by the Milan City Council for the central traffic island in Viale Jenner, we – or rather Mapei – immediately wanted to take part in. Well, Deputy Mayor, you have been pushing a lot in this direction, and there have been other occasions to join you and try out this type of conversion, to have gardens instead of cars. In this case, with financial backing and technical support from Mapei, gardens have managed to get their own back. Not that it was without problems. We found all kinds of things in the ground, but with our support, and the high quality work by the landscaping company Peverelli, we managed to make the carpark blossom. For now the magnolias have gone through their period of full bloom, but the flowering grasses are starting to bring their tones to the island's patchwork of colour, with the long blades of the grass plants around the borders that sway in the wind, or with every passing car or bus. We also included a fountain in the project, that presence of water that once characterised Milan, whereas today fountains, a glory of every hamlet or city, are all too scarce. We hope that these jets of water, forever in motion, the colours of the flowers and the gentle swaying of the long blades of grass, can draw people's attention and put a smile on the faces of passers-by.



**FROM LEFT ON.** Pierfrancesco Maran, Deputy Mayor for Urban Planning, Green Areas and Agriculture of the City of Milan, Laura Squinzi, Architect Franco Giorgetta, Marco Squinzi, Simona Giorgetta and Veronica Squinzi.





# Tactical urbanism and sports facilities



## CREATIVE USE OF COATINGS FOR NEW SPACES DEDICATED TO SPORT AND SOCIABILITY

What is the connection between two apparently distant worlds? On the one hand we have an interactive process, tactical urbanism, based on actions – at times direct actions by local residents, and at other times by the local authorities – aimed at improving public spaces so they are more useful and enjoyable for those who use them. While on the other hand we have sports facilities – such as the sanctuaries of football – places with a large turnout that bring people together. On the one hand we have tactical urbanism aimed at converting lots of public spaces used or occupied by cars into creative solutions, so that people can cross them more easily or even take a pause to

read, have a chat, play, work or have a drink. On the other hand there are sports arenas, where the quest for athletes to improve their performance needs to be combined with the need for spectators to take part and enjoy following the event. In both cases, therefore, the objective is to re-modulate the space and create an island of sociability. And this is the connection between two apparently distant worlds. Even more pressing is the correlation between these two realities, if you consider that, to remove acres of “road space” from traffic to hand it over to pedestrians, and to transform roads into something more than an anonymous “sea of grey”, you

## A VALUE THAT UNITES MAPEI AND US: QUALITY



INTERVIEW WITH ANTONIO MAISTO, PRESIDENT OF ASSOVERDE

**Assoverde, the Italian Association of Green Constructors, has been operating in Italy since 1982: which sectors is your work focused on?**

Assoverde is a renowned association that has been operating in Italy on a non-profit basis since 1982 to promote the safeguarding of the environment, land

and soil. It is now tackling such major issues as climate change, hydrogeological instability, environmental pollution, energy-saving, and the quality and healthiness of inner-city areas, making use of the benefits offered by “green” works. Assoverde’s main aims include creating and promoting a “green-based culture”, raising everybody’s awareness of the “strategic value” of green public and private spaces thanks to the miscellaneous ecological, environmental, hygiene-health, social, recreational, cultural, educational, aesthetic and architectural purposes that greenery serves. To achieve these aims, Assoverde is closely associated with institutions, universities and research bodies, associations, unions, companies and businesses that share the same

goals. Assoverde backs the implementation of innovative projects and enterprises in response to national and international tenders; it also organises training programs and other projects/events to promote good practices and provides expert aid for tender procedures, writing specifications and making computational estimates. The association also updates and publishes price lists and special specifications on an annual basis.

**Who are your associates and in which realms do you mainly operate?**

Assoverde, now represents over 200 companies, as well as professional firms/people involved in the creation, maintenance and care of parks and gardens, villas and historical

gardens, ‘green’ sports facilities, green road construction, vertical greenery and roof gardens, acting in various sectors of public greenery and urban design, nature-based engineering, bio-architecture and tactical town-planning. Assoverde also encompasses other businesses, such as manufacturers and suppliers of materials and services related to the green sector.

**How did you find out about Mapei and what values do you think Assoverde and Mapei have in common?**

Mapei is a famous company that has been working with our firms for years supplying high-quality products and materials for our projects. Nevertheless, the partnership became more systematically organised last year at the beginning of the Covid-19

pandemic when, in response to Milan City Council’s decision to rethink city spaces, the “20/30 Green Strategies” project came into being and a tactical town-planning proposal was eventually implemented in the square outside Porta Genova Station in Milan (see the article in the next few pages). What brought Assoverde and Mapei together was the opportunity to experiment with new design methods, innovative materials/products and means of managing projects, and the possibility of developing important new synergies between the public and private sectors to try and create increasingly “green” and people-friendly cities with the support of temporary projects. Something I believe Assoverde and Mapei have in common is quality: quality pro-

jects, quality materials, quality operations and, consequently, quality spaces for living in.

**Last year you were an important player in the “20/30 Green Strategies. A strategy to adapt urban areas to so-called Phase 2”. Can you tell us what that was about?**

Devised in response to an emergence situation, the “20/30 Green Strategies” project, promoted by Assoverde in partnership with AIAPP (Italian Association of Landscape Architecture) and ANACI (Italian National Association of Condominium Administrators), combines health goals with sustainability, decarbonisation, re-naturalisation, restabilising of eco-systemic balances, fairness, inclusivity and helping the most fragile people, which should be



need to give asphalt a splash of colour, to be creative and identify pedestrian zones more clearly. The aim of applying coatings on asphalt in a creative manner is not only to improve aesthetics and safety; it is also for "place-keeping", that is, to make it clear that certain spaces can and must be used by those who live nearby. In order for these interventions to be effective, however, not only do you need to use aesthetically excellent "paints"; these treatments must also and above all be durable and resistant to the aggressive action of the environment, as well as to those actions deriving from their actual use.

In the sports facilities sector, materials – not only for sports surfaces, but also for areas where spectators are in transit or remain seated or standing – are subjected to exceptional stresses and loads, high levels of wear from the footfall of large groups of spectators, and constant exposure to bad weather, aggressive air and atmospheric particulate matter. In view of this, Mapei's experience can be the ideal solution in the regeneration of

urban spaces, associating the concept of beauty with the concept of durability and, as a result, of sustainability.

Today, the Mapei Sports Flooring line offers designers of the future, and landscape architects in particular, a complete range of solutions for applying durable, coloured coatings on cycle lanes, piazzas, playgrounds and recreation areas, and even on areas used by vehicles. More specifically, today's range has been further extended with the introduction of the new two-component, epoxy-acrylic resin-based coating MAPECOAT TNS EXTREME in water dispersion, which can even be used to great benefit to colour areas with vehicle access. And what is more, MAPECOAT TNS EXTREME is also rapid-drying which allows application times to be optimised and reduces the down-time of sites.

**Elisa Portigliatti.** Sport Line Corporate Product Manager, Mapei Group

**"The partnership with Mapei became more systematically organised with the 20/30 Green Strategies project, which allowed us to experiment with new design methods and innovative materials"**

the direction in which our cities head even well beyond the current emergency situation. The project includes:

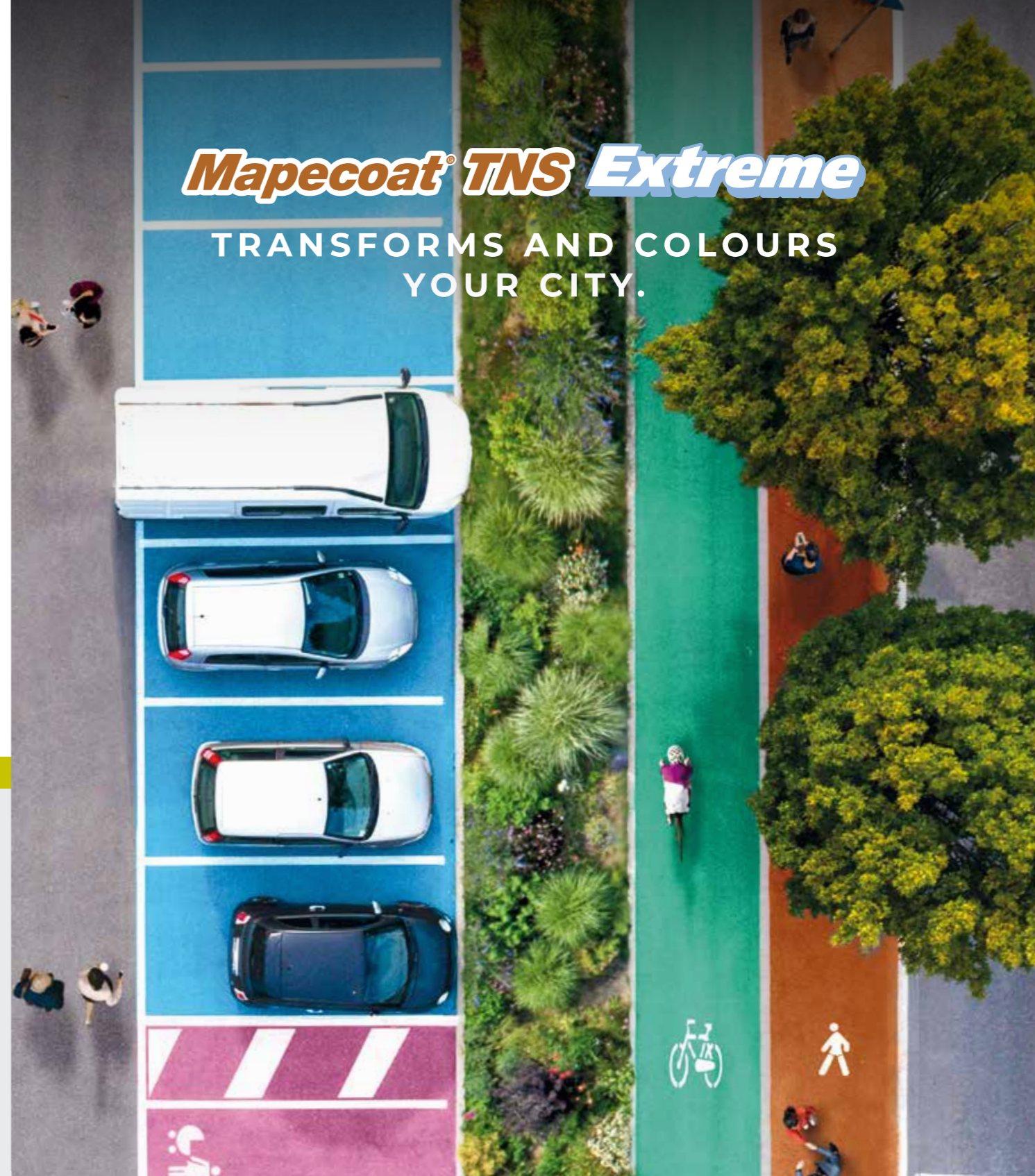
- a framework of operations ranging from the reorganising and furnishing of public space, the construction of school courtyards, and the creation of green areas with amenities inside condominiums;
- a promotional partnership guaranteeing high-quality planning; the encouraging of standardised intervention by private parties; the promotion of quality projects and the green industry in general in partnership with authoritative associations;
- a "zero-cost" model of managing/implementing projects for

the City Council based around "technical" sponsorships put forward by businesses in a position to supply goods, services and activities or "economical" sponsorship deals covering the costs of goods, services and activities supplied at "ethical costs".

**Why did you get Mapei involved in this important project and how did the company help you out?**

Mainly because it is one of the leading companies in the industry. In the case of Milan, it was basically a tactical town-planning project: redesigning the pedestrian spaces in the square outside Porta Genova Station. Plants were placed along the

pedestrian paths and a decorative pattern was painted over most of the surface of the square. The quality and durability of the materials had a key part to play, as well as the speed with which it was carried out so that the building work could be completed as quickly as possible. Mapei supplied a fast-drying two-component epoxy-acrylic resin for covering an area of approximately 600 m<sup>2</sup>. Thanks to its fast-drying properties and its ease of application, the square was reopened less than 48 hours after works began.



**Mapecoat<sup>®</sup> TNS Extreme**

**TRANSFORMS AND COLOURS YOUR CITY.**

**Mapecoat TNS Extreme** is the resin to renovate and colour urban spaces. Developed for coating and upgrading carparks, access ramps, cycle lanes, it is also resistant to the most intense vehicular traffic. Easy to apply and rapid-drying with a non-slip finish. **Mapecoat TNS Extreme transforms your city.**

EVERYTHING'S OK WITH **MAPEI**

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Two coats of MAPECOAT TNS EXTREME coloured epoxy-acrylic resin-based coating was applied on the surfaces of Piazzale Porta Genova. Work was completed by applying MAPECOAT TNS PROTECTION protective finish.



**TACTICAL URBANISM**

It is a method adopted to involve local inhabitants in the urban regeneration process by implementing scalable spatial and political interventions aimed at improving a city's gathering places.

**Milan (Italy)**

# Piazzale Stazione Genova

MAPEI COLOURS FOR A MAIN HUB CENTRAL TO THE LIFE OF THE LOCAL COMMUNITY

Work on the restyling of the square in front of Porta Genova railway station in Milan was completed in October last year thanks to a "tactical urbanism" intervention which is part of the "Open Piazzas" project. Through a Cooperation Agreement between Milan City Council, Assoverde (the Italian Association of Green Constructors, see the interview with its President in the previous pages), the landscaping company Nespoli Vivai and the sustainable development initiative "SeMiniAmo", the colours of the road surfacing were restored, the number of plants in the piazza was doubled and the plant-pots were painted. "Open Piazzas" is part of Milan City Council's "Suburbs Plan", a project which uses the "tactical urbanism" approach to bring public spaces back to being the heart of city districts and the life of local inhabitants. When it was launched, there was also the need to make these city spaces more welcoming and functional over the course of the following few months to ensure social-distancing could be practiced correctly and, at the same time, to prepare them for when the city would be used and approached in a different way on a more permanent basis

**New colours which decorate and remain**

Restoration of the paving surfaces was carried out using two new Mapei coating products specific for urban open spaces. After preparing the surfaces by giving them a thorough cleaning, adhesion between the asphalt and stone substrates and the new coloured finish was guaranteed by applying a coat of MAPECOAT TNS PRIMER EPW epoxy primer in water dispersion. The surfaces were then treated with two coats of roller-applied MAPECOAT TNS EXTREME two-component, rapid-drying, coloured epoxy-acrylic resin-based coating, in the colours specified for the project: blue (RAL 5026 as required by the owner) and white. This product guarantees high versatility, excellent resistance to wear caused by the constant passage of pedestrians or passing traffic, and high level of durability. Work was completed by applying MAPECOAT TNS PROTECTION over the surfaces, a two-component, transparent protective finish for indoor and outdoor surfaces. The plant-pots were painted with DURSILAC SATIN, a water-based, acrylic-urethane enamel paint for internal and external use that protects surfaces and gives them a lovely, long-lasting satin-effect finish.



Find out more  
MAPECOAT TNS EXTREME

**TECHNICAL DATA**

**Piazzale Stazione Genova**, Milan (Italy)  
**Year of the requalification:** 2020  
**Year of the Mapei intervention:** 2020  
**Owner:** Milan City Council

**Intervention by**

**Mapei:** supplying products for painting and protecting road surfaces  
**Mapei coordinator:** Marco Cattuzzo, Mapei SpA (Italy)

**MAPEI PRODUCTS**

Preparing the substrates: Mapecoat TNS Primer EPW  
Coatings: Mapecoat TNS Extreme  
Finishing: Mapecoat TNS Protection  
Finishing: Dursilac Satin

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





MAPECOAT TNS RACE TRACK was used to paint the asphalt surface. The synthetic grass for the playing area was installed using ULTRABOND TURF 2 STARS PRO two-component polyurethane adhesive.



## Breda (The Netherlands)

# A sports court “embraced” by street-art

MAPECOAT TNS RACE TRACK FOR A NEW WORK BY GUMMY GUE IN A “PROBLEM” AREA OF THE CITY

Orbital is a work of street-art completed in 2019 by Marco and Andrea Mangione, aka Gummy Gue. After already making a mark at international level for their knack of combining sports spaces and architecture, with this new piece in the Dutch city of Breda the Gummy Gue duo from Catania (Sicily, Italy) has made yet another statement with a large, optical work of graffiti surrounding a playground. The work decorates the surface of the playground in the Gerardus Macella district of the city and completely surrounds the football pitch dedicated to Hein van Gastel, a local footballing legend. Orbital – this is the title of the work – is like a play

on graphics with a high visual impact that amplifies the space dedicated to sport and draws in the people as they move across its surface. Creating and painting Orbital was made possible thanks to the collaboration with Blind Walls Gallery and the support of the local council, which wanted to claim back an area characterised by pollution and petty crime. Previously, this square was known by the local residents as the “black square” because of its asphalt surface, a sad place to be in winter and very hot in summer, which made it very difficult to use and enjoy. The new colours have given it a new function, turning it into a central meeting place.

### Coloured graffiti for the playground

To create the graffiti it was necessary for the artists to be able to rely on very high performance products which would give a long-lasting finish resistant to atmospheric agents, wear and abrasion. Mapei Technical Services carried out a survey of the area to make sure the asphalt surface was suitable and that it provided a sound, flat base for the work without having to level it off. The Mangione brothers were advised to start with a coat of white MAPECOAT TNS RACE TRACK to even out the surface of the substrate. Specifically created for sports facilities, this is an acrylic, waterborne, rapid film-forming, coloured coating that forms a

protective, non-slip finish on concrete and asphalt surfaces against wear from intense footfall and abrasion. The space was then divided into smaller plots, as specified in the design, and coloured in by hand, one at a time using MAPECOAT TNS RACE TRACK in the various colours. The work was completed by applying MAPECOAT TNS PROTECTION finish, which protects surfaces against abrasion and guarantees long-lasting durability.



Find out more  
MAPECOAT TNS PROTECTION

### TECHNICAL DATA

**Orbital**, Breda (The Netherlands)  
**Period of construction:** 2018-2019  
**Period of the Mapei intervention by Mapei:** 2018-2019  
**Intervention by Mapei:** supplying products for coating the asphalt

surfaces and installing synthetic grass  
**Design:** Marco & Andrea Mangione, Gummy Gue  
**Client:** Breda City Council  
**Main contractor:** Blind Walls Gallery  
**Installation:** Gummy

Gue; KSP Kunstgras  
**Mapei coordinator:** Chris Yperlaan, Mapei Netherlands B.V.

**MAPEI PRODUCTS**  
**Coating the surfaces:** Mapecoat TNS Race Track, Mapecoat TNS Protection

**Bonding synthetic grass:** Ultrabond Turf 2 Stars Pro

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





## San Cristóbal de La Laguna (Tenerife, Spain)

# A colorful street in Tenerife

MAPECOAT TNS RACE TRACK ALLOWED COLORFUL, SLIP AND WEAR RESISTANT ROAD COATINGS TO BE CREATED IN A CITY IN THE CANARY ISLANDS



The city of San Cristóbal de La Laguna on the island of Tenerife has recently been the stage of a new example of “tactical urbanism” through a project to redevelop and enhance outdoor areas providing amenities for the locals.

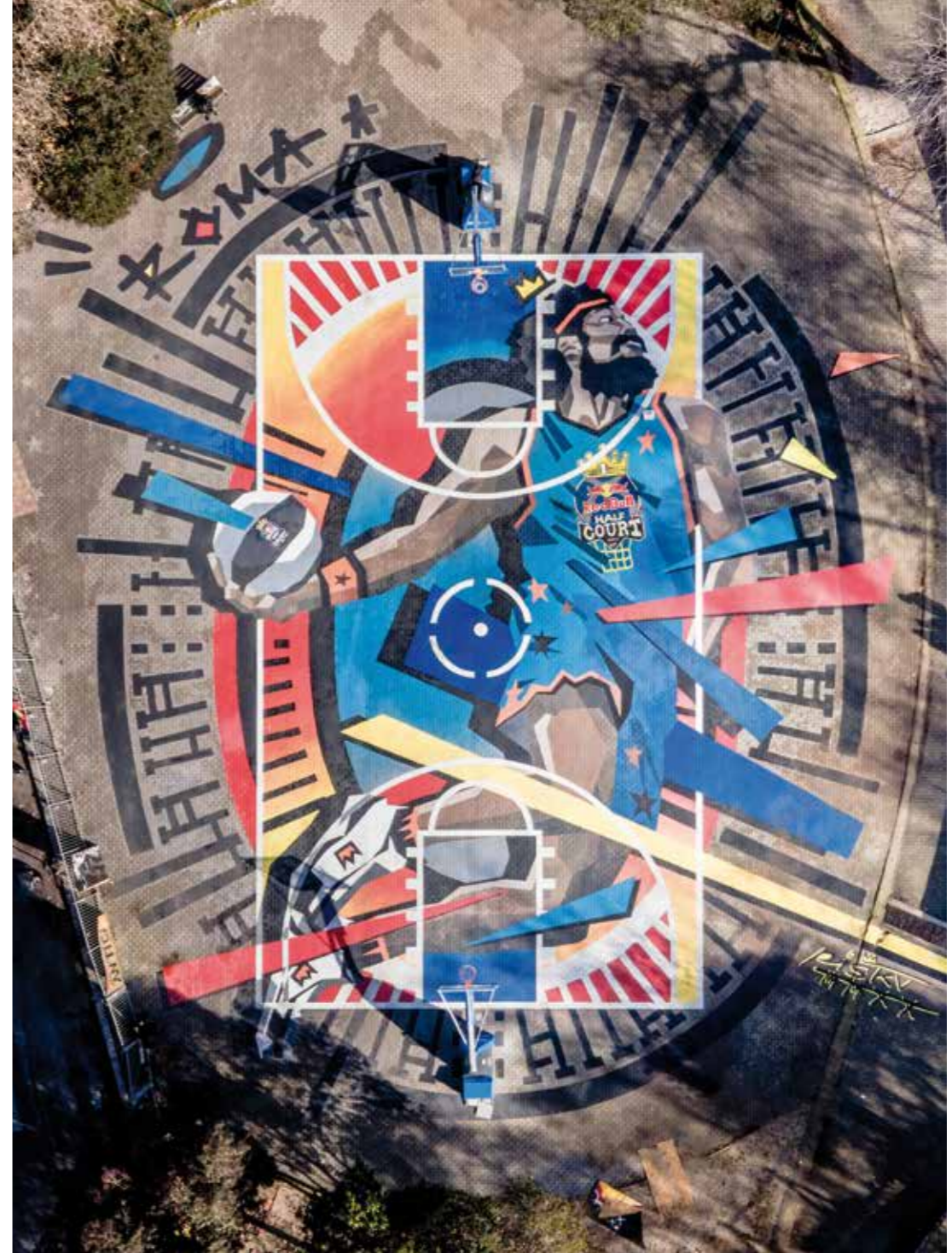
Heraclio Sanchez Street, located in an area of the city mainly serving entertainment and shopping purposes, has been regenerated by creating new coloured paving installed by a company called C.P.I. Residual S.L.U. last May. The aim was to create a road surface decorated in various pleasant colours for both people living in the neighbourhood and tourists, that was also extremely resistant to wear and atmospheric agents, as well as being safe and anti-slip.

It was decided to use MAPECOAT TNS RACE TRACK to achieve this goal. This is an acrylic waterborne, rapid film-forming, coloured coating to protect and colour concrete and asphalt surfaces

subject to a high level of footfall, including driveways. Thanks to the selected fillers used in its special formulation, MAPECOAT TNS RACE TRACK may be used as a finishing coat on external flooring requiring a high level of slip-resistance, such as in this case, as well as on access and exit routes in sports facilities in general (ramps, stairs, etc.). The mechanical properties of the film, combined with its high resistance to agents potentially harmful for the flooring (such as de-icing salts, oil and fuel, etc.), also make MAPECOAT TNS RACE TRACK an excellent solution for coating large surfaces, such as those that need to be treated periodically to prevent ice forming and/or for routine cleaning purposes.

The wide range of colours available, along with the other shades available using the ColorMap system, allowed the choice of 6 different shades of coloured coatings for this project.





## Rome: basketball court at Scalo San Lorenzo

STREET-ART TO PROMOTE SPORT AND ENRICH THE LIVES OF THE YOUNG RESIDENTS OF THE AREA

The area around the San Lorenzo railway station (also called "Scalo San Lorenzo"), in Rome, has been invaded by colour with the image of a giant basketball player painted across the whole of the court. A young street artist called Piskv (real name Francesco Persichella, in the photo on the right), contributed in brightening up the local community by giving the court a completely new look. The work was carried out as part of the Red Bull Half Court initiative, an international 3on3 basketball tournament which had originally been scheduled in October 2020, but then put back to October 2021. A refurbishment project with a clear objective: to create a work of art that would be lived and appreciated, first and foremost, by the entire



neighbourhood, and then become a point of reference for the numerous lovers of basketball from all over the capital. "I added the layout of the Colosseum into the shape of the playground because I wanted to give it a really powerful identity", explained Piskv. "I wanted to trace a basketball player over the Colosseum performing a slam-dunk, the most iconic shot in street basket. Dynamic lines and the vivacity of the colours make the design more powerful, as if it were really slamming the greyness that previously characterised this court". To guarantee the durability of the design, and that the colours would remain bright and protected from bad weather and pollution, it was coated using MAPECOAT TNS RACE TRACK, a rapid

film-forming, acrylic resin-based coating in water dispersion used to protect the concrete and asphalt surfaces exposed to a high level of footfall. Thanks to the selected fillers used in its special formulation, MAPECOAT TNS RACE TRACK may be used as a finishing coat on external flooring that needs to have a high level of slip-resistance. MAPECOAT TNS RACE TRACK technology allows highly durable, non-slip surfaces to be created that maintain their surface roughness over the years. To complete and fully protect the design – which is around 800 m<sup>2</sup>, one of the largest of its kind in Europe -, the surfaces were then treated with MAPECOAT TNS PROTECTION two-component, transparent protective finish.





The 5-a-side football pitch was coated with MAPECOAT TNS MULTISPORT PROFESSIONAL, a multi-layered, acrylic resin-based system, which is used for creating polyfunctional sports surfaces with high resistance to wear, UV rays and atmospheric agents.

## Prato (Italy)

# Macrolotto Zero district

ACRYLIC RESINS TO CREATE DURABLE, MULTISPORT PLAYING SURFACES ON BITUMINOUS ROADS

In 2020, the centre of Prato (Central Italy) underwent major urban redevelopment work that transformed a rundown area into a hub for social and sporting activities. Macrolotto Zero is an area right next to the old part of the city centre characterised by its large Chinese community and numerous shops, stores and bars.

With its mix of housing and small factories, its particular social fabric, a high density of buildings and a lack of public and green spaces, the development and integration process proved to be particularly complex, which made it necessary for a complete urban and social redevelopment to be carried out on the entire area.

The lack of piazzas and public spaces, which were needed to promote civil coexistence and encourage social interaction, led to a series of interventions being planned. One of the most significant was the transformation of a previously privately-owned space into a piazza, to create a meeting place where numerous activities could be organised.

Work started in the first months of 2020 with the creation of a 3,000 m<sup>2</sup> bituminous paving, which was chosen for its versatility in forming different patterns, the speed at which it may be applied and for its high compatibility with acrylic resin coating products. The spaces for the Playground project include a 5-a-side football pitch, a skate-park, a well-equipped, open-air gym and communal pedestrian areas where people can socialise and organise public events.

The products chosen for these polyfunctional spaces belong to the MAPECOAT TNS line, which is designed for creating playing surfaces and cycle and pedestrian zones, and even light traffic areas.

### Resistant surfaces for communal spaces

For the 5-a-side football pitch, an area of 800 m<sup>2</sup> was coated with MAPECOAT TNS MULTISPORT PROFESSIONAL, a multi-layered, acrylic resin-based system in water dispersion containing

selected fillers, which is used for creating multi-purpose sports surfaces with high resistance to wear, UV rays and weather ageing agents.

For the remaining surfaces designated for other types of use, on the other hand, the product chosen was MAPECOAT TNS RACE TRACK, an acrylic resin-based, rapid film-forming product in water dispersion that forms a coating on paving that has to withstand high pedestrian use and light traffic.

MAPECOAT TNS RACE TRACK may be used as a finishing coat on external flooring that requires a highly non-slip finish, and forms highly durable, non-slip surfaces that maintain their surface roughness over the years, even when they get wet.

Aesthetics were also a particularly important aspect of this project: in fact, the surfaces were designed with a geometric pattern divided into different colours.

Thanks to ColorMap technology, MAPECOAT TNS products can be used to meet the aesthetic and chromatic requirements of designers and users; in fact, apart from the 36 standard colours, other colours are also available on request to create unique patterns and give projects a truly personal touch.

MAPECOAT TNS RACE TRACK is often used for coating bituminous road surfaces to create cycle tracks and lanes and in urban redevelopment projects to create multipurpose paving and playing surfaces.

**TECHNICAL DATA**  
**Macrolotto Zero district**, Prato (Italy)  
**Year of construction:** 2020  
**Year of the Mapei intervention:** 2020  
**Client:** Francesco Caporaso

**Project manager:** Michela Brachi  
**Design:** Massimo Fabbri, Alessandro Pazzagli  
**Works director:** Massimo Ceccarini  
**Main contractor:** Lanzaro Luigi Srl

**Installation company:** C.M.C. srl  
**Mapei coordinators:** Paolo Cannella, Alberto Cosmelli, Roberto Marotta, Mapei SpA (Italy)

**MAPEI PRODUCTS**  
Coating sport surfaces:  
 Mapecoat TNS Multisport Professional, Mapecoat TNS Race Track

For further info on products: [mapei.com](http://mapei.com)



Find out more  
**MAPECOAT TNS MULTISPORT PROFESSIONAL**



# Cycle tracks: freedom and safety

MAPECOAT TNS LINE PRODUCTS ENSURE HIGH-QUALITY, DURABLE AND BEAUTIFUL PATHS FOR PEDESTRIANS AND BIKES



## Jurassic Mile - Singapore

Opened in October 2020, the Jurassic Mile is Singapore's largest permanent outdoor display of life-sized dinosaurs, with over than 20 different pre-historic creatures lining along it. The dino-themed cycling and jogging track stretches 1 km along the perimeter of the airport. The track is part of the 3.5 km Changi Airport Connector path that links the Jewel Changi Airport to East Coast Park and the Park Connector Network. The project took about 3 years to be completed, with the support of Singapore National Parks Board and the Singapore Tourism Board. MAPECOAT TNS URBAN SYSTEM, a multi-layered system made from acrylic resin in water dispersion with selected fillers, was used on 8,000 m<sup>2</sup> along the entire Airport Connector to make a path with high resistance to wear, UV rays and various weather conditions.



## Lungomare della Libertà promenade - Riccione (Italy)

Riccione City Council decided to paint the cycle path along the seafront promenade (Lungomare della Libertà) pink for the 2019 Tour of Italy. Mapei technicians suggested using MAPECOAT TNS EXTREME, a rapid-drying, coloured epoxy-acrylic resin-based coating in water dispersion with selected fillers, which is ideal for cycle-pedestrian paths and areas for vehicles. MAPECOAT TNS EXTREME, which ensures high resistance to foot traffic and excellent durability, was supplied in the colour pink 80118 from the Mapei Master Collection and applied to a 1 km stretch of cycle path over a total area of 2300 m<sup>2</sup>.

To make MAPECOAT TNS EXTREME bond better to the old asphalt surface, MAPECOAT TNS PRIMER EPW, a two-component epoxy primer, was also used.



## Pieve Emanuele cycle track - Milan (Italy)

A dense network of footpaths and cycle tracks, immersed in parkland and woods, runs around and through Pieve Emanuele, a town in the outskirts of Milan.

In 2020, Ludicando Srl – a company specialised in the design and installation of sports surfaces – worked together with the Mapei Sports System Technology team to coat the cycle track with around 3,500 m<sup>2</sup> of surfaces with the coloured acrylic paint in water dispersion MAPECOAT TNS PAINT. This product may also be applied, as in this case, on pervious concrete surfaces, giving them a uniform colour without affecting their initial drainage capacity. Its high resistance to potentially aggressive chemicals agents makes MAPECOAT TNS PAINT an excellent solution for surfaces that need to be treated periodically to prevent ice forming and/or for routine cleaning purposes.



## Castro Marim (Portugal) Lezíria cycle path

THE FIRST SECTION OF THE "GREEN TRIANGLE" IN ALGARVE HAS BEEN COMPLETED WITH MAPECOAT TNS RACE TRACK

The cycle path in Lezíria, which winds through the Portuguese borough of Castro Marim, is the first part of the "Green Triangle" integrated environmental sustainability project that will link the towns of Castro Marim, Vila Real de Santo António and Praia Verde in the Algarve region. The cycle path, which runs along EN22 highway, currently stretches 3 km from Castro Marim to Villa Real de Santo António also providing access to Reserva do Sapal, one of 30 protected areas in Portugal located close to the mouth of Guadiana River. The cycle path, which gets its name

from the island of Lezíria, was officially opened in February 2020 by various local authorities in the Algarve region, as well as José Manuel Caetano, President of the Portuguese Touristic Cycling Federation, and Ricardo Mestre, one of Portugal's most famous professional cyclists, who comes from Castro Marim and once won the Tour of Portugal. He also thought up the motto of the new cycle path, "Pedalling lengthens your life", in the name of health, the environment and sustainable mobility. The path, which is embellished by the beauty of the landscape, has been further

adorned by two sculptures specially created by the artist Carlos Correia and inspired by sport.

### The cycle path

The cycle path is, in fact, an infrastructure that respects and promotes the environment, tourism, economy, health, and even local pride and a sense of belonging in the inhabitants of Castro Marim and Vila Real. The project is part of PO CRESC 2020, a plan to boost the region's economy in a balanced and sustainable way, and it was completed with the help of funding by the Portuguese Government and European Union.

### Mapei's contribution

Lusomapei, the Group's Portuguese subsidiary, was contacted to supply a system for constructing the cycle path. Working in partnership with the installation company Spitex, MAPECOAT TNS RACE TRACK, a multi-layered, acrylic resin-based system, was chosen for its ease of installation and striking good looks. This is an ideal system for cycle paths and for coating and colouring areas subject to high level of foot traffic, such as pedestrian areas and stands in stadiums and sports arenas. After suitably preparing the substrates, MAPECOAT TNS WHITE BASE COAT, acrylic semi-flexible waterborne textured base coating, was applied before adding two layers of Dark Green MAPECOAT RACE TRACK, acrylic waterborne, rapid film-forming, coloured coating, and a finishing coat of the two-component transparent protective finish MAPECOAT TNS PROTECTION.



1. Stretching for 3 km, Lezíria cycle path connects the towns of Castro Marim and Vila Real de Santo António in the Algarve region of southern Portugal.
2. Application of MAPECOAT TNS WHITE BASE COAT over the substrates.
3. Application of dark green-coloured MAPECOAT TNS RACE TRACK.



Find out more  
MAPECOAT TNS RACE TRACK



### TECHNICAL DATA

**Lezíria cycle track,**  
Castro Marim-Vila  
Real de Santo António  
(Portugal)  
**Period of construction:**  
2019-2020  
**Period of intervention:**  
2019-2020  
**Intervention by Mapei:**

supplying products  
to coat and finish the  
track surfaces  
**Owner:** Vila Real de  
Santo António and  
Castro Marim Chamber  
of Commerce  
**Main contractor:** Maja  
**Coating contractor:**  
Siptex II

**Mapei coordinators:**  
Mário Amaral and  
António Calado,  
Lusomapei (Portugal)

**MAPEI PRODUCTS**  
Preparing the  
substrates: Mapecoat  
TNS White Base Coat  
Coating: Mapecoat TNS

Race Track  
Finishing: Mapecoat TNS  
Protection

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



# Hydraulic invariance: solutions for vertical drainage

## Coloured, highly wear-resistant coatings for urban surfaces

Integrated quality-quantity management of storm water runoff is becoming an increasingly central theme of environmental policy, both in Italy and at international level. The frenetic and, all too often, uncontrolled growth of built-up areas in many of our cities in recent decades has put enormous pressure on water resources and made it very difficult to manage storm water through networks that would need to be constantly upgraded to handle new flow-rates and volumes of discharges. To make matters worse, climate change has led to a trend of more frequent and, above all, more intense extreme weather events with a resulting increase in hydraulic risk.

To tackle these changes, the traditional way of draining off storm water, by channelling it away through larger and larger networks

of runoff channels, means the size and section of the main catchment pools and basins also need to be upgraded accordingly, which simply transfers the problem from mountain regions to further downstream and, in turn, leads to those areas becoming more vulnerable.

The new approach to managing storm water is moving towards systems that allow it to be processed at a more local level and over a more widespread network, as well as being treated through natural systems so that it can then be used again or dispersed into the ground.

The aim of this approach is to allow part of the storm water, which is quality-controlled during the process, to flow into water courses and aquifers so it is available for the local supply, while helping maintain the water balance and increasing biodiversity, including in urban surroundings.

The natural position for this modern approach to storm water management is within the framework of activities aimed at promoting environmental sustainability, in line with European Union policies, and is best represented in the application of hydraulic-hydrological invariance criteria. This means that any transformation to the ground within an area must take place without increasing the flood flow of the water body or drainage network receiving the outflows originating from the said area.

If we apply this concept to the engineering sector, this leads more and more often to the use of vertical drainage solutions for urban paving, which can be combined with the aesthetic requirements of colour and road markings in those areas. Mapei's experience in surfaces that can contribute

towards hydraulic invariance (such as pervious concrete) also provide the chance to intervene on their final look and finish by spraying them with a coloured coating with high resistance to wear, such as MAPECOAT TNS PAINT. The wide range of colours available, along with tailor-made colours using ColorMap technology, is literally a palette of infinite colours in the hands of both landscape architects and the maestros of street art and land art.

For instance, MAPECOAT TNS PAINT was successfully used to coat several cycle paths in different countries, as you can read in the project portfolio in the previous pages.

**Elisa Portigliatti**, Sport Line Corporate Product Manager, Mapei Group



MAPECOAT TNS PAINT was used to provide coloured coating for pervious concrete substrates.

## Dreno, easy to apply and guaranteeing a safe stroll among skyscrapers

DRENO is an open-pore type of concrete with a dense network of cavities that allow water to penetrate unhindered into the subsoil. This product, manufactured by VAGA (a subsidiary of the Mapei Group) is ideal for creating any type of paving (not exposed to intense vehicle traffic) and has a guaranteed level of compressive strength ( $\geq 15 \text{ N/mm}^2$ ). DRENO may be used to consolidate paving for country lanes, footpaths and cycle tracks, for drainage purposes in buildings/structures below ground level and in hydraulic works to create substrates with very good drainage properties.

DRENO is a ready-mixed concrete supplied in 25 kg bags and is used to create paving that requires a high level of permeability ( $\geq 640 \text{ mm/min.}$ ) It is characterised in particular for its very high level of permeability, as well as its easy application and excellent workability.

VAGA's aim is to supply contractors with a product that, apart from being easy to use, also has high technical properties thanks to its excellent "vertical drainage" properties, which make the surface itself eco-sustainable without modifying the permeability characteristics of the ground.

DRENO: one single product with very high drainage capacity, Environmental Product Declaration (EPD), contributing to obtaining LEED award points and improving users' safety, thanks to its drainage properties that eliminate the formation of puddles. It may be painted in whatever colour you prefer for better visibility; the product to use in this case is MAPECOAT TNS PAINT coloured coating by Mapei.

An interesting application of DRENO was the work carried out in the redeveloped Porta Garibaldi area, one of the most iconic locations in Milan, where various roads and footpaths winding their way between skyscrapers are used by local residents, families, people going to and from work and professionals, as well as tourists visiting the city, which need to guarantee their safety all year round, whatever the weather.

And it was precisely for the safety of those using these paths that Esseci S.r.l. from Arcene (Provin-

ce of Bergamo, Italy), the company contracted to carry out the work to upgrade the paving, chose to use DRENO, a pervious concrete which is the result of a joint-development programme between Mapei and VAGA Research & Development Laboratories, which was supplied by the distributor Ferri Augusto & C. Snc.



**Fabio Baldassari**, Key Account Manager, VAGA





# Ancient knowhow, modern paving

MARCELLO DEGANUTTI, PRODUCT MANAGER FOR THE ARCHITECTURAL STONE PAVING LINE, MAPEI SPA

## A range of specific products for new and historic architectural paving: what led to the development of this product line?

The architectural paving line dates back to 2016, and it was driven by our passion for technology applied to cementitious construction materials and our interest in the construction techniques used by the ancient Romans.

We then moved to looking into solutions for creating modern architectural stone paving, which often has to withstand particularly heavy loads and stresses generated by the passage of vehicles and the action of aggressive

atmospheric agents.

And we shouldn't forget, either, that architectural stone paving is part of our heritage and very often our clients are public bodies. This is what was behind the MAPESTONE SYSTEM.

Antique knowhow means correct installation; we have "stolen" this knowhow from the old paving installers, the true maestros of these ancient skills, by working with them side by side.

Mapei innovative products are a decisive factor in creating solutions for installing stone paving which is both durable and sustainable. To put it briefly: antique knowhow for modern paving.



The paving of Strada Maggiore in Bologna was renovated in 2014 by using MAPESTONE TFB 60 mortar.

## Was there a particular project that proved to be a turning point?

There is a project I remember with enormous satisfaction and also a touch of pride; it was when we were working on Strada Maggiore in the old city centre of Bologna, back in 2014 (see the photo on the left). It was the first restoration work we carried out by re-using old paving stone units and installing them with our high-performance mortar MAPESTONE TFB 60. 8700 m<sup>2</sup> of paving that had to withstand the passage of more than 1,000 buses and numerous private vehicles every day, a challenge we overcame by working alongside the design team, the Director of Works, the local transport company (TPER), Bologna City Council, the contractors and, above all, the installers; it really was a fantastic winning team. Two people deserve a special mention: Fabio Monzali, the Works Director, and Adriano Brescianini, maestro supervisor for the installation team. The result was an efficient, easy-to-maintain stretch of paving and, above all, an open-air test lab, for everyone to observe, that demonstrated the durability of the system in particularly demanding conditions.

## The benefits of the *SUSTAINABLE* option

### LOW ENVIRONMENTAL IMPACTS WITH MAPESTONE CALCIX SYSTEM



Mapei has always believed that durability is one of its most important pillars: lengthening the life cycle of existing infrastructures and reducing maintenance work is, in fact, a winning strategy for consuming fewer resources and generating less waste, thereby reducing the amount of GHGs (greenhouse gases) emitted during building. GHGs are, indeed, responsible for the climate change we are currently experiencing.

The concept of durability has always moved hand-in-hand with sustainability: durable high-quality products like Mapei systems and products actively contribute to reducing construction and demolition waste and decreasing the amount of virgin raw materials

consumed.

Designing sustainable products means focusing on the environmental impact during their entire manufacturing cycle, from the extraction of raw materials to their transformation and end-of-life. It also means trying to design products with reduced environmental impact which, at the same time, always maintain their high quality and durability.

This is exemplified by research into the use of recycled materials instead of virgin raw materials, bearing in mind that the final product must have the same high level of quality and durability.

Focus on sustainability is also aimed at raw materials avail-

able locally to notably reduce environmental impact due to transportation.

The MAPESTONE CALCIX system, made up of installation (MAPESTONE TFB CALCIX) and grouting (MAPESTONE PFS CALCIX) mortars, conforms perfectly to all the aforementioned characteristics, because it is considered to be a sustainable system that promotes sustainability wherever it is used.

But, as we have been saying for a long time, it is not enough to just know that our systems and products are qualitatively sustainable: we want to measure just how sustainable they are! The extent to which Mapei systems benefit our planet can be measured using the LCA

(Life Cycle Assessment) methodology, the only standard and internationally acknowledged method (in accordance with ISO 14040 and ISO 14025) for the calculation of a product's environmental impact.

In this case, we compared a conventional system (using sand-cement) for installing natural stone with an innovative system called MAPESTONE CALCIX to assess whether designing products ecologically can genuinely reduce environmental impact.

Using a special software and all the necessary technical expertise, it was possible to compare the environmental performance of MAPESTONE CALCIX products with the sand-cement



**And from 2014 until now, how has this product line developed?**

The three cornerstones on which Mapei is founded are innovation, Research & Development and internationalisation.

With foundations such as these, it was a logical consequence to develop systems and technologies that focus on durability, sustainability and compliance with the relative applicable standards.

Mapei has a Research & Development laboratory of excellence available, staffed by a highly qualified team with the capacity to formulate technological cutting-edge products and solutions and transform our requests into reality. This enabled us, firstly, to extend the MAPESTONE range of products in 2016 with the introduction of the MAPEI COLOR PAVING® line for architectural paving with an exposed-aggregate finish: durable, customisable paving that integrates perfectly with its surroundings. Then we switched our attention to flexible, pervious paving and perfected, in 2017, MAPESTONE JOINT solvent-free polyurethane binder which, today, is the technical reference product for the correct design of paving compliant with current standards.

And the latest family of products is a line of lime-based, cement-free products particularly recommended for architectural natural stone paving (including of historic interest), which we have called MAPESTONE CALCIX.

**What are the main “ingredients” in the architectural stone paving line?**

Apart from durability, sustainability and compliance with applicable standards, characteristics of all our products, it is the people that really make a difference. Our team is made up of extraordinary people, driven by passion and expertise, extremely knowledgeable and always helpful.

**Do you have any long-cherished dreams?**

Our wish is to become a paving partner for all designers, share their objectives through the skill and passion we carry with us when working alongside them on a daily basis, both in the design office and outdoors in the construction site. And knowing that our support can contribute to the implementation of their projects and turn their dreams into reality, is the driving force behind our work.

products conventionally used for installing and grouting natural stone floors.

The results have confirmed that MAPESTONE CALCIX system has a much lower environmental impact in terms of its carbon footprint (GHG emissions expressed as their equivalent in CO<sub>2</sub>) compared to conventional cycles, still widely used for installing and grouting natural stone.

The table on the right shows the notable environmental benefits of using MAPESTONE CALCIX: MAPESTONE TFB CALCIX emits almost 70% less CO<sub>2</sub> during its lifecycle compared to conventional mortar (the figures refer to 1 kg of unmixed mortar).

So, using the MAPESTONE

	Sand-cement	MAPESTONE CALCIX	CALCIX vs conventional (sand-cement) system
<b>Installation</b>	159 g CO <sub>2eq</sub> *	50 g CO <sub>2eq</sub>	-69%
<b>Grouting</b>	268 g CO <sub>2eq</sub>	167 g CO <sub>2eq</sub>	-38%

CALCIX system (composed of MAPESTONE TFB CALCIX and MAPESTONE PFS CALCIX) instead of conventional cement-based mortars can save 15 kg CO<sub>2</sub> for every m<sup>2</sup> applied, like saving a trip by car of 50 km.

So, if we had to repair a 2000 m<sup>2</sup> paved square using MAPESTONE CALCIX, we would save the equivalent to over **30 tons of CO<sub>2</sub>**, comparable to creating over **3000 m<sup>2</sup> of urban**

**greenery!** Innovation, Circularity and Sustainability: that is the basis of Mapei’s research into developing increasingly sustainable solutions, like the MAPESTONE CALCIX system, focused on durability, use of local materials and low environmental impact.

**Mikaela Decio and Marco Mazzetti.** Corporate Environmental Sustainability, Mapei Group

# UNI 11714-1 standard: focusing on durability



## SAFETY AND MAINTAINABILITY AMONGST THE STANDARD'S REQUIREMENTS

The Italian standard UNI 11714-1, published 12<sup>th</sup> July, 2018 and also available in English, defines the design, installation and maintenance criteria for natural stone, which also covers decorative stone paving.

The installation phase is particularly tied to local traditions which means the standards that cover the subject are aimed exclusively at the domestic market. Nevertheless, all around the world, standardising design and installation means having to meet the same requirements regarding the correct identification of design solutions suitable and compatible with the expected service conditions which, at the same time, comply with international product, safety and quality standards.

A roundtable of Italian experts worked on drafting the standard, the aim being to provide all those involved in creating natural stone paving with a quick, simple tool to support their work, with technical and operational indications and/or prescriptions and standardised best practices to protect clients, end users and the professionalism of those who work in the sector.

UNI 11714-1 is a standard currently in force but voluntary. It becomes binding in the event of disputes, for example between local authorities/clients, contractors, designers and works managers, if the work deteriorates prematurely, in which case it will be up to the courts to establish the cause.

UNI 11714-1 was drafted around the concept of durability, which must be pursued right from the design phase because it is heavily conditioned by numerous factors, including environmental and service conditions, the nature of the substrate, design quality, product quality, installation quality and the methods and frequency of maintenance work. Which is why durability is a fundamental requirement prescribed by the standard, which specifies that these requirements are mandatory objectives and must be guiding principles throughout the entire process, from design to installation and maintenance.

- UNI 11714-1 also introduces a few new key concepts:
- the roles, skill-set and tasks of each figure involved are defined;
  - the ways/areas in which stone can be used to cover surfaces (horizontally, vertically, internally, externally);
  - for each type/class, recommendations/prescriptions are supplied that then need to be adopted during the design, installation and maintenance phases.

In the case of external stone paving for public use, the standard mentions how to choose design solutions, product and procedures according to the type of use of the

paving and the loads/stresses it will be subjected to when in service.

The classification of external paving is the starting point in order to identify, during the design phase, the specific design solution compatible with the actual type of expected traffic. The standard makes a clear distinction between paving for pedestrian use (P4), for pedestrian and cycle use (P5), with access to vehicles for residential purposes (P6) or occasional public use (P7), restricted traffic areas (P8) and paving subjected to general traffic, including heavy-goods vehicles (P9). Once you have selected the correct class you are designing, the type of stone element and whether the paving will be installed using the loose-bed or compact-bed stratigraphy, it is possible to identify the suitable recommended or prescribed installation system (appendix G); the minimum useful thickness of the covering for the paving, to verify the total final thickness (appendix H); the recommended or prescribed compatible type of substrate (appendix J).

To avoid running into situations that would lead to serious and dangerous deterioration phenomena, UNI 11714-1 contains the following prescriptions and recommendations:

**Compact bed:**

- class P9: the standard prescribes the use of pre-blended, high-performance mortars for the installation bed and for grouting joints;
- classes P6, P7 and P8: it recommends the use of pre-blended, high-performance mortars for the installation bed and for grouting joints;
- classes P4 and P5: it recommends the use of pre-blended, high-performance mortar for grouting joints.

**Loose bed (pervious):**

- classes P7, P8 and P9: prescribes the use of polyurethane resin, which is recommended in the case of classes P4, P5 and P6.

And lastly, the standard reminds us that maintenance is an important factor in ensuring the durability of paving. During the design phase, the method and frequency of maintenance work needs to be defined, bearing in mind that a correct design process is the best way of ensuring a long service life for stone paving.

**Grazia Signori.** Architectural Stone Paving Line, Mapei SpA; UNI/CT 033/GL 20 Coordinator.



## Rome (Italy)

## The revival of sanpietrini cobblestones

## TRADITION AND INNOVATION: INSTALLING NATURAL STONE PAVING USING THE MAPESTONE SYSTEM

With their quadrangular top, rough-hewn 10 cm sides worked one by one, a thickness of between 12 and 18 cm and a cross-section similar to that of a truncated pyramid, sanpietrini cobblestones are the orderly, black, shiny geometric multitude that paves the streets of Rome. Planted in an installation bed like never-ending rows of teeth, these are what actually give the city's streets their unmistakable look and represent the identity of the place. They were extracted from quarries on the outskirts of the city from deposits of a very particular type

of lava stone only found in the Lazio Region, called Leucitite.

First introduced by Pope Sixtus V in 1585 as an innovative solution to enable carriages to transit across Piazza San Pietro more easily, they then started to spread throughout the city under their local name, sanpietrini, a reminder of their first experimental application. The various Popes that followed gradually standardised the materials, procedures, systems and stratigraphic installation layouts, as well as the skills required of those that



actually installed the cobblestones, and perfected them along the way while closely supervising the quality of the work.

**The cobbled streets of today**

A lot of things have changed between 1585 and now. Transit loads are completely different in terms of entity, frequency and speed: from the carriages we have moved on to the innumerable buses and tourist coaches, along with the city's normal traffic. The way the cobbles are cleaned and maintained are also different to yesteryear, and the condition of cobbled streets is monitored less closely than before. As a result, there are deformations and instability of the most stressed streets and roads, which often have hollows or cobblestones that have become completely detached. The consequence is that the safety of vehicles and people is being put at risk, even when timely maintenance and repair work is carried out.

**From tradition to innovation: a solution that focuses on durability**

If we take a look around at the roads and streets in our cities, we could be led to think that cobblestones are no longer compatible with the current needs of road users.

But does this mean giving up using cobbled roads and streets, a symbol of the city of Rome? Absolutely not. If, on the one hand, the rhythm of modern life has made it necessary to look at cobblestones from a different perspective, on the other hand the solution is that traditional techniques, a precious and centuries-long tradition of the area, need to be preserved but allow new technology in substrates and grouting to combat the problem of stresses on cobbled streets and make a significant improvement to their durability.

**Restoration work in two streets in Rome**

Via IV Novembre and Largo Magnanapoli are an important stretch of road and intersection for vehicles heading towards the heart of the city. Even though they are in a restricted traffic zone, and access for private vehicles is limited, the majority of buses and tourist coaches have to pass through here. On an average day, this stretch is used by 1626 buses beside plenty of turistic coaches.

Also, because of the direction the road follows, the stresses on the paving is even more significant: it is on a steep slope and the roundabout at Largo Magnanapoli and the ninety degree bend that then goes towards Via Cesare Battisti amplify the levels of stress loads when vehicles have to brake, accelerate and turn. So it comes as no surprise that the cobblestone paving made from cubes of Trentino porphyry dating back to the 1950's are in very poor condition, which is a danger to both vehicles and pedestrians.



**IN THE FACING PAGE.** A view of Largo Magnanapoli after completion of the works that made use of MAPESTONE TFB 60 to install the stone.

The joints were grouted with MAPESTONE PFS PCC2.

**TOP OF THE PAGE.** The "green" pedestrian crossing in Via Battisti made from black sanpietrini cobblestones and white travertine.

It was this condition that was behind an important regeneration plan drafted by technicians of the SIMU (Infrastructure Development and Maintenance Department – Rome City Council) aimed at fulfilling two objectives, which, at first glance, would seem incompatible: to adopt a highly durable technical solution compatible with the enormous stresses along this highly-trafficked route, while at the same time give back to the city the importance and value of cobblestone paving and promote the traditions and indications of the "sanpietrini Cobblestones Plan" (to asphalt Via IV Novembre, apart from the stone gutters, and re-use the existing porphyry cubes and cobblestones, with the same work in Largo Magnanapoli and Via Cesare Battisti). Thanks to several field tests that were carried out, a sequence of steps was defined to find a suitable technical solution for this type of road using, for the first time, the MAPESTONE SYSTEM. Specifically developed for installing cost-effective, durable stone urban paving, the MAPESTONE system includes products in exposure class XF4 and complies with the requirements of Italian standard UNI 11714-1:2018 and European standard EN 206-1. Stone road surfaces installed using this system will only require maintenance work after a certain number of years because they are resistant to freeze-thaw cycles, de-icing salts and rain, and the mortars used do not tend to crumble and maintain their properties over the years. They also have the capacity to absorb mechanical loads and stresses caused by the passage of vehicles, including heavy goods vehicles, and dangerous hollows caused by structural subsidence do not appear on the surface. To install the stones cubes, which on average were around 5



cm thick, the product used was MAPESTONE TFB 60 ready-mixed mortar, while the joints (5 mm wide on average) were grouted with MAPESTONE PFS PCC2, a ready-mixed mortar with low modulus of elasticity for grouting architectural paving made up of slabs, blocks and cobblestones.

Particular care was taken with the gutters, an embroidered-like pattern at each side of the road consisting of five rows of stones parallel to the pavement: apart from being firmly embedded right up to the edge of the paving, they were installed in such a way that they provided a sound, presentable housing for the drain covers for the rainwater to flow into.

Once the performance characteristics of the products had been checked, by taking part of the mix from site and testing its mechanical properties in compliance with current standards, the same technical solution was then extended to cover a wider area and exposed to the more intense traffic of Largo Magnanapoli and Via Cesare Battisti.

Using MAPESTONE TFB 60, supplied in bulk quantities in silos, allowed substrates in varying thicknesses to be created, helping blend in any differences in the thickness of the road slab and the stone blocks, without affecting the continuity and flatness of the road. MAPESTONE PFS PCC2 grout was chosen with the aim of enhancing the look of the stones and emphasise the role paid by the paving in the overall pattern and the stone urban fabric of the city. The grout has also been chosen to obtain a perfect balance in colour between the cobblestones, porphyry and grout.

The paving was warmly received and approved by the Local Heritage Authority, which had also been involved during the design stage to help identify the most favourable path to follow in the search for a new style and perception of stone in Rome, the city of stone.



**ABOVE.** Apart from being firmly embedded right up to the edge of the paving, the gutters were installed in such a way that they provided a sound housing for the drain covers for the rainwater to flow into.



Find out more  
MAPESTONE TFB 60

**TECHNICAL DATA**  
**Renovation of paving along Via IV Novembre and Largo Magnanapoli, Rome (Italy)**  
**Year of the renovation:** 2020  
**Year of the Mapei intervention:** 2020  
**Owner:** Rome City Council Infrastructure Development and Maintenance Department (SIMU)  
**SIMU Director:** Fabio

Pacciani  
**Design and works direction:** Stefania Nardocci, SIMU  
**Project manager:** Maurizio Allevi  
**Safety coordinator:** Paolo Fratini  
**Main contractor:** Edil GM (Gianfranco Mandrelli)  
**Intervention by Mapei:** supplying products for installing architectural stone paving  
**Installed materials:**

sanpietrini (typical Roman cobblestone) and porphyry  
**Site technical director:** Leopoldo Cataldo (Edil GM)  
**Mapei coordinator:** Grazia Signori, Armando Faccani; Marcello Deganutti, Roberto Toscani, and Fernando Bianchi, Mapei SpA (Italy)  
**Photos:** Franco Rotili  
**On-site tests:** Luca Lanzini, Ilko Iliev, and

Fabio Evangelisti, Mapei SpA (Italy)  
**Lab tests on materials:** Mario Villani, Gabriele Gasparini, Mapei SpA (Italy)

**MAPEI PRODUCTS**  
**Installing stone paving:** Mapestone TFB 60  
**Grouting joints:** Mapestone PFS PCC2

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

## PAVING THE WAY TO A NEW ROMAN STYLE FOR ROAD PAVING



WE SPOKE WITH FABIO PACCIANI, DIRECTOR OF SIMU, INFRASTRUCTURE DEVELOPMENT AND MAINTENANCE DEPARTMENT – PUBLIC WORKS UNIT, ROME CITY COUNCIL

### Mr. Pacciani, could you tell us about this project and the objective of the intervention?

The objective of the project for Via IV Novembre and Largo Magnanapoli was to refurbish the road paving of this intersection of vital importance for the city where, day after day, there is a constant, intense flow of public buses, tourist coaches and private vehicles. It was decided to replace the old porphyry and cobbled road surface, which had become badly worn and hazardous: along Via IV Novembre we decided to asphalt the carriageway and maintain the Sanpietrini cobblestones and porphyry gutters that run alongside the pavement, while for Largo Magnanapoli, part of the stone units that were removed were repositioned and the rest are in storage so they can be used the next time we have to carry out work in the old city centre.

**“The Sanpietrini Cobblestones Plan represents a turning point in the overall vision of Rome’s urban fabric”**

### The city has had its Sanpietrini Cobblestones Plan in place since June 2019: “a roadmap to repair the roads network in order to safeguard the landscape and its history, but also to safeguard residents and the changing needs of the city”, which was drafted by a dedicated workgroup made up of all the various bodies responsible for this sector. How does this project fit into the Sanpietrini Cobblestones Plan?

The Sanpietrini Cobblestones Plan represents a turning point, a concerted effort by all those involved to give a new look, which is both safe and durable, to the roads in the city centre, while also keeping in mind the Management Plan for the historic centre of Rome which is a UNESCO site.

The plan is based on three guiding criteria: to repair the road network; the development and enhancement of the urban fabric; the development and enhancement of itineraries dedicated to predominantly pedestrian use running across the city, such as from Piazza San Giovanni to the Colosseum. The project for Via IV Novembre and Largo Magnanapoli is the first one within the framework of the Sanpietrini Cobblestones Plan, and so the first time we have had to come together to give form and material to these new guidelines.

### So we could define it as a testbed, a pioneering project for a well-defined “Roman style”. How do you see this project developing in the future?

That’s right, it should be considered a testbed in the true sense of the word, or a field test, which has given

us the chance to identify and verify design choices and decisions made on site that could then be used as a starting point for the next projects. And while carrying out the work it was obviously important to combine the aesthetic aspect with performance properties, to check and measure progress by taking samples on site and then testing them in the laboratory, as well as constantly sharing information and results with the City and State bodies responsible for safeguarding our architectural heritage, not to mention constant collaboration with the main contractor. Special attention was dedicated to the design and how it would manage storm water, by purposely channelling the flow towards specific drains.

### This project also included another pretty special innovation: the first prototype of a “green” pedestrian crossing. What is this exactly?

Yes, you’re right, this project was like “ground zero” for several other innovative experiences. We are particularly fond of cobblestone road markings which is why, as a Department, we are constantly in search of innovative, durable solutions which don’t interfere with the circulation. This is why we came up with the idea of the first ever green pedestrian crossing in Rome, in which the different strips that make up the crossing are made from white Travertine units alternating with traditional grey sanpietrini, strips which, unlike those painted on the surface, do not require any maintenance.

### So, to sum up: durability, safety and lower maintenance costs without having to give up using cobblestones, a symbol of the roads in the centre of Rome, not only for Romans, but also for anyone visiting the city. Could this highly resistant technical solution also pave the way to the development of a specific solution that is just as durable and safe for pavements, cycle lanes and areas with slab paving, such as the characteristic Basaltina basalt slab paving?

It is important to have an overall vision of the road network, which means not only the roads themselves, but also pavements and cycle lanes which are often used by service or emergency vehicles, and so prone to exposure to localised stresses. This is why we are ready to experiment technical solutions specifically developed for paving for occasional vehicle use which also guarantee maximum safety for residents and tourists.



## Ravenna (Italy)

## Madonna di Pompei Oratory

## MAPEI TECHNOLOGY AND SYSTEMS FOR THE CONSERVATIVE RENOVATION AND RESTORATION OF THIS PLACE OF WORSHIP

Mapei has always been deeply committed to enhancing and promoting our historic and architectural heritage and lately contributed to the recovery of the Madonna di Pompei Oratory in Ravenna (Central Italy)

The Oratory, built in 1766 and dedicated to the Madonna of Pompei, which also has a fresco dedicated to her inside the building, used to be a place of worship for many of her followers. The small church sits close to the bridge at the confluence of the so-called Fiumi Uniti or joined-up rivers. The Oratory was closed in 1994 and had fallen into a state of disrepair due to neglect and the passage of time. Following a request from residents to restore the Oratory, the City Council and the Archdiocese of Ravenna launched an appeal for local building contractors and restoration companies willing to provide their services and the materi-

als and equipment needed for the work free of charge, and give the ancient church a new lease of life so that it could be returned to the local community. To restore the Oratory several mortars from the MAPE-ANTIQUÉ Line for masonry renovation were used because of their similar chemical/physical and elastic/mechanical characteristics to the properties of the materials originally used to build the structure, that is, lime-based and completely cement free.

Going into detail, the contractors that carried out the work used masonry mortars to reconstruct portions of the facing walls, dehumidifying renders to restore masonry damaged by rising damp, high-performance renders and other technological systems to strengthen the structure of Oratory (which had been damaged by the earthquake in August 2016), chemical anchors, various materials



Find out more on the Mape-Antique Line



to thermally insulate the walls, waterproofing systems for the substrates, mortars for screeds, adhesives and grouts to install the stone paving and the stone steps and, lastly, mineral-based coatings for the internal and external walls.

MAPESTONE CALCIX was used for the cobblestones outside the church (see the photo on the left), a cement-free system specific for renovating stone paving, including of historical interest. Perfect for footpaths and areas used by pedestrians and light vehicles, and compliant with Italian standard UNI 11714-1, this system is made up of two types of pre-mixed mortar: one to install the cobblestones (MAPESTONE TFB CALCIX) and the other for grouting joints (MAPESTONE PFS CALCIX). They are both natural hydraulic lime-based (NHL) products, and also contain inorganic Pozzolanic materials, selected aggregates and special additives: the result is a system that is highly sustainable and highly durable. MAPESTONE PFS CALCIX is available in either a light colour or a darker colour (Tenebris).



Find out more  
MAPESTONE TFB CALCIX

**TECHNICAL DATA**

**Madonna di Pompei Oratory**, Ravenna (Italy)

**Period of construction:** 18<sup>th</sup> century

**Period of the intervention:** 2019-2021

**Architectural design and works direction:** Paolo Focaccia

**Architectural design:** Enzo De Leo

**Structural design and works direction:** Tiziano Carli

**Restoration consultant:** Ugo Capriani

**Geological survey and report:** Oberdan Drappelli

**Safety manager:**

Giorgio Pezzi

**Historical research:**

Filippo Treré

**Design and works direction assistant:**

Luca Galassi

**Main contractor:**

Azimut SpA, Casadio geom. Bruno s.a.s. di Casadio Gianni & c., Ceir Società Consortile Cooperativa, Ediltecnica Global Service Società Cooperativa

**Mapei distributors:**

Azimut SpA Consorzio Edili Artigiani Ravenna Cear, Global Point srl, Martini Legnami srl, MT tecnologie edili srl, Società Cooperativa

Braccianti Riminese CRB coop

**Mapei coordinators:** Fabrizio Maltoni, Davide Bandera, Marcello Deganutti, Mapei SpA (Italy)

**MAPEI PRODUCTS**

**Masonry restoration:** Mape-Antique Allettamento, Mapewall Render & Strengthen, Mape-Antique Intonaco NHL, Mape-Antique Rinzafo, Mape-Antique MC, Mape-Antique FC Civile

**Structural strengthening:** Planitop HDM Restauro, Mapegrid B 250

**Thermal insulation:**

Mapetherm Cork, Mapetherm AR1

**Wall coatings:** Malech, Silexcolor Paint, Silexcolor Base Coat

**Installation and grouting of stone paving:** Mapestone TFB Calcix, Mapestone PFS Calcix Neutral, Mapestone PFS Calcix Tenebris

**Preparing screeds:** Topcem Pronto

**Installation of ceramic tiles:** Keraflex Maxi

**Chemical anchors:** Mapefix VE SF, Mapefix PE Wall

[mapei.com](http://mapei.com)



## Bagnarola, Sesto al Reghena (Pordenone, Italy) Piazza IV Novembre



The first one of its kind, this project involved the recovery of old, badly deteriorated porphyry paving and its re-use for the same site.

The old 4/6 cm porphyry paving cubes were recovered by cleaning them in a tumbler and then carefully selecting the ones that could be re-used, thanks to which it was then possible to create a new, protected pedestrian zone (stress class P6 according to Italian standard UNI 11714-1) with bars and shops. The road part of the piazza on the other hand, designed to include a drainage function, was paved with new 6/8 x 6/8 cm cubes sealed with MAPESTONE JOINT polyurethane binder.

The advantage of the tumbler recovery system, which has to be carried out in an authorised facility, is that not only does it enable all types of porphyry and/or other stone elements be re-used, but it can also be employed to obtain usable materials from waste products, whose functionality and aesthetics can be further enhanced, especially if used with the MAPESTONE system.

### TECHNICAL DATA

**Year of the intervention:** 2020  
**Installed materials:** porphyry cubes; Pietra d'Istria stone  
**Design:** Edi Innocente  
**Works director and**

**project manager:** Edi Innocente  
**Stone supplier:** Consorzio Italiano Porfido del Trentino - Italtorphyry - soc. cons. coop.  
**Main contractor:**

Paving Stone srl  
**Mapei coordinators:** Marcello Deganutti, Grazia Signori, Mapei SpA (Italy)

**MAPEI PRODUCTS**  
Mapestone Joint, Mapestone Cleaner

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



## PORPHYRY PAVING: ONE OF THE VALUES NEW ENVIRONMENTAL POLICIES ARE BASED ON

WE SPOKE WITH ANDREA ANGHEBEN, DIRECTOR OF CONSORZIO ITALPORPHYRY

### Mr. Angheben, what does Consorzio Italtorphyry do exactly?

All things considered, quarrying and processing porphyry isn't that difficult. But to be an instrument at the service of design work and works management is a completely different story. What makes Consorzio Italtorphyry stand out from the other companies in this sector is, first and foremost, our ability to present ourselves as a partner for our clients, offering the availability of our wealth of experience and knowledge to a design team in order to have a constructive exchange of ideas that leads to the most suitable and informed choices being made, not only in terms of materials, but also the work procedures to implement on site.

### In this case, what was your contribution and what was the distinctive feature of the project?

While waiting for the Italian eco-sustainable protocol regarding roads and paving to be drafted and implemented, Consorzio Italtorphyry became a precursor of an innovative project for the recovery of the old, worn porphyry paving, thanks also to the availability of an authorised processing centre that is a member of the consortium. Our aim was to limit waste and introduce procedures to demonstrate the sustainability and durability of old materials by enhancing them to extend their service life. After all, paving is often

found to be in poor condition, but most of the porphyry cubes that make up the paving are perfectly sound, so it's a pity to dispose of such a noble product which still has good performance properties and, more importantly, is part of the heritage of local communities. In the specific case of Bagnarola, we had no hesitation in proposing to the local council the recovery of the old, deteriorated 4/6 cm cube paving by tumbling the old stones and then reinstalling them in the pedestrian area. For the road part, exposed to stress levels of class P8 according to Italian standard UNI 11714-1:2018, there was no other choice than to use 6/8 x 6/8 cm porphyry cubes, for which we improved their performance properties even further by sealing them with MAPESTONE JOINT polyurethane resin. And the results proved us right, not only for the positive feedback we got from the residents of the town, but also for the effective cost saving for the client and a perfect balance of functionality, aesthetics and durability.

### Do you think there will be more to come following the project in Bagnarola?

Yes, without a doubt. The objectives that can be achieved through a coherent project for the recovery of porphyry paving are the values and parameters that new environmental policies are based on. This project in Bagnarola is just the start of a journey to share with government bodies.



Paving made from assorted sizes of recovered cobblestones, cubes and irregular stone units sealed with MAPESTONE JOINT.



Cobbles and cubes in various sizes were installed in a characteristic pattern and grouted with MAPESTONE PFS2 to make it easier for pedestrians to walk cross.





## Udine (Italy) Via Mercatovecchio

Founded before the year 1000, the city of Udine in Northern Italy expanded around its old town centre first under the patriarchate of Aquileia and then the Republic of Venice. Via Mercatovecchio grew with the city becoming a market area, trading space, and junction for the main traffic/communication network.

The redevelopment of Via Mercatovecchio, whose design was positively approved by the Local Fine Arts Superintendent's Office, has removed all the architectural barriers to transfer the road, sidewalks and porticos onto one single level. Depending on the impact of traffic, different mate-

rials have been used, i.e. porphyry and Piasentina stone (a locally mined stone once used for paving squares and sidewalks), which was safely installed by Paving Stone's expert team.

The project, completed in September 2020, now makes it possible to admire the street's new appearance and the beauty of the neighbouring buildings, which have been further embellished by upgrading operations. The installation and grouting operations of the stone paving were completed with MAPESTONE TFB 60 mortar (mixed with PLANICRETE) and MAPESTONE PFS2 mortar, respectively.

### TECHNICAL DATA

**Period of works:** 2019-2020

**Owner:** Udine City Council

**Project managers:** Marco Disnan, Lorenzo Agostini

**Project manager assistants:** Amanda Burelli, Lucio Furlanut  
**Design:** Barbara Gentilini, Marco Disnan

### Works director:

Agnese Presotto  
**Operational works director:** Ivo Fachin  
**Executive phase safety coordinator:** Roberto Finati  
**Supervision:** Friuli-Venezia Giulia Region Fine Arts Superintendency, Udine department  
**Main contractors:**

Edilcostruzioni Group s.r.l., Acquaviva s.r.l.  
**Stone suppliers and installation companies:** Consorzio Pietra Piasentina Torreano, Bardo Stone s.r.l.s., Paving Stone srl  
**Archeological digs:** ARxE  
**Mapei coordinator:** Marcello Deganutti, Mapei SpA (Italy)

### MAPEI PRODUCTS

Mapestone TFB 60, Mapestone PFS 2, Planicrete

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



## Orte (Province of Viterbo, Italy) Old town centre

80 km a north of Rome, sitting on top of an isolated volcanic cliff and surrounded by the Tiber Valley, Orte is an ancient and historic hamlet, a jewel full of medieval buildings, churches and unusual underground tunnels, as well as important Roman and pre-Roman archaeological remains. The paving in the hamlet, dating back to the 1980s and made from slabs of local basalt, was in very poor condition with slabs either detached or broken, and had been almost completely patched-up with asphalt and several attempts at maintenance work.

Thanks to the foresight of the local town council, in just two years three separate regeneration inter-

ventions were carried out.

The designers re-proposed the local tradition of paving the roads with basalt slabs and to use basalt cobblestones for the pavements, but added a modern twist by deciding to use the MAPESTONE SYSTEM for the paving, consisting of MAPESTONE TFB 60 for the installation bed, PLANICRETE for the bonding slurry and MAPESTONE PFS 2 VISCO for grouting the joints.

Particular attention was paid to the positioning of the joints, which were created using MAPEFLEX E-PU 21 SL sealant and MAPEFOAM polyethylene foam cord, as well as around the drain covers and numerous manhole covers.

### TECHNICAL DATA

**Period of the intervention:** 2019, 2020-2021

**Owner:** Orte City Council  
**Design:** Marcello Libriani, Giulio Follatello  
**Works directors:** Marcello Libriani, Giulio

Follatello  
**Product managers:** Enrico Fonti, Pino Cruciani  
**Supervision:** Viterbo Province Archeology, Fine Arts and Landscape Superintendency

### Main contractors:

Edilizia Covi di Prostanto Carmela, Marini e Darida Scavi e Trasporti Srl  
**Mapei coordinators:** Grazia Signori and Alessandro Mechelli, Mapei SpA (Italy)

### MAPEI PRODUCTS

Mapestone TFB 60, Mapestone PFS 2 Visco, Planicrete, Mapeflex E-PU 21 SL, Mapefoam  
For further information on products: [mapei.com](http://mapei.com)





## Tradate (Province of Varese, Italy) Piazza Unità d'Italia

Thanks to the contribution of the Lombardy Region (L.R. No. 9, 2020 – Operations to promote economic recovery), Tradate local council decided to carry out radical work on Piazza Unità d'Italia, built at the end of the 1980s, which was being used as a carpark and was in very poor condition.

Converted to pedestrian use, the damaged paving was replaced with new, pervious paving in exactly the same pattern. The designer decided to replace the red Trentino porphyry blocks with Cuasso al Monte pink porphyry, the white Carrara marble cubes with white Montorfano granite and the large concrete tiles with cubes of Luserna stone. All the elements were installed using the loose-bed method and were grouted with MAPESTONE JOINT solvent-free, polyurethane binder to guarantee a perfect seal. The pink porphyry and the white granite were installed in parallel rows, while

the stone was mainly installed in a dovetail pattern. And there were also two new features for the pleasure of young and old alike: the carpet of stone blocks included the design of a chess board and a hopscotch court.



### TECHNICAL DATA

#### Year of the intervention:

2021

**Client:** Tradate City Council

**Design:** Filippo Maffiolini

**Works direction:** Filippo Maffiolini

#### Stone materials:

Cuasso al Monte pink porphyry, white Carrara marble, white Montorfano granite, Luserna stone

**Project manager:** Marco Cassinelli

#### Main contractor:

I.G.E.S. srl

**Installation company:**

Appia Antica Srl

**Mapei coordinator:**

Grazia Signori and Marcello Deganutti, Mapei SpA (Italy)

#### MAPEI PRODUCTS

Mapestone Joint

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

# Mapestone® Joint

THE SOLUTION FOR ELASTIC,  
PERVIOUS URBAN PAVING.



Mapestone Joint is a polyurethane binder used to create  **durable, elastic, pervious architectural paving** for vehicles, including intense traffic. A one-component solvent-free product compliant with UNI 11714-1 and REACH regulations.

EVERYTHING'S OK  
WITH MAPEI

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





# Mapestone for paving

DURABILITY, RESISTANCE AND SAFETY FOR THE NEW PAVING IN THREE EUROPEAN CITIES



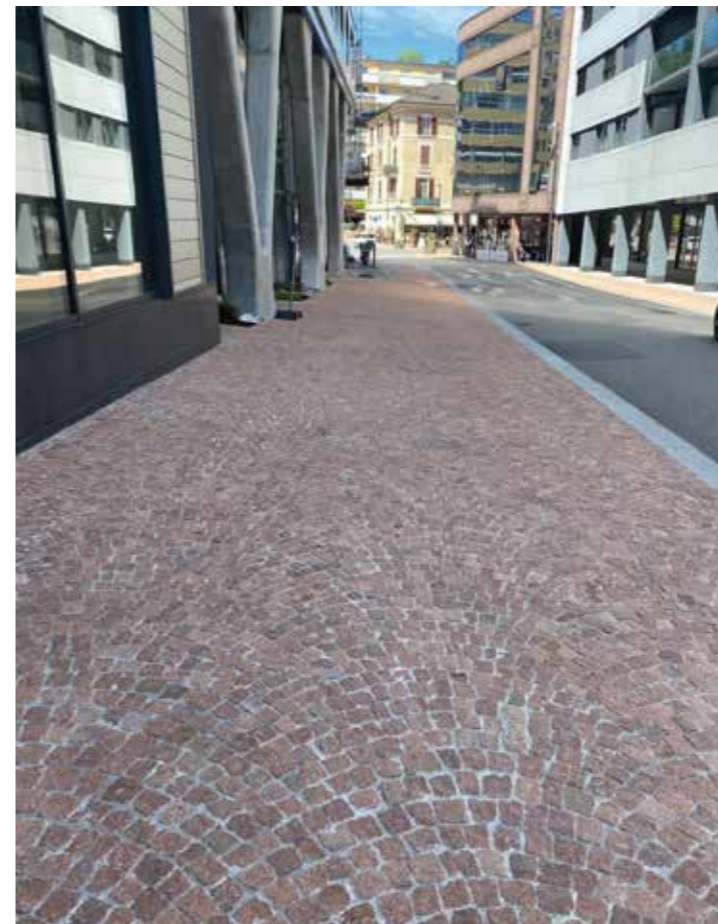
## Košice - Slovakia

The old part of the centre of Košice, where the city's most important monuments are located, is one of the most beautiful and best preserved in the whole of Slovakia. In the last few years the stone paving was in very poor condition, with cracks and badly deteriorated areas that were putting the safety of pedestrians and cyclists at risk. The local authorities contacted Mapei, who recommended removing the existing grouting mortar used for the stone cubes and then applying MAPESTONE PFS PCC 2 pre-blended, polymer-modified mortar with a low modulus of elasticity, which is ideal for grouting stone paving and guarantees a high level of durability, including in areas exposed to freeze/thaw cycles. Using MAPESTONE PFS PCC 2 mortar, along with a site-mixed mortar installation bed, is an ideal solution for natural stone paving used exclusively by pedestrians and cyclists.



## Balchik - Bulgaria

Balchik is a coastal and tourist town on the Black Sea in the north of Bulgaria. Also known as the "White City" because of the colour of the hills around the town, it has a beautiful seafront overlooked by historic buildings. The pavement along the seafront is 2 km long and was restored in 2020 thanks to a consistent joint-investment from the Bulgarian and Romanian governments. The new pavement was made from granite and the joints between the slabs were grouted with MAPESTONE PFS2, a pre-mixed mortar for grouting XF4 and XS3 exposure class decorative stone paving, which has particularly high mechanical properties and high resistance to de-icing salts, seawater and freeze/thaw cycles. This solution, which is ideal for paving used exclusively by pedestrians and cyclists, means the new seafront was ready to welcome the tourists and spectators visiting the town to see the musical events in programme, such as Piano Days and the Jazz Festival.



## Paradiso - Switzerland

On the borders with Lugano lies Paradiso, an administratively independent municipality overlooking Lake Lugano. The centre of the city recently underwent renovation work, which also included the paving. To install the attractive stone chosen to create the new paving, it was decided to use MAPESTONE, a complete paving system which guarantees high durability and high resistance to freeze/thaw cycles and compressive loads. The system included installation of red porphyry cubes using MAPESTONE TFB 60, a pre-blended mortar for installation beds for exposure class XF4 and XS3 stone paving, and then MAPESTONE PFS2 pre-mixed mortar for grouting the joints.





Mural paintings have brought a new look to several areas in the old centre of this Sicilian city

## A splash of colour to regenerate the city

The old town centre of Rosolini, in the province of Syracuse (Sicily, Italy), has been given a new look thanks to the energy and colour of the murals created during the first edition of Street Art Rosolini, an event organised to redevelop some areas of the town centre. The project was launched following a study of the most fragile and degraded points of the urban fabric, with the aim of giving them new life through art but also through social aggregation and collaboration between different generations. The masonry surfaces, now decorated with murals, were prepared with PRIMER 3296 and QUARZOLITE BASE COAT colored acrylic undercoat to provide the artists with a clean and sound substrate.

The acrylic paints COLORITE PERFORMANCE and QUARZOLITE PAINT were instead the protagonists of the murals themselves. For the paintings on metal substrates (steel shutters), the substrates were treated with DURSILAC NO RUST primer and the enamel paints chosen were DURSILAC GLOSS, DURSILAC SATIN and DURSILAC MATT. Sponsor of the event was the Mapei distributor Punto Ceramiche, owned by Patrizia Paolin.





“We focus on residential buildings, sports facilities and infrastructures. Considerable public investment is being made in these sectors to support the nation’s economy”



# Hungary, training is the key to our strategy

WE SPOKE WITH BELA MARKOVICH, GENERAL MANAGER OF MAPEI KFT, THE GROUP’S HUNGARIAN SUBSIDIARY

## How has Mapei’s presence in Hungary changed and grown since it began doing business in the country back in 1991?

Mapei Kft. was founded in 1991 with 4 people. At the first year, the turnover of the company was 24 million HUF (66,000 Euro). Turnover for the second year, which was a full year, was 63 million HUF (about 174,000 euro). Mapei was not known at all in Hungary, either as a brand name or for its products. In the beginning, we only distributed products for the installation of ceramic tiles, stone materials, resilient and textile materials, concrete repairs, as well as admixtures for concrete.

By today Mapei has become a dominant company in the building chemical market in Hungary. The number of employees exceeded 200 people and the turnover was over 22 billion HUF in 2020 (over 63 million Euros). We have two powder mixing lines and a small concrete admixture mixing plant.

At the start, everyone was doing almost everything. Nowadays, there are clearly defined departments

and roles with fixed processes that ensure efficient operation and continuous growth.

## What are Mapei’s strategies for strengthening its position on the Hungarian market?

One of the main elements of our strategy, which has remained unchanged for 30 years, is the continuous training and development of our professionals, designers and partners. We are constantly concerned that the contractors who use our products receive from us the knowledge that will enable them to create the best quality and long-lasting results.

We extended the training sessions to the sales agents of our trading partners. We hold sales trainings and organize company management, personnel management, sales and communication training for the professionals of our industry. Besides, we are permanently looking for areas of opportunity to help our target groups to contribute to their success. This is also the mission of our company: to help build-

ing companies and professional partners to make their construction dreams true by using our solutions.

## The building industry is still the driving force behind Hungary’s economic growth: which business sectors will Mapei be focusing on in future? Will there be fresh investment on various levels?

The construction industry is still the engine of the economy in Hungary. The Hungarian government supports the development of the construction industry with a wide variety of subsidies and programs. Our company focuses on 3 important areas, because these areas are expected to undergo major investments, as for both new constructions and renovation projects. The first field is the production of flats and the construction of new single-family houses. Many companies establish subsidiaries and install production facilities in Hungary and we also focus on these investments: the construction of manufacturing facilities and the projects to strengthen the existing production

lines. Over the next few years, substantial governmental investments are expected, such as those devoted to stadiums and sports halls, as well as to infrastructures, both for the construction of new highways and the renovation of old roads.

## Research, innovation and sustainability are the latest frontiers of the Hungarian economy, too: does Mapei have any trump cards to play in this respect?

In order to achieve sustainable development, R&D and innovation play a very important role for us. Perhaps, the most important element we deal with is made up by human resources. We develop and train colleagues but we also train the partners’ staff who choose and use the final solutions for building and make the buildings serve their purpose on a long term.

We continuously keep on researching the market; we are monitoring the needs of our partners and taking these into account, developing new innovative products in cooperation with the Mapei central R&D

MAPEI KFT

**1991**  
THE YEAR IT WAS  
FOUNDED

**63.2**  
MILLION EUROS  
(22.6 BILLION FORINTS)  
TURNOVER IN 2020

**15,000 m<sup>2</sup>**  
MANUFACTURING AREA  
IN SÓSKÚT

**101,171**  
TONS OF SOLID  
PRODUCTS AND  
2,979 M<sup>3</sup> OF ADMIXTURES  
YEARLY PRODUCTION  
OUTPUT

**211**  
STAFF

**1,312**  
REGULAR CUSTOMERS



The Mapei Kft’s manufacturing plant in Sósokút in northern Hungary.





**RIGHT.** Mapei products were used for thermal insulation, finishing the façades, waterproofing the substrates and installing ceramic tiles in this residential complex shaped like a yacht in the town of Balatonszemes.

laboratory, based in Milan. When developing new products, we always try to use raw materials that are safe for human health and as many recycled materials as possible. Innovation is not limited to the development of new products: we also continuously innovate and improve the operation processes of the company, so that they are as efficient and sustainable as possible.

**Which product lines are most popular with the Hungarian market?**

Our most popular product lines include products to install ceramics,

stone, resilient and textile materials. However, part of our strategy is to introduce all Mapei product lines to the Hungarian market, as with them we can help our target groups and the market in a much wider area to create durable and reliable buildings.

**The pandemic has slowed down the growth of the Hungarian economy, which, however, is now starting to recover: what conclusions can we draw from this tricky period, even as regards Mapei?**

Of course, the pandemic and its consequences have affected all

businesses, including Mapei Kft. We helped both staff and partners with continuous and accurate information and a package of infection prevention. However, this situation also turned to have some benefits. It has made us aware that we have communication tools which we can use to save time, energy and cost, and that we can speed up the process without damaging our contacts. This period also made us see that we need to constantly look for ways to help our employees more and better to make production even more efficient and effective, and to help partners make their lives easier.

**What measures has the Government in Budapest taken to help the post-Covid 19 recovery?**

The government took number of measures in order to facilitate recovery: VAT on new housing construction was reduced to 5%; maximum 3 million HUF (over 8,000 Euro) subsidy is provided for home renovation; wage support is provided to entrepreneurs; a significant pay rise was given to medical staff; credit moratorium for families and businesses; young people under the age of 25 are assured an exemption of personal income tax; interest-free loan of 10 million HUF (27.600 euro) for businesses.

**RECORD RESULTS EVEN DURING A DIFFICULT YEAR**

For the first time in Mapei Kft's history, its press conference was held online on 24<sup>th</sup> March. Participants received updates and news about the company's results in 2020 and its projects for this year with the help of information provided by Veronica Squinzi, the Group's CEO, and Béla Markovich, General Manager of Mapei Kft.. As in previous years, Mapei Kft has continued its process of growth and, bearing in mind the 17.4% increase in income, compared to 2019, the rise in production, the turnover (22.6 billion Hungarian forints) and the number of regular customers (1312), it is fair to say that the 2020 results were the best ever. This growth was certainly favoured by the national economy, which, despite the slowdown recorded in 2020 (-5%), will continue to see its GDP rise by 5% in 2021 and by 5.5% in 2022, according to forecasts made by the European Commission. This is being helped along by the healthy state of the building industry: there was an 11% annual rise in production on the Hungarian building market in January, 7.4% higher than the previous month.

**Supporting professionals with across-the-board training**

The press conference outlined the results of a survey carried out among 4450 people. The survey showed that the response time of qualified professionals in the Hungarian building industry is on average 133 days, back to the levels it was before the pandemic. This confirmed one of the problems Mapei Kft has had to deal with for some time now: a lack of qualified manpower.

Mapei Kft has continued, and will continue in 2021, to promote professions in the building industry among students, for example with the help of videos and paper documents handed out in schools in various parts of Hungary.

Another "weapon" the Hungarian subsidiary has always used to tackle this problem is training: approximately 6100 professionals were involved in its training events in 2020. It set up a community of Hungarian experts in the building industry, which now boasts approximately 2720 members. Mapei Kft. also launched the so-called "Training programme for ideal specialists", which aims to promote know-how not just on a technical level but also in other related matters, and the "Master of Masters" Award that has been showcasing the achievements of professionals working in this industry since 2015.

Mapei Kft was awarded the 2019 "CSR" National Prize in the "Shared problems, shared responsibilities" category for its commitment to helping players in the building industry. This follows a prize it was awarded by the Hungarian Ministry of the Economy in 2015 for its training operations. These prizes follow closely in the wake of others Mapei Kft has received over recent years in the realms of marketing, corporate ethics and corporate management: last year, for instance, the subsidiary received the 2020 UNICEO Live Communication Award for its original virtual dinner organised with its clients, who were sent everything they needed to cook and enjoy dishes in the "virtual" company of the subsidiary's own staff.

**All kinds of building work**

So, it is hardly surprising that Mapei Kft. has managed to supply innovative products for building operations carried out all over Hungary, helping in the construction of buildings used for miscellaneous purposes. Amongst those completed last year, it is worth mentioning the Pesterzsebet Spa Resort, Alföldi Tej Dairy, a number of new housing complexes, the "House of Hungarian Millennium" Multicultural Centre, Cabernet Visitors Centre, Ferenc Puskas Stadium, Párisi Udvar Hotel in Budapest, and Zalakaros Medical Centre spa (see the next few pages).



**ABOVE.** Mapei helped renovate the famous old "House of the Hungarian Millennium" in Budapest by supplying products for laying the resin floors and installing ceramic coverings.

**BELOW.** Zalakaros spa facility has been renovated using Mapei products for preparing the substrates and installing ceramic tiles.





# An overview of projects

FACTORIES, HOTELS AND RESIDENTIAL COMPLEXES:  
MAPEI PRODUCTS WERE USED IN RECENT YEARS FOR NEW  
BUILDS AND TO RENOVATE EXISTING STRUCTURES



## Párisi Udvar Hotel - Budapest

The Párisi Udvar Hotel is located inside a historic building in the centre of Budapest, which was recently bought by the Hyatt Hotel chain. During the refurbishment work on the building, particular care was taken with the ceramic coverings. New ceramic flooring, designed by the Hungarian artist István Zakar, was installed in the central foyer. The concrete substrate was levelled off with PLANITOP FAST 330 cementitious mortar before applying MAPETEX SEL membrane to protect the flooring from stresses in the underlying layers. The ceramic tiles were installed with ELASTORAPID adhesive and joints were grouted with ULTRACOLOR PLUS mortar.



## Alföldi Tej Dairy - Debrecen

In the summer of 2019, the Alföldi Tej Dairy was extended and renovated to increase production capacity and provide space for 200 new employees. Going into detail, an external insulating system was installed on the façades and then protected and painted to give them the effect of a large carton of milk. Insulation of the building is guaranteed thanks to the installation of the MAPETHERM system using EPS insulating panels, while the external surfaces were treated with acrylic-based UNIVERSAL BASE COAT and then painted with white and blue QUARZOLITE TONACHINO SP and ACRYCOLOR TONACHINO coating products. These products are distributed on the Hungarian market by Mapei Kft.



## Multi-family housing complex - Siófok

The city of Siófok, on Lake Balaton, is a much-loved holiday destination and residential locality in Hungary. A large, 6-storey residential complex was built recently, right on the

shore of the lake, consisting of 56 apartments with panoramic balconies, an underground garage, gardens and outdoor parking. The MAPETHERM TILE SYSTEM was chosen for this project to insulate the ceramic tile façades, while the tiles were installed with ULTRALITE S2 and grouted with ULTRACOLOR PLUS. As for further façades, after installing the MAPETHERM external insulating system, they were painted with an undercoat of SILANCOLOR BASE COAT, followed by a top coating of SILANCOLOR TONACHINO. In the apartments themselves, ceramic tiles were installed in the bathrooms, corridors and communal areas with the adhesives ADESILEX P9, KERAFLEX and KERAFLEX EASY S1 and joints were grouted with ULTRACOLOR PLUS. Expansion joints were sealed with MAPESIL AC, MAPESIL LM and MAPEFLEX PU 45 FT. Before installing the tiles in the bathrooms, the surfaces were waterproofed with MAPELASTIC AQUADEFENSE and MAPEBAND PE 120.



## Budapest

## Ferenc Puskás Stadium

WATERPROOFING MATERIALS, RESIN FLOORS AND BUILDING SOLUTIONS FOR ONE OF HUNGARY'S LARGEST SPORTS STADIUMS

The new stadium in Budapest, dedicated to the footballer Ferenc Puskás, is a monumental structure worthy of the legendary status of this Hungarian champion. Rebuilding work on the remains of the old stadium, which started in 2017 and was completed in 2019, was one of the largest ever investments in Hungary for a sports complex: 190 billion Forints (around 610 million Euros) to build a stadium, which has a capacity of 67,000 and was used to host some of the 2020 UEFA championship matches.

The stadium is made up of a structure with 38 forty-metre high steel and reinforced concrete pylons. Two cement mixing units were installed directly on site to actually construct the load-bearing structure, each one with a maximum daily output of 1,200 m<sup>3</sup> of concrete. Every day, the site had a workforce of 1,500 and 21 cranes, all working at the same time.

**Waterproofing at 360°**

Mapei played a key role in the construction of the new stadium, supplying products for various areas and applications, such as MAPEFILL MF 610 expansive grout to anchor the large pylons of the

load-bearing structure.

But it was with all the waterproofing applications that Mapei really made its mark, proposing specific solutions for each of the specific problem areas. For example, for the surfaces below ground level exposed to water under pressure from the subsoil, and for the surfaces on the ground floor exposed to moisture from the ground, technology had to be employed that would guarantee excellent water-tightness while forming a tough bond with the substrates. For this reason, for this part of the work, 10,000 m<sup>2</sup> of surfaces were sprayed with PLASTIMUL 2K SUPER and PLASTIMUL 1K SUPER PLUS two-component, solvent-free, highly flexible, low-shrinkage, thixotropic bituminous emulsions. For the reinforced concrete masonry below ground level, on the other hand, the preference went to PLANISEAL 88 one-component osmotic mortar, with excellent adhesion to the substrate for complete waterproofing, even in the presence of negative pressure.

For the water storage tanks and the bathrooms, the product employed was MAPELASTIC FOUNDATION, a two-component, flexible, cementitious mortar ideal for waterproofing concrete surfaces subjected to positive and negative water pressure. The possibility of applying the product either manually or by spray using a rendering machine was a deciding factor in choosing this product. For the plant service rooms, a quick, effective and reliable waterproofing solution was needed, one that could guarantee excellent tensile strength, tear strength and elongation capacity, as well as long-term resistance to leaking between the various levels of the structure, including in the case of cracked piping. Which is why the PURTOP SYSTEM was used, which consisted of the application of a coat of PRIMER SN two-component, epoxy primer on the substrate, a broadcasting of quartz sand over the primer and then application of PURTOP 400 M two-component, hybrid polyurea membrane. The surfaces were then treated

**Problems and solutions**

Products from various Mapei product lines had to be used to build this complex, imposing structure, but it was the waterproofing products that played a particularly important role. Different types of products that complied to perfection with the specific needs and requirements of the project and which helped overcome various challenging problems encountered on site. These included products from the PLASTIMUL line, the PURTOP system and products from the MAPELASTIC family, with each of them used in different areas and for different needs.



**ABOVE.** The Ferenc Puskás stadium was rebuilt and completed in 2019 and can now host 67,000 spectators.

**BELOW.** To build the structure, a workforce of 1,500 and 21 cranes worked together every day on site, along with two cement mixing units to produce the concrete.

with PRIMER P3 two-component polyurethane primer and covered with two coats of MAPECOAT TC aliphatic polyurethane finish.

To ensure sound installation of ceramic tiles on around 42,000 m<sup>2</sup> of substrates in the bathrooms, showers, kitchens and changing rooms, the surfaces were first waterproofed with MAPELASTIC AQUADEFENSE membrane and MAPEBAND rubber tape after treating them with PRIMER G and levelling them off with ULTRAPLAN RENOVATION. The ultra-quick-drying properties of MAPELASTIC AQUADEFENSE were a crucial factor in opting for this product because it made application that much easier, even when the surrounding temperature was particularly low.

**Installation of ceramic wall coverings and resin floors**

Ceramic tiles were installed in various areas of the stadium (bathrooms, changing rooms and kitchens) using the adhesives KERAFLEX LIGHT S1, distributed on the Hungarian market by Mapei Kft., and ADESILEX P9. The joints were grouted with KERACOLOR FF FLEX (a mortar distributed on the Hungarian market by Mapei Kft.), while the expansion joints were sealed with MAPESIL AC. MAPEFLOOR PARKING SYSTEM HE, a multi-layered polyurethane system with excellent physical and mechanical characteristics that provides surfaces with long-lasting protection, was used for the floors in the VIP stand and in the business and







**LEFT.** The emulsions PLASTIMUL 2K SUPER and PLASTIMUL 1K SUPER PLUS were used to waterproof the structures below ground level exposed to ground water under pressure and for the surfaces on the ground floor exposed to moisture coming from the ground.

**RIGHT.** Application with a rake of MAPEFLOOR PU 410, one of the components of the MAPEFLOOR PARKING SYSTEM HE used to create resin flooring in the stands and on the external (north and south) access ramps to the stadium.

press boxes, as well as on the external ramps (north and south) that provide access to the stadium. The system consisted of the application of a coat of PRIMER SN followed by the polyurethane binders MAPEFLOOR PU 400 LV and MAPEFLOOR PU 410 and, to finish, the two-component, aliphatic, top-coat MAPEFLOOR FINISH 451. Between each layer of the system, the surfaces were broadcast with various grades of quartz sand, according to the type of material applied and their particular function within the layered system.

**Concrete repair in the museum**

The only part of the old Puskás stadium left standing in the new stadium was a tower, which was converted into a museum dedicated to sport.

Specific restoration products had to be used on the tower to repair the old concrete, such as MAPEFER 1K anticorrosion mortar for the reinforcement rods, MAPEGROUT 430 thixotropic mortar to repair the surfaces of damaged concrete, PRIMER 3296 to consolidate the screeds and PLANITOP 550 mortar, which is distributed on the Hungarian market by Mapei Kft., to create a tough, even surface on the old stairs.



Find out more  
**PURTOP 400 M**

**TECHNICAL DATA**

**Ferenc Puskás stadium,** Budapest (Hungary)

**Period of construction:** 2017-2019

**Period of the Mapei intervention:** 2017-2019

**Intervention by Mapei:** supplying products for waterproofing, anchoring, installing ceramic tiles, laying resin floors, repairing concrete

**Owner:** Hungarian Football Federation

**Main contractors:** Magyar Építő PLC-Záév PLC Consortium, Épkar

PLC, WHB LLC

**Design:** György Skardelli

**Resin flooring contractors:** SpecTech LLC

**Waterproofing contractor:** Akvaszig LLC

**Concrete repair contractor:** Tipox

Betontechnika LLC

**Contractor for the installation of ceramic tiles:** Stukkó

LLC Ratskó-Bau LLC, Dominó LLC

**Mapei distributor:** BNF Department Store

**Mapei coordinators:** Gergely Garay, Zsolt Dunai, István Jankovits,

Zsolt Marton, Ervin Horváth, Mapei Kft. (Hungary)

**MAPEI PRODUCTS**

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# CRM technology systems

## INNOVATIVE SYSTEMS FOR THE STRUCTURAL STRENGTHENING OF EXISTING BUILDINGS

The constant evolution in technologies and standards covering the renovation and regeneration of buildings has led to the use of innovative materials for the structural strengthening of existing buildings becoming more widespread. Amongst all these new technologies, CRM (Composite Reinforced Mortar) systems are now widely adopted as an alternative to the more traditional reinforced render technique, and are, in fact, an evolution of this technique.

CRM systems are reinforced renders consisting of structural mortars, applied in layers 3 to 5 cm thick, used in combination with preformed, glass fibre composite (GFRP) mesh mechanically connected to the masonry to be strengthened using special connectors, which are also made from composite material, their function being to transfer stresses from the substrate to the strengthening package. In this type of system, the function of the mesh is to absorb tensile stresses, while the mortar helps absorb compressive forces. The aim of this type of technology is to improve the mechanical properties of masonry and increase collaboration

between the various elements masonry is made from.

This means that these systems are recommended for improving and upgrading the seismic capacity of historic buildings, and for more homogeneous, widespread consolidation of all types of deteriorated masonry. Also, they are used to improve the compressive strength of load bearing wall, of vaults by adding a collaborating screed and to form anti-collapse systems for ceilings.

Compared with traditional systems, consisting of the application of reinforced render made from electro-welded mesh and several centimetres of concrete, CRM systems are more ductile and lighter, in that more compact layers are applied and the mesh is made from more lightweight material. Besides, they are characterised by their higher durability and by being fully compatible with existing masonry. What is more, not having metal components within the system, there is no problem of corrosion in rebar.

From a standards aspect, CRM systems can be qualified through ETA (European Technical Ap-

**LEFT.** Strengthening the extrados side of the vaulted ceiling of Palazzo Zicari Hotel in Matera (Italy).  
**ABOVE.** The meshes used in CRM strengthening systems increase overall strength and resistance and confine the elements to be reinforced.

proval) and national guidelines. For their design, they can be equated to the traditional strengthening system.

### High performance lime-based mortars

In order to guarantee excellent mechanical properties and a high level of chemical/physical compatibility with all types of substrate on structures (brick, tuff, stone and mixed), including those of historic and architectural interest, Mapei has developed two high-performance (CS IV and M15), breathable, fibre-reinforced, natural hydraulic lime-based mortars for render and masonry recommended for use in CRM systems, which may be applied either by trowel or with a rendering machine:

- MAPEWALL RENDER & STRENGTHEN: natural hydraulic lime-based mortar with reactive inorganic compounds, natural sand, special admixtures and micro-fibres, with very low emission of volatile organic compounds (EMICODE EC1<sup>plus</sup>);
- MAPE-ANTIQUE STRUTTURALE NHL: cement-free, NHL (Natural Hydraulic Lime)-base-

mortar with Eco-Pozzolan, natural sand, recycled materials, special admixtures, micro-fibres and glass fibres.

### Glass fibre structural meshes: lightweight and strong

The meshes used in CRM strengthening systems increase overall strength and resistance and are necessary in order to confine the elements to be reinforced.

The meshes in Mapei's portfolio are preformed and made from alkali-resistant glass fibres and a polymer matrix. These types of mesh are applied in combination with preformed glass fibres connectors, which are also alkali-resistant, and guarantee connection of the reinforced render with the masonry element and with the strengthening system applied on the opposite side of the element, where provided for. To anchor the connectors to the substrate or to couple them together, a chemical anchoring product is used, such as MAPEFIX VE SF. Mapei has two types of mesh available, as well as connectors and special pieces.



## THE EXPERT'S OPINION

### MAPENET EM range

This range is made up of MAPENET EM30 and MAPENET EM40, pre-impregnated, A.R. (alkali-resistant) glass fibre meshes (FRP) containing at least 16% of high-strength zirconium dioxide which, thanks to their special weave pattern, give strengthened structures a high level of ductility and more even stress distribution.

The mesh is fastened monolithically to the structure with MAPENET EM CONNECTOR, preformed, L-shaped fasteners made from alkali-resistant glass fibres and thermo-setting resins, such as vinyl-ester-epoxy resin, which are inserted into the masonry at a recommended rate of around 5 connectors/m<sup>2</sup>. The meshes are highly flexible so they may be shaped accordingly to suit the form and geometry of the structure.

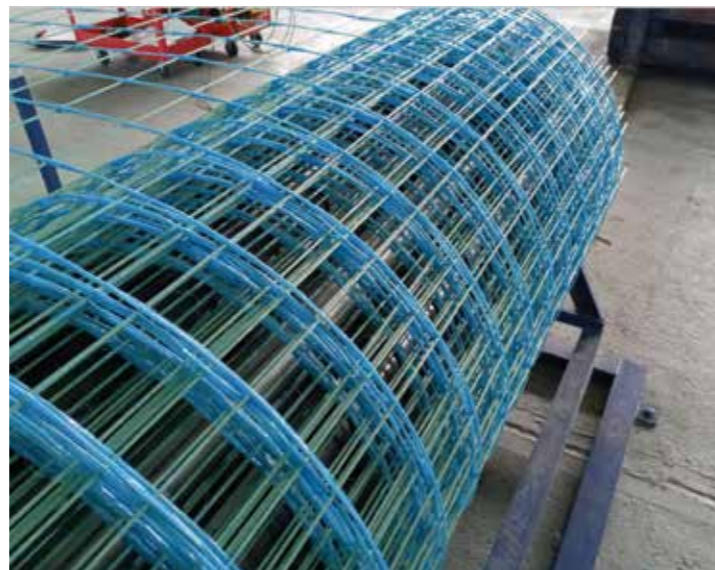
### The new MAPENET EMR range

The new meshes from the MAPENET EMR range (MAPENET EMR 33/66/99) differ from the types mentioned above for their higher sectional stiffness, which means special angular/corner pieces need to be used (MAPENET EMR ANGOLARE 33/66/99). Using stiffer mesh makes full use of the bidirectional membrane-type behaviour of the mesh, creating structural continuity by using special corner pieces in order to also create monolithic mesh in particularly difficult areas, such as internal and external edges and corners. As with the EM range, the new MAPENET EMR meshes also need a connection to be created between the system and the substrate to transfer stresses, which is achieved by using special connectors, also made from glass fibres, called MAPENET EMR CONNECTOR.

The meshes and connectors used in CRM systems are made from lightweight materials, they are easy to handle, are dielectric (do not conduct electrical currents) and they do not suffer from corrosion, ageing or decay. What is more, thanks to their particular conformation, they are characterised by their excellent adhesion to the mortar they are applied with.



Detail view of the insertion of the MAPENET EM CONNECTOR within the CRM system.



A mesh from the new MAPENET EMR range.

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**Daniele Sala**, Restoration Line for Masonry Building;  
**Rossella Comensoli**, Structural Strengthening Line,  
Mapei SpA (Italy)

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Anne Lacaton and Jean-Philippe Vassal. Photo courtesy of Laurent Chalet

# Cost-effective, Sustainable architecture

2021 PRIZE  
AWARDED TO  
THE FRENCH  
ARCHITECTS ANNE  
LACATON AND  
JEAN-PHILIPPE  
VASSAL

Officially announced by the President of the Hyatt Foundation (and eldest son of the Prize's founder, Jay A. Pritzker), Tom Pritzker, on the 16<sup>th</sup> of March, the 2021 Pritzker Prize was awarded to the French architects, Anne Lacaton and Jean-Philippe Vassal.

The verdict of the jury was that their work "reflects architecture's democratic spirit. Through their ideas, their approach to the profession and the resulting buildings, they have proven that a commitment to a restorative architecture, that is at once technological, innovative and ecologically responsive, can be pursued without nostalgia". In fact, it is since 1987, when Lacaton and Vassal founded the Lacaton&Vassal design studio, that this has been the objective of their

design work. The two architects met at the École Nationale Supérieure d'Architecture et de Paysage de Bordeaux (France), where they both graduated at the end of the 1970's. Vassal then moved to Niger, where Anne Lacaton was also a regular visitor. Their experience in Africa had a profound influence on their view of architecture and their approach to projects, particularly with regards to two guiding concepts: reducing consumption of resources and doing a lot with very little. For more than thirty years they then worked in Europe and West Africa, designing social housing, private houses and cultural and academic institutions, as well as urban redevelopment projects.

## Don't demolish and don't remove; add and transform

Amongst the projects worth a special mention are Place Léon Aucoc in Bordeaux where, by simply replacing the gravel and modifying the layout of the gardens and traffic flow, they brought a new lease of life and potential to a square typical of French towns. Other significant projects, this time in the residential sector, were the transformation of the Tour Bois le Prêtre block in Paris and the Grand Parc area in Bordeaux. For the latter project, three enormous council house blocks, for a total of 530 apartments, were redeveloped by upgrading



Transformation of G, H, I Buildings, Grand Parc, 530 Units, Social Housing (with Frédéric Druot and Christophe Hutin). Photo courtesy of Philippe Ruault and Pritzker Architecture Prize.

## "A design approach focusing on reusing existing buildings and paying attention to social needs, particularly in the realm of social housing"

their energy efficiency and adding winter gardens. New elements and features were added, enabling living areas to be extended, with a positive effect on the day-to-day life of the residents, and all at minimal cost.

Another interesting project was for the multi-award-winning Frac (Fonds Regional d'Art Contemporain) museum of the Nord-Pas de-Calais region. The new exhibition spaces were created by converting the old naval arsenal overlooking the port of Dunkerque. The project aimed at maintaining the old volume in its entirety and double it by wrapping it with a prefabricated glass structure. This project confirmed the architects' preferred materials: polycarbonate, glass, metal, and reinforced concrete.

## Respectful, without nostalgia

The jury defined Lacaton&Vassal's approach to design as "respectful of our existing heritage", yet at the same time without "nostalgia about the past". In fact, right from the very start, a characteristic trait of their work has been their respect for existing architecture combined with a far from common awareness of budgetary constraints, along with the ability to listen to the needs and requirements of final users. An approach that has driven Lacaton and Vassal to give



FRAC Nord-Pas de Calais, photo courtesy of Philippe Ruault and Pritzker Architecture Prize.

priority to locally-sourced resources, cost-effective materials and to "extend" the concept of sustainability to include requests from inhabitants. It is on the wave of this way of thinking that their architecture "responds to the climatic and ecological emergencies of our time, as well as social emergencies, particularly in the realm of social housing". The 2021 Pritzker Prize has brought to the full attention the concept of retrofitting: adding new technology to an old system to extend its service life. A particularly pressing issue, which the Lacaton&Vassal studio has been attempting to tackle right from the very start through their strategy of "Don't demolish and don't remove; always add and transform".





## Paris-Roubaix: Mapei's fab five

FIVE VICTORIES IN SIX YEARS, ALL THREE RIDERS ON THE PODIUM ON THREE EDITIONS: A LONG SUCCESS STORY IN THE MOST LEGENDARY ROAD RACE

Cycling was the Mapei Group's main means of publicity from 18<sup>th</sup> May 1993 to the end of the 2002 season. Mapei's Professional Cycling Team set all kinds of records, including winning five Paris-Roubaix one-day classics in just six years. The Paris-Roubaix is the most infernal of all the one-day cycling classics with long sections of cobblestone to be tackled from Arenberg Forest onwards.

In modern times the Paris-Roubaix is always raced over a distance of between 260 and 270 km and has the biggest worldwide television audience of all cycling races. Mapei's sequence of successes at the Paris-Roubaix began back in April 1995 thanks to Franco Ballerini.

"Reading and hearing people say we were the favorites in the run up to the race really spurred our team on", so Patrick Lefevere told us, the team manager of the squad with the cube-patterned jersey. Indeed, Mapei riders soon took control of the race. "I was the rider to inject some extra pace right after Arenberg Forest - so Gianluca Bortolami claimed, the winner of the previous year's World Cup - and the main bunch was split asunder. The Mapei riders left up front were me, Tafi, Museeuw and Ballerini. Among those to be dropped (but not too far behind) were Vanderaerden and Tschmil, although the latter managed to catch us up. I encouraged Ballerini to make a break after noticing some of our most dangerous rivals were not in the leading group. At first Franco was not so sure because there was still a long way to go. But then he decided to make a surge and Borto-

lami covered him from behind. Tschmil then tried to catch him. "I chased down Tschmil and then stuck to his wheel. Museeuw and the others eventually caught me and Tschmil, but in the meantime Ballerini was already celebrating his victory". Ballerini crossed the finishing line in Roubaix velodrome 1'56" ahead of Tschmil with Museeuw finishing third to complete a triumphant day for Mapei. Giorgio Squinzi, the team's owner, and Adriana Spazzoli, the former Mapei Group's Marketing and Communication Director, who were at the race in Roubaix, also heaped praise on Bortolami, who finished 10<sup>th</sup>.

### START OF A TREBLE

The 1996 race was the most famous of Mapei's treble at Roubaix. The first time in the modern era that three riders from the same team finished on the podium: Johan Museeuw came first, Bortolami was second and Andrea Tafi third, with Ballerini finishing fifth. "Once again I pushed on after Arenberg Forest to split the pack", so Bortolami explained. Tafi, Museeuw and Ballerini stayed with him up at the front of race. "Unfortunately, just as Tafi and I accelerated hard - so Bortolami added - Ballerini punctured".

Museeuw, Tafi and Bortolami kept up at the front. A lot has been said and written about that edition of the Roubaix. "Mr Squinzi - so Gianluca went on to say - phoned the sports director Fabrizio Fabbri, who was riding in the team car, and told him he wanted to see all the riders cross the finish line in Roubaix together,

1. 1995, Ballerini wins his first "Roubaix"
2. Winning breakaway in the 1996 race: Tafi sets the pace ahead of Museeuw and Bortolami.
3. 1996, from left, Tafi (third), Museeuw (winner, as in 2000) and Bortolami (second).

### TAFI: "GIORGIO SQUINZI'S PRAISE GAVE ME EVEN MORE STRENGTH"

Mapei riders took up all three places on the podium at the Paris-Roubaix on three separate occasions. Andrea Tafi is the only rider who was on the podium all three times: third in '96, second in '98 and the winner in '99. "I am really proud of this achievement - so he told us - because Mapei was and still is like a family to me". Andrea is also the only Italian rider to have won both the Tour of Flanders and Paris-Roubaix, the two most important races across the cobbles. During his career, the

rider from Tuscany won 32 races (24 riding for the Mapei team), including a Tour of Lombardy, a Paris-Tours, a Rochester Classic, and three Tours of Lazio (two with Mapei). "I can boast having won (on breakaways all by myself) prestigious one-day road races requiring different kinds of riding skills: the Tour of Lombardy for rouleurs-climbers, the Paris-Roubaix for super-rouleurs, the Paris-Tour for sprinters, and the Tour of Flanders for powerhouses up the short steep climbs. Unfortunately, I never won

the World Championships: that is the biggest regret in my career. I wanted to win the rainbow jersey to dedicate it to Giorgio Squinzi. I felt so strong and powerful when he told me I was both a leader and team player, perfectly embodying the true philosophy of the Mapei Group". Tafi is also the last Italian to have won the Roubaix. "I am proud of that, but I hope another Italian rider wins at Paris-Roubaix very soon. We have some great young cyclists, so we might not have very long to wait".





but without saying in what order". Fabbri and the team manager Patrick Lefevere decided the riders should finish in order of their positions in the World Cup rankings. "All three riders wanted to win – so Bortolami admitted - but we decided to follow the team orders and Museeuw's win took him to the top of the World Cup Rankings, where he remained until the end of the season. Tafi and I did at least enjoy hearing the crowd roar as we entered the velodrome: it was an amazing feeling". Mapei had to settle for Museeuw finishing third in the 1997 race.

#### SECOND WIN FOR BALLERINI

Mapei riders finished first, second and third again in the 1998 Roubaix: Ballerini crossed the finish line first ahead of Tafi with Wilfred Peeters coming third. As

Tafi pointed out: "The Mapei team was a perfect and unbeatable machine. I am glad I could help Ballerini win; he was phenomenal that day. I certainly was not disappointed at finishing runner-up in 1998. After coming third in 1996 and then second in 1998, I knew it would be my turn to win the Paris-Roubaix sooner or later". Tafi achieved his goal at Roubaix in April 1999. Yet another 1-2-3 for Mapei's riders: Tafi first, Peeters second and Tom Steels taking the final spot on the podium after a sprint finish. Tafi was also all alone when he crossed the finish line, with his only tense moment coming 20 km from the finish at the famous Carrefour de l'Arbre section "I punctured – so Andrea explained - but before the team car could get me, a Mapei fan handed me a spare wheel. I changed it and went on to win: it was the highlight of my career".



4. Podium 1998: Tafi (second), the winner Ballerini and Peeters, third.  
5. 1999, third triple: Peeters (second), the winner Tafi and Steels, third.  
6. 1999 race, Tafi as he rides to victory across one of the toughest sections of cobbles.

## OTHER FAMOUS VICTORIES BY THE GREAT MAPEI TEAM

The following riders all became world road race champions while they rode for the Mapei team: Abraham Olano (Spain) in Duitama in 1995, Johan Museeuw (Belgium) in Lugano in 1996, the Swiss rider Oskar Camenzind, who won in Valkenburg (Netherlands) in 1998, and the Spanish rider Oscar Freire in Lisbon in 2001. As well as 5 "Roubaix classics", Mapei won the Tour of Flanders in 1995 and 1998 with Museeuw and 2002 thanks to Andrea Tafi. Tom Steels (Belgium) won the Gand-Wevelgem in 1996 and 1999, while Frank Vandenbroucke crossed the finish line first in 1998. Michele Bartoli won La Flèche Wallonne '99 and the team won two Liège-Bas-

togne-Liège one-day races thanks to Paolo Bettini (2000 and 2002). Tafi also won the Paris-Tours in 2000, the Wincanton Classic in 1997 and Tour of Lombardy in 1996. Camenzind also won the Tour of Lombardy in 1998. Gianluca Bortolami came home first in the Zurich Grand Prix and Leeds International 1994. Other Mapei riders to win in Zurich were Museeuw (1995) and Bettini (2001). Mapei's great riders also won the individual World Cup in 1994 (Bortolami), 1995 and 1996 (Museeuw) and 2002 (Bettini). Mapei won the team World Cup 5 times: 1995, 1996, 1998, 2000 and 2002. As regards the Grand Tours, the Swiss rider Toni Rominger won the Vuelta a Espana in 1994 and Giro

d'Italia in 1995 riding for Mapei. The team won 654 races from 18<sup>th</sup> May 1993 to the end of the 2002 season. Steels won most races wearing the Mapei jersey: 56 victories.



#### WINNING WITH HIS LEG IN THE AIR

The Flemish rider Museeuw settled his score with Paris-Roubaix on 9<sup>th</sup> April 2000, when he won the race 15 seconds ahead of his rivals. He put on a show as he cycled up towards the finish line: he unclipped his right shoe from the pedal and lifted his left leg into the air instead of his arms. Raising his left leg, so badly injured in the Paris-Roubaix race two years earlier, was Johan's vendetta: "My leg is fine", so he told the world as he rode across the finishing line.

This was Mapei's fifth victory in this great one-day race over the cobbles. Peter Van Petegem finished second, ahead of Erik Zabel who came third. That made an incredible five victories for Mapei at Roubaix. April 2001: Mapei did not win that year's Roubaix, but one of its riders did ride a lap of honour around the velodrome. The rider was Franco Ballerini, who had just finished the final race of his career. He showed off his Mapei-branded T-shirt with the words "Merci Roubaix" written on it, paying tribute to a race that had been so exciting and emotional for him throughout his career and so thrilling for all the fans of the Mapei team.

## WE ARE STILL PART OF CYCLING

Mapei is still very closely involved with cycling. It is the official sponsor of the UCI Road World Championships, whose next edition will take place in Flanders (Belgium) on 19<sup>th</sup>-21<sup>st</sup> September, 2021. Several Mapei Group's subsidiaries are involved in cycling events and races, which are relevant on a national level, or sponsor local cycling teams. For example, Mapei d.o.o. supports the Tour of Slovenia. Mapei Inc. (Canada) sponsor the women's cycling team Macogep-Tornatech Girondins de Bordeaux. In Italy Mapei SpA supports various national youth teams at the Gran Fondo Colnago race and sponsors Re Stelvio Mapei, Maratona delle Dolomiti, "Tre Valli Varesine" and other cycling races in Italy. And the Mapei Sports Research Centre in Olgiate Olona (Northern Italy) is a top-class facility for testing and creating training plans for both professional men and women riders and youngsters competing in amateur and youth events.





# Raspadori, another young talent

THE YOUNG STRIKER HAS BEEN CALLED UP TO PLAY FOR ITALY IN THE EUROPEAN CHAMPIONSHIPS

Sassuolo finished the 2020-21 league championship in eighth place after a strong finish to the season. Giacomo Raspadori, aged 21, had a dazzling end to the season, scoring six goals to help the team win some valuable points. He really inspired the team. "They call me Jack - so the striker from Bentivoglio (Central Italy) noted - because it is short for Giacomo". Jack has always been obsessed with football. "Ever since I was five years old, I have dreamt of becoming a footballer". Over the years he has been compared to Mbappé, Haaland, and other young international stars. "That is something I am really proud of. It drives me on to reach those levels". Raspadori joined Sassuolo's youth programme when he was just a kid. At the age of 14 he received plenty of offers to join other big clubs: "I politely turned them down. I soon realised that Sassuolo felt like a family and the club put people ahead of everything else. Sometimes players become nothing more than numbers in the world of football. Together with my parents I decided to continue my career with Sassuolo". He is not just a centre forward: "I have always enjoyed helping other players score, too. I may not be somebody who provides lots of assists, but I have often shown I am not a selfish player".

## A VERY YOUNG CAPTAIN

On 3<sup>rd</sup> April 2021 in the match against Roma, team manager De Zerbi handed Raspadori the captain's armband. That made the young striker one of the youngest captains in the history of the Italian Serie A. "I only found out five minutes before the start of the match. They told me during the warmup, and I can assure you it was an incredible feeling. I had always been captain of the youth teams. When your team manager and teammates give you this kind of responsibility, it makes you feel important". He even scored in the match against Roma. "It was a perfect day". Giacomo, who has always been an Inter Milan fan, was



"When I was 14, I turned down offers from top clubs. I realised that Sassuolo felt like a family and the club put people ahead of everything else"

brought on in the second half of the game against AC Milan at San Siro Stadium with Sassuolo trailing 1-0. Jack then scored two goals to give Sassuolo a fantastic Coordinamento victory: lots of people said Raspadori thought he was playing in a derby: "In actual fact, I always have the same attitude in every match, concentrating just as hard in all games. But scoring two goals against AC Milan in just a few minutes in such a legendary stadium as the Meazza certainly sends shivers down your spine". When he was finishing at primary school and starting middle school, Jack's idol was Samuel Eto'o, a striker who played for the Inter Milan team that won the Champions League and World Club Championship. That is strange because Jack and the African striker have totally different playing styles. According to Jack, "I admired how well Samuel Eto'o could strike the ball and the way he was always a leader on the pitch. He was a leader in a very unassuming way and that is something I also admire. It was what he did and not what he said that really counted for him. I would like to be like him". Unfortunately, Giacomo did not manage to score in Sassuolo's 2-1 defeat against Inter Milan. "But that is not what I regret. I am just disappointed we left San Siro Stadium with no points, regardless of who scored". Giacomo is not just pleased about the way he played in the AC Milan-Sassuolo match. "My

best game ever was against Juventus. And I will never forget the Lazio-Sassuolo game in the 2019-20 season, when I scored my first goal in the Serie A".

## A NATURAL GOAL SCORER

Giacomo has a real striker's instinct, just like Pippo Inzaghi and Sergio Agüero, who have both won lots of trophies. "Being a natural goal scorer, as De Zerbi often describes me, is important. A striker must know how to take his chances. Nevertheless, I can also join in the team play just as effectively". Raspadori was a permanent fixture in the Italian Under 23 team. Recently he has been promoted into the full squad playing for Euro 2020 (which will be held in summer 2021) by the Italian team manager, Roberto Mancini. "Playing for the full national team is an incredible achievement. But I have no intention of resting on my laurels, being picked for the national team is just the start; you have to want to keep on improving. Realising you are representing Italy gives you incredible motivation. It is something you can feel inside". Even though he is now part of the national team, he is still very grateful to Sassuolo: "Peluso, Magnanelli and the rest of my more experienced teammates were the first to encourage me and urge me on when I was only occasionally picked for the first team".

## "GENERAZIONE S" IS UP AND RUNNING

Sassuolo's "Generation S" project is now up and running. The club presented the project at Mapei Football Center in Sassuolo. Generation S is focused on amateur football clubs for males and females so they can share activities, events and training programs. The presentation was attended by Veronica Squinzi, Vice-President of Sassuolo, Giovanni Carnevali, CEO and Managing Director of Sassuolo, Francesco Magnanelli, the team captain, and two testimonials who grew up with "Generation S", Benedetta Orsi, who plays for Sassuolo's women's team in the Italian Serie A, and Giacomo Raspadori. The President of the Emilia Romagna Region, Stefano Bonaccini, was also there. The project is divided into three main realms: Educational, Academy and Experience based around Sassuolo's main underlying principles. The project gives precedence to ethical-social factors to offer services to football clubs and football schools.

The clubs joining the project will be required to sign a charter of values. The courses and conferences will examine different issues: from technical-sports aspects and nutrition to psychology, marketing, education, and social networks. It will cover topics

that may be important to ordinary clubs interested in understanding how Sassuolo operates. The first "Educational" conference is planned to be held in September: "Recovery: the technical views of our experts".



FROM LEFT. Francesco Magnanelli, Giovanni Carnevali, Benedetta Orsi, Veronica Squinzi, and Giacomo Raspadori.



# NEWS FROM THE MAPEI WORLD

EVENTS, SPONSORSHIPS AND INITIATIVES FROM THE GROUP'S SUBSIDIARIES

## USA – A LOUNGE COMPLETED WITH MAPEI MARINE SOLUTIONS

Susan Sadolin, owner of Shores Global (a furniture supplier for the ship-building industry), has created the Innovation Lounge in Miami. The conceptual design was created by Tillberg Design of Sweden, with Mapei Marine and Mapei Corporation assisting with the construction. The Innovation Lounge contains spaces designed like a cruise ship, showcasing specific products for this part of the marine industry. Mapei showcased three of its finish coatings, including MAPEDECK TEAK DESIGN and MAPEDECK TEAK EVOLUTION teak-effect coatings, MAPEDECK TERRAZZO, a “Venetian Terrace-style” coating, and ULTRAPLAN MARINE FIRE, a self-smoothing cement underlayment. The photo shows Guido Sardi (left) and Mike Daniels (right) from Mapei Marine and Susan Sadolin (center).



## PANAMA – MAPEI SPONSORS TAURO FC

Mapei Panama is continuing its sponsorship of the professional football team, Tauro Fútbol Club, which began in 2018. The club plays in Panama's top division and is the current league title holder. This is an opportunity for the Panamanian subsidiary to enhance its brand's reputation across a huge audience and renew its commitment to sport at the highest level. Mapei Panama and Tauro FC share Italian “origins”: in the same way the Mapei Group was founded in Italy, Tauro FC was originally set up by the Italian industrialist Giancarlo Gronchi. This year the Mapei logo will appear on the right-hand sleeve of the players' shirts (in the photo, on the left).



## NORWAY – MORE MATHS FOR PUPILS

This year again, Mapei AS organised Mattekneker'n, a maths competition for high-school pupils. Over a period of 16 years, 1600 pupils have taken part in the event, including 500 in the 2021 competition alone, which was held online last March. The aim of the project is to promote science in schools, a goal shared by Mapei AS, which believes the sciences lie at the very foundations of Research & Development. So, it is hardly surprising that the General Manager of Mapei AS, Trond Hagerud (in the middle of the photo), attended an event that saw students from eight schools battle it out in various challenges before the grand final held on 17<sup>th</sup> March that was won by Eidskog High School.



## MALAYSIA – NEW TREES FOR EARTH DAY

On World Earth Day held on 22<sup>nd</sup> April, Mapei Malaysia organised events to protect the environment. Staff and the General Manager, Seow Aik Guan (in the photo, on the right of the poster), planted trees in the ground around the subsidiary's manufacturing plant to acknowledge the role they play in reducing CO<sub>2</sub> emissions and the risk of floods, improving air quality, and dampening the greenhouse effect. To encourage staff to do the same around their homes, they were given plants of their own. Similar activities were also organised by Mapei Far East, the Group's subsidiary based in Singapore. Yet another sign of Mapei's long-standing commitment to the environment and sustainability.





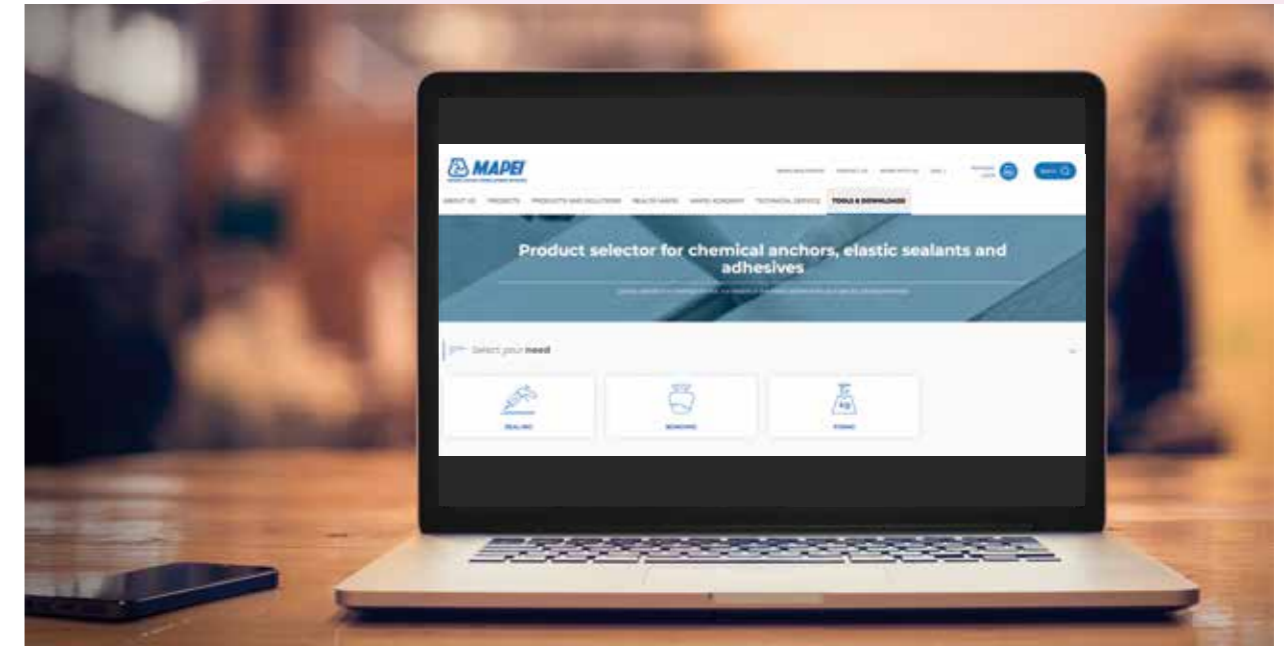
Available  
in English  
at [mapei.it](http://mapei.it)

# Mapeflex<sup>®</sup> MS 45

## MULTI-PURPOSE SEALANT AND ADHESIVE

QUICKLY PINPOINT  
THE MOST SUITABLE  
PRODUCT  
FOR YOUR NEEDS

# Selector for anchors, elastic sealants and adhesives



**Mapeflex MS 45** is an elastic sealant and adhesive compatible with all types of material. It is paintable and suitable for use on damp substrates, as well as having very low emission of VOC.

Mapei's line of elastic sealants and adhesives is made up of a wide range of products, specific for every anchoring and elastic sealing and bonding need. The products in the Mapei range are used to structurally anchor metal bars, create elastic seals and waterproofing for joints and cracks, as well as to bond every type of building component and feature. They have been designed to meet all your application needs, with a guarantee of excellent performance and maximum reliability over time. To help you quickly choose the most suitable Mapei product for your specific anchoring, sealing and bonding needs, a new product selector is available in English language on the website [mapei.it](http://mapei.it). Easy to use with an intuitive menu, it allows you to select the characteristics and requirements of every job and pinpoint the most suitable products to guarantee long-lasting results. Once the new product selector has identified the most suitable product, Mapei's network of sales and Technical Services teams will be able to confirm your choice and provide all information required to carry out work to perfection.

### HOW TO USE THE SELECTOR

- What do you need to do?  
Choose between sealing, bonding and fixing/anchoring.
- For **sealing** work, select the type of substrate, the characteristics of the joint, the chemical resistance and mechanical strength.
  - For **bonding** work, enter the two materials to be bonded, specify initial bonding strength and setting speed and, lastly, choose the characteristics of the work surroundings.
  - For **fixing** work, choose the type and the condition of the substrate and the type of bar you intend using. Then define the position of the hole and the drilling method employed, the type of load and the service conditions.
- Once you have entered all the information, the selector will tell you the most suitable Mapei products for that particular job.

EVERYTHING'S OK  
WITH MAPEI

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





# Concrete flooring: from design to installation



CON CONCRETE FLOORING SOLUTION MAPEI È PARTNER PER TUTTE LE ESIGENZE COSTRUTTIVE

Online shopping and the world of e-commerce have revolutionised the way we shop. However, with every transaction, a product needs to be physically moved from the manufacturer to the consumer and often passes through integrated distribution hubs, especially in the case of international shipments. Such hubs have a high demand for concrete industrial flooring. Concrete flooring is often considered an accessory structure in most civil engineering and industrial works. The construction method often fails to follow best practices. As a result, these “structural elements” often have defects.

Designers, works directors and concrete manufacturers occasionally fail to dedicate the level of attention required during the design and installation phases of this type of flooring. Consequently, it is often down to the experience of the team that actually places the concrete to make sure everything is done according to the specification. Careful, detailed design work makes the difference in achieving perfect results and is often neglected. The numerous design variables and changes in surrounding conditions, particularly weather conditions, may then give rise to a series of defects that could limit the floor’s serviceability. The floor itself becomes the subject of complaints, as it happens with most disputes regarding civil and industrial buildings. Mapei is a reliable partner for all professionals involved in the construction of concrete flooring, starting with the installation teams, to encourage their technical and cultural development. This is why the Concrete Flooring Solution range of products was created.

## What is your target audience for the activities of the new Concrete Flooring Solution Division?

We want to target design engineers, general contractors, building companies and those who install flooring. In practical terms. Any professional who has to analyse a civil or industrial construction project that involves the installation of concrete flooring would benefit from the support of this new Mapei Division.

## What does the Mapei offer consist of?

Mapei is already an important point of reference in the sector when it comes to products that can be employed in the various phases of concrete flooring construction. The strength of the Mapei offering is that it includes a range of services dedicated to the people mentioned above, with field support which sees in the construction system a point of strength in its approach to the design and installation of flooring. Mapei is not only a supplier, but rather an efficient partner who you can turn to for concrete proposals and solutions for all your construction needs.

## What services is Mapei offering that you believe to be winners?

We start with a fundamental step in creating concrete flooring correctly: its design. We provide direct support to designers to check the structure. With just a few simple parameters, such as the client’s operational requirements, we propose solutions and provide precise technical indications regarding the characteristics of the concrete (including the possibility of using fibre-reinforced concrete), the thickness of the slab and the pitch and dimensions of joints, as well as the types of surface treatments that could be used according to what the flooring will be used for.

We also work with the pre-cast concrete plant where the concrete is to be mixed to find the correct formulation for the mix design of the cementitious conglomerate and to organise pre-qualification tests, as well as further field tests on site, if required.

We have the availability with our mobile laboratories to verify the characteristics of both the fresh and set concrete, based on the indications from the design phase. And we also organise training course and workshops at various knowledge levels for our clients. Finally, we offer our support in drafting specifications and technical articles, where they are considered useful.

## Which products are included in these services?

The products Mapei proposes for the construction of industrial flooring vary from the range of DYNAMON FLOOR admixtures specifically formulated for the concrete technology sector to products that ensure correct curing of poured concrete, to broadcasting products to obtain different surface finishes according to the level of abrasion resistance required, right up to surface treatments and products for sealing joints. Mapei, thanks to the acquisition of the company Istrice - Fili & Forme, is now the largest manufacturer of polymer fibres for concrete in Italy and one of the largest in Europe. At the production plant in San Cesario sul Panaro (Central Italy), complete lines of structural fibres are developed and produced, with a range of different characteristics according to the type of application specified. In the fibre-reinforced sector, Mapei is able to offer full support during both the design phase and the executive phase based on significant and consolidated laboratory work and field tests. Lastly, we believe it is important to mention MAPECRETE SYSTEM, the Mapei solution for jointless floors.

## Do you already have a lot of experience of using these products?

We have successfully taken part in important projects all around Europe, amongst which we would like to



Products from the Concrete Flooring Solution line were used to build concrete floors in a Lamborghini plant in Central Italy.

mention the work we did at FCA, Lamborghini, Snatt, Boero, Philip Morris International, Danieli Steelworks, Amazon, Ikea and Zara.

## Why should someone choose Mapei as partner to construct concrete flooring?

Mapei is able to offer a complete service that involves all key figures in the process, from design to installation, and a complete range of products that can be useful at every stage of the process.

Mapei offers the reliability and professionalism of a market-leading company and can provide quick, concrete responses thanks to the capillary network of specialists operating in the field with a host of contacts available at every level to create efficient synergies across the whole of the country, benefiting our domestic and international customers.

Marco Paparella, Fibers Corporate Product Manager, Mapei SpA

Download the brochure  
CONCRETE FLOORING



# 3

## Products in the spotlight

EVENING OUT THE ABSORPTION OF SUBSTRATES, STRENGTHENING WITH LOW-THICKNESS SCREEDS, SMOOTHING WITH HIGH THICKNESSES



### QUARZOLITE BASE COAT

Coloured, acrylic resin base paint in water dispersion. It is essential for repair work or new buildings. It can improve adhesion on old, chalking paintwork; even out the absorption of surfaces with different properties, which might cause the colour to change; make it easier to apply even coats of thick-layered finishing products by roughening the surface; even out the colour of substrates before applying finishing coats with low hiding power. It can be tinted in a vast range of colours through the ColorMap® tinting system. It is used in combination with QUARZOLITE line plasters. It has its own EPD (Environmental Product Declaration) measuring and assessing its environmental impacts.

SUITABLE FOR EVERY KIND OF SUBSTRATES



### PLANITOP HPC FLOOR

FRC (Fibre Reinforced Concrete) technology structural mortar containing steel reinforcing fibres with extra-high mechanical properties for strengthening the extrados of floor slabs by applying a compact, low-thickness (1.5-3 cm) structural screed without the need for strengthening mesh. In the presence of an existing screed, when using PLANITOP HPC FLOOR there is no need to embed shear connectors into the underlying floor joists. It may be used for various types of floor slab (brick/cement, reinforced concrete, wood, mixed brick/beam, etc.). It features very high flexural and compressive strength; high ductility; high resistance to cyclical loads; high resistance to wear. It complies with EN 1504-9, EN 1504-3 (R4-class structural mortars) and EN 1504-6.

COMPACT STRENGTHENING SOLUTION



NEW

### ULTRAPLAN TRADE

Fast drying, self-levelling compound used in interiors for levelling and smoothing differences in thicknesses from 3 to 40 mm on new or existing substrates (concrete, ceramic tiles, stone), preparing them to receive all kinds of flooring where high resistance to loads and traffic is required. ULTRAPLAN TRADE is especially suitable for areas exposed to castor wheels and for use with underfloor heating systems, including compact heating systems. Mixed with water, it becomes a highly fluid and easily workable mortar, with perfect self-levelling capacity, high adhesion to the substrate and ultra-rapid drying. It can be applied with an automatic pressure pump at distances over 100 m. It develops very high compressive and flexural strength, as well as resistance to indentation and abrasion.

HIGH THICKNESS LEVELLING COMPOUND

## Mapestone® System

THE ANCIENT ROMANS WOULD HAVE LOVED IT.



If the ancient Romans had known about the innovative **Mapestone System** they would have used it straight away. Being expert road builders, they would have immediately recognised its superior installation efficiency and the added strength it provides for porphyry and interlocking stone labs. Created to guarantee **durability**, compared with conventional system it offers more resistance to freezing weather conditions, de-icing salts and sea salt. The intelligent choice to cut down on maintenance costs. **Time goes by but Mapestone remains!**

EVERYTHING'S OK WITH MAPEI

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





# Building a SUSTAINABLE future together



Thanks to research and innovation we offer the **best solutions to build sustainable, durable, and top-quality buildings** and contribute to the growth and development of communities all over the world.

EVERYTHING'S OK  
WITH MAPEI

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

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