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DANIEL LIBESKIND

Interview on page 4

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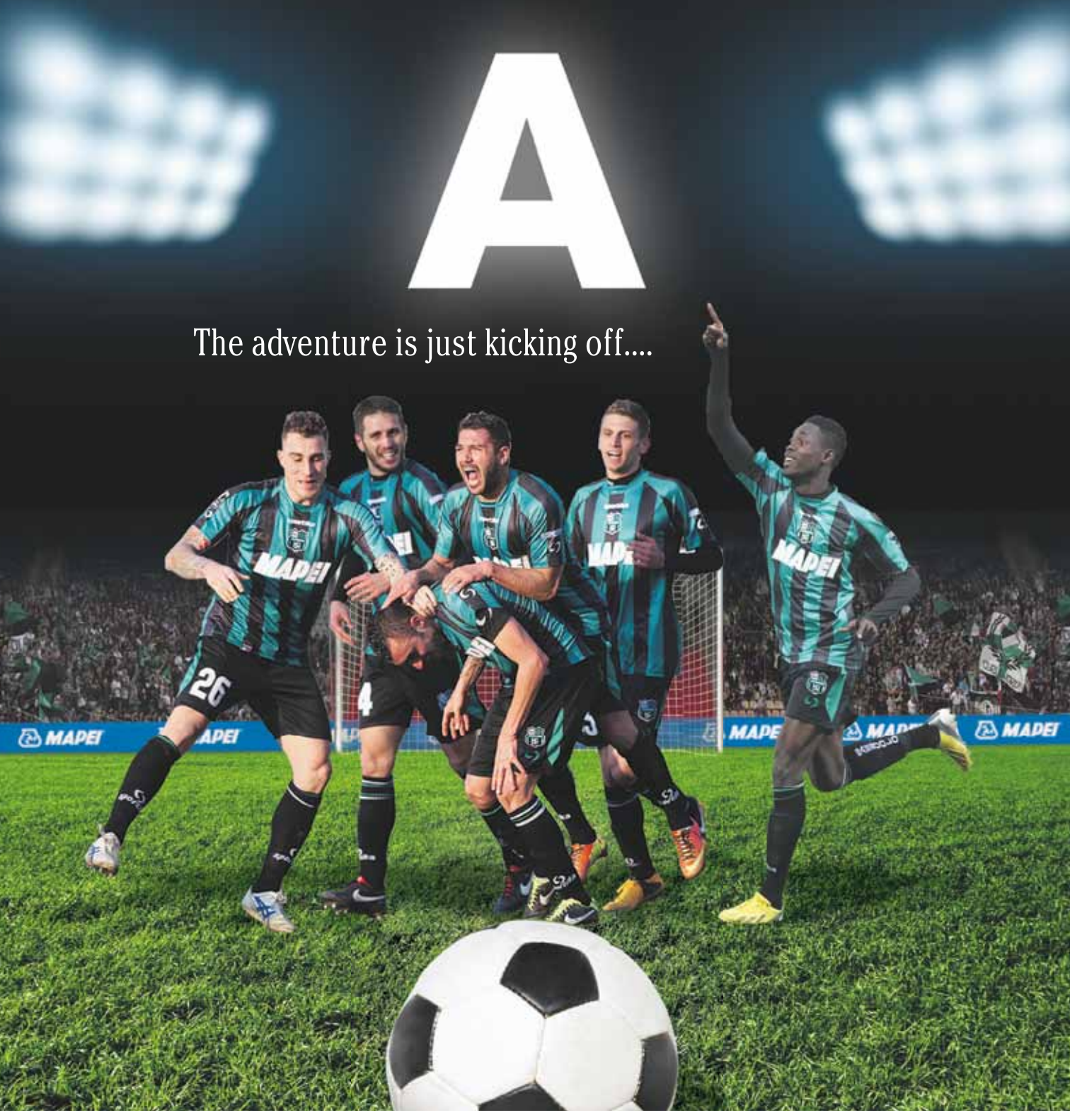

Sassuolo promoted to Serie A
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SUMMARY

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COVER STORY: The drawing on the cover is by Daniel Libeskind, the american architect who talks about himself in a detailed interview with Realtà Mapei International.

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Responsible Care

"Responsible Care" is the world chemical industry's voluntary program based on implementing principles and lines of action concerning staff health and environmental protection.

Sassuolo promoted to Serie A

The Italian football team has been promoted to the Italian first division

18th May 2013: a date that will be always remembered by everybody who loves sports and football. For the first time in its 91-year history, Sassuolo has been promoted to the Italian first division (Serie A) and in doing so it gave its boss and owner, Mr Giorgio Squinzi, the best present he could possibly have received on his 70th birthday.

An historical event, bearing in mind that this borough in the province of Modena (Northern Italy) is one of the smallest to get into the top division. Sassuolo is also the most important town in Italy's great tile-manufacturing district; a world with which Mapei has extremely close working bonds, both in retailing and building work, now strengthened even further through football.

The one thing that cannot be said is that promotion was not expected, although it only came at the very end of the season. After missing three match points and suddenly fearing it might have to take part in the promotion play-offs (just like last year and three years ago), Sassuolo managed to make it at the fourth time of asking. It only needed one point against Livorno: a 0-0 draw would have been enough, but a lobbed goal by Simone Missiroli made the celebrations even sweeter.

The final match against Livorno was a seesaw of emotions for the over 15,000 fans that flooded into Braglia Stadium in Modena. Playing with nine men against ten, promotion to the top flight came at the very last second and then the celebrations really erupted. The team has rewritten the record books: 85 points (winners of the Tim Serie B Cup), 77 goals scored (best attack), the second-best defence after Verona, at the top of the division from the very first match and, out on its own, for 38 consecutive matches.

A will to win and excel that is the same as Mapei's and what the team has achieved over the last few years proves that Sassuolo is an example of how it is more important to focus on ideas, values and "teamwork" than on major investments. And it is partly thanks to having taken on board the "Mapei spirit" that, in the space of seven years, Sassuolo has progressed from the C2 division to the very elite of Italian football. Credit should go to its boss, Mr. Squinzi, for believing in the team and working with such rigour, actually reducing investments last year by 70%. The results speak for themselves: spending less the team has been promoted. "This is an example - so the boss, Mr. Squinzi, pointed out in his role as Confindustria chairman - of how starting with small things you can actually conquer the world through skill and expertise, both in football and in industry, particularly in the realms of tiles and ceramics. Italy is full of examples like this, and they must be taken as guidelines for making progress".


Serie bwin
Serie bwin
Serie bwin
Serie B
Serie bwin

Daniel Libeskind

American architect, protagonist of international architecture and urban design.

GREAT ARCHITECTURE FOR A NEW RENAISSANCE

The optimism, culture and eclecticism of Daniel Libeskind are revealed in an exclusive interview with *Realtà Mapei International*

By Adriana Spazzoli and Tiziano Tiziani

Shortly before the inauguration of his exhibition in Rome entitled *Never Say the Eye is Rigid: Architectural Drawings of Daniel Libeskind*, featuring 52 of his drawings on display for the first time ever, Daniel Libeskind told us about the guidelines that help make him feel more artistic and architectural. Personal memories and visions of a changing world are interwoven with technical observations on the architecture and on the materials used to create buildings.

How do music and your training as a musician influence your style?
A lot...I think that being a professional musician is not just something from my past. It's also there when I work; music becomes a part of architecture because music is very important for life and for architecture. Music and architecture are very similar because they are both very highly intellectual activities, very precise, but also very emotional. They have to communicate with the soul, not just with the mind, so everything about music and architecture is very close to my heart and also in the way music is produced is very similar to architecture. It's very similar to creating a project: it's like an orchestra; you have to be able to have a piece of music and conduct in a large orchestra. There has to be harmony, genuine reverberations and echoes for the soul.

What role does the imagination play? Do you imagine what a building will be like?
Sure, because you cannot do it otherwise. The imagination plays a fundamental role. But as the architect and the sculptor Filippo Brunelleschi said when he was building The Duomo in Florence, there's no other way of showing drawings, models or virtual reality except by building them. Because you cannot physically embody gravity, the sky or the horizon, then you have to be able to imagine before you're able to build.

In a recent interview you gave to the Italian daily newspaper *La Repubblica*, one of the questions was about the influence a client can have on the work of an architect. What is the relationship between these two players?
If you work in a serious way with the client or the owner you have to work through creative cooperation in order to make the building something really fantastic. And if you work with great materials, great owners and great people with great ideas you can create really fantastic architec-

The **interview** with Daniel Libeskind carried out by Tiziano Tiziani, left, and Adriana Spazzoli, Operational Marketing & Communication Director for Mapei Group.

ture. So I have always believed that it's really a development together. It's not just the architect that does something and the owner writes something, rather you have to do the project together to make everybody care for something to be built.

The work of an architect in Europe and in America is completely different. For example, I know that in America architects usually choose the materials themselves. How well do you really want to get to know them?

I think that without the knowledge of materials you cannot create a good building. It's not just a matter of a ready-made product, but the knowledge of what is behind a specific product. Research and development for companies like Mapei, that create products with high scientific and technical quality, really influences the quality of the construction of the building. So I think that it's very important wherever you are working, although of course it's different in Italy to the USA.

» WITHOUT THE KNOWLEDGE OF MATERIALS A GOOD BUILDING CANNOT BE CREATED

We are living in a period of economic crisis that is having quite an effect on the construction world. Design and the choice of materials can help us overcome this situation?

Sure, I think this is the time for great architecture. There's no money to be wasted on mediocre architecture. This is the time for really important ideas and buildings. I mean, let's remember that it was during a period of economic crisis that the Empire State Building (the most famous skyscraper in New York, *editor's note*) and the Rockefeller Center (a complex of 19 commercial buildings in New York, *editor's note*) were built. And so, money is never wasted when it is used for something well built; actually it's important to build something that is truly sustainable and that people want. And it's for this reason that in the United States Ground Zero is under development, even though there is an economic crisis. I think architecture provides more confidence for the future, because in moments like this it's very important not to put our heads in the sand.

So you think we must always stay positive?

Absolutely! I think it's only through having a positive view that reality will change and I would say that architecture is naturally linked to optimism: you cannot be pessimistic in architecture. Maybe as an economist or as a political leader you can be pessimistic but you cannot be pessimistic as an architect because you're building for the future. The future is always going to be better.

Does this also directly involve those who work in the building industry and in the construction market?

Exactly. I'm a great believer in great projects, especially because they provide jobs, they provide employment for entire cities and countries.

During one of your interviews you said that, when you arrived in America from Poland, you were particularly struck by the skyscrapers of New York. Is that true?

Oh it really was. I was 12 or 13 years old and I arrived in America on a ship. Even if all of us have seen the movies about skyscrapers and read about them, it's so different from having them in front of you, because it's a miracle to see the power of architecture, the power of human imagination, of ambition, of progress.

We now see skyscrapers rising up all over the world. Milan is being transformed: we just have to think about the area where City Life is being built. The impression it arouses is really positive.

Definitely. I also think it's true when we just talk about skyscrapers, because they give us enormous confidence that something fantastic is going on. Because in these places a lot of people are living, a lot of people are working. So it's not just the aesthetics of the building, there is also the power of a community, and you can feel it when you are in New York or Milan, the new Milan in particular, where you can feel that there is a positive transformation of the city.

IN THE PHOTO, IN THE CENTER, THE ZLOTA 44 TOWER, IN THE CENTER OF WARSAW. DESIGNED BY LIBESKIND, IT IS THE TALLEST RESIDENTIAL TOWER IN EUROPE.

One of the most evocative buildings in New York is the Flatiron Building, dating back to 1902. When you design a building nowadays the materials are obviously different.

Sure, materials are different; we have a greater choice of materials today compared to when the Flatiron Building was built. In the past there were fewer possibilities with the materials available. Now we have new possibilities by using different materials, lightweight and with a very good effect on the environment. So I think this is the power of change.

In the past a lot of things were still unknown. Now we have a clearer perception of technology and we are aware, even if only partially, of all the effort that is put into research. This means that now we can do things better, especially regarding respect for the environment, which means for our lives and for our future.

Exactly, all this helps the environment. Good air, the better methods used to make the materials and the fact that the materials are not only technical, but they also become memorable for the life of the building or of the site. I think that's a big change: people have rediscovered how important this is for the cities and for buildings, which I think is like the Renaissance. Now people are aware that it's no longer just a question to build some buildings, but they understand that it's important as part of culture, part of civilization.

» TODAY PEOPLE UNDERSTAND HOW ARCHITECTURE IS A PART OF CULTURE

You are a citizen of the world and your work involves designing while trying to give an answer to all the requirements in any country. Which country do you feel responds best to the challenges we face?

The world is really more united than it is divided. Of course there are big differences between the culture of Italy and the culture of the United States or South America, or between Asia, Korea, Singapore and China. So, it's very interesting, because each country has a unique history, each country has a unique ambition. Of course you cannot compare in terms of culture (and Italy is at the top), but the ancient cultures and the modern cultures have a continuous flow so they cannot be compared. So I think what is true is that, wherever you are around the world, you will see an interesting new development in the people, about how they live, about the importance of design. There is a more global understanding now that, as more and more people live in cities, and within a few years more than 50% of the population of the world will live in cities, there has been a big shift towards architecture and the environment.

In "old" countries such as Italy, France and Spain people are more prudent when it comes to architecture, which is also because of their cultural heritage. In the new emerging countries, such as in Eastern Europe, they seem to be freer when it comes to making architectonic choices. What are your feelings on this?

An emblematic example of what we are saying is the Zlota 44 building, a skyscraper in the centre of Warsaw in Poland. It's the tallest residential tower in Europe and it is located opposite the Palace of Culture and Science dedicated to Stalin.

The countries in Eastern Europe and Asia are now developing very rapidly, and they have a certain advantage because they don't have the kind of history we have in Europe, so they can really quickly build an entire city. In the centre of South Korea, in Busan, there is the largest concentration of skyscrapers (30). It is as if there has been a renovation of a city which already has 600 or 700 years of history.

So your designs are influenced by the entire situation? I mean from renovation work to the buildings of the future.

Every architect has a unique way of working. I work in Germany, in Poland and in Belgium. Every country has its own sense of how they do things. So, we can't say this country is bad or that country is good. Every country has its own process and I think you have to be able to understand that

process. Of course there are different complexities, different cultures and different ways of doing things, and sure those differences should be caught.

Culture and art are connected. What relationship do they have with architecture?
Culture and art were around at the beginning of history and are resources for architecture. I think drawings from the beginning of history are the source of architecture. Now we have computers that are very quick and they offer new frontiers to the imagination, but the freedom that drawing offers the imagination hasn't changed.

Mapei's style of communications also opens doors to the imagination, because we believe that, if we lose our fantasy, then we lose everything.
The imagination is essential for form, for cities, for possibilities. I think that, if we don't have imagination, we don't have cities. What is memorable is what has been created with the imagination.

According to your biography, apart from architecture, you have other passions and skills such as music, drawing and art in general. It is very similar to Leonardo da Vinci who, as an architect, completely changed the face of cities, especially Milan, by knocking down fortifications, widening roads and bringing water courses into the city. It is like the trigger to a cultural process that gives a city a new meaning. How do culture, society and people's needs influence your designs?
Leonardo was a man of humanistics and of science at the same time. I think that's architecture: you have to combine scientific and artistic ideas. I think that the inspiration from Leonardo came from music, the world of architecture, mathematics, scientific ideas, poetry…

How and how much does modern architecture manage to highlight the differences between different cities and different countries, yet on the other hand how much is it becoming a globalising tool that tends to destroy their identity?
We live in a global world but we have to take care of identity. Each place has its own unique identity, unique sky, unique history, so it is connected with local genius. The world wasn't built by following some abstract formula, but by seeing these differences.

ABOVE, THE JEWISH MUSEUM IN BERLIN AND, BELOW, THE DENVER ART MUSEUM, UNITED STATES.

So you believe differences are important then?
Yes, differences are essential and are linked to the different atmosphere in buildings, to the different materials used for buildings, to the different architects who design buildings. Buildings can't be imposed from the outside in an abstract way. They must be developed from the inside, from the soul, that's the key.

Our conversation started by discussing music, so it would only be right to end by going back to the subject. What type of music do you like?
I love all music: classical, ancient, popular and contemporary. It's the beginning of dance which is the choreography of architecture.

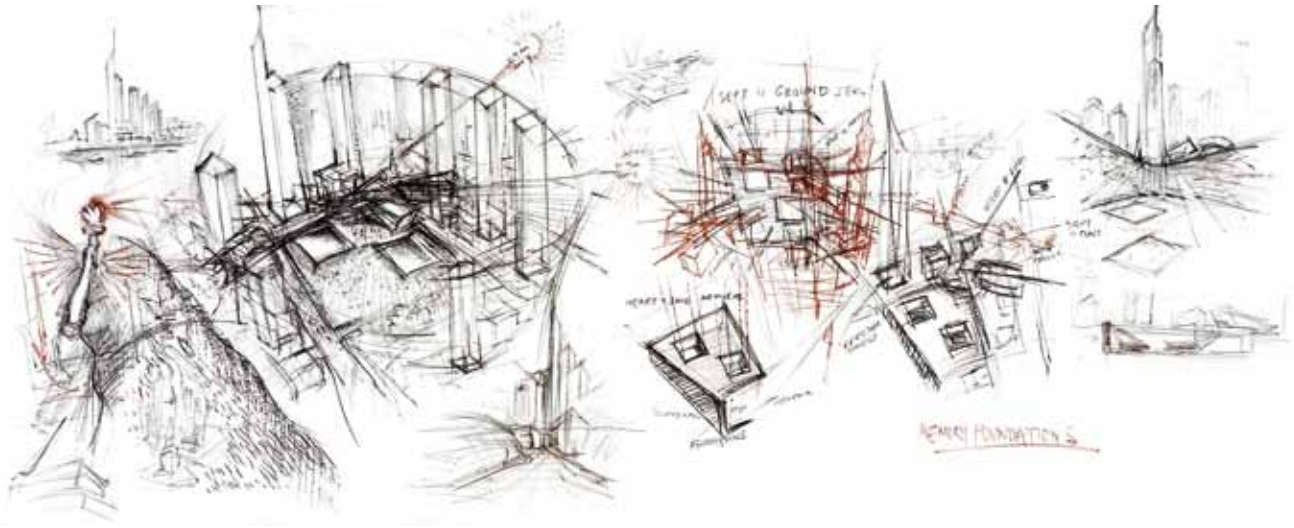
Mapei often invites their friends to the Scala Theatre in Milan and we would like to invite you soon. This year's programme includes a number of operas by Verdi and Wagner. Which of the two musicians do you prefer?
I appreciate Wagner but I love Verdi. He wrote from the heart. Verdi has the lightness of Italian culture that has influenced the world.

NEVER SAY THE EYE IS RIGID: ARCHITECTURAL DRAWINGS

Inaugurated in Rome, in collaboration with Mapei, the first exhibition of Daniel Libeskind

On Monday the 11th of March, at the Ermanno Tedeschi Gallery in Rome, an exhibition was opened to the public entitled *Never Say the Eye is Rigid. Architectural Drawings of Daniel Libeskind*. This is the first ever exhibition of the drawings of the great polish architect who became an American citizen in 1965. The exhibition, with Mapei as main sponsor, will be open to the public until the 30th of April and features 52 original drawings covering 8 different projects created by Libeskind in Germany, Italy, Poland, the USA and England. They include his most representative works: the Jewish Museum in Berlin (2001) and the master plan for Ground Zero (2003) in New York. Once the exhibition comes to an end, Libeskind's drawings will be on display at the Ermanno Tedeschi Gallery in Milan (in May), in Turin (in September) and in Tel Aviv (in November), and will then head back to New York for the grand closing event of the project, supervised by Ermanno Tedeschi himself in collaboration with Mapei. The 52 drawings highlight his vast range of styles and techniques, from classic line drawings to vivid watercolours and freehand sketches. What they have in common is their philosophical ideas behind a specific project and the aesthetic characteristics of the project itself, and its particular colour, soul, posture and tension. From the majestic stature of the roll that displays his vision of the master plan for the World Trade Center


DANIEL LIBESKIND
DANIEL LIBESKIND
MAPEI



Above. Some of the sketches for the Memory Foundations project, in New York, in the Ground Zero area.

in New York, at Ground Zero, to the intimacy that characterises his sketches of the Jewish Museum in Berlin, the visitor is accompanied by Daniel Libeskind along a very personal path through some of his more famous works. For his 2004 memorial *Breaking Ground: Adventures in Life and Architecture*, Libeskind was highly eloquent in his approach that dealt with the theme of centrality in design and its creative process. "The physical act of drawing by hand", explained Libeskind "is an extremely important part of the architectural process. An architect must know how to draw: without a connection between the eye, hand and mind, the design of a building would lose the human soul that characterises it and it would become simply an abstract exercise. Only by drawing may architects reach their so-called Proustian moments, those fleeting instances in which we accidentally come across the stumbling blocks in our minds, triggering off memories that magically unleash those visions that lead to true art". The first collections of drawings by Libeskind - *Micromegas* and *Chamberworks*, dating from 1970 to 1980 - challenge the meaning of contemporary architecture and, at the same time, carry the idea of the Renaissance forward, for which drawing was not just a mere instrument to reach a goal, but was drawing for drawing's sake, the real heart and the very life-blood of architecture.

From the Pencil to the Computer

During the press conference to present the exhibition, the New York architect declared how his work "pays homage to Italy and the Renaissance, to the great maestros such as Leonardo, Michelangelo, Brunelleschi, Bramante, but also Piranesi. They were first and foremost artists, and only then architects. They designed and drew using a pencil. And that is what I still do, in spite of computers".

And choosing Rome as the first leg of the tour, continued Libeskind, was by no means a coincidence, because "Rome is not like other cities; for architecture it is an absolute symbol, a reference point for us all. Because of its history, its traditions and architectonic heritage. Before being architects, Michelangelo and Bramante were artists. They drew on paper. And drawing, the signs made by human beings and the lines of a pen, still form the basis of our work".

"For architects" continued Libeskind "drawing is an intellectual exercise, it helps mature ideas and verify the plan of a design, and all this in spite of being invaded by technology and by computers. A singularly human exer-

THE BIOGRAPHY

WHO IS DANIEL LIBESKIND?

Daniel Libeskind is an international star in the field of architecture and urban design. He is renowned for introducing a new vision of architecture using a multi-disciplinary approach. His professional experience spans from buildings, for large cultural and private institutions, including museums and concert halls, right up to congress centres, universities, residences, hotels, shopping centres and villas. He has also created scenery for operas and runs a very active research department dedicated to industrial design.
Libeskind, born in Poland in 1946, became an American citizen in 1965. He studied music in Israel and New York and became a highly acclaimed soloist. He then gave up music to dedicate his life entirely to the study of architecture, graduating in 1970 at the Cooper Union for the Advancement of Science and Art in New York. In 1972 he was awarded a masters degree in the History and Theory of Architecture at the Comparative Studies at Essex University (England). He has won numerous awards and is the creator of world-famous projects, including the Jewish Museum in Berlin, the extension to the Denver Art Museum (Frederic C. Hamilton Building) in Colorado in 2006, the Royal Ontario Museum in Toronto, Canada in 2007 and, more recently, the Museum of Military History in Dresden, Germany, the Bord Gáis Energy Theatre and Grand Canal Commercial Development in Dublin, Ireland, CityCenter, a shopping complex on the Las Vegas strip in Nevada and Westside, the largest shopping and wellness centre in Europe, inaugurated in October 2008 in Berne, Switzerland. Daniel Libeskind's constant research to widen the boundaries of architecture is reflected in his profound interest and involvement in philosophy, the arts, literature and music. A fundamental point in the philosophy of Libeskind is the idea that every construction evolves through human energy and coherently faces up to the wider cultural context in which it is placed. There are numerous other Daniel Libeskind projects currently under way including CityLife, a project to transform the former Fiera exhibition area in Milan, which will include a large new urban park, residential and cultural areas and other areas dedicated to office space, Zlota 44, a residential tower in Warsaw, Poland, and the Zhang ZhiDong And Modern Industrial Museum in Wuhan, China. Following his victory in the contest to design the World Trade Center in February 2003, Libeskind was nominated Head Architect for the master plan of the area: Memory Foundations is now under construction.

In the photos. Some pictures of the exhibition that, after Rome, it will also in Milan, Turin and Tel Aviv.

cise, like the birth of a baby: you see how it evolves, how it changes, its hopes and its future. When I choose someone to collaborate with", reflected the great architect, "I always ask them to draw something for me using a pencil so I can check their passion, their authenticity and the appeal of this type of work". Heart and Technique to win the battle against modernism. The same weapons that Mapei employs in the field, used again to support the event. The company's involvement in this exhibition is also an indication of the continuity of its collaboration with Daniel Libeskind, with whom Mapei has already worked side by side on projects such as the Museum of Military History in Dresden (see the article on the following pages), where Mapei supplied products used to prepare the substrates and install rubber and textile floor coverings, and the City Life Housing project, which has used Mapei products right from the first pour of concrete with products from the admixtures range (see *Realtà Mapei International* edition No 41). And in Rome, following in the wake of Daniel Libeskind and his path towards "constructing well", Mapei was in the front line to consolidate a relationship that is destined to bear fruits yet again in the future.

THE MUSEUM OF MILITARY HISTORY, DRESDEN

Daniel Libeskind's design for the extension to one of the most renowned military museums in the world

In October 2011, after almost 7 years of extension and renovation work, the Museum of Military History of the German Armed Forces reopened to the general public. The building, located north of the ancient city centre of Dresden, was completely redesigned by the American architect Daniel Libeskind, and its structure is now traversed by a wedge of metal and concrete. The Museum is in the Albertstadt district of Dresden. The original nucleus was built in the XIXth century and, in 1994, became the main exhibition centre for the German Armed Forces. With around 1.2 million exhibits, it is one of the largest military museums in the world. The inventory of the museum tells the story of 6 centuries of German military history, from the late Middle Age to the present, with arms, ammunition, heavy artillery, uniforms, medals, flags and other exhibits. There are also pieces from the

Above. An external view of the museum of military history of the german armed forces, which in 2011 opened its doors again to the general public after being completely redesigned by the architect Daniel Libeskind.

IN THE SPOTLIGHT

ULTRABOND ECO V4 SP

It is a solvent-free, synthetic polymer-based single-coat adhesive in water dispersion, formulated in a ready-to-use light beige paste. It has an especially extended open time suitable for the installation of resilient floor coverings (vinyl, rubber, polyolefines, needlepunch and carpet flooring), provided they are dimensionally stable. It is easy to spread and has an excellent initial grab. After hardening ULTRABOND ECO V4 SP film is flexible and strong and can take heavy foot traffic and wheeled chairs. It is not inflammable with very low emission of volatile organic compounds (EMICODE EC1 PLUS). It can contribute up to **4 points** to obtain the **LEED** certification.

Royal Sassonian Arsenal on display and others from the army of the German Democratic Republic, along with collectors' pieces from the world of aeronautics, such as the landing gear from the space ship used for the Sojuz 29 space mission and the spacesuit worn by Sigmud Jähn (the first German pilot to enter space), both dating back to 1978. All in all there is a bit of everything, from uniform buttons to a submarine.

A Spectacular Extension for a Complete Change in Direction

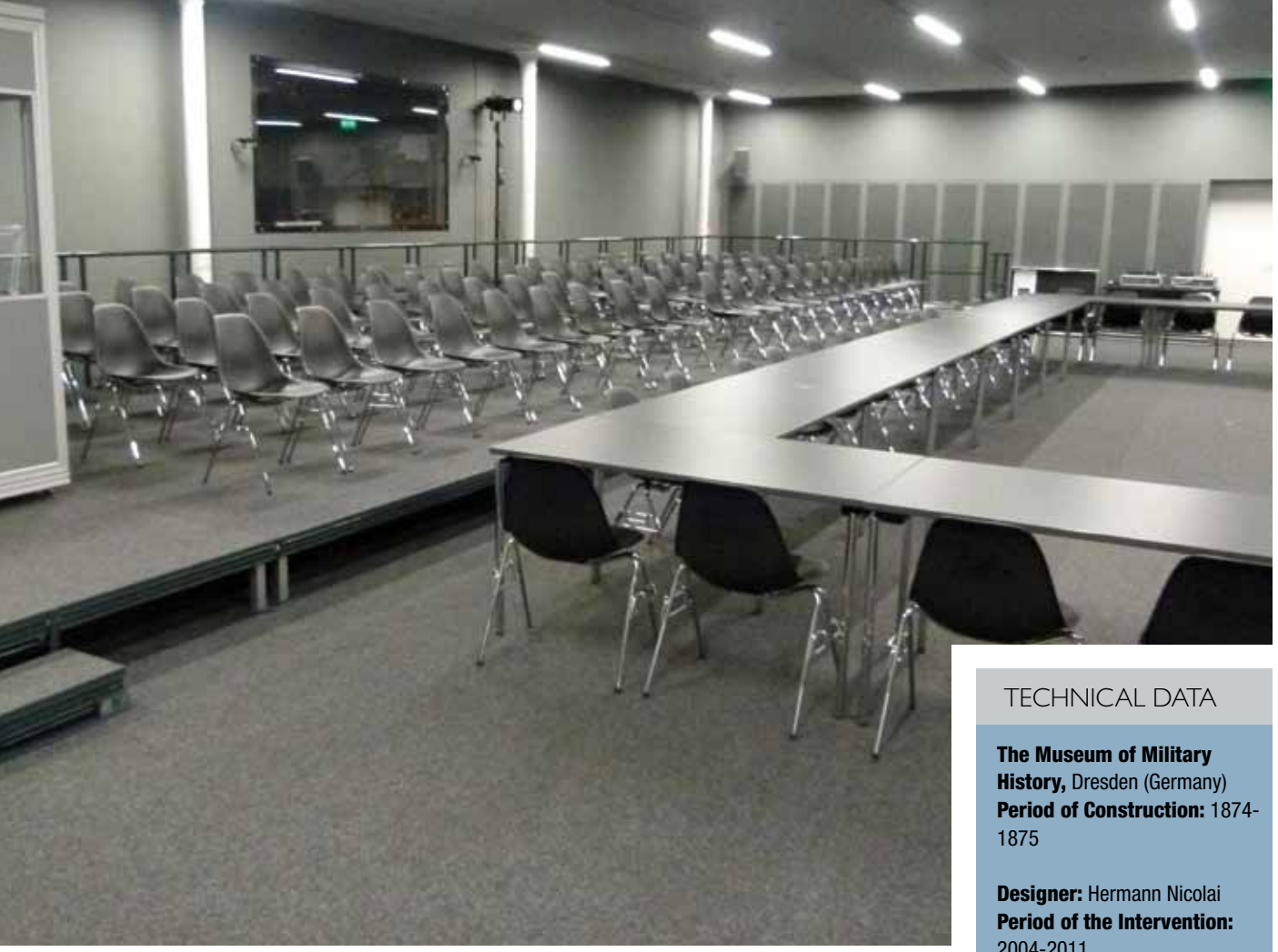
The extension designed by Daniel Libeskind represented a complete change in direction for the museum. A new structure has been inserted, like a wedge, into the spatial layout of the existing building. According to Libeskind, the Museum "Supplies us with the space to reflect on human violence and distance ourselves from the continuity of military conflict, forcing us to face up to basic anthropological questions". The emphasis is not placed on the uniforms, weapons or the other military equipment, but rather on the human side to military history: what provokes violence? How does it start? And how can we overcome it?

The extended structure also offers a spectacular view of Dresden's ancient city centre, rising above the roofs of the old city: from the outside a symbol of renewal and from the inside a window on the city.

The new façade of the building is an element of contrast to the old city. Its characteristic openness and transparency are a direct contrast to the sense of closure and solidity transmitted by the existing structure. The old building, therefore, represents the rigour and authoritarianism of the past eras in which it was built, while the intention of the designer was that the new structure should incarnate the open-mindedness of a democratic society and how the armed forces are now used within that society.

This constant correlation is evident within the building, with new rooms that live alongside the older rooms, while in the new structure the spaces without columns are a contrast to the network of columns in the older part of the building. The exposed concrete walls that slope in different directions have been incorporated into the old structure and are a recurring theme in the architectural designs created by Libeskind.

A WEDGE OF METAL AND CONCRETE THROUGH THE FRONT OF THE MUSEUM.



Above. Around 3500 m² of resilient and textile floor coverings were installed using mapei products in the offices and conference rooms of the administration area.

Quality Floors, Expertly Installed

Mapei also took part in this project by supplying solutions and products that enabled an eco-sustainable administration area to be created. While the display areas are dominated by floors made from "solid" materials such as concrete, around 3500 m² of resilient and textile floor coverings were installed in the offices and conference rooms of the administration area. Designers and floor installers all agreed on the choice of professional products from the Mapei range for installing this type of flooring. Before bonding the flooring, the substrate was prepared using Mapei solutions suitable for this type of application. PRIMER G synthetic resin-based primer in water dispersion, with low emission of volatile organic compounds (VOC), was used as an overall general treatment for the substrates. PRIMER MF, a two-component, solvent-free epoxy product, on the other hand, was used to consolidate and seal the cementitious substrates, and ULTRAPLAN was used to level off the surfaces. This levelling product, apart from having low emission of VOC, is characterised by its ease of use and rapid setting properties, and allows a strong surface to be created that is suitable for all types of floor covering. The resilient floor coverings were made up mainly of natural rubber. In the Dresden Museum of Military History itself, the flooring was bonded with ULTRABOND ECO V4 SP, a high-performance adhesive in water dispersion with low emission of VOC, particularly suitable for homogeneous and non-homogeneous PVC flooring, as well as for vinyl flooring in general and rubber. In some sections, natural rubber and conductive rubber flooring was installed, with the capacity of offering good protection from static electricity and protection for the components of the electrics. The adhesive chosen in this case was ULTRABOND ECO V4 SP CONDUCTIVE, a product in water dispersion with low emission of VOC, particularly suitable for installing conductive rubber and textile floor coverings on substrates prepared to spec. Lastly, textile flooring was installed, characterised by its high versatility and resistance to abrasion. The adhesive chosen in this case was AQUACOL T, a solvent-free, ultra rapid-setting synthetic polymer-based adhesive in water dispersion with very low emission of VOC, ideal for bonding textile floor coverings and linoleum.

TECHNICAL DATA

The Museum of Military History, Dresden (Germany)
Period of Construction: 1874-1875

Designer: Hermann Nicolai
Period of the Intervention: 2004-2011
Designer: Daniel Libeskind
Intervention by Mapei: supply of products to prepare the substrates and install rubber and textile floor coverings.
Client: Staatsbetrieb Sächsisches Immobilien und Baumanagment, Dresden
Laid Materials: Natural rubber floor covering (supplied by Mondo and Nora) and textile floor covering (by Findeisen).
Installation Company: reeselubic-woehrlin Gesellschaft von Architekten GmbH, Berlin
Laying Company: Schandert Raumgestaltung GmbH, Jüterbog (Germany)
Mapei Co-ordinator: Lothar Jacob, Mapei GmbH (Germany)

MAPEI PRODUCTS

Preparing the substrates:
Primer G, Primer MF, Ultraplan ECO
Laying rubber and textile floors:
Aquacol T, Ultrabond Eco V4 SP, Ultrabond Eco V4 SP conductive
For further information see the websites www.mapei.com and www.mapei.de

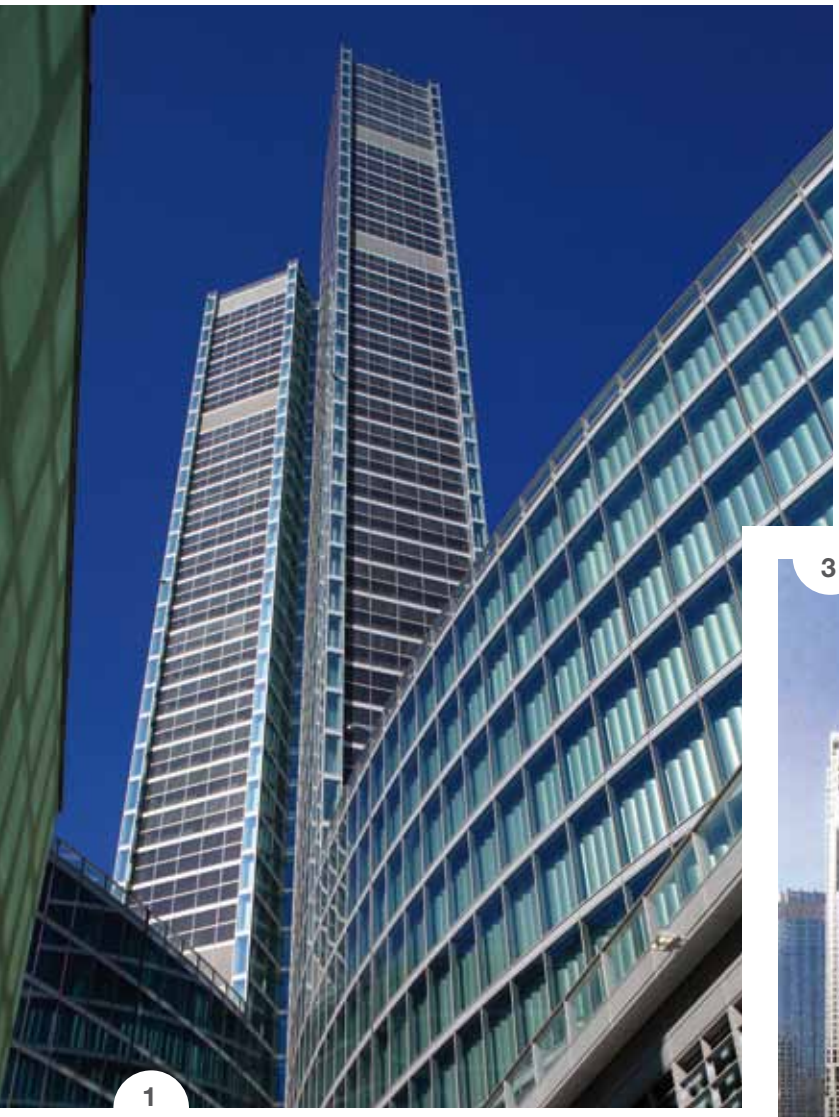
TALL BUILDINGS

At the IUAV University of Venice, a day of intense study is rounded off by a *Lectio Magistralis* given by Daniel Libeskind

In this delicate moment of economic crisis there is one phenomenon in Italy that is showing signs of growth: the construction (and design) of tall buildings. Skyscrapers under construction, and those that have already been constructed, are, in fact, modifying the skyline of most major Italian cities and are giving the country a more international style.

It was on the basis of this consideration that the IUAV University of Venice, in north of Italy, organised a convention on the 23rd of November last year entitled *The technological constraints of high-rise buildings*, highlighted by a lectio magistralis given by Daniel Libeskind.

Organised by Aldo Norsa and Dario Trabucco and sponsored by the Ctbuh (Council on Tall Buildings and Urban Habitat), the event also included Mapei amongst the companies that gave their backing to the initiative. It proved to be a highly successful event and was completely sold out, with more than 450 participants including students and professors from the University and external entrepreneurs. It was the perfect occasion for various players from the construction market to compare and debate thoughts and ideas: designers such as Libeskind himself, companies such as Mapei and researchers and professionals such as John Iorio, who has acted as Project Manager for numerous skyscrapers constructed in and around Milan. Various projects widely lauded as examples of excellence in



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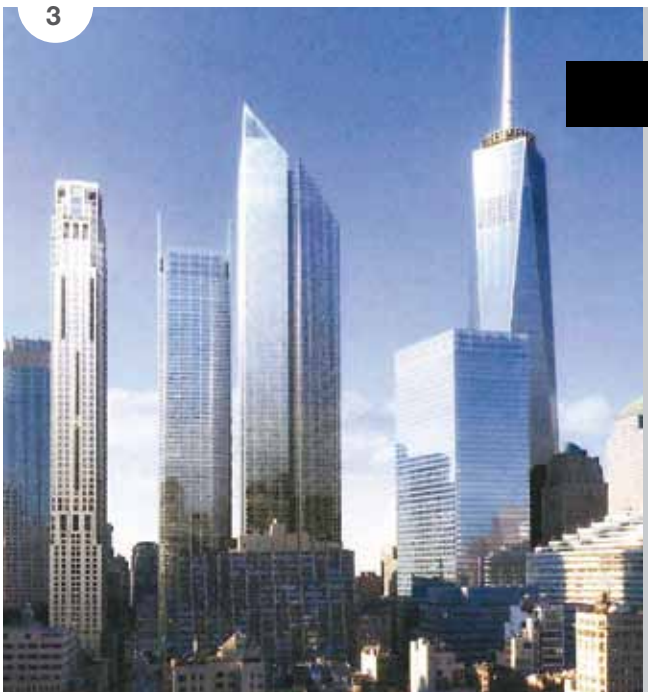

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construction were exhibited, including Palazzo Lombardia (the headquarters of the Lombardy Region in the heart of Milan), an award-winning project voted best tall building in Europe in 2012. A great feat of construction which also involved the contribution of Mapei products for its execution (see edition No. 35 of *Realtà Mapei International*).
Alessandro Pistolesi then illustrated the Europarco Tower in Rome, while the Garibaldi Tower in Milan was presented and described by Gianni Bardazzi. The Net Tower in Padua was presented by its designers Aurelio Galfetti and Luciano Schiavon and, to remain on the theme of Europe, Oliver Deloof from Artelia exhibited his future projects for tall buildings and those already constructed in the city of Paris. To finish, Luigi Croce exhibited the results of his international workshop *Tall on the Water* held at the IUAV of Venice with around thirty students from all over the world.

Innovative Materials from Mapei

Fiorella Rodio, head of Mapei's Large Projects Division, presented a paper on *Innovative Materials for the architecture* of the future. Mapei's approach, declared Fiorella Rodio, is one of "global innovation based on internationalization, not just as a business opportunity, but also as cultural osmosis. In fact, Mapei thinks globally but performs on each territory with full respect for the differences of each market and by considering the requirements of each single Nation". It is with this virtuous approach that Mapei is able to compete as a leading player, with their product systems being used on the most important sites in the world. And it was with her presentation of a roundup of prestigious references that Fiorella Rodio ended her presentation in style: from The Great Belt Link (Denmark) to the New Panama Canal (see *Realtà Mapei International* edition No. 40), from the Gibel Gibe III - Hydroelectric Project - (Ethiopia) to the Marina Bay Sands Resort in Singapore (see *Realtà Mapei International* edition No. 33); from the Victoria Towers in Hong Kong to the Patronas Twin Towers in Malaysia to the Isozaki City Life Tower in Milan (see *Realtà Mapei International* edition No. 41); ending with the World Financial Center in Shanghai and the Burj Khalifa in Dubai (see *Realtà Mapei International* edition No. 32), which reaches the dizzy height of 819 metres.

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Photo 1. The headquarters of the Lombardy Region in Milan, voted best tall building in Europe.
Photo 2. Daniel Libeskind during his *Lectio Magistralis*.
Photo 3. An artist's impression of the towers designed by Daniel Libeskind at Ground Zero in New York.

The *Lectio Magistralis* by Daniel Libeskind

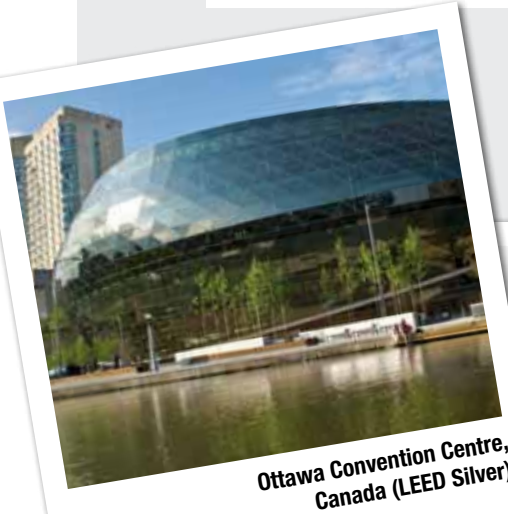
To conclude the intense day of study, Daniel Libeskind presented a *lectio magistralis* as a means of introducing key concepts and words in the design of skyscrapers. Libeskind showed 180 slides of around a dozen international maxi-projects, from the Warsaw Tower to the grand urban transformation projects of cities all around the world, from Seoul to New York and from Paris to Singapore. With the theme "Architecture is a form of language" as his starting point, Libeskind expressed the concepts of the uniqueness of a project, of architecture-sculpture, of architecture as a counterpoint, a variation and a surprise, leading to the themes of "urban transformation" and to the idea that is most dear to him, the idea of "memories". Instigations and concrete visions of a way of interpreting architecture and of operating in each country with full respect for each single tradition.

TALL BUILDINGS: A WORLDWIDE TREND

The number of skyscrapers taller than 200 metres completed all over the world in 2009 was 38. After just three years, that total had more than doubled: 88 were constructed in 2011 and 96 were completed in 2012. These are figures that go to confirm how the new economical, political and social geography is being designed, with the main axis now in the East. Leading this "expedition to the heights" is China, followed by the United Arab Emirates and South Korea. This worldwide trend is also hitting Italy, with the construction of ten skyscrapers taller than 100 metres between 2010 and 2012. At least another three will be completed by 2015 and just as many have been planned for the same date. This means that the number of tall buildings will almost double (a total of 19) compared with the number in Italy in 2009. The leading city is certainly Milan, first and foremost for the number of skyscrapers under construction; nine buildings will be completed by 2015. Milan is also leading in the race for "Front Page" tall buildings, such as the three projects for City Life (scheduled for completion by 2015), known as "The Straight One, The Twisted One and the Curved One" respectively, designed by three architects of the calibre of Arata Isozaki, Zaha Hadid and Daniel Libeskind. Or in the Porta Nuova district, the "green" Bosco Verticale (Vertical Wood) skyscraper designed by the architect Stefano Boeri that, by planting more than 900 trees on its terraces, aims at recreating the effect of a hectare of woodland within the city.

SUSTAINABLE CONSTRUCTION

EMICODE and LEED certification: a guarantee of eco-sustainability in the building world

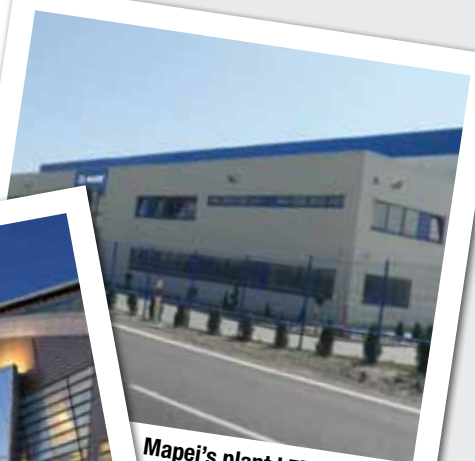


Ottawa Convention Centre, Canada (LEED Silver)

Sap Energy Park, Vimercate (MB) (LEED Gold)

In the following photos, a few of the projects that have been awarded LEED certification, thanks also to the use of Mapei products. For further details, visit our website at www.mapei.com/IT-EN/ and go to the "Mapei is Green" or "Projects" sections.

Mapei's plant LEED-certified in Delta, Canada



Mapei's plant LEED-certified in Barcin, Polonia

Richmond Olympic Oval, Canada (LEED Silver)

The concept of eco-sustainability is nowadays a recurring theme. Unfortunately, this often over-used word is not always backed up by solid facts.

What exactly does "indoor air quality" mean? And how can we obtain a healthy indoor environment?

We are all aware of the dangers of environmental pollution, and we all know, for example, the damage that benzene from cars can do to our comfort. There is also another type of pollution around us called "Indoor pollution", that is the pollution in the air inside our homes.

We have all at sometimes smelt a strong odour after installing flooring, assembling a piece of furniture, painting a wall or simply cleaning the floors in our home. And all of us have certainly opened our windows so we can no longer smell the odour.

All these odours are due to the volatility of certain compounds which may be found in the wood of furniture, varnishes and detergents, or even the irritating perfume of somebody who has taken the lift before us! These compounds are called VOC, Volatile Organic Compounds.

More than 300 VOC have been identified in indoor air, with total concentrations from 2 to 10 times higher than the air outside. These concentrations are usually 3-4 lower than their olfactory limit, which is why they cannot be smelt.

Even our behaviour can have a negative influence on the quality of indoor air. Tobacco smoke and poor ventilation, for example, can lead to very high levels of pollutants (what we call VOC) in the indoor air. In studies carried out on the controlled exposure to concentrations of pollutants inside buildings, phenomena such as sore eyes and irritations in the upper and lower breathing apparatus have been observed. A house built entirely of wood, for example, could cause such symptoms, because wood can

emit terpenes (such as limonene, carene and pinene) for a long time, which in turn can provoke allergic reactions and irritations in the breathing apparatus of those subjects allergic to such substances. According to some studies carried out, volatile organic compounds present in indoor air may be the cause of what is known as Sick Building Syndrome (SBS). This condition may cause nausea, irritations, painful joints and headaches, especially in sensitive people such as babies and the elderly. As far back as 1991 the National Commission for pollution in indoor environments, directed by the oncologist Umberto Veronesi, sent out an alarm call about the deterioration of the air we breathe within the walls of our own homes. Which is why it is so important to guarantee good quality air in the buildings we use by modifying our behaviour and using products which give off the lowest possible concentration of volatile organic compounds.

Mapei's Eco Products

For years Mapei has been producing Eco products with very low emission of volatile organic compounds.

What does this mean? How can we measure whether a product is really ecological or not?

Europe has a long tradition of care taken over the quality of the air we breathe inside our homes (the first congress on "Indoor Air Quality" was held in Copenhagen in 1977).

Products used in the building industry were evaluated according to their emission of volatile organic compounds, emitted by the products themselves from the moment they are applied, and then according to their influence on the quality of the air inside the building. The emissions of VOC may vary in quality and quantity, depending on the material applied.

More than ten years ago, the amount of organic solvents used in adhesive formulations was reduced, and this certainly had a beneficial effect on safety (fewer inflammable products and a lower risk of explosions) and on the quality of the air (less unpleasant odours). Since solvents are highly volatile, their elimination did not have an immediate beneficial effect on the end users, since once the adhesive had been applied, the solvents evaporated: for this reason they did not linger for a long time in the indoor air.

End users are, in fact, more exposed to emissions of high boiling point VOC, emitted into the air, such as plasticisers and coalescents used in building products. People soon realised that a "solvent-free" adhesive is not necessarily an adhesive with low VOC emissions.

In order to preserve the health of both applicators and final users, and to guarantee good indoor air quality, some manufacturers in Europe, including Mapei, started to develop technology for innovative products that could be considered "low VOC emission".

Since October 2005, these products have been certified and labelled EC1 (very low emission level of volatile organic compounds) and since June 2010, EMICODE EC1 PLUS (very low emission level of volatile organic compounds-PLUS), both issued by the German Institute GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), association for the control of emissions in flooring installation; Mapei is also a member. Some Mapei products are also certified Blauer Engel: this award also guarantees the quality of the air for both applicators and end users.

Both GEV and Blauer Engel are extremely severe classification systems, which assess the possible emission levels of volatile organic compounds of products used in the building industry on a short-term basis (3 days) and on a long-term basis (28 days) from when they are applied, using special environmental simulation chambers. Both labels consider products to be low emission on the basis of the sum of all volatile organic compounds released within a certain period of time after being applied and the absence of emissions of carcinogenic compounds, such as benzene, acetaldehyde, formaldehyde, dioxane, etc. Mapei also has a number of labels which guarantee their eco-sustainability according to the

In Europe since 2005

GEV-EMICODE® EC 1 very low emission

In Europe since 2005

GEV-EMICODE® EC 1 PLUS very low emission

In Europe since 2005

DER BLAUE ENGEL weil emissionsarm schützt die GESUNDHEIT

Above. Some of the certifications obtained by Mapei products in Europe.

Above. The environmental chambers at Mapei R&D analytical laboratory used to evaluate volatile organic compounds (VOC) content in products.

different requirements of local markets:
- M1 certification for the Finnish market;
- German Ü mark;
- The Logò Sanitaire in France.

The German and the French labels, which both take into consideration VOC emissions from building products, are mandatory to sell such products in these countries.

The EMICODE Label

For more than 10 years, Mapei's R&D analytical laboratory has been evaluating the eco-sustainability of Mapei products using techniques set by current standards and instruments which only the most prestigious laboratories have. In fact, Mapei R&D analytical lab is currently equipped with twelve environmental chambers dedicated to the VOC evaluation from building products.

In order to obtain the EMICODE certification a product must be solvent-free, must not be labelled as toxic and must have a complete Safety Data Sheet. It must also be assessed for its emission of cancerogeneous compounds and for all the volatile organic compounds emitted.

The products evaluated include liquids (primers), powders (self-levelling products, mortars, and cementitious grouts), pastes (adhesives for resilient flooring, wooden floorings, and epoxy grout), sealants and varnishes for wooden floorings.

The product is applied on a non-adsorbent glass plate with a known surface area, is weighed and then immediately transferred into one of the environmental chambers available in the laboratory. The ratio between the area of the specimen and the volume of the chamber is very important, since it simulates the real situation in an apartment (floor/room volume ratio).

Temperature and relative humidity in the chambers are tightly controlled (T=23°C and R.H.=50%), and they are flushed with purified air. The flow allows the air in the chamber to be completely exchanged every two hours. After 3 days and 28 days, air in the chamber is sampled by pumps onto tubes which can retrain all the VOC. The tubes are then analyzed by gas chromatograph (GC/MS) in order to obtain a qualitative-quantitative analysis in µg/m³ of all the VOC present in the air.

And then, how can the product be classified? During the environmental chamber test, the emissions of volatile organic compounds are measured after 3 days and 28 days: this parameter is called TVOC (Total Volatile Organic Compounds). It is expressed in µg/m³ and is the sum of the concentrations of all the detected volatile compounds.

After 3 days, the level of carcinogenic compounds must also be measured, such as benzene (limit=2 µg/m³), formaldehyde (limit=50 µg/m³) and any residual monomer.

After 28 days the level of semi-volatile compounds is also measured, and all the concentrations are added: this parameter is called TSVOC (Total Semi-Volatile Organic Compounds). The semi-volatile compounds are all those high boiling point substances, such as certain types of plasticizer, which remain in the environment for a long time and which hardly decrease. Even though almost all these substances are neither toxic nor harmful to a person's health, it is very important to measure their emissions since they have an effect on indoor air quality for a very long time.

LEED Certification

In 1998, the USGBC (U.S. Green Building Council) introduced the first LEED standard (Leadership in Energy and Environmental Design) Green Building Rating system, as a guide for the design and construction of sustainable buildings.

LEED Certification encourages the adoption of building practices and eco-sustainable development on a global scale through the creation and application of performance standards which are univer-

sally shared and accepted. By working on the entire process, from the design phase right up to the actual construction phase, LEED requires a global approach to the project which is considered a single entity, rather like a living organism.
LEED is a voluntary system and it is a standard which is applied in more than 100 countries worldwide including Italy, thanks to the commitment of GBC ITALIA which has created a local version, and indicates the requirements for constructing environmentally sustainable buildings in terms of energy and the consumption of environmental resources involved in the construction process.
LEED certification for constructions is legally required for the USA and Canadian federal governments. The private sector is also starting to demand LEED certified buildings, because their economic advantages (for example, a 32% saving in energy consumption) are well documented.
Mapei, a partner of GBC Italia, takes an active part in writing the LEED Italia protocols and sits on standards committees that are involved with adapting the original American protocol to local norms and standards. Mapei has played an important part in the work of the committee that deals with the quality of indoor air, modifying the credits for low VOC emission materials. Mapei helps to obtain important credits for each of the protocols applied. Its LEED-compliant products and systems meet the requirements of the construction industry and offer readily-available support and all the documentation required for building companies that wish to obtain LEED certification for their projects.

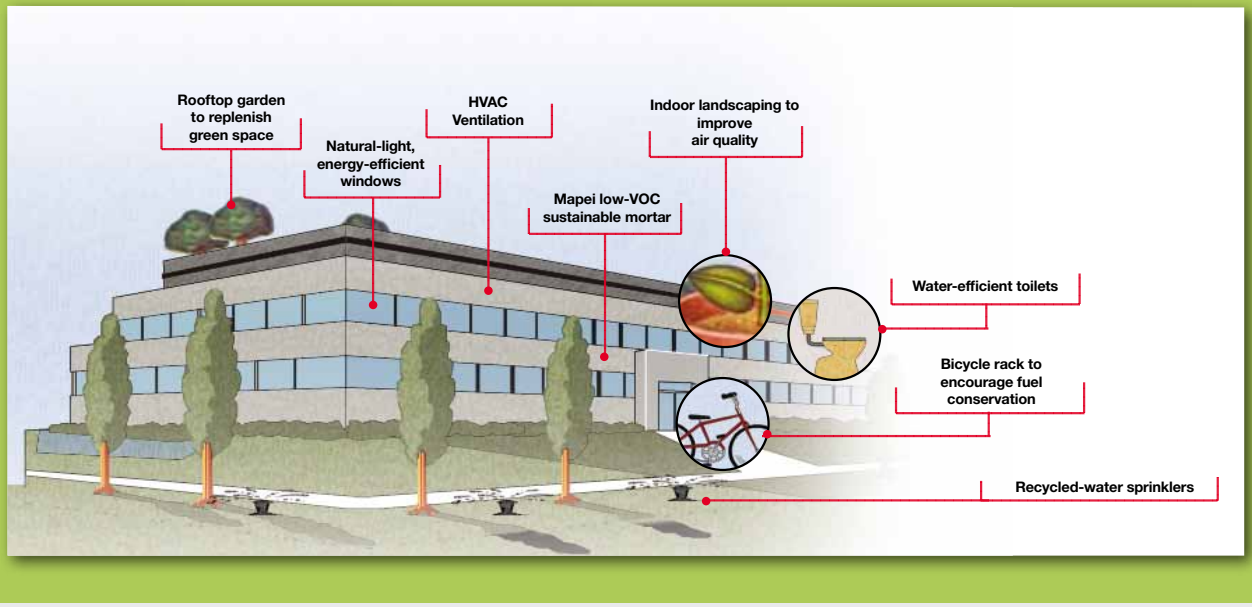
How Mapei Products Can Contribute To Obtain LEED Points

LEED certification is only applied to the building project, and not to the products or services used in the project. The products themselves cannot be certified; rather, they contribute to LEED certification, particularly where Materials and Resources and Indoor Environmental Quality (IEQ) concerned.

Materials and Resources (MR)

• MR CREDIT 4:
RECYCLED CONTENT
The products may earn up to 2 LEED points if their recycled content is at least 10% or 20% based on the cost. The content of recycled materials is defined as pre-consumption (waste during manufacturing, for example) or post-consumption (waste from consumers). Products like ULTRALITE, for example, have been developed using innovative technology that makes them "lightweight": in fact, they contain around 30% of recycled post-consumption materials. Contractors that use products with a high content of recycled materials, such as ULTRALITE, give an advantage to constructors committed to obtaining LEED certification.
• MR CREDIT 5: REGIONAL MATERIALS
The materials can contribute to 2 points if they are extracted and manufactured within a radius of 500 miles from the site. LEED standard promotes the use of locally-sourced materials: in this way it reduces the impact of transport on the environment. During the construction of a building, the constructor must quantify the percentage of all the locally-sourced materials used in the project: 10% of the total of materials used earns 1 point, while 20% earns 2 points.
Mapei's production facilities in Italy have the capability to supply products within a radius of 350 km from the site, and most of the raw materials are extracted within a radius of 350 km from the production facility. This leads to save in fuel costs for transport and reduces the risk of atmos-

Below. Examples of design elements that help to earn LEED points.



pheric pollution from exhaust gases.

• MR CREDIT 6: RAPIDLY RENEWABLE MATERIALS

One of the fundamental principles of sustainability is to reduce the exploitation and use of raw materials that require a long cycle to replenish them and to replace them with raw materials that may be rapidly renewed, such as those from plantations with a maximum harvesting cycle of 10 years, such as cork, bamboo and natural rubber.

If 2.5% of the total cost of all the materials is made up from rapidly renewable sources, 1 LEED point can be given for this credit, such as for example Mapei ULTRABOND ECO polyurethane wood adhesives.

Indoor Environmental Quality (IEQ)

Mapei has been producing Eco adhesives since 1992. This kind of products (which now makes up almost the entire production) helps to earn points in the Internal Environmental Quality category.

• IEQ CREDIT 3.2: IEQ MANAGEMENT PLAN: PRE-OCCUPANCY

The aim of this credit is to reduce problems related to indoor air quality due to construction/renovation processes.

Once construction work has been completed, tests may be carried out to assess indoor air quality according to protocol ISO 16000 to demonstrate that the particulate concentration limits indicated in the protocol for certain pollutants, such as formaldehyde and VOC, is lower than 50 µg/m^3.

Using products such as ULTRALITE S1, formulated with Low-Dust technology, can help contractors to earn this credit more easily than by using traditional products. This technology, in fact, helps to reduce the amount of dust produced mixing the mortar up to 90%.

• IEQ CREDIT 4: LOW EMISSION MATERIALS. The Italian protocol is different to the American version regarding the classification of low emission materials.

In fact, the American LEED standards includes an evaluation method for VOC based on SCAQMD (South Coast Air Quality Management District) Rule 1168 and Rule 1113, which is used to calculate VOC content in g/l. For the Italian protocol, on the other hand, low emission materials are those products which comply with GEV EC1 classification and the evaluation VOC emissions, therefore, is expressed in µg/m^3.

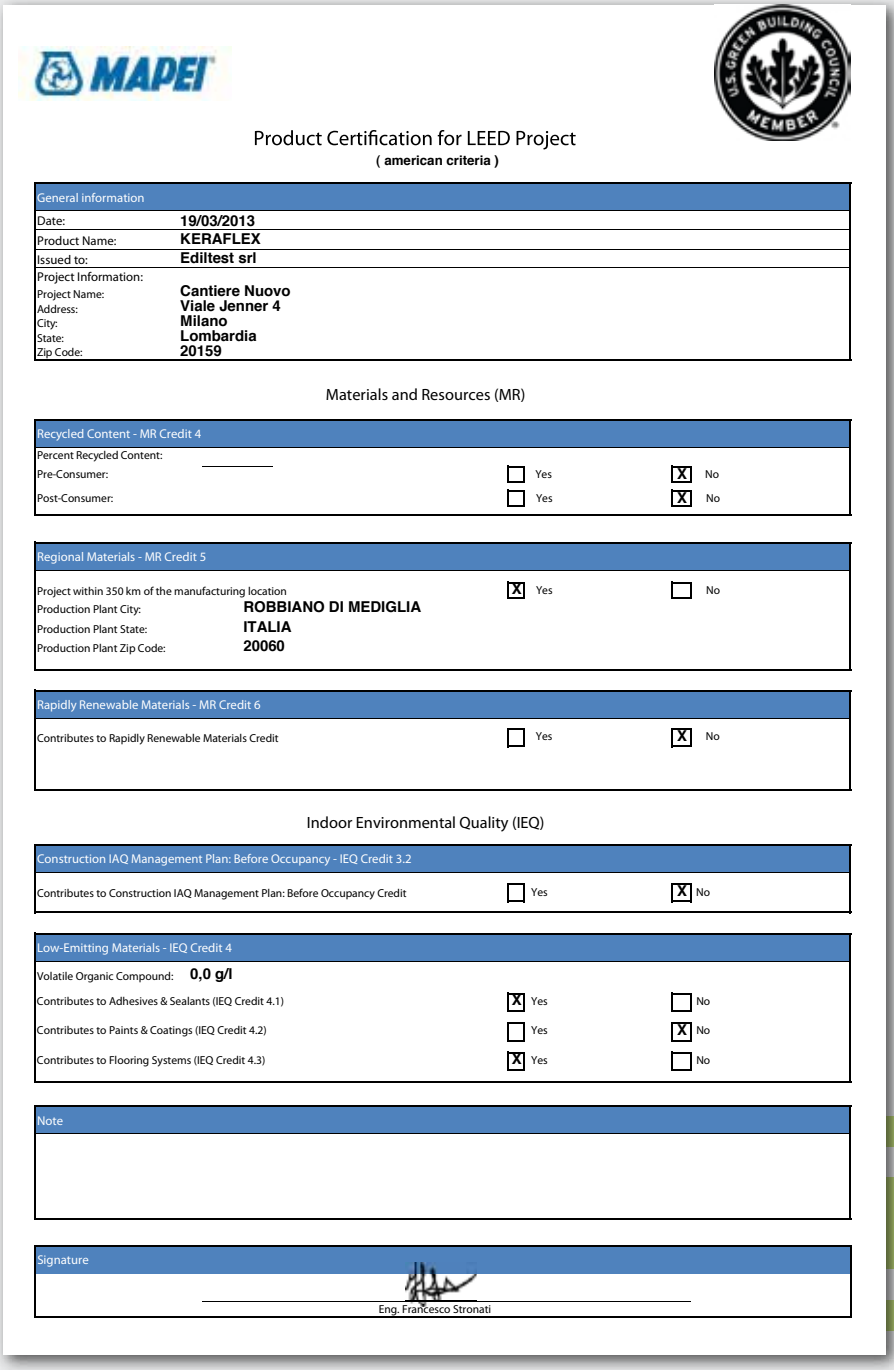
• ITALIAN PROTOCOL: IEQ CREDIT 4.1: LOW EMISSION MATERIALS: ADHESIVES, PRIMERS, SEALANTS, CEMENTITIOUS MATERIALS AND WOOD FINISHES. One LEED point may be earned if all the adhesives, primers, self-levelling products, cementitious products and wood varnishes are classified GEV EMICODE EC1. The aim of this credit is to reduce contaminants with an unpleasant smell or that are irritating and/or harmful for the health of applicators and end users. Most of Mapei products are certified EC1 and EC1PLUS, which guarantee very low emissions of volatile organic compounds and, as a result, the quality of indoor air.

• IEQ CREDIT 4.2: LOW EMISSION MATERIALS: PAINTS

One LEED point may be earned if the paints used inside the building have a VOC content in g/l lower than the limits set by GBC Italia: for indoor paints, for example, the VOC content must be lower than 20 g/l. Mapei paints contribute to obtain points for this important credit, and also help to guarantee a good quality of indoor air.

• IEQ CREDIT 4.3: LOW EMISSION MATERIALS: FLOORING

All the adhesives used to install flooring that meet the requirements of IEQ 4.1 also contribute to obtain one point for this credit.



MAPEI

Product Certification for LEED Project
(american criteria)

General information	
Date:	**19/03/2013**
Product Name:	**KERAFLEX**
Issued to:	**Ediltest srl**
Project Information:	
Project Name:	**Cantiere Nuovo**
Address:	**Viale Jenner 4**
City:	**Milano**
State:	**Lombardia**
Zip Code:	**20159**

Materials and Resources (MR)

Recycled Content - MR Credit 4		
Percent Recycled Content:		
Pre-Consumer:	☐ Yes	☒ No
Post-Consumer:	☐ Yes	☒ No

Regional Materials - MR Credit 5		
Project within 350 km of the manufacturing location	☒ Yes	☐ No
Production Plant City:	**ROBBIANO DI MEDIGLIA**	
Production Plant State:	**ITALIA**	
Production Plant Zip Code:	**20060**	

Rapidly Renewable Materials - MR Credit 6		
Contributes to Rapidly Renewable Materials Credit	☐ Yes	☒ No

Indoor Environmental Quality (IEQ)

Construction IAQ Management Plan: Before Occupancy - IEQ Credit 3.2		
Contributes to Construction IAQ Management Plan: Before Occupancy Credit	☐ Yes	☒ No

Low-Emitting Materials - IEQ Credit 4		
Volatile Organic Compound: **0,0 g/l**		
Contributes to Adhesives & Sealants (IEQ Credit 4.1)	☒ Yes	☐ No
Contributes to Paints & Coatings (IEQ Credit 4.2)	☐ Yes	☒ No
Contributes to Flooring Systems (IEQ Credit 4.3)	☒ Yes	☐ No

Note

Signature
Eng. Francesco Stronati

Facing page.
Two screenshots from the website **www.mapei.it** green section: FAQ (above) and the LEED calculator (below).
On the left. LEED product certification available on the Mapei website.

LEED Calculator

There is a section on the Mapei website entirely dedicated to green products: a programme called “LEED Calculator” is available to help architects, contractors and engineers involved in construction products aiming to be LEED certified. In the dedicated green section, LEED credits for both protocols applied in Italy (Italian and American LEED criteria) are explained in detail. There is also an exhaustive explanation of all the labels regarding eco-sustainability used on the European market.
In this section, you can also choose which products to use on site, calculate the points they earn and, once registered, obtain on-line the certification for every product chosen for both the Italian and American LEED criteria.

Mikaela Decio. Graduated in Pharmaceutical Chemistry and Technology at the University of Milan, she has been working in the analytical laboratory in Mapei R&D since 1999. Since 2003 she has been involved mainly in the evaluation of VOC emissions and the “green” products certification. She is vice-coordinator of the Standards Committee for Indoor Environmental Quality within LEED and has published numerous papers about VOC emission from building products. A complete list of her publications is available on the website www.mapei.it.

THE BETTER SYSTEMS IN THE WORLD OF MAPEI

Over 40.000 visitors from 87 nations came to Domotex 2013, the international trade fair for textile, resilient and wooden floors, which took place in Hannover from 12th-15th January 2013. 1.350 enterprises from 60 nations (with more than 60% coming from abroad, 21% from Asia and 11% from the Americas) presented their latest products and collections, including carpets, textile floor coverings, resilient floor coverings, wooden flooring and laminated coverings as well as installation, cleaning and application technologies. Satisfied Jochen Köckler, member of the Deutsche Messe AG Managing Board, who at the close of the event remarked: "With a slight rise in attendance over 2011, Domotex has once again delivered proof of its great international appeal and its pivotal role as the flooring industry's flagship fair".

Systems Adding Value

At Domotex 2013 Mapei's communication strategy highlighted the concept of "system": the company is able to offer complete product systems for laying textile, resilient and wooden floors which guarantee added value for distributors, project designers, engineers, contractors and building companies. Mapei systems are available not only for the installation of textile floor and wall coverings, but also for laying ceramics and natural stones.
Floor-layers can choose among a wide range of products: from primers for substrates and self-levelling compounds, through adhesives and grouts for joints, up to paints for wooden floors and protective coatings.

Eco-Sustainability as a Key Factor for Success

Architects and projects designers are ever more eager for certified products to be used in eco-sustainable projects.



Mapei range includes numerous products which meet the requirements of the LEED (Leadership in Energy & Environmental Design) system and have been awarded EMICODE EC1 (very low emission level of volatile organic compounds, VOC). Several Mapei products also have the Der Blaue Engel, an important international label which has been establishing the criteria for eco-friendly products, since 1978. Until now it has mainly been the manufacturers of major projects that have been interested in eco-construction and the trend of sustainability has been deprived of benefits for floor-layers.

Mapei's intention is to help floor-layers make the most of their market potential. Floor-layers in particular should get more involved with the "LOHAS" segment, an acronym that stands for "Lifestyle of Health and Sustainability", which refers to a new breed of consumer that takes an interest in sustainability, not only regarding how and what they eat, but also how they dress, where they take their vacations and the quality of their domestic surroundings.

Innovative Products Setting New Installation Standards

At Domotex 2013 Mapei displayed a complete range of products, with systems designed to meet all the needs of professionals wherever they operate, be it in industrial, commercial or residential environments, with solutions for small and large building sites alike. A safe and durable installation of floor coverings is the prerogative of every internal design project with a high aesthetic impact. Mapei's line of adhesives for installing textile, resilient and wooden coverings have been used and tested on millions of square metres of floor and are certified according to the most modern standards in industrial production and user safety.

Preparing the Substrates

To manage restraints in work schedules safely and allowing floor layers to manage work progress according to the requirements of the client: these are the aims of Mapei's range of rapid products for substrates and smoothing compounds. ULTRAPLAN QUICK TRAFFIC smoothing compound is a product specially developed for the German-language countries and ideal for thicknesses from 1 to 10 mm. It features very quick setting time. After just 45 minutes surfaces are ready to foot traffic, and after around 2 hours it is already possible to install waterproofing floorings. It is an ideal product, therefore, for all those building sites where the time available is at a premium. This smoothing compound may be pumped. It is extremely stable and is ideal for use in industrial environments. ULTRAPLAN QUICK TRAFFIC can also be used to level off substrates that are not flat, and to create flat surfaces suitable for installing textile, resilient and wooden flooring.

Laying Textile and Resilient Floorings

The Mapei line for laying textile and resilient floorings was recently renewed, and includes high-performance adhesives such as ULTRABOND ECO V4 SP FIBER, ULTRABOND ECO TACK and ULTRABOND ECO FIX. ULTRABOND ECO V4 SP FIBER, the innovative evolution of ULTRABOND ECO V4 SP, is an adhesive that has managed to win over numerous floor layers in the last few years for its safety features right from the moment PVC flooring is installed. Thanks to the use of innovative, fiber-based technology, ULTRABOND ECO



PRIMERS AND **ADHESIVES** FOR THE INSTALLATION OF **RESILIENT FLOOR** AND **WALL** COVERINGS

GRUNDIERUNGEN UND **KLEBSTOFFE** FÜR DIE **VERLEGUNG ELASTISCHER WAND-** UND **BODENBELÄGE**

V4 SP FIBER takes the properties of peel adhesion and dimensional stability to an even higher level, which is why it guarantees 50% more adhesion compared with traditional dispersion adhesives. The product is particularly suitable for PVC and natural rubber flooring, giving it 100% more dimensional stability compared with traditional adhesives, including when subjected to higher levels of thermal stress.

Soundproofing Systems

At Domotex 2013 Mapei has presented MAPESILENT SYSTEM and MAPESONIC CR, two excellent soundproofing systems for ceramic, natural stone and wooden floors to reduce the noise of footsteps. MAPESILENT SYSTEM is ideal for new constructions, while MAPESONIC CR is especially suitable for renovation projects.

Laying Wooden Floors

It's not only in the installation of textile and resilient floor and wall coverings that Mapei has set new standards. Over the last few years, the Company have become increasingly recognised as a groundbreaking firm in the field of adhesives for wooden floors. One example is the recent development of sililated polymer-based adhesives that, thanks to their elasticity, provide efficient protection to the wooden floors from movements in the wood caused by expansion and shrinkage. Thanks to their elasticity, these materials can even absorb tangential stresses. These properties combine with its excellent workability, due first and foremost to its excellent trowelability and creamy consistency. And what is more, residues of the adhesive are easy to remove from floor layers' hands, and also from the surface of wooden floors.
With ULTRABOND ECO S955 1K, at Domotex 2013 Mapei presented a first class, universal adhesive polymer-based. This adhesive, with its solvent-free formulation and low emission level of VOC, is suitable for any type of wooden floor, including exotic woods and boards up to 2.5 metres long. ULTRABOND ECO S955 1K also has excellent workability and cleanability, and can be applied on substrates without having to prime them beforehand, including asphalt screeds.
Amongst the adhesives under the spotlight at Domotex 2013 there were ULTRABOND ECO S945 1K, ULTRABOND S965 1K and ULTRABOND ECO S955 1K, ready-to-use, one-component adhesives, EMICODE EC 1R PLUS certified, made from sililated polymers and ideal for all types of wooden floorings on any kind of substrate.

Protecting and Finishing Wooden Floors

Mapei's complete range of varnishes, oils and finishes for wooden floors may even be applied on subject to wear surfaces and guarantees long-lasting protection against dirt and abrasion. These systems for protecting and finishing wooden floors, combined with Mapei's innovative adhesives for wood, ensure that the level of surface protection may be calibrated according to the type and level of stress the floor is actually subjected to. At Domotex 2013, the ULTRACOAT range being presented has been enriched with ULTRACOAT TONING BASE, a two-component, water-based product for wooden floors with high insulating properties, which is efficient even when applied in a single finishing coat. It is used to exalt the natural colour of wood, especially woods rich in tannins. It is also used on wood with high absorption rate and before applying Mapei varnishes for wooden floors. Mapei's protection systems for wooden floors include the varnishes with low emission level of VOC ULTRACOAT EASY PLUS and ULTRACOAT HIGH TRAFFIC and the oils ULTRACOAT OIL and ULTRACOAT OIL CARE, as well as various undercoats, such as ULTRACOAT UNIVERSAL BASE and ULTRACOAT PREMIUM BASE.



PRIMER, ADHESIVES AND VARNISHES FOR THE INSTALLATION OF WOOD

GRUNDIERUNGEN, KLEBSTOFFE UND PARKETTSCHUTZ-SYSTEME ZUR VERLEGUNG VON PARKETT



Products for Sport Facilities

At Domotex 2013 Mapei also presented innovative products for sports facilities used for any kind of sport and in the facilities hosting the most famous sport events in the world. For resin sports surfaces Mapei offers the MAPECOAT TNS line, that includes MAPECOAT TNS PROFESSIONAL (for tennis courts), MAPECOAT TNS MULTISPORT COMFORT (for multisport fields) and MAPECOAT TNS URBAN acrylic resin-based coloured coating in water dispersion with selected fillers, for coating cycle tracks, footpaths and urban features.

In the spotlight there also was ADESILEX G19, a high performance adhesive used to install rubber tracks in the most important athletics arenas in the world, including those used in the Olympic Stadium in London for the 2012 Olympic Games.

Mapei Architectural Design Solutions

At Domotex 2013 Mapei also highlighted the Architectural Design Solutions guide, a key tool to strengthen the company's relationship with the world of project design. Mapei enjoys an open dialogue with project designers, engineers, and contractors and actively promotes refresher courses and workshops to perfect the application and installation techniques for their products. Just as important is the on-line training using the latest digital technology, available for PC, tablets and smartphones.

The company's attention to the design world can also be seen in the Mapei Architectural Solutions Design Guide, an interactive "technical community" that facilitates the development of ideas and projects step by step.

The Mapei Architectural Solutions Guide currently comprises 17 chapters, representing 17 different macro-areas of interest which project designers, engineers, contractors, architects, and technical specialists from building companies and public and private bodies and organizations have to deal with on a daily basis.

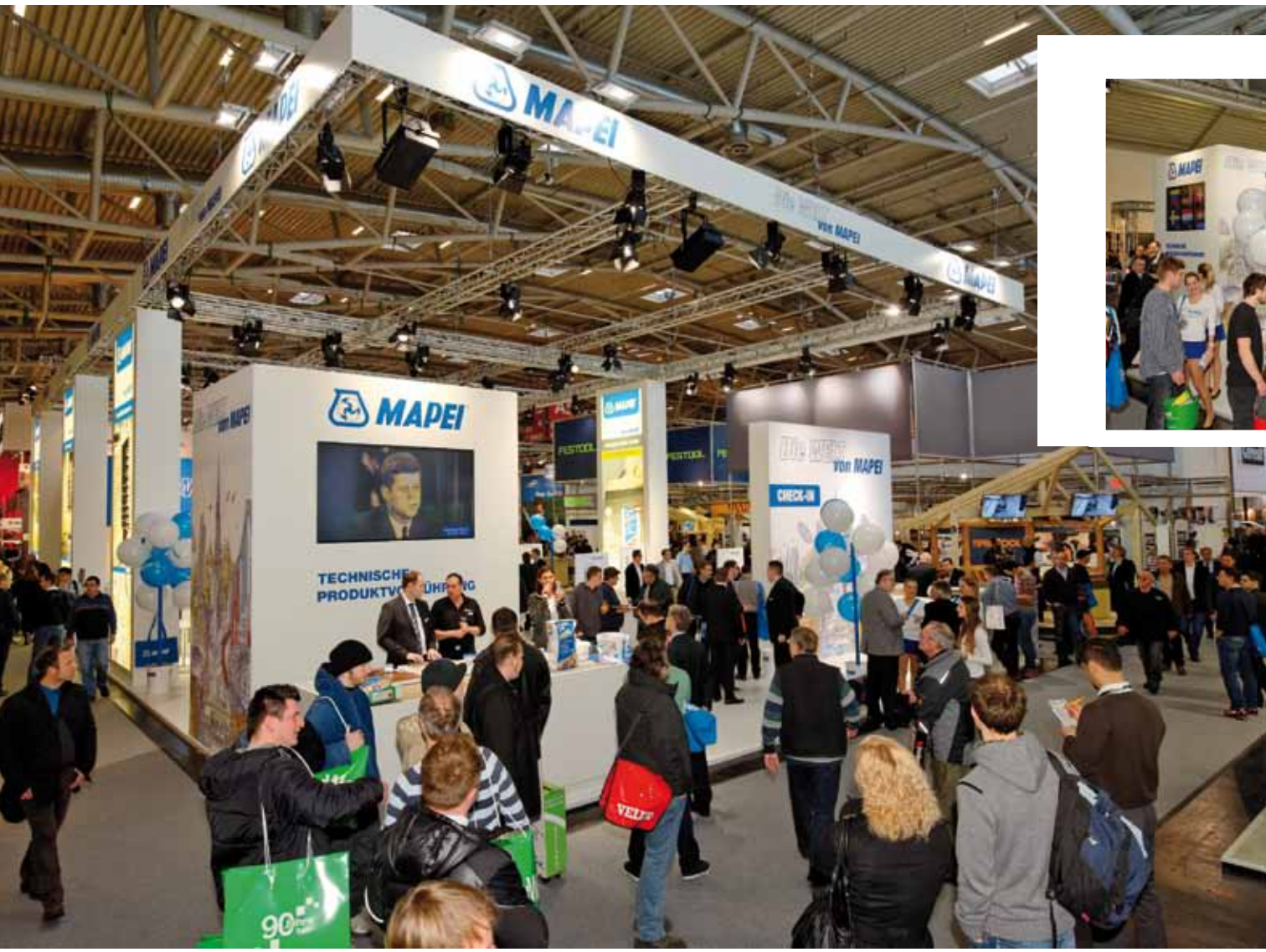
The English version of this design guide is available at www.mapei.it.

The next edition of Domotex will once again be held in Hannover from the 11th to the 14th of January, 2014.

PRODUCTS FOR THE INSTALLATION OF **SPORTS PITCHES** AND GENERAL LANDSCAPING

PRODUKTE FÜR DIE KUNSTRASEN-VERLEGUNG IM **SPORTSTÄTTEN**- UND FREIZEITBAU

BAU 2013



GLOBAL BUILDING IN THE HEART OF EUROPE

More international, more professional, more innovative. That, in a nutshell, is the impression gained after six days of BAU 2013, International Trade Fair for Architecture, Materials, Systems, which took place in Munich (Germany) from the 14th to the 19th January. With 180,000 m² of exhibition space and over 2,000 exhibitors from 41 different countries, BAU had over 235,000 trade visitors, matching the record figures of 2011.

In terms of visitors from outside Germany, there was a particular high increase in the number of visitors from Russia (2,920 visitors), China (1,091) and Japan (750).

The top themes at BAU this year were: sustainability, which is crucial for a responsible, ecologically and socially intelligent future; Energy 2.0, energy efficiency that is created for the construction of buildings; town planning of the twenty-first century, to preserve good example of today's buildings and respond to the transformation of the cities to come; building for life, building that answers to changing needs.

Also this year, BAU showed its very strong bond with the world of architecture. Daniel Libeskind, who designed the One World Trade Center currently under construction, travelled to BAU from New York, and met up here with his no less prominent colleagues Christoph Ingenhoven, Juhani Pallasmaa, Mario Cucinella, Andrey Bokov and Jean-Michel Jaspers. One of the highlights of BAU 2013 was the discussion panel between these six famous architects on the subject of sustainability.


Mapei presented their product systems to the German and international markets on a completely updated stand. Through their new corporate image entitled "The World of Mapei", created by the architect/illustrator Carlo Stanga, visitors were immediately immersed in a world of projects executed also thanks to the contribution of the company's solutions and products.

Levelling and Rapid Products for Substrates

To manage tight building schedules in complete safety: that's the aim of Mapei's range of rapid products for substrates and levelling compounds. With ULTRAPLAN QUICK TRAFFIC levelling compound, Mapei presented at BAU 2013 a new system of products for levelling the surface of floors rapidly. Around 70% of building work involves renovation and repair work, which means operating in a context where little waiting time is allowed. That's why organising the time available plays a determining role. With Mapei's range of levelling compounds and rapid products for substrates, designers and floor installers have the perfect tools on hand to organise operations safely, even when they are carried out close together. ULTRAPLAN QUICK TRAFFIC is a cementitious levelling compound developed specifically for German-speaking countries and is suitable for layers from 1 to 10 mm thick. It sets extremely rapidly: after just 45 minutes it sets to foot traffic, and after around 2 hours it is already possible to install flooring. ULTRAPLAN QUICK TRAFFIC can also be used to level off substrates that are not flat, and to create flat surfaces suitable for installing textile, resilient and wooden flooring. Amongst the products for substrates on display at BAU there was also MAPECEM PRONTO SL.

Waterproofing Products

Mapei has always proposed a complete range of waterproofing products and systems. At BAU 2013, particular attention was paid to the Mapei systems for waterproofing structures below ground level, particularly those formed using bituminous emulsion (the PLASTIMUL range), that allow vertical reinforced concrete and brick or block masonry facing structures to be waterproofed. Amongst the products showcased was PLASTIMUL 2K SUPER, a two-component, solvent-free, quick-drying, low-shrinkage, high-flexibility bituminous waterproofing emulsion containing polystyrene spheres. PLASTIMUL 2K SUPER is used for waterproofing horizontal and vertical concrete and brickwork surfaces subject to high dynamic loads, and when the waterproofing product is applied at low temperatures and in high levels of humidity.

BAU 2013

Systems for Installing Ceramic and Stone

Showcased at BAU was the wide range of products dedicated to the installation of ceramic and stone. The range includes cementitious adhesive pastes, hydraulic binders and pre-blended mortars for screeds, primers, smoothing compounds, grouts for joints, sealants and complementary products. The family of lightweight adhesives was presented at BAU 2013, now extended with the introduction of two new rapid, high-performance, lightweight adhesives ideal for installing all types of ceramic, slim porcelain and stone: the rapid versions of ULTRALITE S1 and ULTRALITE S2. ULTRALITE S1 QUICK is a deformable, rapid-setting and hydrating adhesive with no vertical slip, very high yield, good trowelability and high wetting capacity for ceramic tiles, stone and slim porcelain tiles. Apart from the same characteristics as its sister product, ULTRALITE S2 QUICK also has extended open time and higher deformability.

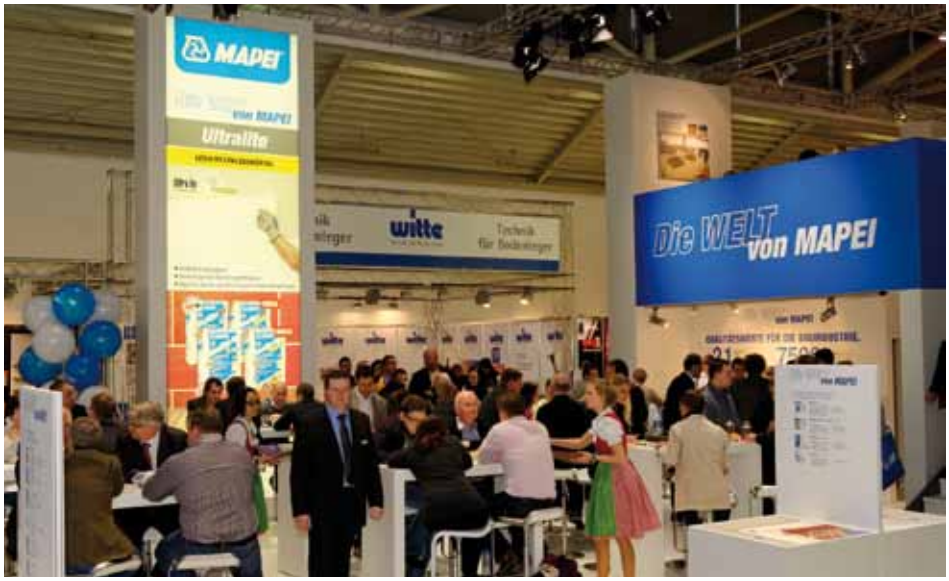
Tile Joints

Mapei proposes a range of high-quality, highly-functional products rich in colour for internal and external tile joints.

Available in the versions cementitious, paste and epoxy, they are suitable for all residential commercial and industrial environments. The KERAPOXY range is particularly suitable for bonding and grouting tiles in special environments where a high degree of chemical resistance is required. The novelty presented recently at BAU 2013 was the wider range of colours available for KERAPOXY CQ, the most versatile filler around, which has gone from 6 to 21 colours. Its special properties include easy application, high cleanability, including during application, and hygiene. KERAPOXY CQ is recommended for ceramic floors and tiling in commercial and domestic environments, as well as in industrial environments where high resistance to chemicals is required. A new cleaner for epoxy grouts was also presented at BAU: KERAPOXY CLEANER, used for cleaning the marks left by epoxy grouts on surfaces after installing ceramic or glass tiling. A reminder that, in the residential sector, the product for excellence is the cementitious grout ULTRACOLOR PLUS, the mould-proof grout with no efflorescence that prevents mould from forming in damp environments.

Adhesives for Installing Resilient Materials and Textiles

Amongst the flagship products that Mapei presented at BAU 2013 we have ULTRABOND ECO V4 SP FIBER, an evolution of ULTRABOND ECO V4 SP, an adhesive that has managed to win over numerous floor installers over the last few years for its safety features right from the moment PVC design flooring is installed. Thanks to the use of innovative fibre-based technology, ULTRABOND ECO V4 SP FIBER takes the property of peel adhesion of ULTRABOND ECO V4 SP to an even higher level. This is the reason why the adhesive guarantees higher adhesion compared with traditional dispersion adhesives.This product is particularly suitable for modern PVC and rubber floors.



Installation of Wooden Floors

Over the last few years, Mapei has become increasingly recognised as a groundbreaking company in the field of adhesives for wooden floors. One example is the recent development of sililated polymer-based adhesives that, thanks to their elasticity, provide efficient protection to the substrate from movements in the wood caused by swelling and shrinkage. Thanks to their elasticity, these materials can even absorb tangential stresses. These properties combine with its excellent workability, due principally to its excellent trowelability and creamy consistency. And what is more, traces of the adhesive are easy to remove from the floor installer's hands and from the surface of wooden floors. With ULTRABOND ECO S955 1K, Mapei presented at BAU 2013 a first class, multi-purpose adhesive. This polymer-based adhesive, with its solvent-free formulation and low emission of volatile organic compounds, is suitable for any type of wooden floors.
We'd like to remind you that the BAU exhibition is held every two years, and the next appointment is scheduled to be held from the 19th to the 24th of January 2015, as always at the exhibition centre in Munich.

PROJECTS PORTFOLIO: GERMANY

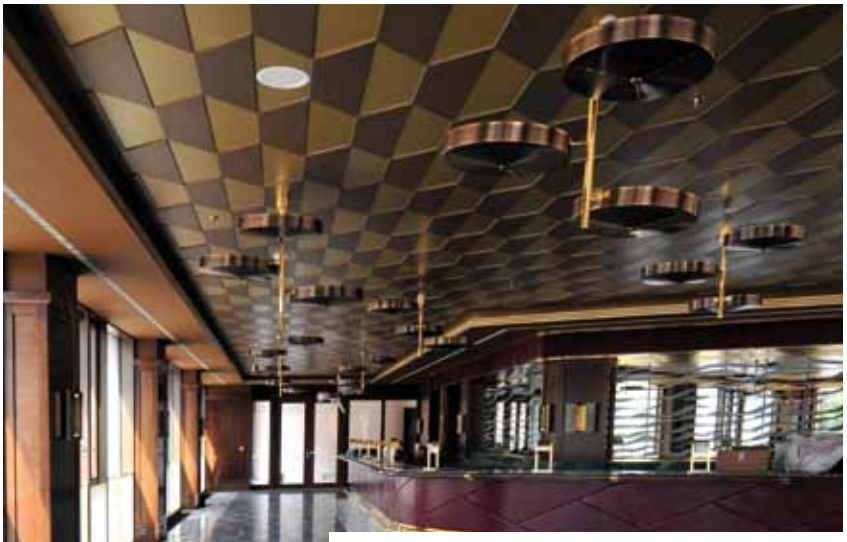
Mapei is present in Germany through their subsidiary Mapei GmbH and supplies their products to important building sites all over the country. A few of these are presented on these pages.

Exhibition Centre - Hannover

The exhibition centre in Hannover is one of the largest in the world with an exhibition area of 500,000 m^2, 27 pavilions and a large congress centre. The annual Domotex event is held here, for example, the international trade fair dedicated to resilient, textile and wooden floor and wall coverings. In the spring of 2012, a new entrance was opened in the southern part of the exhibition centre. Atlas Concorde porcelain tiles measuring 60x60 cm were chosen for the floors in this area. The substrates were initially treated with PRIMER G and ULTRAPLAN MAXI, and then the tiles were bonded in place using GRANIRAPID. The joints were grouted with ULTRACOLOR PLUS.

Municipal Theatre - Aschaffenburg

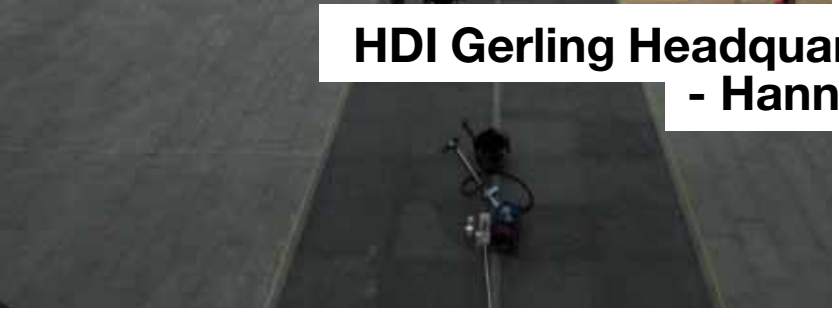
The municipal theatre in Aschaffenburg is one of the most beautiful neo-classic theatres in Southern Germany, and was inaugurated in 1811 by Prince Carl von Dalberg. To bring the theatre back to its original splendour in time for its 200th anniversary in 2011, it was lovingly restored and upgraded to meet the requirements of a modern theatre. A two-storey foyer with glass façades was built around the entrance to the building, thus offering sufficient space for a high quality entrance and a restaurant on the upper floor. The Großes Haus auditorium was also restored by substituting the stalls, renovating the corridors and walkways and upgrading the security system. 22 mm-thick oak flooring was installed in the auditorium, while solid industrial wooden floor was chosen for the restaurant and new foyer. PRIMER G, PLANITEX D10 (distributed on the German market by Mapei GmbH) and ULTRAPLAN ECO were used to prepare the substrates in these areas. The wooden floor was installed using ADESILEX LC/R in the auditorium and ULTRABOND ECO P909 2K for the restaurant and new foyer. The textile floor coverings in the corridors were installed using AQUACOL T.



Hotel Waldorf Astoria - Berlin

The first example of the luxury Waldorf Astoria hotel chain was recently opened in Berlin. It is one of the tallest buildings in the city and comprises 25 floors with 232 rooms, suites and apartments. In order to reach the high standards the name evokes, the designer included several elegant touches by choosing, for example, modern, luxurious materials for the interiors, such as natural stone for the stairs and floors in various areas. Slabs of white Aristone limestone were installed using MAPESTONE 1* in the coffee lounge, while the Crema Marfill creamy-coloured skirtings were bonded using MAPESTONE TM*. The steps' screeds on the stairs, covered with the same type of natural stone, were prepared using TOPCEM PRONTO. To bond the slabs of Guatemala Green serpentinite in the Lang-Bar, MAPESTONE BASIC* was used. All the joints in the natural stone covering were grouted with ULTRACOLOR PLUS. To prepare the substrates prior to installation, various Mapei products such as TOPCEM, EPORIP and ULTRAPLAN MAXI were used in this hotel.
*Remember: These products are distributed on the German market by Mapei GmbH.

HDI Gerling Headquarters - Hannover



The new headquarters of the HDI-Gerling insurance company in Hannover was built following criteria of eco-sustainability in line with the requirements of the DGNB, the German Sustainable Building Council. Mapei played a part in this project by supplying products to install the textile and wooden floors flooring over a total surface area of more than 36,000 m^2. To bond the textile floor covering in the offices, ULTRABOND ECO 170 was used after treating the substrates with PLANIPATCH and PRIMER MF. For the floors in the corridors, on the other hand, textile loose-lay tiles were used, and were bonded in place with ULTRABOND ECO FIX. In the boardrooms, foyer, conference area and coffee bar, multi-layered pre-finished wooden flooring was installed, while solid oak was chosen for the service areas. In both cases, the flooring was bonded in place using ULTRABOND ECO S955 1K.

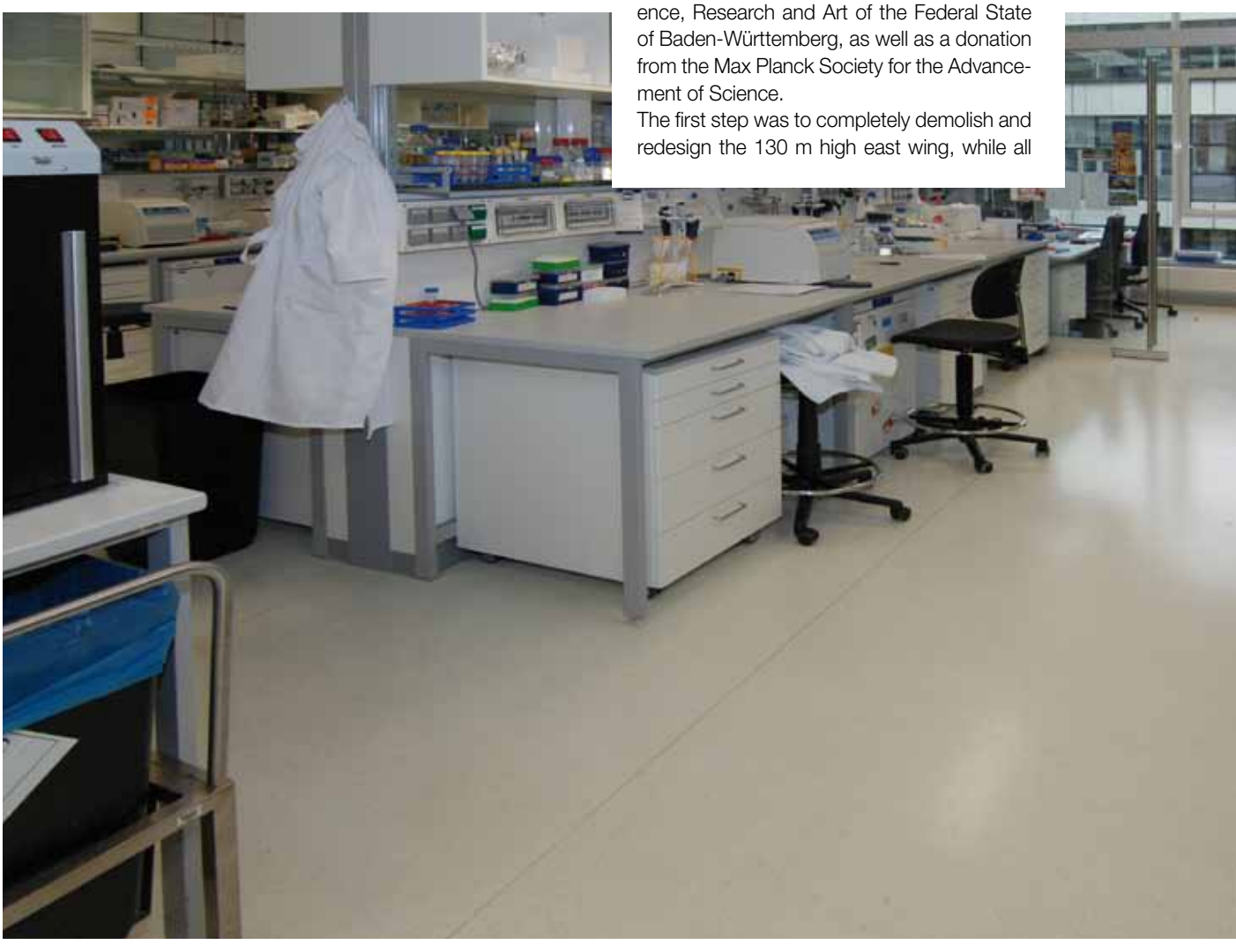
GERMAN CANCER RESEARCH CENTRE (DKFZ) IN HEIDELBERG

Professional installation of resilient floorings in this internationally renowned science complex

The German Cancer Research Centre (DKFZ) in Heidelberg is the largest bio-medical research institute in Germany, where more than 1,000 research scientists study the mechanisms of the illness, identifies its risk factors and develop new strategies for its prevention, diagnosis and therapy. Research work at such a high level as is carried out here also requires working surroundings which are in excellent condition.

After more than thirty years of intense use the building, built in the 1970's, was no longer in condition to guarantee the standards expected of a modern research centre. In order to carry out their internationally-renowned research work, the management decided that the structure of the 8-storey building and the documentation centre (which includes records rooms, offices and a series of areas generally required for archiving documentation) needed to be completely renewed. The work was financed through a contribution of 70 million Euros from the German Federal Ministry for Education and Research and around 7 million Euros from the Office for Science, Research and Art of the Federal State of Baden-Württemberg, as well as a donation from the Max Planck Society for the Advancement of Science.

The first step was to completely demolish and redesign the 130 m high east wing, while all



the laboratory activities continued in the other half of the complex. After two years of work, the research scientists in the centre were able to be transferred into new, bright, modern offices so that work on the west wing could start, which took another three years. Three more floors were also added to the three existing floors of the documentation building.
The client insisted that the interior of the building should be designed in such a way that it helped optimise the researchers work and made communication easier. The areas dedicated to the laboratories, for example, benefitted in particular from the new design module: the building, which originally had 3 sections, was redesigned to have just two. This allowed more spacious laboratories to be created which were more suited to research work. A glass wall divides the office area from the laboratories area, allowing natural light to penetrate into the laboratories.
The new administration and documentation areas were designed around criteria of flexibility, transparency and efficiency. For example, in the documentation centre, the administration areas have been laid out around a communal area illuminated by natural light passing through a skylight. Thanks to the use of sliding doors, this area may also be used as a reception area for visitors and as a communal area for those who work in the centre. Both buildings have meeting rooms, a library and a small kitchen on each floor. The ground floor entrance is particularly spacious and bright, offering lovely views of the internal courtyard.

On the left. In the laboratories in the east wing, new conductive floorings were installed using ULTRABOND ECO V4 CONDUCTIVE (which has now been replaced on the market by ULTRABOND ECO V4 SP CONDUCTIVE).
Above. The German Cancer Research Centre (DKFZ) in Heidelberg, which was recently renovated, is the largest biomedical research institute in Germany.

The Installation of Resilient Floorings: a Masterpiece in Renovation

Because of the specific requirements of the client and the final use of the centre, resilient floor coverings were chosen for the renovated rooms. Since the existing flooring had been very poorly installed, with poorly prepared substrates and mistakes made when bonding the flooring, the entire structure of the floors had to be renovated, and what is more, in a very limited amount of time. The company contracted with installing the flooring, Müller & Olsen from Neuweiler (Germany), worked in close contact with technicians from Mapei GmbH, one of the Group's German subsidiaries, which was involved in the project by

Below. The Nora synthetic rubber floorings in the corridors in the east wing were installed with ULTRABOND ECO V4 SP after preparing the substrates with PRIMER MF, ULTRAPLAN MAXI and ULTRAPLAN.

supplying materials and technical assistance on the building site.

Installation work started in 2007 in the east wing and required the use of chemical products which guaranteed rapid work phases without compromising the quality of the end result.

Which is exactly why a highly technological, highly flexible system of Mapei products was chosen. The system comprised the use of PRIMER MF epoxy primer, ULTRAPLAN MAXI and ULTRAPLAN smoothing and levelling compounds and ULTRABOND ECO V4 SP adhesive to install the "Norament 926 grano" rubber stairtreads supplied by Nora on the stairs and "Noraplan mega" synthetic rubber floorings in the corridors.

ULTRABOND ECO V4 CONDUCTIVE adhesive (which has now been replaced on the market by ULTRABOND ECO V4 SP CONDUCTIVE), on the other hand, was used to install conductive flooring in the laboratories.

During the second phase of the project, which commenced in December 2008 and was completed in 2011, a further 11,000 m^2 of "Noraplan mega" synthetic rubber floorings were installed in the offices and in the documentation centre in the west wing using ULTRABOND ECO V4 SP adhesive after preparing the substrates with ULTRAPLAN MAXI, PRIMER MF and ULTRAPLAN.

Thanks to this renovation work, the German Cancer Research Centre in Heidelberg now has a building decorated in pleasant colours that help visitors find their way around the complex made from innovative materials. In 2012, the renovation project received the prestigious "Hugo-Häring" on the federal state level award in recognition of its architectural excellence from the regional section of the German Association of Architects (Landsverband des Bund Deutscher Architekten).

IN THE SPOTLIGHT

ULTRABOND ECO V4 SP CONDUCTIVE

It is a synthetic resin based adhesive in water dispersion with special fibres that ensure electrical conductivity, formulated in an easily trowelable light grey paste. ULTRABOND ECO V4 SP CONDUCTIVE is the evolution of ULTRABOND ECO V4 CONDUCTIVE. It is used for bonding conductive vinyl floorings in all areas where discharges of static electricity could cause explosions or disturb electrical and electronic equipment, for conductive needlepunch and carpet floorings and on all absorbent and moisture-stable substrates normally used in building.

It can contribute up to **3 points** to obtain the **LEED** certification.

Above. ULTRABOND ECO V4 SP was used to install the Nora rubber floorings on the stairs in the east wing.
On the left. The substrates for the rubber floorings were levelled off prior to installation with ULTRAPLAN and ULTRAPLAN MAXI.
On the right. Installation of skirtings using ULTRABOND V4 SP.

TECHNICAL DATA

German Cancer Research Centre (DKFZ), Heidelberg (Germany)
Period of Construction: 1970's
Designers: Heinle, Wischer und Partner, Stuttgart (Germany)

Period of the Intervention: 2007-2011
Intervention by Mapei: supplying products for the preparation of substrates and the installation of resilient flooring
Designer: DKFZ Building Projects Department

Clients: German Federal Ministry for Education and Research; Baden-Württemberg Office for Science, Research and the Arts and Max Planck Society for the Advancement of Science
Laid Materials: rubber floorings by Nora systems GmbH and conductive floorings
Laying Company: Müller & Olsen from Neuweiler (Germany)
Mapei Co-ordinators: Günther Hermann and Bernd Schulte, Mapei GmbH (Germany)

MAPEI PRODUCTS
Preparing the substrates: Primer MF, Ultraplan, Ultraplan Maxi
Laying resilient flooring: Ultrabond Eco V4 SP and Ultrabond Eco V4 Conductive (the product has now been replaced on the market by Ultrabond Eco V4 SP Conductive)
For further information see the websites www.mapei.com and www.mapei.de

Mission America

The story of an expanding market is told during an interview with the President of Mapei Corp. Luigi Di Geso

The process of internationalization of Mapei began with the construction of the first production plant in Laval, Canada (near Montreal) in the late 70s. Today, in light of the world economic crisis, is it possible to maintain and strengthen the commercial growth in North America?

Yes, we can maintain our market share and there is room to grow, especially in the area of concrete restoration (the building line). We are an emerging competitor in this area and we have great technology supporting us, so we foresee that our greatest growth will occur in this industry segment.

What new strategies should be put in place?

In all categories, we will grow through the continued introduction of new products and new product divisions. For example, we have added new products such as the FRP structural strengthening materials to our Concrete Restoration Systems line; and we are in the process of adding the tunneling line and admixtures to the categories of products we well in the Americas. In the flooring sector, Mapei Americas Research & Development group has developed an entirely new category - the UltraCare line of care and maintenance products for tile, stone and grout. This product line will eventually be extended to all of Mapei Group. Another well-crafted strategy for Mapei Americas involves the expansion of product sales into the Caribbean, Central and South America. The economic boom in South America is attracting our attention as well as the attention of the whole world. Large commercial and industrial infrastructures are being developed in these countries today, and Mapei is well-positioned to supply the building materials needed from our industry sector. By increasing our salesforce with local people who have the proper skills and abilities to do a good job, we are putting into practice the vision of our founder, Rodolfo Squinzi, whose core belief was, that to successfully operate in any area, a manufacturer must be knowledgeable and respectful of the individuals, demands, conditions and specialties of that particular locale. Mapei Americas is committed to immersing itself in each of its local markets with the determination of developing an understanding of the culture and traditions valued by those who live and work there. This attitude will be the cornerstone of our success in these territories.

Luigi Di Geso

President of Mapei Corporation (the US subsidiary of the Group) and responsible for the Mapei Group's operations in the Americas.

What challenges await the "American strength" in the coming years?

The rebound from the recent economic recession must be taken advantage of; we have planned strategically to compete successfully with new and existing companies in our competitive landscape in order to increase our market share during this time. Mapei Americas did not close plants or lay off employees during the recession, so we are in a stronger position than our competitors to ramp up our production in order to serve the increasing needs of our customers. One aspect of construction that persisted through the downturn was the pursuit of green initiatives. Mapei has always employed sustainable manufacturing practices, and we have made it a priority to continuously innovate our products to be greener and more sustainable, too. Raw materials may become an issue as the construction industry gains momentum, but Mapei has the support of our Vinavil subsidiary for polymer production, which will put us in an advantageous position for production of our premium products.

How does Mapei face the fierce competition from manufacturers on "the other side of the Atlantic" - manufacturers in the Americas?

Mapei Americas faces and overcomes our competition by developing and providing the best products through our innovative research and development. We supply these products to our customers at competitive market prices; and our customer service, technical service, marketing and sales support give us a distinct advantage over our competitors.

ON THE LEFT, THE MAPEI PLANT IN SAN BERNARDINO (CA) - USA, AND BELOW, FROM THE LEFT, THE GROUP'S PLANTS IN LAVAL (CANADA), GARLAND (USA) AND DEERFIELD BEACH (USA).

What are your major objectives and priorities for introducing new products and systems?
Our main objectives are to maintain a leadership position in our markets and to respond to our customers' needs as they change and evolve. In the flooring sector, the introduction of the ULTRACARE line typifies our strategy for meeting these objectives. Following the overall Mapei global strategy, we are emphasizing new products in the building line as we grow our strength in this area.

The expansion of activities in Latin America is already proving to be successful. In the last two years you have increased the number of distributors in the Caribbean, Central and South America. Please elaborate on the results.
We are opening up distributorships in countries where we have never done business before, doubling and tripling sales in these areas. We are "seeding" the environment for future opportunities. Last year and this year we spent resources building our infrastructure for future sales. We are doing an abundance of seminars, informing and educating architects, contractors and distributors about our total systems of products and spreading the message of Mapei's excellent technical support. As an example of our efforts, we are happy to report that we have finalized our plans for Mapei Brazil and are opening our first entity amidst this country's rapidly growing economy.

During the past three years (2010-2012), you have planned to extend the space dedicated to production in the United States and Canada from 102,200 m² to 139,30 m². Has the goal been reached?
We are on track with our expansion goals. The new plant in Brampton, Ontario, will be fully operational in 2013. Work has begun on the new plant in New Jersey, with an expected opening date in late 2014. We have completed the acquisition of a new property in Chicago, Illinois, and there will be further development of this facility after the completion of our work in Brampton and in New Jersey. We will wrap up our current expansion plans with the development of a new powder plant in Dalton, Georgia in 2015.

What are your anticipated investment forecasts during the next few months?
Besides the developments of the plants already mentioned in the US and Canada, we are also concentrating on new investments in Mexico and South America.

What is the trend in housing forecasts in the housing markets in North, Central and South America?
We see a moderately positive trend going forward, as shown in the following charts.

What is the role of trade shows in the Mapei Americas strategy?
Trade shows offer Mapei the opportunity to show our customers the new products we are introducing. They also give us a forum to listen to our customers wants and needs for the future and discuss ways we can support them. Trade show management is offering more promo-

» WE ARE WIDENING OUR DISTRIBUTION IN THE CARIBBEAN AND IN CENTRAL AND LATIN CENTRAL AMERICA

tional opportunities at the expos as well, which allows us to reach more participants and invite them to our booth for more information on Mapei. We have also worked with the conference managers to have Mapei knowledge experts speak in seminars that accompany the trade shows, demonstrating our commitment to the building community.

Which product has more room for growth in the floor covering materials market (wood, tile, carpet or resilients)?

As a reflection of the economic times less building with higher quality in construction is favorable to floor coverings that are more high end, such as wood or tile. Wood has the best growth potential at this time, as wood has become a popular trend in recent years. Ceramic has a steady growth pattern, with greater use of tile throughout the hospitality industry representing new opportunities. Resilients have a positive outlook through commercial work, while carpeting has the least room for growth due to its already large share of the floor covering market. Carpet tiles show more growth than wall-to-wall carpeting.

Does being sustainable help?

Substainable products and green manufacturing processes absolutely help. A recent survey conducted by Turner Construction Company, the largest green builder in the United States, states, "Important factors contributing to continued use of green construction included the potential to reduce energy costs and operating and maintenance costs. Other factors included the impact such construction had on their [developers and contractors] brand/reputation, requirements from customers, and the belief that it was the "right thing to do". The practical aspects of building sustainably are becoming more and more evident and giving "green" construction a solid position in the industry. Mapei's sustainability mission statement says, "At MAPEI we are committed to protecting the earth, using energy and resources sustainably, minimizing waste, and developing and supplying products with user-safety in mind, while being good corporate citizens". We live this mission each day, in our manufacturing plants and in the sustainable products we produce.

What does Mapei Americas do to be sustainable?

Specific examples of Mapei America's sustainability plan include:

• Our Research and Development group make sure new products are being developed to be eco-friendly; they also periodically review existing products in light of new technologies to determine if re-formulations can make them more sustainable.

• Mapei AIA/CES-approved seminars help train architects to specify green.

• The green initiatives web pages on the Mapei Americas web site helps contractors calculate the ways in which the use of our products can help contribute points to projects seeking LEED certification. Contractors can also download LEED contribution letters for specific products from the web site.

• We seek ISO 14001 certification for all our plants, demonstrating that we have achieved accreditation for managing our products and processes sustainably.

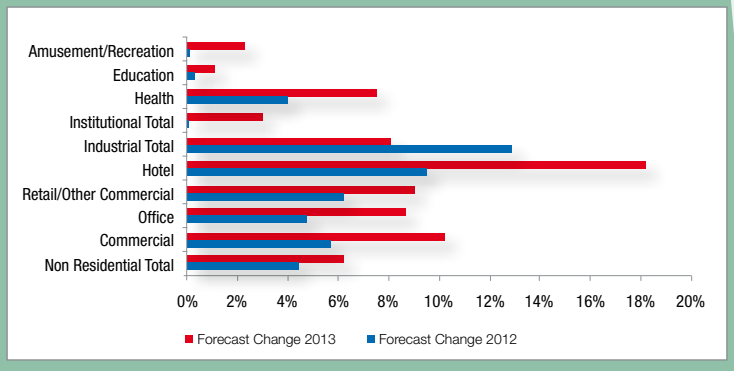
What relationship has Mapei established with its distributors, and also with contractors?

Mapei Americas employs distributors as our shipping/warehousing channel to go to market most successfully. We also partner with them to promote and sell our products through training them with product knowledge seminars and via our Mapei Training Institute (MTI) branches at each of our production facilities.

We work hand-in-hand with contractors in the field, recommending the proper products for the most successful projects. We train contractors at our MTIs, too, so they have the best knowledge about how to use our products. In addition, we work with contractor buying groups to build better relationships with our customers.

We participate in a large number of contractor-based and distributor-based associations, showing our support for them and their goals. These organizations include the National Tile Contractors Association, the Tile Contractors Association of America, World Floor Covering Association, U.S. Green Building Council, Ceramic Tile Distributors Association, National Wood Flooring Association, Carpet & Rug Institute, Floor Covering Installation Contractors Association, International Concrete Repair Institute, Marble Institute of America, National Association of Floor Covering Distributors, Tile Contractors of North America, American Concrete Institute, Adhesives and Sealants Council, Materials & Methods Standards Association and the Resilient Floor Covering Institute.

In summary, Mapei Americas is poised at the crest of an economic rebound, and we are strategically positioned to take advantage of this momentum in every way possible.



Fonte: Helbling & Associates, Inc.

ABOVE. IN 2012-2013, FORECASTS INDICATE A GROWTH IN THE AMERICAN CONSTRUCTION MARKET.

Ultralite

Our family of “lightweight” products is now extended with two new rapid, lightweight, high-performance adhesives. Ideal for installing all types of ceramic, thin porcelain and stone.

- Lightweight with high performance
- One-component and deformable (S1 and S2 according to EN12004 and ISO13007)
- Available in “standard-setting” and “rapid-setting” versions
- Up to 80% higher yield compared with Mapei adhesives with the same classification
- Good trowelabilty
- Very high wetting properties

Discover the world of Mapei: **www.mapei.com**

/mapeispa

MAPEI®
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

Mapei Corp wins manufacturer of the Year Award

The award was presented by the MAF, Manufacturers Association of Florida

Amidst the elegant setting of the Hyatt Regency Hotel at Orlando International Airport (United States), the Mapei Fort Lauderdale production plant, located in South Florida, received the "2012 Florida Manufacturer of the Year " Award. The award was presented by the Manufacturers Association of Florida (MAF), on 6 December 2012 during the 9th annual summit of the MAF. Four winners were announced, including Mapei Corporation for the category "Manufacturers with 66-130 employees".

The Value of the Excellence

«All of our finalists demonstrated a commitment to excellence in their manufacturing businesses. We are delighted to have such exemplary manufacturing companies in Florida and congratulate the winners of this year's competition», said Nancy Stephens, Executive Director, Manufacturers Association of Florida. Each company was judged on: leadership; strategic planning; customer and market focus; measurement, analy-

sis and knowledge management; workforce focus; and process management. In addition to evaluation of applications, tours of finalists' facilities were made by the judges. The Manufacturers Association of Florida, founded in 2005, is comprised of manufacturers and those supporting industries interested in improving the business climate for manufacturers in Florida.

Comments by Robert Piatek

Robert Piatek, Unit Manager of the Fort Lauderdale plant, accepted the award on behalf of Mapei. «This award represents the efforts of our Fort Lauderdale team to achieve all the aspects of CARE, which our Mapei Americas CEO Luigi Di Geso outlined at our recent Town Hall meeting - Commitment, a can-do Attitude, Responsibility and striving for Excellence», Piatek said. «Being named Manufacturer of the Year for the State of Florida highlights our efforts and spurs us to be even more committed in the coming year».

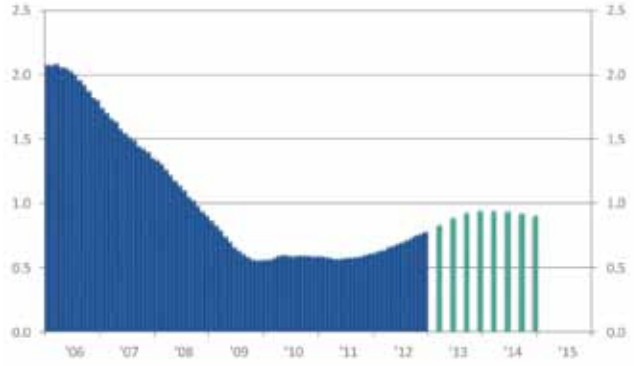
ABOVE. ROBERT PIATEK, UNIT MANAGER OF THE FORT LAUDERDALE PLANT, ACCEPTS THE "2012 MANUFACTURER OF THE YEAR" AWARD AND IN THE PHOTO AT THE TOP LEFT WITH GIORGIO AND MARCO SQUINZI AND WITH LUIGI DI GESO.

ON THE OPPOSITE PAGE. INSTALLATION OF "2012 MANUFACTURER OF THE YEAR" AWARD SIGNAGE

The economy of the future

Trends in the construction market and economic factors in the United States

Housing Starts



In the USA, Housing Starts for 2012 totaled 780,000 units, up 28.1% from 2011. Expect 945,000 Housing Starts in 2013. The better-than-anticipated growth is largely being driven by Multi-Unit Housing Starts that rose 37.1% in 2012. At the same time, the demand for rental properties is increasing and the younger generation is benefiting from the improving job market and leaving their parents' homes to set out on their own.

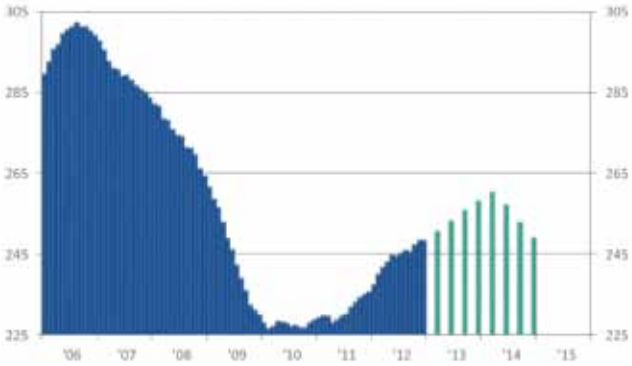
It appears that there is moderate economic growth and that the economy is slowly picking up according to the figures presented last February by the National Building Manufacturers Distributors Association (NBMDA) and the National Association of Floor Covering Distributors (NAFCD). The consumer is spending money; and on the business-to-business front, new orders for durable goods in the final quarter of 2012 came in 1.1% higher than 2011, although forecasts for year-end and 2014 are not the most optimistic.

Growth Figures and Forecasts

Housing and autos are good examples of the positive consumer momentum. Housing Starts (total number of housing units started in millions, including farms, private and public) in 2012 came in 28.1% higher than the year before. This is great news, and it is consistent with the ongoing solid performance evident in the Light Vehicle Retail Sales trend for the past 12 months, which came in 13.6% higher than last year. Additional gains for 2013 are expected here as well (3.3% for the year) with the first half of the year coming in stronger than the second half.

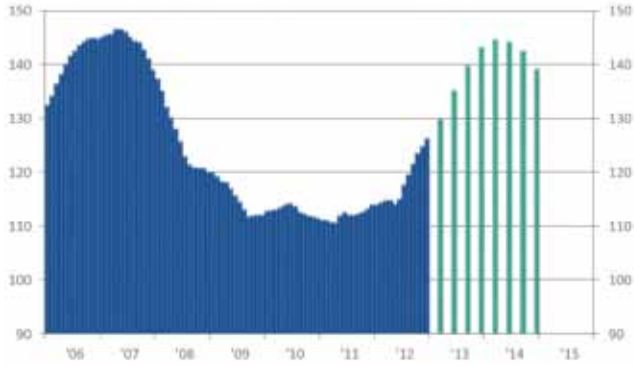
The ITR Leading Indicator edged higher in January 2013, eclipsing the tentative high of October 2012. The ITR Leading Indicator normally leads the overall econo-

Building Materials & Supplies Stores Retail Sales



Annual Retail Sales in 2012 grew 5.4% above 2011. Fourth quarter Retail Sales gained 4.7% from the same time last year, indicating growth will continue but at a slower pace moving forward. Paint and Wallpaper Stores Retail Sales, a segment of Building Materials & Supplies, rose 8.3% in 2012 from 2011, but the pace of rise is diminishing. Annual Retail Sales are expected to rise into early 2014, before slipping into recession around midyear.

Home Improvement Construction

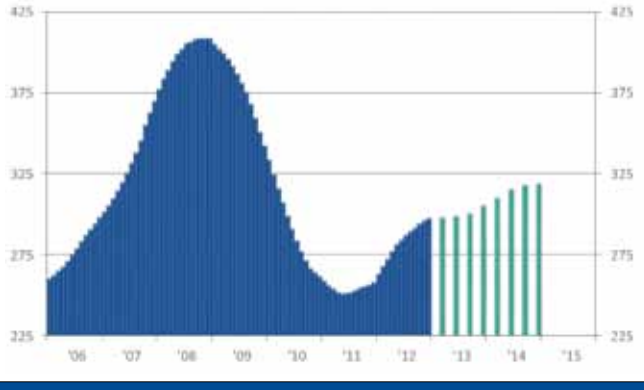


Annual Home Improvement Construction in the USA rose 10.8% in 2012, the fastest pace of rise in six years. Look for Home Improvement Construction in 2013 to be 13,5%, while it will start to fall around mid-2014, with a value of less than 2.8%.

my through business cycle highs by approximately nine months. Ascent in January means we should be expecting businesses to generally be doing better into at least the fourth quarter of 2013, especially if the business is coincident with, or lags behind, US Industrial Production. Perusing the leading indicators reveals that one of the most forward looking indicators, Corporate Bond Prices, is exhibiting rate-of-change decline off a September 2012 high. The annual average data trend turned down in January, joining the 3MMA (Three Month Moving Average) and the rates-of-change in descent. The Bond Prices annual average trend turned down because bond yields are rising. In January, they rose above the year-earlier level. The recent shift in the Corporate Bond Prices trend is an early indication of business cycle decline for 2014.

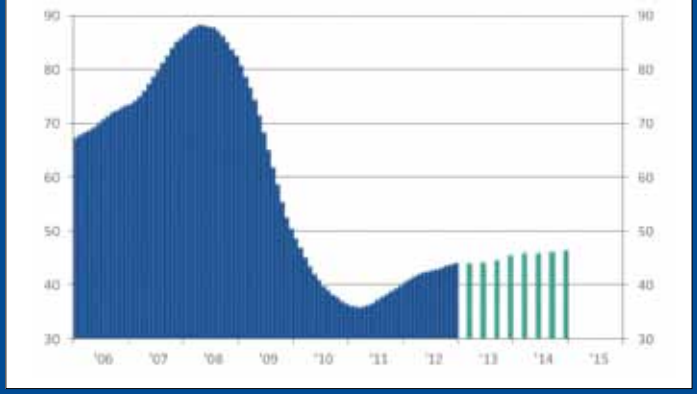
The concern for 2014 is supported by the onset of deterioration in some of the leading indicators as well as changes to American government tax and spending policies. The solution to the spending problem was to raise taxes. Raising taxes has the consequence of slowing the rising trend in Total After-tax Income which means there is less to spend on just about anything and everything. No doubt the spending "cuts" slated to begin in 2014 will be headline news as the economy goes through the latter half of 2013.

Private Non-residential Construction



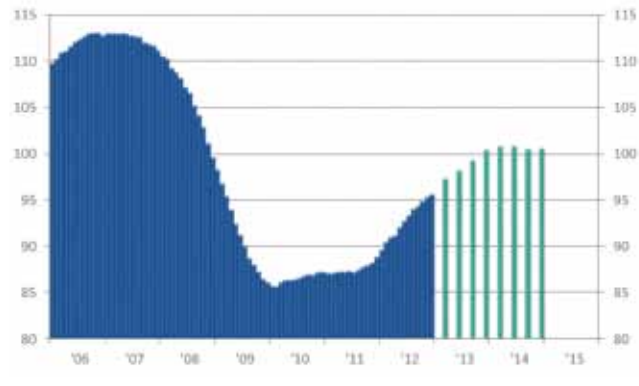
American Private Non-residential Construction is continuing along its long path to recovery, marking its 19th consecutive month of rise in December 2012. Growth will persist through 2014 as this industry manages to escape the recession intact, although the pace of ascent will be slower than the current rate of 15.4% annually. Vacancy Rates for Offices, Retail Space, and Warehouse/Distribution remain elevated and well above their historical norms at 17.1%, 10.7%, and 12.4%, respectively. As long as there is a glut of vacant space in the market, demand for new infrastructure will remain subdued. A large portion of the increase in construction activity may stem from renovating existing infrastructure, rather than building new.

Commercial Buildings Construction



Annual Commercial Buildings American Construction is projected to remain in an overall rising trend through 2014. The rate of growth is slowing, and Construction is projected to end 2013 up 3.0% from last year. Direct Tourism Output is up 4.2% from last year, and the expanding industry is having a positive effect on Total Lodging Construction. The market made some big gains over the past year but has yet to return to its pre-recession level. The rate of Commercial Construction growth will slow going forward.

Furniture & Home Furnishings Retail Sales

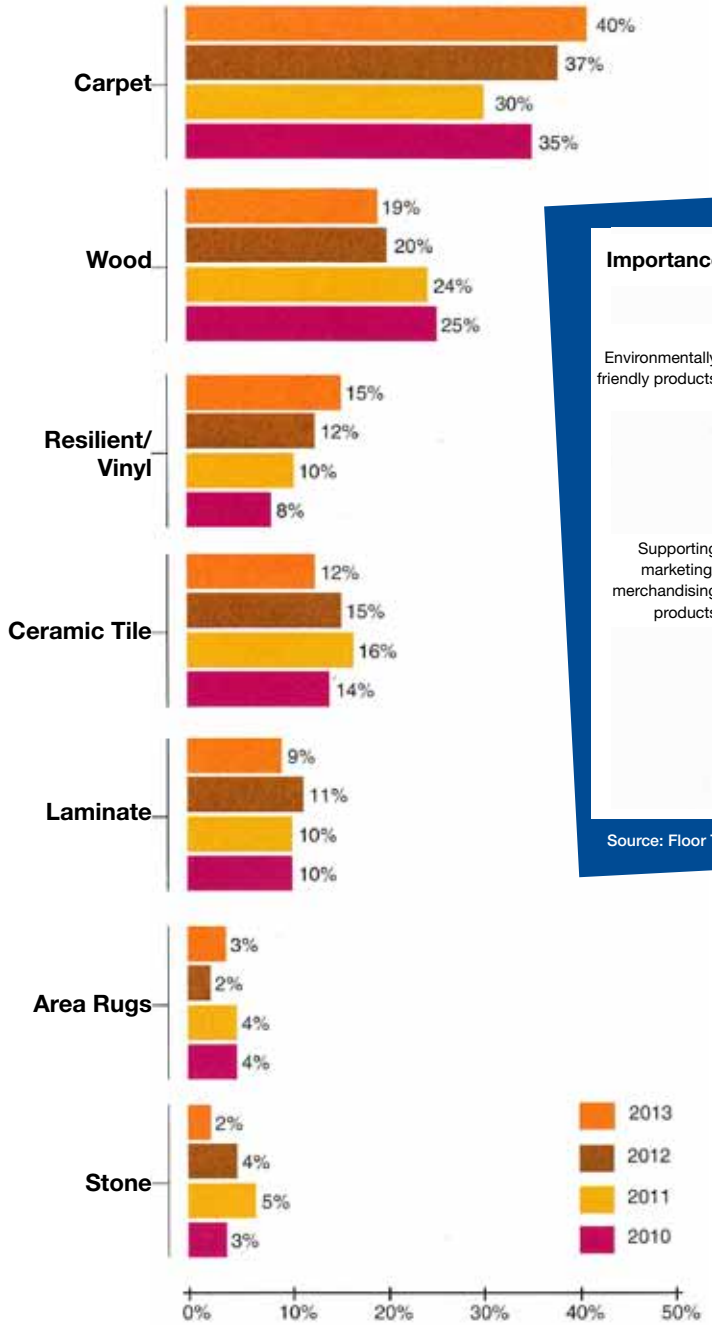


Furniture & Home Furnishings Retail Sales had slower growth than expected. Floor Covering Stores Retail Sales is the fastest growing segment of this market. Consider shifting resources into Floor Coverings to offset the slower pace of rise in annual Furniture Store Retail Sales (up 6.3% year-over-year). Annual Retail Sales totaled $18.0 billion in 2012, a gain of 22.1% from 2011.

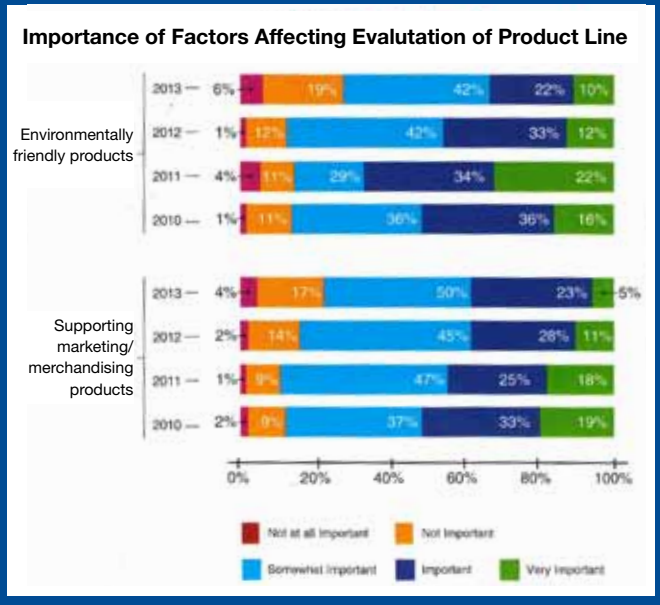
Source: NMBDA-NAFCD Economic Report, February 2013

The American floor coverings market

TOTAL SALES EXPECTATIONS



Source: *Floor Trends*, March 2013



Source: Floor Trends, March 2013

Wood: a survey shows both good and bad prospects for a segment that is picking up

Edition 3/March 2013 of the US magazine Floor Trends, dedicated to the latest trends in the flooring industry, published the results of a survey carried out by the editorial group BNP Media. The survey went out in early January to 4,918 active, qualified domestic Floor Trends subscribers, whose primary business is flooring dealer/contractor. The results, for the years 2011 and 2012, which are summarized in this article, refer to:

- retail business activity and hardwood flooring sales
- changes in the sourcing and distribution of hardwood flooring
- issues facing the hardwood flooring segment of the retail business
- future business expectations

Sales and Prospects

Following a disappointing 2010, annual sales of hardwood flooring products rebounded sharply in 2011. Sales stayed strong in 2012, with respondents reporting an annual sales average of $ 302,000. Sixty-seven percent of those sales came from residential replacement, followed by builder/new construction at 23 percent. Factory prefinished wood, as you'd expect, continues to dominate, making up 89% of respondents' sales last year (up from 86% in 2011).

When asked to gauge the sales potential going forward for hardwood in the residential segment, 57% of respondents said they expect business to "increase or significantly increase" in 2013, with 37% expecting things to remain the same. That positive sentiment is not as strong, however, when respondents were asked about the commercial market: 22% expect an "increase or significant increase" in business, while 69% expect sales to remain steady.

Distribution: Price/Quality Relationship

Expectations are high for 2013; and, just like last year, the single most important issue facing the hardwood flooring segment is pricing. Thirty-three percent of respondents cited competitive pricing as issue No. 1, down significantly from last year (44%). Competition from other hard surfaces (15%), foreign imports (12%), consumer knowledge of products (8%) and other concerns still lag behind. Consumers have high expectations when considering a hardwood floor. When asked "Do you have more wood product quality issues with domestic or imported materials?", 50% of respondents said they had more issues with imported products than with domestic materials (10%). That number is up significantly from 2011 (36%) and 2012 (40%).

Ceramic tiles: a bubbling market

"The American ceramic tile market revealed a recovery since the downturn of 2009". So said the Chairman of Confindustria Ceramica Franco Manfredini at The Ceramics of Italy International Press Conference that was held at the Georgia World Congress in Atlanta on Tuesday 30 April during Coverings trade show 2013. Manfredini presented statistical figures revealing that "the consumption has risen steadily over the last three years, increasing by more than 12% from the 2009 low of 182 million square metres. In 2012 turnover rose by 6.5% to reach US $ 2.4 billion". Comparing the export figures of various producer countries, Mr Manfredini noted that "Italy has maintained its position as the leading exporter to the United States, surpassing both China and Mexico by US $150 million in 2012 and further strengthening its leadership with more than 14% growth in the first two months of 2013". These figures were confirmed on 1st of May by Donato D. Grosser, President of D. Grosser and Associates Ltd and Assopiastrelle consultant for the American market, during the conference presented at Coverings on "The effect of housing recovery on ceramic tile sales" and on the ceramic tile market 2014 projections.

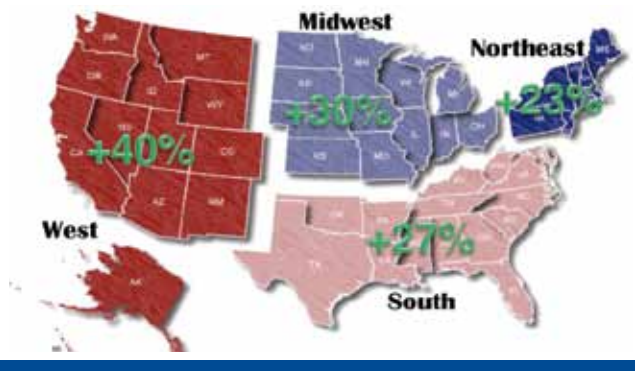
The Link with Italy

The Italian market contributes to the growth of the American ceramic market. In fact, during The Ceramics of Italy International Press Conference at Coverings 2013 the Chairman of Confindustria Giorgio Squinzi remarked on the strong presence of Italian ceramic companies and on the steady recovery of the American market, noting that the situation bodes well for Europe in the near future. Pier Paolo Celeste, the newly appointed Director of the Italian Trade Commission's North American Network, New York Agency, highlighted the importance of the Italian tile industry in the American market and discussed the collaboration between the Italian Trade Commission and Confindustria Ceramica throughout the year.

HOUSING STARTS AND U.S. TILE CONSUMPTION, 2002-2012

Sources: U.S. Department of Commerce and Estimates D. Grosser and Associates, Ltd.

BUILDING PERMITS PERCENTAGE CHANGE 2011 TO 2012



Source: D. Grosser and Associates Ltd.

Surfaces

Positive atmosphere at the US exhibition devoted to wall and floor coverings

29TH -31TH JANUARY - LAS VEGAS

THE MAPEI STAND AT THE SURFACES EXPO WELCOMED VISITORS WITH PRACTICAL DEMONSTRATIONS AND NEW PRODUCTS, SUCH AS THE NEW ULTRACARE RANGE.

Surfaces, the annual US exhibition devoted to wall and floor coverings, ended with positive data this year. Attendance was up by another 4.3% compared to 2012, also for the StonExpo/Marmomacc Americas 2013 show, which was held in the Mandalay Bay Resort (Las Vegas) at the same time as Surfaces 2013. In general, the atmosphere highlighted a more confident outlook than it has for the last few years, a good sign that the construction market is turning upward again. Mapei met that upbeat attitude with an exceptional array of new products, including a whole new line of care and maintenance products for tile, stone and grout.

Focus on Innovation

Displays of installation systems for all types of floor coverings caught the attention of passersby, and Business Development Leaders from Mapei invited them into the relaxing but professional ambiance of a booth designed for comfortable conversations about innovative products developed to meet the latest trends in floor covering installation. As always, Mapei's green initiatives and sustainability efforts were also highlighted.

Pratical Demonstrations and New Products

At the front of the booth, Sam Biondo, Mapei's National Technical Presenter, led the demo team in a series of hourly talks and demonstrations of products recently launched to the market, including KERAPOXY CQ, a new, easy-to-clean epoxy grout; MAPESONIC 2, Mapei's new patent-pending sound reduction membrane; the extremely popular ECO PRIM GRIP bonding primer for installing new tile over old; PLANIPREP SC, the ultimate in skimcoating compounds; the PLANIPREP SA/AR/ET trio of products for cleaning and prepping damaged or abatement-treated concrete subfloors and Mapei's ULTRABOND ECO REFILL packaging for selected carpet and resilient adhesives. Following a VIP hospitality reception in the Mapei booth, Real Bourdage, Mapei's Director of Strategic Marketing, spoke to the press about Mapei's new ULTRACARE line of products that provide the final step in successful flooring installations - care and maintenance. Bourdage detailed Mapei's plans for offering distributors sealers and finishes for professional installers to use in supplying that additional detail that makes the craftsman's work enduring.

Making Plans for 2014

Mapei Americas President and CEO Luigi Di Geso ended the annual press conference by announcing to the media the winners of the "Mapei $75K Giveaway Sweepstakes" grand prize, a program rewarding American building contractors and distributors who purchased Mapei products in 2012, which brought to a close a year-long global celebration of Mapei's 75 years (1937-2012) in business. Di Geso presented a check for $50,000 to Jeff Bennett and Dale Walton of Business Flooring Solutions from Fort Worth, Texas.

The next edition of Surfaces will be held from 28th to 30th January 2014.

OVER 55,000 PEOPLE, WITH A 5% INCREASE IN ATTENDANCE OVER 2012, FOR WORLD OF CONCRETE. IN THE PHOTO, THE MAPEI STAND.

World of Concrete

New solutions for concrete restoration

This year World of Concrete, the most important US exhibition connected with concrete technology, was attended by over 55,000 people. With a 5% increase in attendance over 2012 figures, the international convention and trade show drew many Mapei friends from North America as well as many visitors from Latin America, an area where Mapei is developing new business. The exhibition was held in the Las Vegas Convention Center.

Pratical Demonstrations and New Products

Mapei Corporation, the Group's USA subsidiary, offered visitors a chance to see a series of hands-on demonstrations provided by the experienced CRS (Concrete Restoration System) demo team. On the Mapei booth's "Concrete Restoration" stage, the team exhibited 3 solutions for concrete restoration:

- prevention and corrosion protection products for steel reinforcement rods: MAPESHIELD 2 galvanic anodes, plus MAPEFER 1K and PLANIBOND 3C anti-corrosion coatings
- shrinkage-compensated fiber-reinforced repair mortars like PLANITOP X and PLANITOP 15, and large-volume durable repair mortars like PLANITOP 11 and PLANITOP 18ES
- fiber-reinforced polymer (FRP) products: MAPEWRAP UNIAX 300 and CARBOPLATE E 170

Other Events

Mapei hosted members of the media from around the world, including concrete.tv (an international media group), which filmed the press conference held by Marco Squinzi, Mapei Group's worldwide Director of Research & Development. Squinzi spoke to the assembly about the expansion of the concrete restoration lines in the Americas and about the sharing of research between the main innovation center in Italy and the centers of excellence in the Americas. Luigi Di Geso, the President of Mapei Corporation, emphasized the importance of this knowledge transfer as an important component of Mapei's expansion into Latin America.

World of Concrete 2013 will once again be held at the Las Vegas Convention Center from 21th-24th January 2014.

5TH-8TH FEBRUARY - LAS VEGAS

THE PRACTICAL DEMONSTRATION ON THE STAND WERE SUPPORTED BY THE CRS (CONCRETE RESTORATION SYSTEM).

Coverings

New solutions for ceramic and stone floor and wall coverings

From the 29th of April to the 2nd of May, Atlanta, (Georgia, USA) hosted the 2013 edition of Coverings, the most important American trade fair dedicated to ceramic and stone floor and wall coverings. The event came to Atlanta for the first time this spring and was held in the Georgia World Congress Center.

Coverings attracted more than 900 exhibitors from over 50 countries and showcased the latest trends to visitors.

Fully aware of the huge role social media plays in business-to-business communication and promotion, Coverings set up a Central interactive area on the show floor. The event, sponsored by Mapei, was organised by the National Tile Contractors Association (NTCA) and offered information about how to use social media in business using the NTCA Business Reference Manual, a multimedia manual illustrating the potential of internet marketing.

Among the events of particular interest were those related to Made in Italy Ceramics. In fact this is a particularly special year for Italians; in addition to 2013 being the Anno della Cultura Italiana ("Italian Year of Culture") in the U.S., it also marks the 20th anniversary of the Ceramics of Italy Tile Competition, Confindustria Ceramica's recognition of US architects and designers and their use of Italian ceramic tiles in institutional, residential and commercial architectural projects of excellence. To celebrate the occasion Ceramics of Italy, the institutional brand of the member companies of Confindustria Ceramica, organised a special interactive exhibit on the subject to showcase the work of numerous North American architects and designers who use Italian tiles in their projects. The exhibit was held in the stand called Piazza Ceramica, where the North American Distributor Award was held on the 30th of April. The prize is dedicated annually by Confindustria Ceramica to North American distributors who actively promote Italian ceramic tiles on the local market. This year the prize went to James Igoe, General Manager of the Mosaic Tile Company, the largest independent distributor in the Mid-Atlantic.

Piazza Ceramica

Designed by the e+i studio, a dynamic architecture and design firm based in New York, Piazza Ceramica transformed the 3,000 square foot space into a typical Italian piazza, a large open gathering space where exhibitors and visitors could meet each other. From the floors and walls to the steps and counter-tops, nearly every surface was wrapped in Italian tiles, and featured a range of products from Italian manufacturers including Mapei, supplier of the mortar to install the floors. Surrounding the central stand were more than 50 exhibits from Ceramics of Italy member manufacturers.

Tiles and Mapei Products

Under the spotlight there was a host of colour, geometry, patchwork patterns and encaustic-inspired designs among the stands, as well as three-dimensional tiles and coverings mimicking wood and textile flooring. Experiments with rustic and inlay design surfaces are also evolving. In terms of shapes, squares and planks are the most dominant formats, while super slim (3-4mm) tiles that provide versatile surfacing solutions and thick (20mm) porcelain slabs, that can be dry-installed in outdoor environments on grass, gravel and cement without grout or adhesives, are also in vogue. For installation with mortar, the trend seemed oriented on the more technologically-advanced materials.

Proof of this trend was the interest shown in the new epoxy mortar KERAPOXY CQ by Mapei, which was presented with other products for installing ceramic and stone flooring at the Mapei Corporation stand, the US subsidiary of Mapei Group. KERAPOXY CQ is a product particularly suitable for grouting large areas where easy ap-

PIAZZA CERAMICA, THE OFFICIAL CONFINDUSTRIA CERAMICA STAND, WAS CREATED USING ITALIAN TILES AND PRODUCTS.
ABOVE: THE NORTH AMERICAN DISTRIBUTOR AWARD THIS YEAR WENT TO JAMES IGOE, IN THE PHOTO WITH, FROM LEFT TO RIGHT, THE MANAGING DIRECTOR OF CONFINDUSTRIA CERAMICA, ARMANDO CAFIERO; THE FORMER CHAIRMAN OF CONFINDUSTRIA CERAMICA, FRANCO MANFREDINI; THE TRADE COMMISSIONER FOR NORTH AMERICA OF THE ITALIAN TRADE PROMOTION AGENCY, PIER PAOLO CELESTE AND THE NEW CHAIRMAN OF CONFINDUSTRIA CERAMICA, VITTORIO BORELLI.
ON THE LEFT: GIORGIO SQUINZI IN THIS PHOTO BETWEEN NICK DI TEMPORA E LUIGI DI GESO OF MAPEI CORP.

plication and cleaning are required. With very low emission of volatile organic compounds (VOC), KERAPOXY CQ is ideal for grouting joints at least 2 mm wide, as well as being easy-to-apply. Another timesaving and versatile product proved to be MAPESONIC 2, a patent-pending, next-generation membrane for noise abatement and crack isolation. It is lighter and thinner and allows installers to just prime, peel and stick before installing the tile.

Make Way for Sustainability

From an environmental perspective, Coverings and Piazza Ceramica have acted as a driving force for all those initiatives on

The Green Card
OF CERAMIC TILES

1. **Adaptable.** Italian tile is a high quality industrial product suitable for a wide range of applications, from furniture & accessories to urban planning, in both the private and public sectors. It has a modular and versatile approach and it has minimal costs for installation and maintenance.
2. **Clean.** Warm water and neutral cleaners are the only cleaning products required. Ceramic tile is a hygienic product suitable for use even in sterile environments.
3. **Cost-efficient.** When sunlight hits the tile it absorbs the thermal energy and dissipates it over time, thus reducing heating costs.
4. **Durable.** Floor finishes such as carpet, sheet vinyl and natural hardwood have an expected life cycle of six years, 10 years and 15 years respectively, while the expected life cycle of porcelain, ceramic and mosaic tile is 50 years.
5. **Energy-saving.** Compared to other materials, porcelain tile offers excellent performance for under-floor heating systems because it allows the whole system to function effectively with a lower water temperature. Additionally, Italian manufacturers produce ceramic products suitable for ventilated wall facades, as large format tiles. A study conducted by NASA concluded that a building with this system is up to 35% more energy efficient.
6. **Non-toxic.** Ceramic tiles contain no VOCs, Volatile Organic Compounds, and contribute to LEED, Leadership in Energy and Environmental Design, credits for a project. In addition, tiles will not absorb unpleasant odours from smoke, paint fumes or other contaminants, enhancing indoor air quality.
7. **Recyclable.** Italian tile is an inert material manufactured from natural raw materials. Additionally, it is a recyclable product by reusing the material in the manufacturing process, minimising natural resource use and waste.
8. **Recycled.** A growing number of new products contain a percentage of recycled content, pre and postconsumer, and therefore can contribute points towards LEED certification. Italian ceramic tile manufacturers recycle 97% of process water and 99.5% of production and purification waste.
9. **Resistant.** Tile is resistant to extreme weather conditions: climate change, moisture, temperature change and UV rays. It is also fire-resistant and does not contribute to the toxic fumes and smoke when a fire occurs.
10. **Responsible.** Italian ceramic tile manufacturers are organized in industrial districts and are directly involved in the responsible management of their territory through their manufacturing operations: air, water, waste and corporate and social responsibility.

Source: Ceramics of Italy

sustainability aimed at increasing the market share of anti-bacteria, anti-pollution and self-cleaning products, particularly ceramics. Italian manufacturers exhibited products that help safeguard people's health. Unlike other materials, ceramic is intrinsically hygienic and does not contain VOC, volatile organic compounds, emitted before, during and after installation. This has been the basis of an increasingly closer collaboration with biotech companies which, by developing technologically-advanced products, reduce the demand for anti-bacteria, anti-pollution and self-cleaning products that respect the environment and people. Just like Mapei, that for years has been manufacturing product ranges that are safe for the environment, installers and end users alike. Their solutions, certified for eco-sustainable projects, are the fruit of the innovative Research & Development laboratories and their products are: formulated with recycled and ultra-lightweight materials, developed to reduce energy consumption, manufactured locally using facilities that respect the environment, with very low emissions of volatile organic substances and certified according to the most severe official standards.
All elements that are included in the 10 points of the Green Card drawn up by Ceramics of Italy.

The next edition of Coverings will be held from the 29th of April to the 2nd of May 2014 in the Las Vegas Convention Center of Las Vegas, Nevada (USA).

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IN THE INSTITUTIONAL ARCHITECTURE CATEGORY, THE HDR ARCHITECTURE STUDIO WAS AWARDED THE PRIZE FOR THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST) IN COLORADO (USA).

© James John Jetel

IN THE RESIDENTIAL CATEGORY, THE MRSA ARCHITECTS & PLANNERS STUDIO WAS AWARDED THE PRIZE FOR THE SCHAEFER/GRAF RESIDENCE IN ILLINOIS (USA).

© Bruce Damonte

IN THE COMMERCIAL CATEGORY, THE SHOP ARCHITECTS STUDIO WAS AWARDED THE PRIZE FOR THE BARCLAYS CENTER IN NEW YORK (USA) WHERE MAPEI PRODUCTS WERE USED.

© Marisa Pellegrini

IN THE RESIDENTIAL CATEGORY, A MENTION OF HONOUR WENT TO THE ARCHITECT ANNA MARIE FANELLI FOR THE ALPINE ESTATE IN NEW JERSEY (USA) WHERE MAPEI GROUTS WERE USED.

2013 TILE COMPETITION WINNERS

Institutional Winner
Project: National Institute of Standards and Technology (NIST) in Colorado (USA)
Architect: HDR Architecture

Honourable Mention
Project: Indu and Raj Soin Medical Center in Ohio (USA)
Architect: Jain Malkin, Inc.

Residential Winner
Project: Schaefer/Graf Residence in Illinois (USA)
Architect: MRSA Architects & Planners

Honourable Mention
Project: Alpine Estate in New Jersey (USA) where Mapei grouts were used / **Architect:** Anna Marie Fanelli
Project: Bilezijkian Residence in Florida (USA) / **Architect:** DEN Architecture

Commercial Winner
Project: Barclays Center in New York (USA) where Mapei products were used/ **Architect:** SHoP Architects

Honourable Mention
Project: Software Headquarters Facility in Medina (USA)
Architect: RSP Architects Minneapolis (USA)

Retail Honourable Mention
Project: Hirshleifer's Shoe Salon in New York (USA)
Architect: Sergio Mannino Studio

Hospitality Honourable Mention
Project: Hotel Wilshire in California (USA)
Architect: KNA Design

Corporate Honourable Mention
Project: Juniper Networks HQ di Sunnyvale (USA)
Progettista: RMW Architecture and Interiors

Each winner received a cheque for 4,000 US dollars and a 5-day trip to Bologna to visit the 2013 edition of the Cersaie expo.

THE MASTER BATHROOM WHERE MAPEI PRODUCTS WERE USED.

Installation & Design Showcase

Famous designers and quality products for luxury environments

The fourth edition of the Installation & Design Showcase was also held during Coverings 2013, a special event to show the public the importance of the synergy between designers and professional installers when creating environments with ceramic or natural stone and floor and wall coverings. The aim was to unite all the segments of the ceramics industry and show visitors to the exhibition how these types of material are able to transform the environments we inhabit on a daily basis. The stars of the Installation & Design Showcase 2013 were the US designers Michael Neiswander, Margaret Nysewander, Foreman Rogers, Allison Isaacs, Mary Porter, Craig Anderchak and Mark Williams, and a number of US installation companies specially selected according to strict parameters dictated by the National Tile Contractors Association (NTCA), co-sponsor of the event. The common theme for all four environments was their luxurious style: a bar/lounge, a hotel lobby, an in-patient room in a maternity clinic and a master bathroom. In two of these environments, the bar/lounge and the master bathroom, the products used included installation of the ULTRAFLEX LFT system supplied by Mapei Corporation, the US subsidiary of Mapei Group.

THE BAR/LOUNGE WHERE MAPEI PRODUCTS WERE USED.

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Adventist Hospital - Hinsdale

For more than a century the Adventist Hinsdale Hospital has been taking care of the local residents' health in Hinsdale, a suburb of Chicago. Over the years the hospital has expanded and the number of structures has increased, offering patients increasingly more comfortable surroundings.

In 2010 a new pavilion was added to the original complex (covering a surface area of around 9,700 m^2) with 135 rooms for patients, new nursing units, a chapel, a labour room and a covered walkway.

The company contracted to construct the building contacted Mapei Technical Services, who proposed the most suitable products for the site.

An intervention was initially carried out on the concrete substrates using PLANIBOND CR 50 injectable resin to repair the cracks, PLANISEAL VS epoxy coating and PLANIPREP FF.

Before applying the coating, PRIMER WE adhesion promoter was applied on the substrates. ULTRAPLAN M20 PLUS rapid-hardening, self-levelling smoothing compound was then applied on the surfaces to make them perfectly flat. This underlayment is product particularly resistant to pedestrian traffic, wheelchairs and trolley beds. At this point it was time to install the vinyl and textile floor coverings. As far as the adhesives were concerned, Mapei Technical Services proposed three eco-compatible products that were harmless to both the floor layers and the end users of the structure: ULTRABOND ECO 360 to bond the vinyl floor covering, ULTRABOND ECO 711 to install the textile floor tiles and ULTRABOND ECO 810 to install the carpets. The wall tiles in the bathrooms in the patients' rooms were installed with ULTRAFLEX LFT adhesive.

PHOTO 1. THE NEW PAVILION AT THE ADVENTIST HOSPITAL.
PHOTO 2. THE SUBSTRATES WERE LEVELLED WITH PRIMER WE AND ULTRAPLAN M20 PLUS.
PHOTO 3. THE VINYL FLOOR COVERINGS WERE INSTALLED WITH ULTRABOND ECO 360 AND ULTRABOND ECO 711.

Technical Data

Adventist Hinsdale Hospital, Hinsdale Chicago, USA
Year of Construction: 1904
Period of Intervention: 2010-2012
Intervention by Mapei: supplying products to prepare substrates and install vinyl and textile floor coverings and wall tiles
Designer: Anderson-Mikos Architects Ltd (Oakbrook Terrace, USA)
Client: Adventist Health System (Hinsdale, USA)
Works Director: Matt Lubbers (Bulley & Andrews)
Contractor: Bulley & Andrews LLC (Chigaco, USA)
Surface Preparation Company: PSI Accuflor
Laying Companies: Midwest Floor Coverings (Tinley Park, USA)
Laid materials: vinyl and textile floor coverings, tiles
Mapei Distributor: Carpet Cushions & Supplies (Elk Grove Village, USA)
Mapei Co-ordinator: Rick York, Mapei Corp.

Mapei Products

Preparations of the substrates: Planibond Cr 50*, Planiseal VS *, Planiprep FF*, Primer WE*, Ultraplan M20 Plus*
Laying the tiles: Ultraflex LFT*
Laying the vinyl floors: Ultrabond Eco 360*, Ultrabond Eco 711*
Laying the textile floors: Ultrabond Eco 810*.
*Produced and distributed on the American market by Mapei Corp.

For further information see the websites www.mapei.com and www.mapei.com/US-EN/

Bamberger Railroad Bridge - Bountiful

In 1891 Simon Bamberger, owner of a number of coal mines in the area, constructed the Salt Lake & Ogden Railway to transport coal to Salt Lake City, capital of the state of Utah. The railway was also used to carry passengers; and in 1934 in Bountiful, a railway bridge was constructed, which today is an important motorway overpass. Over the years the action of rainwater infiltrating the structure, freeze-thaw cycles and corrosion all caused the concrete supports of the Bamberger Railroad Bridge to deteriorate, and large areas of the surface were in particularly poor condition. Repairs to the bridge started in 2011. The deteriorated concrete was removed and then reconstructed to replace the protection around the steel reinforcement. The reconstruction work also had to maintain the original Art Deco style features of that period.

Mapei' s Concrete Restoration Systems (CRS) technical field representative recommended using PLANITOP 15 one-component, compensated-shrinkage mortar, which also contains corrosion inhibitors, mixed with suitably-sized gravel. To improve its air-curing properties and reduce hygrometric shrinkage even further, MAPECURE SRA, a curing agent which also has the capacity to reduce the formation of hairline cracks, was added to the mix. After mounting the formwork around the areas to be reconstructed and impregnating the substrate with water, mortar made from PLANITOP 15 and MAPECURE SRA was poured in from the top. While it was curing (three days), minor repairs were carried out on the surfaces of the bridge using PLANITOP X polymer-modified cementitious mortar.

Technical Data

Bamberger Railroad Bridge, Bountiful, Utah, USA
Year of Construction: 1934
Year of Intervention: 2011
Intervention by Mapei: supplying products to reconstruct the beams and pillars of the bridge
Client: Utah Department of Transportation
Works Director: Chris Weight (Gerber Construction)
Contractor: Gerber Construction (Lehi, Utah, USA)
Mapei Distributor: Alta Paints & Coatings Inc. (Salt Lake City, USA)
Mapei Co-ordinators: Tom Lundgren and Bart Wilde, Mapei Corp.

Mapei Products

Reconstruction of the substrates:
Mapecure SRA, Planitop X*, PLanitop 15 *.
*Produced and distributed on the American market by Mapei Corp.

For further information see the websites www.mapei.com and www.mapei.com/US-EN/

PHOTO 1. HOW THE BRIDGE LOOKED BEFORE THE UPGRADING WORK.
PHOTO 2. PLANITOP X WAS USED TO CARRY OUT MINOR REPAIRS ON THE DETERIORATED AREAS OF THE SURFACES.
PHOTO 3. THE ART DECO STYLE STRUCTURE OF THE BRIDGE AFTER THE RENOVATION WORK.


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International Airport - Tampa

Forty years after its inauguration, upgrading and modernisation work was carried out in the exterior check-in areas at the Tampa International Airport in Florida.
For the exterior work, Mapei products were used to prepare the substrates and install stone slabs. First the old tiles were removed, taking particular care to avoid damaging the underlying waterproofing membrane. The construction company then went on to prepare the substrates. These had to be thicker than the previous ones to compensate for the tiles chosen, which in this case were thinner than the original ones. To level off the substrates and make them perfectly flat before installing the tiles, a layer of MAPECEM 202 rapid-setting cementitious mortar was used, and MAPEGUARD 2 was applied to act as an anti-fracture membrane.
Installation of the tiles was quite complex, because the design included four different styles; two types of tile, each one in two different sizes (15x30 cm and 30x60 cm). Because there was very little time scheduled to install the tiles, two different adhesives were used: GRANIRAPID two-component, rapid-setting cementitious adhesive and ULTRAFLEX 3 one-component adhesive with polymers. ULTRACOLOR PLUS was recommended to grout the joints.
The 20 bathrooms in the main terminal were also completely rebuilt. The substrates were first skimmed with MAPECEM 202 cementitious mortar, and then the bathrooms were waterproofed with MAPELASTIC AQUADEFENSE ready-to-use, rapid-drying, elastic liquid membrane. The ceramic floor and wall tiles (measuring 30x60 cm) were bonded in place with ULTRAFLEX LFT, an adhesive formulated specifically for bonding large sized tiles. The joints were then grouted with ULTRACOLOR PLUS.

PHOTO 1. A VIEW FROM ABOVE OF THE TAMPA INTERNATIONAL AIRPORT IN FLORIDA.
PHOTO 2. THE EXTERIOR TILING WAS IN TWO FORMATS IN FOUR DIFFERENT SIZES. THE ADHESIVES GRANIRAPID AND ULTRAFLEX 3 WERE USED TO BOND THE TILES, AND ULTRACOLOR PLUS WAS USED TO GROUT THE JOINTS.
PHOTO 3. THE CERAMIC FLOOR AND WALL TILES IN THE BATHROOMS WERE BONDED WITH ULTRAFLEX LFT AND ULTRACOLOR PLUS WAS USED TO GROUT THE JOINTS.

Technical Data

International Airport, Tampa, Florida, USA
Designer: Reynolds, Smith & Hills (Tampa, USA)
Period of Construction: 1968-1971
Period of Intervention: 2011-2012
Intervention by Mapei: supplying products to prepare substrates and install tiles in the exterior baggage check-in areas and in the bathrooms in the main terminal
Designer: Alfonso Architects (Tampa, USA)
Client: Hillsborough County Aviation Authority
Works Director: Paul McPhail (Walbridge Construction)
Contractor: Walbridge Construction (Detroit, USA)
Laying Company: Standard Tile Company (Sarasota, USA)
Laid materials: ceramic tiles and stone slabs
Mapei Distributor: DalTile Sarasota (Sarasota, USA)
Mapei Co-ordinators: Darin Weisemiller, Mapei Corp.

Mapei Products

Preparations of the substrates:
Mapecem 202*, Mapeguard 2
Waterproofing: Mapelastic Aquadefense
Laying the tiles: Granirapid, Ultracolor Plus, Ultraflex 3*, Ultraflex LFT*
*Produced and distributed on the American market by Mapei Corp.

For further information see the websites www.mapei.com and www.mapei.com/US-EN/

Kroc Corps Community Center - Chicago

In 1998 Joan Kroc, the widow of Ray Kroc, the founder of the McDonald's chain, left 2 billion dollars to the Salvation Army in order to build a series of Kroc Corps Community Centers, recreational and cultural centres located in various American cities. Since then, 18 centres have been built and a further 9 are on their way to being completed. One of these centres is in Chicago in the West Pullman district, a run-down, area prone to violence that is the ideal location for a centre offering hope to the youngsters who live there. Once a suitable plot of land had been identified - more than 133,000 m^2 owned by the local council - a competition was held to design the complex. The Kroc Corps Community Center is two storeys high with a theatre on the ground floor, along with laboratories and a large 1300 m^2 aquatic centre, a fitness centre and an athletics track on the first floor. There are also gardens around the building and playing fields for various sports.

To prepare the substrates for the pools, Mapei Technical Services recommended TOPCEM PREMIX mortar, PLANICRETE AC latex and, where required, MAPECEM QUICKPATCH. To install the tiles (measuring 5x5 cm) on a total surface area of 1200 m^2, the KERABOND/KERALASTIC system was used, which combines KERABOND (cementitious powdered adhesive for ceramic tiles) with KERALASTIC (acrylic resin-based latex that in the areas outside of the Americas is called ISOLASTIC), and then KERACOLOR S mortar to gout the tiles. Due to time constraints, installation continued with GRANIRAPID two-component, rapid-setting cementitious adhesive and ULTRACOLOR PLUS quick-drying mortar to grout the tiles. The aquatic centre was opened last June and is already proving to be very popular with the local community.

Technical Data

Kroc Corps Community Center, Chicago, Illinois, USA
Period of Construction: 2010-2012
Year of Intervention: 2012
Intervention by Mapei: supplying products to prepare the substrates and install the tiles in the pools
Designer: Antunovich Associates (Chicago, USA)
Client: Salvation Army-Midwest Division (Chicago, USA)
Works Director: Brad Trostrud (Trostrud Mosaic & Tile)
Contractor: W. O'Neill (Chicago, USA)
Laying Company: Trostrud Mosaic & Tile Inc. (Wood Dale, USA)
Laid materials: ceramic tiles
Mapei Distributor: Daltile Chicago (Chicago, USA)
Mapei Co-ordinators: Tyler Barton, Mapei Corp.

Mapei Products

Preparations of the substrates:
Planicrete AC*, Mapecem Quickpatch*, Topcem Premix*
Laying the tiles: Kerabond, Keralastic, Keracolor S*, Granirapid, Ultracolor Plus
*Produced and distributed on the American market by Mapei Corporation

For further information see the websites www.mapei.com and www.mapei.com/US-EN/

PHOTO 1. THE AQUATIC CENTRE UPON COMPLETION OF THE WORK.
PHOTO 2. TO INSTALL THE TILES, BOTH THE KERABOND/KERALASTIC SYSTEM WITH KERACOLOR S AND GRANIRAPID CEMENTITIOUS ADHESIVE AND ULTRACOLOR PLUS MORTAR WERE USED.
PHOTO 3. THE ENTRANCE TO THE KROC CORPS COMMUNITY CENTER IN CHICAGO.


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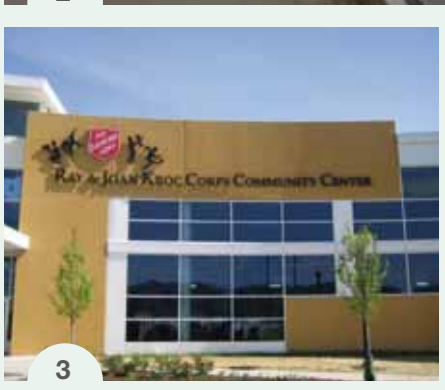

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Ottawa Convention Centre

A modern, eco-sustainable convention centre for the capital of Ontario

Inaugurated in April 2011, the Ottawa Convention Centre (OCC) replaced the old congress centre in the capital of Ontario. It was designed by the architect Richard Brisbin from Brisbin Brook Beynon (BBB) Architects, and the lines of the building have been created deliberately so that it looks like the corolla of a large tulip, in honour of the Tulip Festival that is held every year in Ottawa. Its imposing 31-metre-high glass façade overlooks the Rideau Channel, nominated a World Heritage site by UNESCO, and the lush, green panorama of the Canadian coastline.

Because of its eco-sustainable characteristics, the Ottawa Convention Centre has also been awarded LEED Silver certification.

LEED (Leadership in Energy and Environmental Design) certification is a "green" rating system created in the United States and is based on a points system that places buildings in one of four categories: Certified, Silver, Gold and Platinum.

The Ottawa Convention Centre manages to save 969,000 litres of water every year by collecting rainwater in a large tank, which is then used to supply the bathrooms and irrigate the gardens. In addition to this environmental conservation effort, 97% of the materials from the demolition of the old convention centre have been recycled; and the steel used to construct the trussed roofs for the new centre comes from recycled material. Also, thanks to the large windows, the inside of the Convention Centre is illuminated by natural light instead of artificial electric light, which also leads to less energy consumption.

How do you Intervene on an Eco-responsible Building?

The building is four stories high. The first level

PHOTO 1. AN EXTERNAL VIEW OF THE CENTRE. THE LINES OF THE BUILDING HAVE BEEN CREATED DELIBERATELY SO THAT IT LOOKS LIKE THE COROLLA OF A LARGE TULIP, IN HONOUR OF THE TULIP FESTIVAL THAT IS HELD EVERY YEAR IN OTTAWA.

has a large hall to welcome visitors and has a wall dressed with recycled wood, the Three Rivers Wall, to pay homage to the three rivers flowing through the city: the Rideau, the Gatineau and the Ottawa.

The second floor has 15 meeting rooms and a cloakroom, and a walkway that connects this level directly to the Westin Hotel and the Rideau shopping centre. The third level has a large multi-functional hall that can hold more than 6,000 guests, while the fourth and last level, characterised by its extraordinary views over the entire city, has a large hall for parties and balls.

The company contacted by the designers to create the substrates inside the Ottawa Convention Centre has been using and distributing Mapei products in this part of the country for a number of years, and so recommended applying the company's systems and products.

On the second floor, the 3.5 cm thick screed was made using MAPECEM 100 mortar. Once the substrate had cured, the surface was treated with a coat of PRIMER L solvent-free acrylic primer, and then a 3.5 cm thick layer of ULTRAPLAN 1PLUS rapid-setting, self-levelling, abrasion-resistant smoothing compound was spread over it. On the same

PHOTO 2. NOVOPLAN 2 SELF-LEVELLING SKIMMING COMPOUND WAS USED ON VARIOUS FLOORS OF THE CONVENTION CENTRE.
PHOTO 3. A COAT OF PRIMER T WAS APPLIED ON THE OLD SURFACES OF THE PREVIOUS BUILDING FOLLOWED BY A LAYER OF ULTRAPLAN EASY RAPID-HARDENING SMOOTHING COMPOUND.
PHOTO 4. TO REPAIR A STRUCTURAL CRACK, GRAVEL WITH 6 MM DIAMETER "SEALING" WITH ULTRAPLAN M20 PLUS WAS USED.
PHOTO 5. INSTALLATION OF THE CARPET TILES.

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PHOTOS 6-7. THE TEXTILE FLOOR TILES WERE INSTALLED USING THE ADHESIVES ULTRABOND ECO 810 AND ULTRABOND ECO 885.

floor, and on other floors of the Convention Centre, 5 cm thick substrates were made by applying PRIMER T on the surfaces and then applying a layer of ULTRAPLAN EASY ultra rapid-hardening, self-levelling smoothing compound. PRIMER T, surface-dusted with sand, was applied on the surfaces of the building followed by a layer of ULTRAPLAN EASY rapid-hardening, self-levelling smoothing compound. ULTRAPLAN 1 PLUS, recommended in all those areas where a rapid-hardening product was required to help keep to the site schedule, and NOVOPLAN 2 self-levelling skimming compound were used in various areas, including the service rooms and bathrooms. All these surfaces had been treated beforehand with PRIMER L. PLANITOP X polymer-modified cementitious mortar was used to repair vertical and horizontal surfaces where required. The same company also worked on the third floor of the OCC to repair a structural crack, filling it with 6 mm diameter gravel and then "sealing" it with ULTRAPLAN M20 PLUS ultra rapid-hardening, self-levelling smoothing compound to make the surfaces perfectly flat before installing the various covering materials.

The Importance of Correct Installation

In the reception area and lounges, more than 18,000 m^2 of carpet tiles were installed on surfaces made from PRIMER L and NOVOPLAN 2. In one particular area, the installation company had to repair a 10 cm crack in the cement substrate in the old building using TOPCEM PREMIX mortar. The surface was made perfectly flat by applying a coat of PRIMER L and then skimming it with NOVOPLAN 2. To keep within the guidelines of LEED certification, the products used to install the eco-carpet tiles were chosen from those which guarantee a low impact on the environment and that have a very low emission of volatile organic compounds (VOC). This is why two different types of adhesive were recommended, both of which are eco-compatible, according to the final use of the areas. Where foot traffic was to be the main type of wear, ULTRABOND ECO 810 was used. In the lounges and conference halls, where vehicles would have to transit for brief periods, ULTRABOND ECO 885 was the preferred choice. All the Mapei products used on this site are produced and distributed in Canada by Mapei Inc.

Technical data

Ottawa Convention Centre, Ottawa, Ontario, Canada
Period of Construction: 2009-2011
Period of Intervention: 2009-2011
Intervention by Mapei: supplying products to make screeds, skim surfaces and install textile floor tiles
Designer: Brisbin Brook Beynon (BBB) Architects
Client: the Province of Ontario
Contractor: PLC Construction
Surface Preparation Company: Bellai Brothers
Laying Companies: for the textile floor tiles, Jacques Lamont Ltee
Laid Materials: textile floor tiles
Mapei Distributors: Bellai Brothers and Prosol
Mapei Co-ordinator: Justin Lafontaine and Francois Faubert, Mapei Inc.

Mapei Products

Preparations of the substrates: Mapecem*
Smoothing of the substrates: Novoplan 2*, Primer L*, Ultraplan M20 Plus*, Ultraplan 1 Plus*, Ultraplan Easy*, Planitop X*, Topcem Premix*
Laying texile tiles: Ultrabond Eco 810*, Ultrabond Eco 885.
*Produced and distributed on the Canadian market by Mapei Inc.

For further information see the websites www.mapei.com and www.mapei.com/CA-EN/

Granirapid

Two-component high performance fast-setting and hydrating cementitious adhesive for ceramic tiles and stone material.

- Particularly suitable for bonding stone material with fast drying times
- Particularly suitable for rapid re-tiling jobs or flooring that has to be ready for use within very short times (supermarkets, hospital, swimming pools, etc.)
- Suitable for bonding floorings subject to heavy traffic

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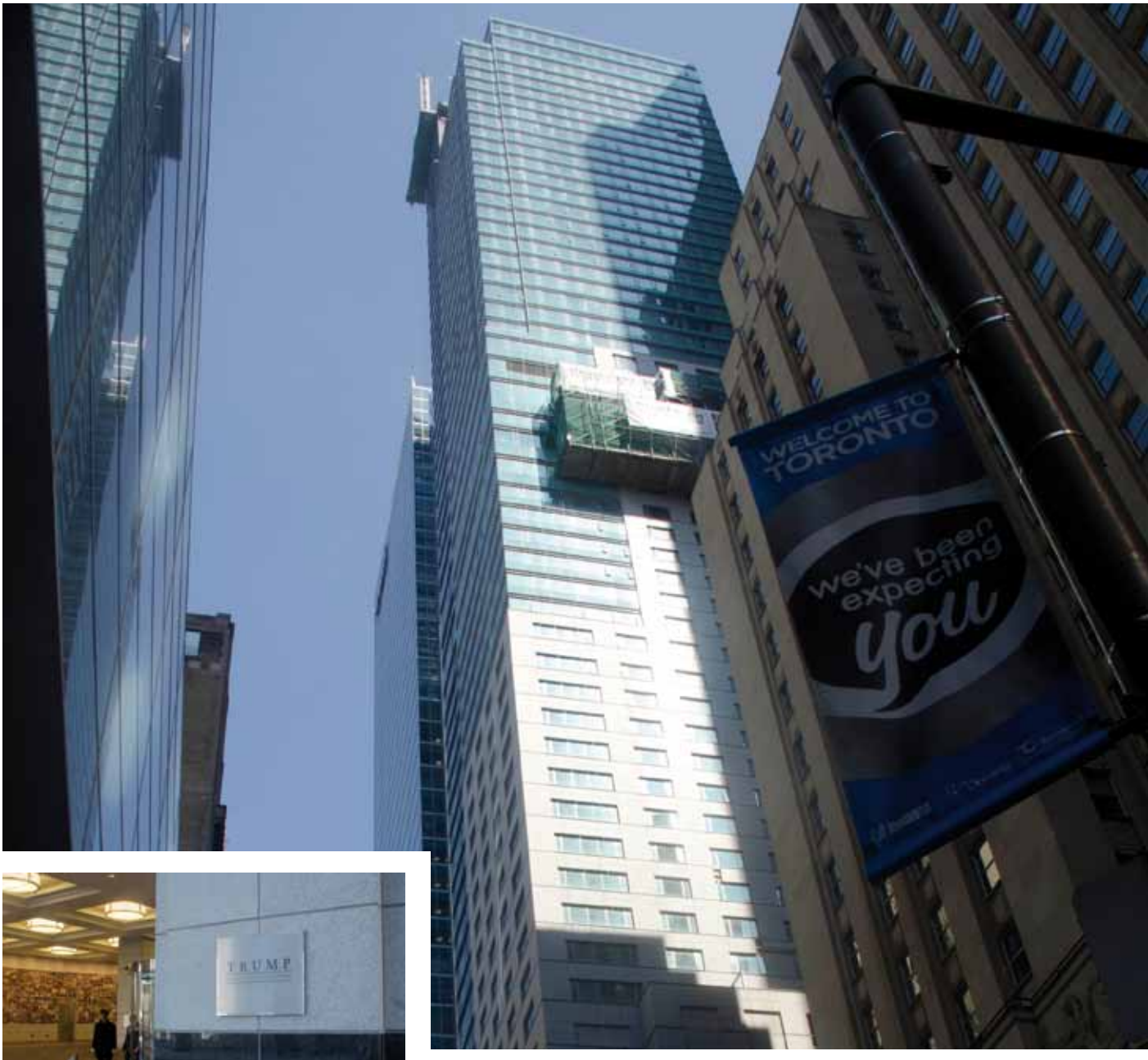
TRUMP INTERNATIONAL HOTEL & TOWER IN TORONTO

Luxury finishes for a skyscraper playing host to apartments and a prestigious hotel



Above. Trump International Hotel & Tower outside picture.
On the left. The lobby.

Located on the northwestern banks of Lake Ontario, Toronto is the financial centre of Canada, with picturesque historical districts, large parks, museums, art galleries, theatres, restaurants and bars. And it is here that the Trump International Hotel and Tower has been constructed, a brand new skyscraper hosting both a hotel and residential units.

The tower is in the financial district of the city and is the second tallest skyscraper in Canada. From the lofty heights of its 65 floors stretching to a height of 276 m, there are panoramic views of the whole city and of Lake Ontario. With its magnificent dome spire, the tower is an homage to the designers of the more classic skyscrapers of Manhattan. The building has façades covered with steel and slabs of stone and sheets of glass, and includes 118 apartments and a luxury hotel with 261 rooms, a Presidential Suite, a restaurant and a spa with a swimming pool. The flooring in the skylobby is in decorative granite, while an enormous antique Italian mirror has been mounted on the ceiling. The interiors are decorated with prestigious finishes and all the areas are characterised by the colours cream and black, with semi-precious stone panels and mosaics made from porcelain, glass, stone and gold chips.

Photo 1. The surfaces were smoothed with NOVOPLAN 2 self-levelling underlayment.
Photo 2. The floor in the lobby was made from slabs of granite in various colours installed using the KERABOND+KERALASTIC system and KERACOLOR U.
Photo 3. In the communal areas, the tiles were installed with ULTRAFLEX 2.
Photo 4. The bathrooms were waterproofed with MAPELASTIC AQUADEFENSE, and the marble slabs were installed with ULTRAFLEX LFT.

Speedy Installation to Perfection

To make approximately 55,700 m^2 of substrates perfectly flat before installing the coverings chosen for the project, they were initially treated with PRIMER L solvent-free acrylic primer and then smoothed with NOVOPLAN 2 self-levelling underlayment.

Where necessary, cracks in small areas of the surface were repaired with MAPECEM QUICKPATCH (all three products are distributed on the Canadian market by Mapei Inc.).

In all the suites, wooden floors were installed (more than 27,800 m^2 of surfaces). For the brushed-oak wooden floors with an antique finish, the adhesive recommended for installation was ULTRABOND ECO 975 (also distributed on the Canadian market by Mapei

IN THE SPOTLIGHT

ULTRABOND ECO 185

It is a very low VOC (volatile organic compound) adhesive in water dispersion with high initial tack for textile floor and wall coverings. It is used for installations of tufted and woven carpet, needlepunch and felt-backed vinyl on all normal absorbent and moisture stable substrates used in construction. ULTRABOND ECO 185 is a solvent free synthetic polymer-based adhesive, for application in a single coat, not inflammable. ULTRABOND ECO 185 is suitable in areas with heavy foot.

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

Photo 5. The oak wooden floor was bonded with ULTRABOND ECO 975.
Photo 6. A view of the suite.
Photo 7. Carpet was installed in the corridors and reception halls with ULTRABOND ECO 185.

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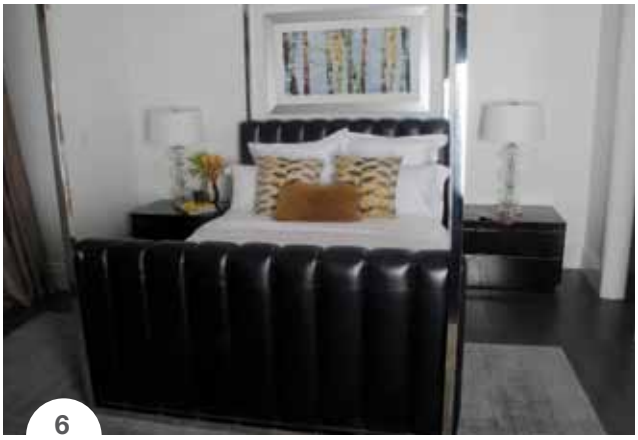

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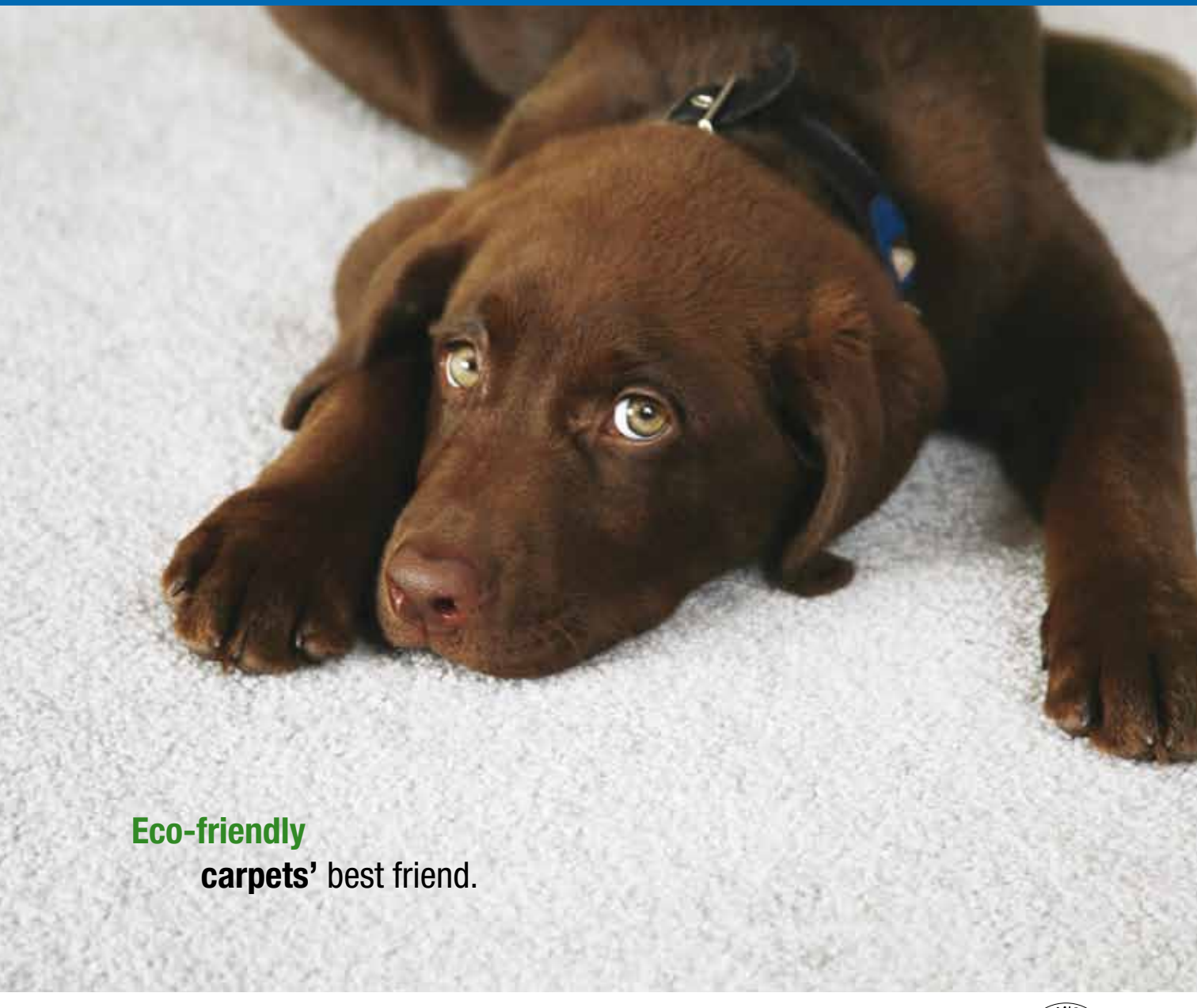
TECHNICAL DATA

Trump International Hotel & Tower, Toronto, Ontario (Canada)
Period of Construction: 2010-2012

Period of the Intervention: 2012
Intervention by Mapei: supplying products for smoothing of substrates and for installing carpets, wooden floors, granite and marble
Designers: building: Ziedler Partnership Architect; **hotel:** II BUY IV Design Associates
Client: Trump International Hotels
Works Director: Glen Pestrin
Contractor: Lewis Builds Corporation
Installation Companies: wooden and textile floors: Broadway Hardwood Flooring; **substrates:** Ground Floor Industries; **stones:** York Marble
Laid Materials: granite, marble, wood and carpet
Mapei Distributor: Durox Floor Accessories
Mapei Co-ordinators: Gaspare Clemenzi and Bill Loveys, Mapei Inc.

MAPEI PRODUCTS
Smoothing of substrates: Mapecem Quickpatch*, Novoplan 2*, Primer L*; waterproofing: Mapelastic Aquadefense; laying tiles: Ultraflex 2*, Ultraflex LFT*, Kerabond, Keralastic, Keracolor U*; installing wooden floors: Ultrabond Eco 975*; installing carpet: Ultrabond Eco 185.
*Produced and distributed on the Canadian market by Mapei Inc.
For further information see the websites www.mapei.com and www.mapei.com/CA-EN/

Inc.). On the floors in the corridors, reception halls and lobbies, carpet was installed using ULTRABOND ECO 185, a rapid-hold, synthetic polymer-based adhesive in water dispersion with very low emission of volatile organic compounds (VOC), ideal for installing textile flooring and coverings.
The company contracted to install the tiles in various materials also asked for the assistance of Mapei Technical Services. The bathrooms and showers in the rooms (for a total area of around 7,430 m^2) were waterproofed with MAPELASTIC AQUADEFENSE, a ready-to-use, rapid-drying, elastic liquid membrane. Then, to bond the marble slabs on the floors and walls, ULTRAFLEX LFT adhesive was used. To grout the joints, KERACOLOR U was recommended (two products distributed on the Canadian market by Mapei Inc.). In all the communal areas (around 26,000 m^2), except the lobby, large tiles measuring 30x60 cm were installed using white ULTRAFLEX 2 adhesive. In this case, too, the joints were grouted with KERACOLOR U. The special flooring in the lobby area and the adjoining bar was made from slabs of granite in various colours that had been cut to shape by laser to create a highly-decorative pattern. To install the granite, KERABOND+KERALASTIC (acrylic resin-based latex known as ISOLASTIC in the rest of the world) was used, along with KERACOLOR U.



Eco-friendly
carpets' best friend.

Ultrabond Eco 170

very low-emission adhesives specially developed for textile flooring, suitable for even the most sensitive noses!

Solvent-free, ready-to-use adhesive.
Discover the world of Mapei: **www.mapei.com**

/mapeispa

Our environmental commitment
More than 150 Mapei products help project designers and contractors building innovative projects, which are LEED (Leadership in Energy and Environmental Design) certified by the U.S. Green Building Council

MAPEI®
ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING

MAPE-ASPHALT REPAIR 0/8

Repair asphalt rapidly without interrupting the flow of traffic

Above. A technician at work applying MAPE-ASPHALT REPAIR M/M 0/8.
Photo 1. A hole in a road ready to be repaired.
Photo 2. Applying and spreading MAPE-ASPHALT REPAIR 0/8.

Over the last few decades, road networks have gone through an unprecedented period of development. Many of them have been in use for more than twenty years and a good part of them now require maintenance. Also, over the years, the number of light vehicles and heavy-goods vehicles using the roads has increased constantly, and a high volume of goods is transported by road. Stress from tyres, heavier axle loads and the wearing action of atmospheric agents all play their part, day after day, in causing road surfaces to deteriorate.

Road Maintenance

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

- Sub binder: part of the road foundations that distributes the loads transmitted to the soil
- Mixed cemented: makes the road structure more rigid, reduces permanent deformations and increases fatigue strength
- Bituminous conglomerate: protects the road structure from traffic and seasonal climatic variations and guarantees the service life and waterproofness of the road.

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

- base layer (thickness around 25-30 cm): supports loads without deforming permanently
- binder (thickness 6-10 cm): joins the base layer to the next layer
- wear layer (thickness around 4 cm): supports loads, provides adherence for vehicles and waterproofs the underlying layers.

Various factors contribute to the deteriora-

tion of road surfaces; amongst the most significant causes are environmental factors and loads from the traffic. In fact, ultra-violet rays from the sun cause the bitumen to slowly harden and reduce its elasticity, and as a result cracks form when the surface contracts in cold weather.

Loads from traffic causes hollows and cracks to form in the road structure. Water then penetrates into the cracks down into the underlying structure making it softer and, therefore, less resistant to wear. Also, the pressure of the water quickly erodes the structure of the granular material, causing the bitumen to separate from the asphalt aggregate.

The immediate result is the formation of holes and deterioration of the road surface and pavements.

Then snow, ice and de-icing salts are the final straw, and once the snow has gone, it is a common sight to see road-workers applying cold bitumen in an attempt to repair the deepest and most dangerous holes.

Photo 3. Wetting the surface of MAPE-ASPHALT REPAIR 0/8.
Photo 4. Compacting M/M MAPE-ASPHALT REPAIR 0/8 manually.
Photo 5. Compacting M/M MAPE-ASPHALT REPAIR 0/8 with a compactor.

The Mapei Solution

The Mapei Research & Development laboratories are helping to solve the problem of holes in the surface of roads with MAPE-ASPHALT REPAIR 0/8, a cold-applied reactive asphalt. This is an innovative product which is used to quickly repair the surface of roads and industrial flooring without interrupting the flow of traffic.

MAPE-ASPHALT REPAIR 0/8 is a highly-reactive, ready-to-use, solvent-free product that hardens quickly when it comes into contact with air and water, allowing the surface of roads to be repaired rapidly. It can be used to repair just the wear layer (if the hole is not too deep) or the binder and wear layer (if the hole is deeper).

It has the following additional characteristics:

- resists intense loads, as long as it is applied on a suitable substrate;
- light to medium traffic passing over the repaired area makes it even more compact without damaging it;
- permanently repairs holes between 20 and 70 mm deep in a single application at temperatures between 0 °C e +35 °C;
- resists freezing and rainy weather and, once hardened, does not soften, even at high temperatures;
- guarantees a durable, long-lasting, stable repair similar to conventional hot-applied asphalt: which is exactly why it cannot be compared with other types of cold-applied asphalt currently available on the market;
- can be applied easily and rapidly by just one man working on his own with no special tools or equipment.

Characteristics of the new MAPE-ASPHALT REPAIR 0-8 packaging

- Larger packages from 14 kg to 25: **larger capacity packs**, containing more product;
- **New plastic drums with a plastic cover to replace**, the previous poly-bound bags. **More robust, solid packaging for easier handling and better protection**, offering excellent conservation of the moisture-sensitive product.
- **Transparent thermo-welded plastic film** around the edge of the drum to prevent damp entering and guarantee the integrity of the packaging.
- **Water can now be added** in the drum if required to speed up the reaction of the product, **even at low temperatures.**

PURTOP: WATERPROOFING MEMBRANES

A range of polyurea-based membranes for rapid applications

The PURTOP range is a series of continuous, two-component, polyurea-based membranes without solvents, suitable for application on various types of substrate.
They may be used to waterproof both new and existing structures and have the following characteristics:

- adapt perfectly to any shape of substrate
- excellent bond to various types of substrate thanks to a complete range of primers for any type of material
- immediate waterproofing and set to foot traffic
- excellent tensile and tear strength
- high static and dynamic crack-bridging capacity, including at low temperatures
- considerable elongation capacity
- excellent resistance to alkalis, diluted acids and detergents
- no reinforcement required
- do not generate overloads on load-bearing structures
- thanks to the special finishes available, the colour of the membranes are unaffected by UV rays
- all PURTOP membranes are marked CE (EN 1504-2)

PURTOP 400 M: waterproofing membrane for large flat roofs and bridge decks.

PURTOP 600: thanks to its exceptional adhesion strength on a wide range of substrates, it is suitable for application on horizontal, sloping and curved surfaces not subject to traffic, on civil and industrial buildings.

PURTOP 1000: waterproofing membrane for storage tanks, basins and hydraulic structures in general, as well as any structure requiring protection with a high-performance membrane.

PURTOP HA: waterproofing membrane for small to medium size terraces and flat roofs, and for repairing surfaces waterproofed with hybrid polyurea and/or pure polyurea-based membranes.

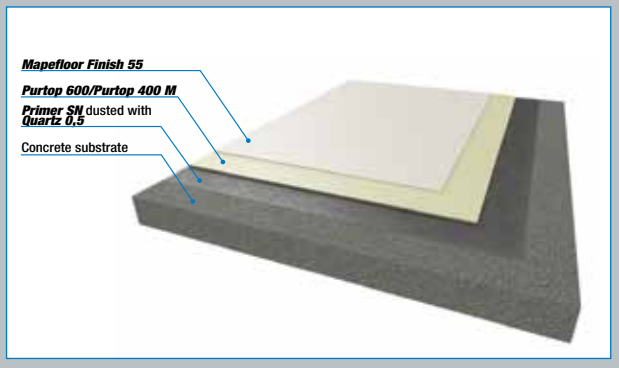
PURTOP SYSTEMS

As well as the spray-applied waterproofing membranes, Mapei also has three complete systems available for three specific types of waterproofing application.

PURTOP SYSTEM ROOF

Spray-applied hybrid polyurea waterproofing system for **non-trafficked roofs**.
It is **made up of:** PURTOP 600, PURTOP 400 M, PRIMER SN, QUARTZ 0.25, TRIBLOCK P, PRIMER BI, PRIMER EP RUSTOP, PRIMER M, QUARTZ 0.5 and MAPEFLOOR FINISH 55.

It is mainly based on the use of PURTOP 600 and PURTOP 400 M and, thanks to the excellent crack-bridging capacity and resistance to stress of the membranes, this system is extremely versatile and suitable for numerous types of roof. It may be applied on various types of substrate: concrete, cementitious screeds, terrazzo, porcelain and klinker tiles, smooth and slated bitumen membranes and metallic structures. To increase the membrane's resistance to ultra-violet rays, aggressive chemicals and wear, MAPEFLOOR FINISH 55 two-component, aliphatic polyurethane coating should be applied over the surface to give it an opaque, non-slip finish.



PURTOP SYSTEM TANK

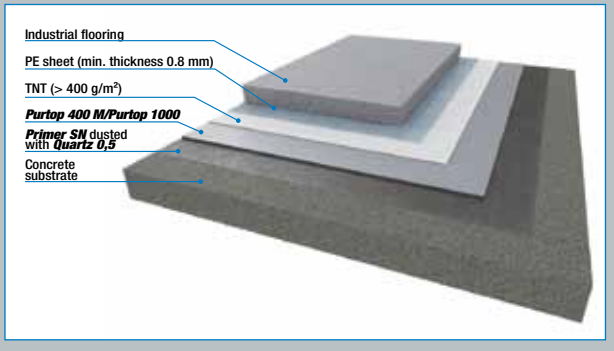
Spray-applied, pure polyurea-based waterproofing system for **storage tanks, basins and hydraulic structures in general.**
It is **made up of:** PURTOP 1000, TRIBLOCK P, PRIMER EP RUSTOP and PRIMER M

It is mainly based on the use of PURTOP 1000. Thanks to its capacity to bond to various types of substrate and its rapid application procedure, as well as its immediate waterproofing and set to foot properties, it is possible to repair the waterproofing capacity of various types of storage tanks and hydraulic structures in general, while the high mechanical strength and dynamic and static crack-bridging capacity of PURTOP 1000 make this system suitable for application on any type of substrate. The high resistance to chemicals of the membrane also makes it suitable for contact with highly aggressive chemical substances.

PURTOP SYSTEM DECK

Spray-applied hybrid polyurea or pure polyurea-based waterproofing system for **trafficked roofs and bridges and viaduct decks**.
It is **made up of:** PURTOP 400 M, PURTOP 1000, PRIMER SN, QUARTZ 0.25, MAPEFLOOR I 914, TRIBLOCK P, PRIMER M, QUARTZ 0.5, PURTOP PRIMER BLACK and QUARTZ 1.2.

It is mainly based on the use of PURTOP 400 M and PURTOP 1000. It is extremely versatile and suitable for numerous types of trafficked roofs, as well as trafficked surfaces typically found on many types of infrastructures. It may be applied on concrete in combination with various finishing products, on industrial flooring, self-locking blocks and asphalt.
This system may be used to repair the waterproofing capacity of various types of existing trafficked roofs and decks. Also, since PURTOP membranes are relatively thin, they do not generate overloads on load-bearing structures, and their excellent resistance to high temperatures means that asphalt may be poured directly on their surface.



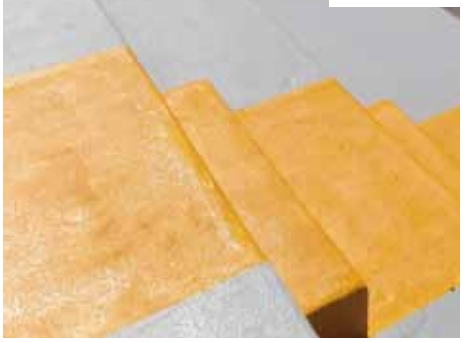
THE WORLD OF PURTOP

A few examples of sites where this waterproofing membranes for rapid applications has been used

The Sewage Treatment Plant - Tiszaújváros

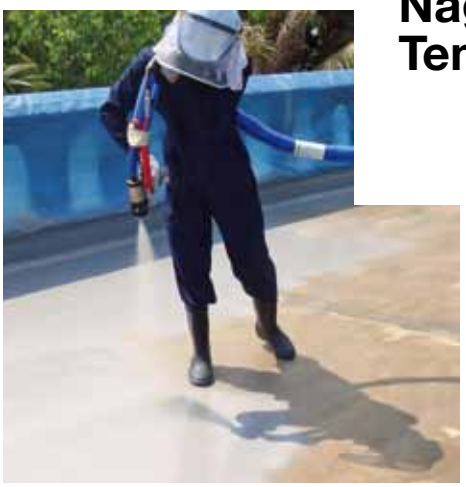
The sewage treatment plant of Tiszaújváros, in Hungary, was built in 1976 with an initial capacity of 3000 m^3/day. Due to the ever increasing residential and industrial load the capacity of the plant has become insufficient. Thus it was high time for expansion and for renewal and waterproofing existing objects. As a first step, tanks were drained off and concrete surfaces cleaned. The cleaning was followed by the application of a base coat layer: MAPEFLOOR H02, a two-component, solvent-free general epoxy primer. Primer was applied in two layers: at applying the first base coat layer smaller imperfections were filled with a mixture of MAPEFLOOR H02 and QUARZO 0.5 which resulted in a smooth finish. Then, the PURTOP 1000 pure polyurea waterproofing membrane was applied. Its thickness varied between 1.5 mm on vertical surfaces and 2.5 mm on the bottom of the basins and vaults. The total surface to be treated was 850 m^2 in each tank and work took two days because of the divided surfaces. The resulting construction joints were covered with PURTOP PRIMER OL so as to produce a 100% waterproof layer throughout.

Former Jesuit Sports Centre - Pescara



The former Jesuit sports centre in Pescara, Italy, includes a football and a rugby pitches. The reinforced concrete terraces were deteriorated. After removing the seats and clamps, the surfaces were cleaned and sanded. Fillets were then made in all the 90° corners using MAPEGROUT LM2K two-component, fibre-reinforced mortar. The through joint between the base of the terraces and the asphalt surface were treated as a structural joint. First, a strip of asphalt was removed from around the cracks to expose the underlying concrete slab. The slab was then cleaned and levelled off with MAPEGROUT LM2K and MAPEBAND TPE was applied by sandwiching the felt edges between two layers of ADESILEX PG4 epoxy adhesive applied. On the terraces was applied MAPEFLOOR I 914 epoxy primer, then dusted with QUARTZ 0.5 to help the waterproof membrane adhere. After preparing the surfaces, a seamless layer of PURTOP 400 M two-component polyurea membrane was applied. The coloured finish was created by applying MAPEFLOOR FINISH 55 two-component, aliphatic polyurethane finish, dusted with QUARTZ 0.5 to create an antiskid support.

Nagarathar Sivan Temple Malaysia



The island of Penang, in Malaysia, known as the "Pearl of the Orient", is a renowned tourist destination. Many of the Hindu temples on the island were founded by the Nattukottai Chettiar, the first Indian settlers in Malaysia. One of these temples is the Nagarathar Sivan, constructed more than 150 years ago. The three roofs of the temple were starting to leak through cracks which had formed following the previous restoration works about 10 years back. The proposed Mapei system comprised the application of PRIMER SN after the surfaces had been thoroughly cleaned, sprinkling quartz sand on the surface of the primer to enhance mechanical strengths, and then spraying the surfaces with a coat of PURTOP 400 M two-components hybrid polyurea waterproofing membrane. The cycle was completed by applying a coat of MAPEFLOOR FINISH 55 two-component polyurethane finish which is highly resistant to UV rays and wear, and sealing the expansion joints with MAPEFLEX PU 45 polyurethane sealant.

ARTIFICIAL SNOW WATER RESERVOIR IN SELVA DI VAL GARDENA

Mapeplan T WT membrane was used for waterproofing

Summer 2012 saw work undertaken to waterproof the man-made Piz Seteur reservoir in the Piz Sella - Plan De Gralba ski resort in the municipality of Selva di Val Gardena (province of Bolzano, in Northern Italy), located at an altitude of roughly 2,000 m asl.

This is a reservoir built into the earth containing about 70,000 m^3 of water with a water level of around 10 m, that will allow numerous km of ski slopes to be covered with artificial snow through a complex system of snow cannons. The reservoir and the underground service building were waterproofed with a 2.3 mm-thick TPO/FPO (Thermoplastic Olefyn/ Flexible Polyolefin) liner called MAPEPLAN T WT, manufactured by Polyglass, a Mapei Group's subsidiary.

Requirements of the Waterproofing System

The waterproof lining of a snow-making water reservoir built into the earth is a complex undertaking that must take into account various factors and basic requirements, such as:

- risk of differential settling of the substrate
- harsh weather and environmental conditions
- high mechanical strength

Below. View of the completed reservoir during the water filling phase.
Photo 1. Digging and leveling the reservoir.
Photo 2. Laying the Mapeplan T WT waterproofing membrane.

1

2

- quick installation
- critical operating conditions, such as ice formation, fast draining
- easy maintenance
- setting in surroundings of great environmental and natural value
- feasibility of testing and monitoring the lining system
- long service life
- ease of repair

In this specific case, the project also had to meet the rules and requirements laid down by local laws regarding the construction of reservoirs and dams, which call for waterproof lining systems able to provide:

- dimensional stability
- a waterproof barrier to water under pressure
- resistance to mechanical wear
- resistance to UV rays and harsh weather conditions
- resistance to plants, roots and microorganisms
- resistance to heat and freezing temperatures
- resistance to the ageing of the material
- non-toxicity
- field testing of the installed lining system
- installation of the layered lining system by a professional company.

The MAPEPLAN T WT Solution

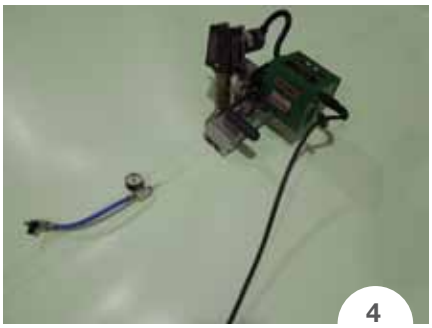
To comply with the rules and meet the official requirements, Polyglass supplied a waterproof lining system comprising a TPO/FPO flexible polyolefin synthetic liner called MAPEPLAN T WT, as described below.

The soil was prepared by compacting the bed and sides with a roller and shaping the banks with the aid of heavy equipment. The trench for anchoring the layered waterproof lining system was dug into the top of the banks. The banks were shaped with a berm at about t a 1/3 of the way up to provide a base for the rock covering to be laid over the upper part of the banks.

A cuspated material drainage geocomposite laminated with a filter geotextile was applied as an underlay on the banks to act as drainage system and levelling layer.

This drainage layer allows the waterproofing system to be monitored continually as a network of finely slotted HDPE (High-Density Polyethylene) drainage pipes has been produced at the base of the banks running into inspection chambers outside the reservoir.

The bed has been covered with an 800 g/m^2



non-woven geotextile material to act as a levelling and puncture-resistant layer.
The bed monitoring system, under the liner, has been produced by laying a layer of dry drainage material embedded with a network of finely slotted HDPE drainage pipes running into inspection chambers outside the reservoir. The MAPEPLAN T WT liner was loose-laid with the sheets overlapping by about 10-15 cm; the overlaps were thermally welded with hot air using specific welding equipment. More specifically, in this case, two weld tracks were produced with an unbonded channel between them for testing purposes. This particular weld design allows the seam to be tested for leaks by pumping the channel full of air. Testing is carried out with an average pressure of 2.0-2.5 bar (which is equivalent to a water level of 20-25 m). This weld testing offers the utmost reliability and ensure that the waterproof system is free of leaks.
The MAPEPLAN T WT liner was protected by an 800 g/m^2 non-woven geotextile material on the upper part of the sides only, on top of which the rock covering was laid. The waterproofing liner was left completely exposed on the rest of the lined surfaces. Connections between the waterproofing liner and the drainage pipes and bed inlets, which were under water pressure, were produced with specific elements provided with stainless steel flanges and counter-flanges. An ice-prevention system referred to as "bullage" was installed on the reservoir bed consisting of HDPE piping fitted with air-blowing nozzles designed to keep the surface of the water moving constantly, thus preventing it from icing over. The reservoir was completed with safety fencing erected around the entire perimeter.

Photo 3. The trench for anchoring the lining system was dug into the top of the banks.
Photo 4. The liners were welded using specific welding equipment.
Photo 5. Detail view of the ice-prevention system called "bullage".
Above. View of the waterproofed reservoir.

TECHNICAL DATA

Piz Seteur water storage reservoir for artificial snow-making, Selva di Val Gardena (Italy)
Year of Construction: 2012

Year of the Intervention: 2012
Intervention: supplying products for the waterproof lining of the reservoir
Clients: Sciovie del Sella SpA and Sciovie Piz Sella SpA
Client's Technical Consultant: Monica Borsatto, Bressanone (Italy)
Designer/Project Manager: Studio d'ingegneria Erwin Gasser, Brunico (Italy)
Main Contractor: Karl Wieser snc, Molini di Tures (Italy)
MAPEPLAN Qualified Installer: Isoledil srl, Collebeato (Italy)

POLYGLASS PRODUCTS
Waterproofing the reservoir and the underground service building: Mapeplan T WT (N.B. The product is manufactured by Polyglass SpA, a Mapei Group's subsidiary). See www.polyglass.com website for the technical data sheet.

FEATURES AND ADVANTAGES OF THE MAPEPLAN T WT SYSTEM

Compliance with Harmonized Standards
The MAPEPLAN T WT waterproofing membranes are manufactured and certified to meet European harmonized standards EN 13361 "Geosynthetic barriers - Characteristics required for use in the construction of reservoirs and dams" and EN 13362 "Geosynthetic barriers - Characteristics required for use in the construction of canals".

The Multi-Extrusion Coating Production Process
The MAPEPLAN T sheets are produced in a modern and environmentally friendly hi-tech multi-extrusion coating plant. This production process applies the synthetic TPO/FPO matrix directly onto both faces of the carrier at the same time to ensure that it is perfectly encapsulated within the structure of the sheet. Thanks to this coating, MAPEPLAN T M forms what is essentially a single-layer sheet that is not subject to delamination and is resistant to all forms of stress (physical, chemical and thermal).

Plasticizer-Tree Formulation
MAPEPLAN is an innovative waterproofing membrane formulated without plasticizers or volatile substances.

Built-in Flexibility
The MAPEPLAN membrane gets its flexibility from the special chemical structure of its polymer component: the element that renders it so flexible is found in the molecular chain and is chemically bonded to it. This chemical bond is very strong and difficult to separate, which essentially results in the liner's increased durability, higher resistance to aggressive substances, as well as improved resistance to weather conditions, microorganisms and bacteria.

Dimensional Stability
Dimensional stability is ensured by the internal fibreglass mat carrier and by the multi-extrusion coating production process.

Highly Eco-friendly with Low Environmental Impact
Being free from plasticizers and volatile substances and containing no substances that are harmful to people or the environment, MAPEPLAN T TPO/FPO membranes are highly eco-friendly products.
The modern and technologically advanced production system has been designed and developed to ensure the lowest environmental impact. This low environmental impact is guaranteed during all stages of the liner's life cycle: manufacturing, transport, installation, service life, end-of-life disposal.
Once the waterproofing membrane reaches the end of its life cycle, it can be removed and recycled/reused to produce new raw material.

Non-Toxicity
The MAPEPLAN T WT waterproofing membrane is non-toxic and suitable for contact with drinking water according to current Italian legislation.

Surface Colouring - Signal layer
The MAPEPLAN T WT liner's top layer is produced in a special light green colour, which looks attractive and blends in well with the surrounding landscape.
The different colour on the liner's surface also has the advantage of acting as a warning layer, providing visual evidence of any accidental mechanical damage or surface scratching as a result of work carried out once the liner has been laid.

Resistance to Root Penetration
Resistance to root penetration is one of the product's inherent properties and is not achieved with the addition of volatile substances or additives likely to wash off. The thermal welding of the seams means that both main and secondary overlaps are also resistant to root penetration.

Thermally Welded Seams
The MAPEPLAN T waterproofing liners are thermoplastic plastomers, which means they have excellent weldability properties and are actually thermally welded with hot air.
This welding method effectively fuses and bonds together the molecular chains: the welded MAPEPLAN T liner seams withstand the pressure of the water and are mechanically strong.

JAYCO-AIS WORLD TOUR ACADEMY

Young Australian champions progress at the Mapei Sport Research Centre

Mapei's love of cycling has very deep roots and has never shown any signs of grinding to a halt, indeed it keeps on growing over time thanks to some truly sweeping enterprises, such as the sponsorship of international sports events or scientific aid and assistance to professional and amateur athletes and teams in various different sports. In the wake of this tradition, among the sports teams followed by the Mapei Sport Research Centre, one is very special. It is the Jayco-AIS (Australian Institute of Sport) World Tour Academy Team, a team of under 23-year-old Australian cyclists that races on both the road and track and holds a UCI (Union Cycliste Internationale) Continental Team licence, which allows it to take part in races of the UCI Continental circuits, most notably the UCI Oceania Tour.

In 2013 the team will take part in top-flight races in Italy and the rest of Europe as a national team, aiming to help young Australian cyclists progress through proper training, in order to facilitate their future transition into UCI World Tour teams. The bond and working relationship between Mapei and Australian cycling began over 10 years ago when the Mapei Professional Cycling Team was strengthened by taking on some promising young Australian cyclists. This decision was not taken randomly, neither was it aimed at making the team more international. It was the result of an awareness that Mapei's approach to cycling was basically in synch with the aims and goals of Australian cycling, in both cases based on an ethical approach to cycling and its values. Among the cyclists who joined the Mapei team back then were Michael Rogers, Alan Davis and Cadel Evans, the latter making the transition from mountain biking to road racing. At the time Mapei was looking for a potential winner of a stage race and Evans seemed to fit the bill, as he went on to prove in his subsequent career.

The like-mindedness with Mapei's approach to cycling in terms of its basic philosophy and ethics is the reason why Giorgio Squinzi, CEO of the Mapei Group, decided to support Australian cycling's European programme, using the Mapei brand to sponsor the European cycling operations of the team representing the AIS from 2003 onwards. This relationship has also strengthened the bond and partnership between the Mapei Sport Research Centre and the Australian Institute of Sport so that, with Mapei Sport's consultancy, the European headquarters of the AIS has been set up in Gavirate (in the province of Varese, Northern Italy - the city that hosted the 2008 UCI Road World Championships).

The working relationship between the Mapei Sport Research Centre and cyclists at the Jayco-AIS World Tour Academy, who will soon be taking part in this season's most important bike races, will continue to bear excellent fruits. The aim is to help them achieve their sporting goals in an ethical and healthy approach to sport.

AUSTRALIAN INSTITUTE OF SPORT

Jayco

SAVE THE DATES

Mapei will be there this year too at ExpoTunnel, Cersaie, Marmomacc and MadeExpo. Visit our stands to find out more about the most innovative systems for the building industry!

CERSAIE

Bologna, 23rd-27th of September
Arcade 25-26

MARMOMACC
48th International Trade Fair for Stone Design and Technology

Verona, 25th-28th of September
Pavilion 7, stand E2

MADE expo

Milan, 2nd-5th of October
Site Construction pavilion

EXPO Tunnel

Bologna, 17th-19th of October
Pavilion 19, stand B77-83

MAPEIDAY2013

SUNDAY 14TH JULY
BORMIO - STELVIO PASS

PROGRAMME

8.40 a.m. **Ski Roll Race** (for members only)

8.50 a.m. **Half Marathon** (for FIDAL's and sport promotion institutions' members only)

9.00 a.m. **Running Open to All**

9.15 a.m. **Re Stelvio - Mapei Competitive Cycling Race 29th edition** (for FCI's and Italian National Cycling Commission's members only)
Female Cycle Race
By bike and with proper jersey

9.30 a.m. **Re Stelvio - Mapei Competitive Cycling Race 29th edition** (for FCI's and Italian National Cycling Commission' members only)
Male Cycle Race
Mapei Bike Ride (for all those interested, alongside champions of the former Mapei Professional Cycling Team and other sport VIPs)

2.00 p.m. **Timelimit Race**

4.00 p.m. **Prize-giving Ceremony** in Piazza Kuerc in Bormio

A free training schedule for runners and cyclists is available from: www.mapeisport.it

ENTRIES

from 2st April to 10th July at the web sites: www.winningtimesportservices.com, www.usbormiese.com, www.popso.it, or else at the Unione Sportiva Bormiese Headquarters via Manzoni - Bormio.
Maximum amount of entries: 3,000

Entry fee: 25 Euros, for entries from 2st April to 30th June.
40 euros for entries from 1st June to 10th July, including
- **Mapei Day jersey, which you are kindly requested to wear**
- Clothes transport service up to the Stelvio Pass
- Refreshment points alongside the course and at the finish line
- Shuttle bus service from the Stelvio Pass to Bormio (for both bicycles and athletes)
- Mapei Day medal
- Photo and race certificate (both available and downloadable at www.mapeiday.com)
- Personal race time of the athletes (Winning Time)

N.B. FREE ENTRY on the website www.mapeiday.com for Mapei customers using their customer code and for readers of Realtà Mapei using their Realtà Mapei code

COURSE

A 21.097 km climb from BORMIO (1,225 m a.s.l.) to the STELVIO PASS (2,758 m a.s.l.). Difference in level : 1,533 m.
Starting Line: via al Forte (Bormio City Centre)
From 2.00 p.m. a shuttle bus service will be available from the Stelvio Pass to Bormio.

HOTEL INFORMATION

Associazione Albergatori Bormio
phone: +39 0342 902765 - info@hotelsbormio.it
www.hotelsbormio.it

/mapeispa

MAPEI SPORT

UNIONE SPORTIVA BORMIESE

Banca Popolare di Sondrio

PIROVANO L'UNIVERSITÀ DELLO SCI

giussani enrico e figli s.r.l.

WINNING TIME

COLNAGO

MIC s.r.l.

SHIMANO

ENERVIT Science in Nutrition

BORMIO TERME

SMS Santini

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