

Extraordinary

Butterflies' Green Roof

It's not often that a roof serves butterflies and basketball players, but the roof at the Target Center in Minneapolis, US, does both. That's because this green roof not only provides shelter to the National Basketball Association's Minnesota Timberwolves and their fans, but it also features vegetation designed to attract the endangered Karner Blue Butterfly.

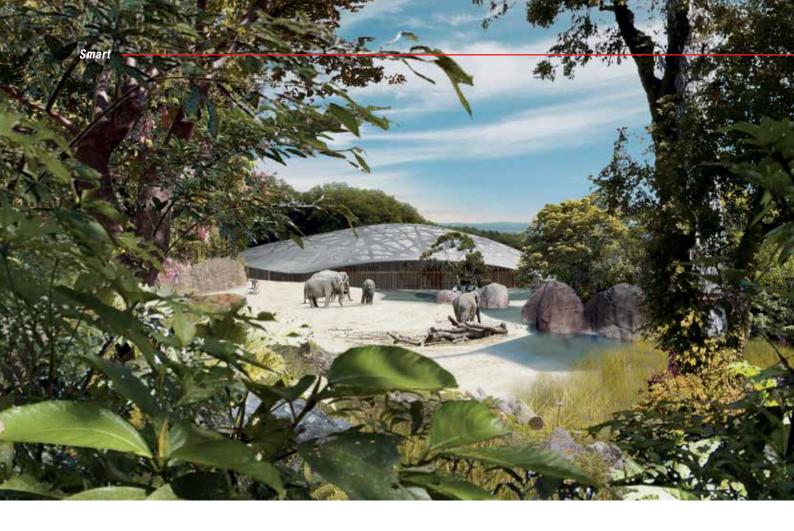
But attracting butterflies wasn't the main reason the city of Minneapolis went with a green roof when it replaced the existing EDPM roof on the

sports arena. "We had a problem in the city with sewer overflow problems, and every drop of water that went on the old roof went onto the sidewalk, into the sewer system and then into the Mississippi River," said Minneapolis City Council member Lisa Goodman. The new green roof is designed to capture more than 2 cm of rain before run-off occurs, and is expected to prevent an estimated 3.8 million liters of storm water.

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An exceptional new home for elephants

The children cannot wait to ride on them – and anyone who has enjoyed an elephant ride at some time in their life knows how much fun it is to be so near to these animals. Elephants are large mammals. Traditionally, two species are recognized: the African and the Asian elephant. The animals are scattered throughout sub-Saharan Africa, and South and Southeast Asia. Male African elephants, the largest living terrestrial animals, can reach a height of 4 meters and weigh 7 tones.

These animals have several distinctive features, including the long famous trunk used for many purposes, particularly for grasping objects. They communicate by touch, sight, and sound, also using infrasound and seismic communication over long distances. Calves are the center of attention in the female family groups and rely on their mothers for as long as three years. Elephant intelligence has been compared with that of primates and cetaceans. They appear to have self-awareness and show empathy for dying or dead individuals of their kind.

To provide these sensitive animals with an appropriate facility in a zoo, the primary focus must be on the elephants' needs. Sika Switzerland recently provided some innovative technologies that made a significant contribution to Zurich Zoo's unique new elephant building. The new elephant enclosure is eight times larger than at present, offering ideal conditions that are compatible with their species-specific behavior. The complex consists of a large outdoor park plus a species-appropriate elephant house, which protects them from outside weather conditions and provides them a quiet place where they also receive their care.

The striking, bright wooden elephant house roof covering an area of some 6000 m² and weighing about 1500 tons is architecturally unique. This multi-layer roof structure is sealed with the Sarnafil[®] Roof System against weather conditions. It is supported by a filigree concrete structure. In the newly introduced elephant stalls, Sikalastic[®] Polyurea flooring and walls protect against corrosion by the highly aggressive feces and urine.

Sika products are also used for the rain water tanks and the treatment plant for the elephants' bathing water. All concrete work on the main building was carried out with Sika®ViscoCrete® and sealed with the Sikadur-Combiflex® System. As of spring 2014 you can visit the elephants in their new enclosure! They are already looking forward to see you!



Roof structure of the elephant park



Mario Gross, Global Head of Procurement, Sika Services AG

Development of new markets

Working at Sika for 11 years, 7 of which in Asia, what were your main challenges and rewards?

Working and living in Asia has been a fantastic experience for me. During my time working in Procurement Asia Pacific,

we were tasked with setting up our regional structure and driving the countries through a phase of fantastic growth. Building up new supply chains, factories and the respective material flows in a very heterogeneous region with a mixture of mature countries such as Japan and the emerging markets such as China was indeed challenging. Leading the teams through the GFC and various natural disasters like the earthquakes in China and Japan allowed us to promote the real Sika spirit and develop highly professional teams throughout the region.

In the last 2 years I had a completely new task: managing Sika Thailand as GM. Targeting at economic growth in Thailand and new opportunities in the markets of Laos and Myanmar, our highly motivated team has achieved excellent results so far. I am convinced that Sika Thailand will continue its success with profitable growth.



What fascinates you about developing new markets in Asia?

The diversity among cultures, the differences in priorities and interests, and especially the friendliness and warmth of people throughout the region offer Sika the largest growth potential in the coming decades. This fascinates me! In a nutshell: I felt at home wherever I was in Asia.

What is the main challenge facing you when you return to Europe as the Global Head of Procurement?

To be growth and profit oriented, to be highly flexible thinking in global supplier and supply chain management, and to optimize the Procurement team work according to the Sika business strategy.

In what way would you change the world if you could?

I would make it mandatory for all school kids to live at least one year outside their home continents. Future generations need to gain an understanding of and respect for other cultures as early as possible.

"Butterflies' Green Roof". Continued from page 1.

At 10,000 m², the Target Center's vegetated roof is the largest in Minnesota and the first green roof installed on a sports arena in North America. The new roof was not to weigh more than the previous ballasted roof and the existing loading limits. A vegetated system over a lightweight waterproofing system met that challenge. The Sika Sarnafil waterproofing PVC membrane was chosen for the green portion of the roof. The membrane handles the effects of root growth, is resistant to bacteria and handles varying hydrostatic pressures as well as preventing moisture wicking at seam edges.

When a roof has 29 different areas and is in the middle of a bustling downtown, there are bound to be installation challenges, and this roof was no exception. One major challenge was installing the roof at the same time that the new Minnesota Twins baseball stadium was being constructed next door. Freight and materials had to be scheduled carefully because of the congested area, and 25 people worked day and night, with much of the material haulage taking place at night. In addition, the roof had to be installed around the schedule of the Target Center, which remained operational during the installation and held 65 separate events during construction.

Throughout the design and installation process, a Sika Sarnafil representative was always available to make sure the quality of construction was up to their specification. The vegetation on the roof consisted of a pre-grown mat of sedums and plants that are native to Minnesota. Lupines were also added to attract the Karner butterflies in order to enhance plant diversity and ecological resistance. This roof also reduces energy costs, since it doesn't get nearly as hot as the old rock ballast roof. Other cities could also benefit from making their big arena roofs more sustainable. That's something both butterflies and basketball players can applaud.





Mongolia – a country on the verge of change

In October 2012, around 8,000 km from my workplace in Zurich, a new Sika company was founded in Ulaanbaatar, the capital of Mongolia. Sika Mongolia LLC is one of the youngest Sika companies. Mongolia is one of the 20 largest countries in the world and, with just 2.8 million people, very sparsely populated. Ulaanbaatar is home to approximately 50% of Mongolia's population, while the other 48% are still nomadic and live in yurts.

How do you get there from Europe? It is a 20-hour trip if you choose the fastest way via Istanbul and Bishkek. However, you soon forget how exhausting the trip has been during the descent into the Mongolian airport of Ulan Bator, which offers an awesome view of this country's beautiful scenery.

For those who are not used to extreme climates, Mongolia offers the whole range. Visiting Mongolia in January or February will change your personal definition of cold: with temperatures dropping as low as -50° C, you will be glad to receive Sika Mongolia's warm thermal clothes. Those temperatures make a skiing experience in the only Mongolian ski resort, near Ulaanbaatar, a real challenge, even with those thermal Sika clothes. Summertime is the complete opposite, with temperatures soaring to $+40^{\circ}$ C. A harsh land. Mongolia is a country where you can experience all four seasons in a single

laboratory with various training sessions concerning concrete technology. Then the most extensive PCE (polycarboxylate-ether) testing program ever seen in Asia was undertaken, testing PCE supplied from within the region and from the production facilities in Europe.

One of the biggest and most important projects for Sika Mongolia is the supply to the mine project, with many products being involved in both underground and surface applications: everything from SikaFloor to Sigunit. Furthermore, Sika Mongolia gained a large market share in a very short time due to its exceptional technical support and technical services not previously available in Mongolia for civil or mining projects.

"Sika Mongolia is already the clear market leader in the retail and distribution markets as the company provides a wide range of retail products not seen in the Mongolian market before Sika Mongolia opened its doors," states Paul Howarth, General Manager of Sika Mongolia. Sika Mongolia has also secured the supply to major projects thanks to its extensive product range and technical support approach, and has a full specialist team in place with direct supply via a range of distribution channels for both retail and pro-dealer products.

day. Ulaanbaatar is officially the coldest capital city in the world with an average temperature of approximately 0°C.

In a very short time, Sika Mongolia grew to 24 employees with a modern office and a well-equipped concrete laboratory and admixtures production facility. The Corporate Concrete & Waterproofing departments helped in establishing the processes in the newly opened concrete



Paul Howarth, General Manager of Sika Mongolia, cutting the cake during the concrete laboratory opening ceremony



A Sika Mongolia Technical Support Manager is taking a break looking over the fantastic Mongolian countryside.





The Bridge of Relief

Tunis is Tunisia's largest city as well as its capital, with a population of more than 2 million. The greater metropolitan area holds some 2.5 million inhabitants. Situated on a large Mediterranean Sea gulf behind the Lake of Tunis and the port of La Goulette, the city extends along the coastal plain and the hills that surround it.

Despite the boisterous and active trade going on in the medina (a dense agglomeration of alleys and covered passages, full of intense scents and colors, at the center of the city), the expansion of the Tunisian economy in recent decades is reflected in the booming development of the outer city where one can see clearly the social challenges brought about by rapid modernization in Tunisia.

The Greater Tunis region is divided into southern and northern areas by the Lake of Tunis Canal. Traffic between the two areas depends either on routes passing through the urban area of Tunis or ferryboats connecting the two

biggest ports. The ferryboats, however, are limited in terms of service, frequency and capacity, and most of the south-north traffic concentrates on the routes passing through the urban area of Tunis, causing traffic congestion and environmental deterioration in the city.

The future traffic volume will need to be reduced as economic activity and tourism increase. Road-related projects based on a National Development Plan are aimed at mitigating traffic congestion in this area. The La Goulette Bridge project is considered an important link connecting the south-east and north-west areas of the metropolitan area and is the first of its kind in Tunisia, and indeed anywhere in the African continent.

Sika Tunisia supplied concrete and superplasticizers for the project during the entire construction period. The concrete structure of the 260-meterlong cable-stayed bridge is divided into three spans measuring 70, 120 and 70 meters respectively. The bridge deck, located 20 meters above sea level, is held by two 45-meter-high pylons. 23.5 meters wide, it is divided into two channels, two emergency lanes, and a backfill. The bridge definitely provides genuine relief from traffic jams!



The tunel "Emisor Oriente" will serve to support the old "Deep Drainage System" which was built in the 70s

Keeping a megacity dry

Monumental work will strengthen the main drainage system in the Valley of Mexico for the benefit of its 20 million inhabitants. Mexico City was originally built on an island in Lake Texcoco by the Aztecs in 1325 as Tenochtitlan, which was almost completely destroyed in the 1521 siege of Tenochtitlan, and subsequently redesigned and rebuilt in accordance with the Spanish urban standards. After achieving independence from Spain, the Federal District was created in 1824. The city has grown over the decades and expanded into the lake, and has therefore been facing the problem of flooding.

Since pre-Hispanic times, people have been trying to find solutions to prevent and control the floods. A new solution was devised in 1967. The "Deep Drainage System", as reflected in the original project, consisted of two tunnels water receptors 5 m in diameter and 18 km in length, with a depth ranging from 30 to 50 m. The tunnels were 6.5 m in diameter and 50 km long were installed deep underground. The construction, considered by many to be "final", was commissioned in 1975.

At present, the capacity of the drainage system in the metropolitan area is insufficient and has serious problems. Just compare its capacity in 1975 with what it has now, which is 30% lower with nearly double the population. The operating system for the pipes needs to be closed during the dry season months for repair and maintenance. This makes it necessary to have an alternating ability to maintain system operation throughout the year as the current sewage system is inadequate for the current needs of the Valley of Mexico.

Owing to flooding and to prevent this in future, the "East Tunnel" construction project is now being implemented in coordination with several Mexican governments. The work will expand the drainage capacity, thus avoiding flooding in the Valley of Mexico, reduce the risk of failure of the drainage system and implement a procedure to inspect the drainage without suspending its operation.

Sika Mexico is currently working together with the company ICA to develop the final coating, providing special solutions for the concrete required for this purpose. Superplasticizers Sika ViscoFlow®10 and Sika ViscoFlow®20 E are being used among other products to achieve a significantly enhanced slump retention without additional retardation and subsequent fast strength development. With this particular solution concrete is pumped up to 95 m deep and 1000 m in length; the volume is approximately 230,000 m³. Sika Mexico also provides technical support on site and the project will contribute significantly to the development of Mexico's megacity.







Exploring professional working style in Vietnam

Vietnam is a strong economic market with great potential and remarkable growth. In the 20 year long presence from Sika Vietnam the company has achieved remarkable growth in the Vietnamese market. This year, the Sika Experience was carried out in this amazing country, offering the winning students a great chance to discover Sika's products and projects and have the first taste of the professional life.

The six Vietnamese students had a great journey traveling across the country, from the South to the North, experienced how the real life of the construction industry and visited project sites, sights and experienced cultures from the different regions along the way. The enthusiastic staff from Sika Vietnam accompanied them and shared a lot of information with them anywhere they came. The students learned how Sika strives to being a reliable partner for construction and industry with perfect solutions, no matter what the requirements are.

Part of the Sika Experience was the laboratory workshop where the students learned how to apply Sikaflex. They visited job sites such as the Formosa project, the RMIT university with its PVC-roofing membranes, the green roof of the Marriott luxury hotel or the Long Thanh bridge of the Dau Giay highway. Furthermore, they visited factories of Sika and for ready mix concrete production. As an overview of this adventure we captured some voices from the students:

At the Mariott Hotel: "We got on the top of this building and had an amazing view. The scenery is more wonderfull thanks to Sika plant, i could see the grass has been growing well." <u>Nin's blog</u>.

"And we went through from this surprise to the others, seeing professional working style, good at human management, and checking the products by ourself, that we have never ever had before." Tien's blog "We visited Rmit University on the top floor. There, we saw the application of Sika products. For example, Sarnafil PVC membrane is used to cover the whole surface of the top floor." <u>Huong's blog</u>

"Our group was welcome by the employees and Mr. Man, Central Branch Manager and one of the three first staff to operate Sika's Branch in Da Nang. [...] He also stressed on the importance of the honesty in working, in the relationship with the clients, and the influence of laboratory on deciding their sales." <u>Hung's blog</u>

In the Laboratory: "I was very impressed with the practical experience through hands-on-tasks at the laboratory. We also took some picture at Sika's factory to remember this great moment!" <u>Trung Thuc's blog</u>

While sightseeing: "The first day of [...] gave me a lot of emotions. That is the first time to Ho Chi Minh City that is very beautiful and modern. We visited Bitexco Financial Tower where we can see the view of whole city that is different from where i knew. In the other hand, I also met friendly people. That is two fun guides who are Mr. Dang, Ms. Lang and Mr. Adam Sharp – Deputy General Director of Sika Vietnam with sharing extremly valuable [information] about the job in the future." <u>Anh Tuan's blog</u> See the whole experience at:

http://experience.sika.com/tag/south-east-asia/







What about Africa?

Africa is a continent of explicit contrasts, a bubbling cauldron of cultures and creeds, starkness between diverse beauty and devastating poverty, massive opportunities and even bigger challenges. There is a mixture of highly developed regions like Southern Africa, mature regions of Northern Africa and then everything in between, West, Central and East Africa, emerging slowly in the footsteps of their neighbours.

Sika's headquarters are situated in Nairobi, Kenya in the heart of the East African region which consists of Kenya, Ethiopia, South Sudan, Uganda, Rwanda, Burundi and Tanzania. Somalia, Djibouti and Eritrea also form part of East Africa and in time no doubt will form part of Sika's global family. Kenya is considered to be one of the more stable democracies in the region, becoming a republic in 1964 and celebrates Independence Day on 12 December. In order to know more we visited Tom Power, the General Manager of Sika East Africa on site in Nairobi.

You recently moved from the green, but rainy Ireland to an ever-sunny and hot Kenya. Are you already well-suited to this change?

Yes it's true; we do suffer from a lack of sunshine in Ireland. It's really comforting to know that when you wake up in the morning, the likelihood is that the sky will be blue and the sun will be shining. I don't miss the grey

wet climate at all. However when it rains here in Kenya, it rains like I've never seen it rain before. It is torrential and flash flooding is normal, bringing with it a new set of problems.

Kenya has 2 rainy seasons. April-May bring the heavy rains leading us into the winter season when it absolutely buckets down with intense thunder and lightning storms. November brings the short rains and the pre-cursor to summer. Temperatures are in the mid to high 20's rarely getting above 30 due mainly to the altitude. Nairobi is just a whisker south of the equator and is 1,770 meter above sea level. The biggest change for me was getting used to the altitude which surprisingly enough does take a bit of adjusting to.

What do you enjoy most about your new surrounding so far? Have you become a safari fan?

I'm embarrassed to say that I haven't yet immersed myself fully in the safari experience. I have taken in a 1-day visit to Lake Nakuru National Park, about a 3 hour drive West of Nairobi in the Rift Valley. There I encountered 4 of the big 5, rhino, lion, giraffe and buffalo, but the most spectacular species there are the hundreds of thousands of pink flamingo that come to breed on the lake. It's a magnificent sight to see. The last of the big 5 – Elephants will only be found in the much larger parks as they tend to be too destructive for the smaller parks.



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The Sika branch in Nairobi, Kenia

"What about Africa?" Continued from page 8.

Closer to home in Nairobi environs, I regularly visit the David Sheldrick elephant sanctuary where baby elephants are taken and cared for having been rescued from the various National Parks after poachers have killed the mother and sometimes the entire heard. Poaching today in Africa is still a huge problem. I am now the proud foster parent for 2 baby elephants rescued after both their mothers were killed for their ivory – Kithaka and Barsalinga.

Another place that I visit regularly is Giraffe Manor where the endangered Rothschild species of giraffe are protected and nurtured. Here you can interact up close with the giraffe and feed nuts from your hand.

Kenya has more than 60 languages and dialects – so it is time to communicate with hands and feet! How do you experience the community with the people and the different cultures?

You know, the Kenyan people are very proud people, made up of many tribes throughout the country. Their culture is extremely important to them and they are very welcoming to visitors. They are so proud of what their country has to offer tourists, visitors and business people.

This is also true for the rest of East Africa and each country has such a diverse and different experience to offer. Ethiopia is so different to Uganda which in turn is completely different to Tanzania, Rwanda and South Sudan; each has a uniqueness that is beautiful in a completely different way.

Speaking about economics... Kenya and all the African regions around offer a very versatile and demanding surrounding for multinational companies. Where do you see the chances and difficulties in general?

The African continent is a huge emerging market. In most areas (there are of course exceptions, but in general) the economic uplift that is happening is bringing a new wealth and with it comes a growth in demand for urbanization and housing, infrastructure such as airports, ports, railroads, roads, electricity generation and waterworks etc. The future potential over the next 30 years is extremely exciting. However, this has to be tempered with the need for improved governance and political stability in the East African Community. The future is definitely bright...

How about the construction market?

The construction market is typical for any developing region; it is more reactive than proactive and is driven mainly by severe resource shortages, socio-economic stresses and political instability.

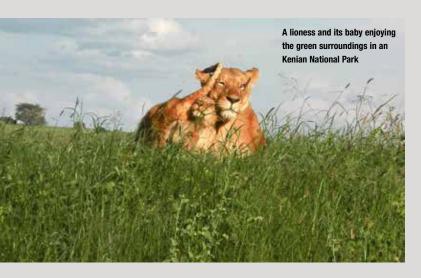
There is a huge movement at the minute to improve capacity and effectiveness of the construction industry to meet demand for building and infrastructural projects. There is also an awakening to the responsibilities of environmental responsibility in the delivery of these projects and the support for sustained economic and social development with increased value for money to clients, viability and competitiveness of domestic construction enterprises.

Before leading the Sika organization of Ireland you are now responsible as General Manager for the East African Region. What are the current steps to go?

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"What about Africa?" Continued from page 10.

Taking on the role of General Manager is a big responsibility. For me it means a much wider focus on the business at hand. The main responsibil-

ity is to manage and supervise all aspects of the company as a whole, from planning and production, strategies and sales, training and tactics, finance and resources etc. You become a conduit, an instrument for the implementation of strategies, goals and objectives in order to successfully grow the Sika footprint on the global stage.

Any surprise you have been experiencing?

Apart from the shock of the volume of traffic and the shortage of quality roads, the biggest surprise to me is how fragile these countries are. Almost everything is imported and there is a huge reliance on foreign aid in order to survive. They are dependent on the developed world for their mere existence. Despite the vast land areas, there is a huge underutilization in agriculture and manufacturing sectors.

Last Question: When is your next vacation? Adventurous Africa or irresistible Ireland?

I have no immediate plans, but I have several ambitions such as climbing Kilimanjaro and Mount Kenya and also to see the Rwandan mountain gorillas.

Safeguards for housings

Sealants were used many hundreds of years ago. Building with mortar and tar or pitch as a sealant, and naturally occurring bitumen and asphalt materials have been widely accepted as sealants for many centuries. Prior to the 1900s most sealants evolved from vegetable, animal, or mineral substances. The development of modern polymeric sealants coincided with the development of the polymer industry itself, sometime in the early 1930s. Sika introduced elastic 1C PU sealants as first company in 1968.

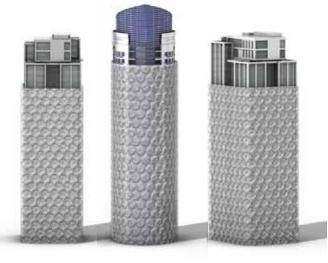
Joint sealants are used to seal joints and gaps between two or more substrates, and are a critical component for building design and construction. The main purpose of sealants is to prevent air, water, and other environmental elements from entering or exiting a structure while permitting limited movement of adjacent building elements. The use of sealants and adhesives allows for greater innovation in building design, along with increased durability of structures and a reduction in material consumption for the construction of the facade and windows.

Sika now has launched a new range of joint sealing solutions to complete its range of commercial building envelope solutions. In meeting the high performance standards expected by building owners, architects and specifiers, the new SikaHyflex[®] joint sealants are highly durable, cost effective and will enable a "one stop shop" for all commercial building applications. The new weatherproofing products for sealing facade and roof joints in building envelopes do not only meet the most demanding building codes and standards, and exhibit an outstanding longevity, but also come with long-term warranties.

> In order to get long-lasting building envelopes, sealants have to have an outstanding UV and weathering resistance

Owing to cost pressure, growing requirements for reduced energy consumption and a lower carbon footprint, as well as increasing demands on the quality of living and working environments, construction materials for facades have changed in recent years and their number has increased significantly. Professional SikaHyflex[®] sealants ensure permanently tight sustainable building envelopes and thus contribute significantly to reduced consumption of heating and cooling energy in buildings.

SikaHyflex[®] products are designed to meet the increased requirements high performance sealants have to fulfill today. They adhere to all kinds of substrates and have an extremely high movement capability in order to absorb large movements. The sealants exhibit an exceptional durability due to their outstanding UV and weathering resistance. It is a pity that the people from hundreds and thousands of years ago did not have the possibility of using these sealants. This would be a new boom in cultural tourism for historical buildings. And maybe even we would have more than seven new Wonders of the World. Some buildings just would have lived much longer.







Waterproofing: The Proof is in the Grid

Regarded by some as the financial and commercial hub of Canada and one of the most densely populated cities in the country, Toronto and its 2.6 million residents, according to the 2011 Census, is currently the fifth most populous city in North America. Bringing those sets of information together along with the skyrocketing per-square-meter cost of real estate in major cities and you have the perfect equation for mixed-use, high rise and below-grade construction. One challenge of which is obviously to keep the water out of the foundations, basements and other underground facilities.

As developer and builder, Madison Homes is currently constructing two, 33 and 30-storey condominium and commercial complexes, representing a gross floor area of 62,927 m². Amongst the other amenities, including ground floor retail space and luxurious suites in the towers themselves, the basement is being built to house almost 1000 cars on 5 subterranean levels. To ensure that the parking garage and the entire below-grade structure remain dry and operational all year round, Kirkor Architects & Planners and Madison Homes elected to use SikaProof® A as the waterproofing system. After years of successful applications across the world, on a wide variety of projects ranging from individual housing to full-scale residential and commercial complexes, SikaProof® A comes to North America. The reasons why SikaProof® A was selected, rather than better known and established systems, were numerous, starting with Sika Canada's reputation for providing technically advanced and proven systematic solutions, rather than just products. Next was SikaProof® A's fully- and permanently-bonded, embossed Flexible Polyolefin (FPO) membrane. laminated with the innovative Polyolefin (PO) Sika[®] Grid Seal Technology sealant grid, and a non-woven, polypropylene (PP) fleece.

The system's ability to withstand ground water contaminants and create a watertight structure, thanks to the Sika[®] Grid Seal Technology, paved the way for Sika's membrane to be applied on a total surface of 12,540 m². In conjunction with the applicator, Alliance Waterproofing, Sika Canada was able to offer a warranty that matched the competition and alleviate any worries the owners and construction team may have had about using a system unproven in Canada.

Furthermore, Sika brought added-value to the project through a globally acquired expertise, supported by highly experienced and trained professionals, available at every stage of the project.

To date, the installers are very pleased with SikaProof[®] A's ease of application, the system being cold-applied and able to withstand the fixing of steel reinforcement together with the pouring of concrete. Despite the tight work schedules and poor weather conditions, the installation team has not experienced any problems and remain very impressed with the system.







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Sika' international newsletter to customers

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Two Solar Awards

Sika recently received two awards at this year's SNEC Solar Exhibition and Conference in Shanghai, China. One wasthe "Top 10 Highlights—MWAward" for "Sikasil®AS-780 – the liquid tape" and the other the "Best Poster Award – PV Modules" for the poster presentation by Michael Niederfuehr entitled "High initial green strength adhesives – A way to reduce process costs and increase product durability". These two awards show that adhesive technology and its potential for the PV sector have been well recognized by experts and the industry.

The key message in both cases was the potential that adhesive technologies offer for reducing costs, optimizing processes and increasing durability. Using suitable adhesives, the PV module industry can achieve these advantages by bonding back rails or other mounting devices to modules during module production.

Sikasil®AS-780 combines the exceptional long-term performance of a structural silicone used in the facade industry with the process ability of an adhesive with high tack and high green strength. The initial green strength and strength development is much higher than with existing silicone technologies. The product permits bonding of the mounting devices and handling of the assembled parts within the standard production lines and cycles without the need for any large buffer zones or pre-fixation devices. This produces material and labor savings of up to 25% compared to common framing and mechanical installation systems, and installation time is reduced by as much as 40%. At the same time Sikasil®AS-780 meets the requirements of the EOTA ETAG 002, the severest structural glazing standard for facades, which stipulates a lifetime expectation of at least 25 years on the tested system. With the corresponding joint geometry, the bond will last for decades under harsh environmental outdoor conditions exposed to UV, rain and heat as well as under wind and snow loads.

