

AMBITIONS

A DIVE INTO SIKA'S WORLD



WORLD VIEWS

The city-state Singapore has seen an enormous transformation from a fishing village to one of the most prosperous nations on earth

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SECURITY

Earthquakes – a vast improvement of safety

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REMEMBRANCE

It was at the Reflecting Pool where Martin Luther King gave his "I Have a Dream" speech to a quarter million people

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WATERFUN

For wellness lovers as well as for fun seekers! Visit this huge water park with the largest amount of indoor attractions in Czech Republic!

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BUILDING TRUST



The room before and after fun and wellness: hairdryers and changing rooms inside Aquapark Moravia



SECURITY.

Common perceptions of security can be poorly mapped to measurable, objective security. For example, the fear of earthquakes has been reported to be more common than the fear of slipping on the bathroom floor although the latter harms many more people than the former. Similarly, the perceived effectiveness of security measures is sometimes different from the actual security afforded by those measures. The presence of security protections may even be taken for security itself.

So the perception of security and risks depends not only on general psychological mechanisms but also on cultural and social factors. Risk is never an objective phenomenon, but always "negotiated" or "constructed" within society, based on cultural backgrounds. But what does security mean in our everyday life? And isn't it necessary as well to look at the mental security every human being needs to feel at ease? Though this is probably not something that springs to mind, construction chemicals can play a pivotal role in providing security. This is clearly illustrated by New Zealand, where, in the wake of several earthquake disasters, the buildings were seismically retrofitted with structural strengthening systems (p. 23). Even after major tremors, the reinforced buildings showed only minor visible damage.

Apart from all the strengthening refurbishment work, the Romuald Burkhard Foundation also takes care of child earthquake victims in Chile by giving them residential shelter (p. 40). Addressing another form of mental security, the Sika Ride UK sponsored cycling event raises much-wanted donations for Macmillan Cancer Support, a charity that provides shelter and advice for numerous people in need (p. 43). Security has many facets. We can all begin with ourselves and start by creating security for the disadvantaged around us.

Yours sincerely,



ASTRID SCHNEIDER



ASTRID SCHNEIDER
Marketing & Product
Communications Manager
Sika Services

CONTRIBUTORS



PAVEL ŠRENK
Business and Technical
Representative,
Sika Czech Republic

I work in Sika Czech Republic for two and a half years. I am satisfied that I can work in a team, where I can implement great projects and I feel fortunate that I could work on the Aquapark Moravia project.



DUNCAN ROBERTSON
Marketing and Communications
Manager, Sika New Zealand

Before I worked as a Creative Director and I joined Sika 12 months ago. The two main Christchurch Earthquakes were so violent I felt them at my Auckland desk, nearly 1,000 kms away. "2014 is the year that construction will finally start to replace demolition in this beautiful city.



MARVE SLAG
Marketing & Communication
Specialist, Sika Netherlands

The Dutch library was one of the first projects including the Sika Comfort floor System. In collaboration with the architect we got the opportunity to design and develop all floors. This was the perfect opportunity to show the designer world what added value we can provide.



JUNIA KOMALAWATY
Personal Assistant, Sika Singapore
It's been a real pleasure to work for Sika for the last 6 years. There have been plenty of learning experiences in a nice working environment.

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Editors' address: Sika Services AG, Corporate Marketing, Tüffenwies 16, CH-8048 Zurich, Switzerland, e-mail: ambitions.magazine@ch.sika.com

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Visit us on the Internet: www.sika.com

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A WATER PARK LIKE A ROMAN BATH

Pálava in Southern Moravia in Czech Republic is not just a great place for strolls in nature and getting to know Moravian wines! With **AQUALAND MORAVIA** a huge water park with the largest amount of indoor attractions in the country was built. The swimming pools with geothermal water at temperatures up to 46°C include the widest range of water slides and extreme water games; for wellness lovers there is a sauna, massages, jacuzzi and lots of hydromineral procedures. The complex also includes restaurants, shops and parking.

TEXT: PAVEL ŠRENK, MAREK SVABENIK, JANA JEDLICKOVA
PHOTO: ZDENĚK NÁPLAVA

> CONSTRUCTION

The first Czech thermal complex, as Moravia's biggest water park is also known, took just one year and a quarter to build. During this time a fully functional recreational center, 12 swimming pools, 20 chutes and slides, a restaurant, bars, a wellness zone and further water attractions rose on an area nearly the size of ten football fields.

Many of the attractions are the only ones of their kind and took sophisticated capabilities and a great deal of patience to build. Simply developing the architectural plans and accompanying documentation was relatively difficult. Precise coordination was needed to keep every detail of the challenging project in harmony. The design of the structure with its scattered attractions has a very airy feel and seamlessly links interior with exterior.

INTERIORS

Designing the interiors was an integral part of the project. Given the nature of the project, it was important that the surfaces be not just esthetically pleasing, but also fully functional. The need to keep all parts in perfect harmony gave rise to special requests for the color and function of the floors. Sika® ComfortFloor® was used in the restaurant and bar area.

The polyurethane resin screed system's attributes and tread characteristics make it ideal for surfaces where many users will be barefoot. Warm colors were chosen to give the interior a pleasing finish. The Sika® ComfortFloor® polyurethane system was also used in the locker rooms, where it ideally complements and lends a sense of warmth to floors with a more subdued feel.

The functional requirements and easy maintenance made it an easy choice for this area. Sika flooring systems were also used for service areas and stairways, primarily for their mechanical and chemical durability and easy maintenance characteristics. >







> **WALLS**

The architects' design for the interior walls was an important element of the project. OSB (Oriented Strand Board) wall panels give the surface a distinctive appearance that enlivens visitor areas with a natural irregularity. The edges of the walls, by contrast, are left smooth, creating a visual frame around the OSB surfaces. Coated with Sikagard®-675 W ElastoColor colored coating, this frame

harmonizes with the color of the floor. The concrete surfaces look like OSB elements and are protected by a layer of Sikagard®-680 S transparent protective coating.

DETAILS

The carefully harmonized details of each structure and surface are a key factor in the pleasing overall impression left by the interior. A nearby ancient Roman ar-

chaeological site is a point of interest, now complemented by a new wellness center in the style of a Roman bath. The building as a whole offers entirely new recreational opportunities in the region and is successfully serving guests.

Aqualand Moravia was built right on the site of the ancient Roman baths at Novomlýnské nádrží. Roman baths were part of the day-to-day life in Ancient



Lockers in the entrance room

THE STRUCTURAL DESIGN WITH ITS SCATTERED ATTRACTIONS HAS A VERY AIRY FEEL AND SEAMLESSLY LINKS INTERIOR WITH EXTERIOR





Rome. These Roman houses had water supplied via lead pipes. However, these pipes were taxed according to their size; many houses just had a basic supply and could not hope to rival a bath complex. Therefore for personal hygiene, people went to the local baths. The local bath complex was also a gathering point and served a very useful community and social function. Here people could relax, keep clean and keep up with the latest news.

Taking a bath at that time was not a simple chore. There was not only one bath to use in a large complex. A visitor could use a cold bath (the frigidarium), a warm bath (the tepidarium) and a hot bath (the caldarium). A visitor would spend some of his time in each one before leaving. A large complex would also contain an ex-

ercise area (the palaestra), a swimming pool and a gymnasium.

The building of a bath complex required excellent engineering skills. Baths required a way of heating up water. This was done by using a furnace and the hypocaust system carried the heat around the complex.

Watch <http://www.youtube.com/watch?v=RBlwZ7KRMXk> to experience some of the aqua park's water slides and visit the website <http://www.aqualand-moravia.cz/> and search for touristical options at <http://www.czechtourism.com/s/pasohlavky-aqualand-moravia/>

Learn more about Sika Czech Republic at <http://cze.sika.com/>



IT OFFERS ENTIRELY
NEW RECREATIONAL
OPPORTUNITIES IN THE
REGION AND IS SUCCESS-
FULLY SERVING GUESTS



RETRACING THE HISTORY OF THE LINCOLN MEMORIAL REFLECTING POOL

The Lincoln Memorial is an American national monument built to honour the 16th President of the United States, Abraham Lincoln. It is located on the National Mall in Washington D.C. across from the Washington Monument. The architect was Henry Bacon and the sculptor of the primary statue – Abraham Lincoln, 1920 – was Daniel Chester French. Dedicated in 1922, it is one of several monuments to a US president.

TEXT: RENEE MINIERI
PHOTO: MISC.





MORE THAN 113.6 BILLION LITRES OF THE CITY'S POTABLE WATER WERE NEEDED EACH YEAR TO REPLENISH THE OLD POOL

> The building is in the form of a Greek Doric temple and contains a large seated sculpture of Abraham Lincoln and inscriptions of well-known speeches by Lincoln. The Lincoln Memorial Reflecting Pool, Washington's largest, is situated right next to the monument. The reflecting pool is long and can be seen in countless photographs of the Washington Monument. With paths and trees on both sides, it is a popular place for exercisers. Reflections of both the Washington Monument and the Lincoln Memorial can be seen in the water.

Located right in front of the Lincoln Memorial, the reflecting pool has witnessed many famous events. In 1939, singer Marian Anderson was not allowed to perform in the Constitution Hall in Washing-

ton on grounds of her race. Instead, she sang on the steps of the Lincoln Memorial on Easter Sunday. Over 75,000 people went to the reflecting pool area to hear her. President Franklin D. Roosevelt and his wife Eleanor helped make her concert at the Lincoln Memorial possible.

In 1963, the March on Washington for Jobs and Freedom held a large Civil Rights rally around the reflecting pool. This was where Martin Luther King gave his "I Have a Dream" speech to a quarter million people standing around and in the reflecting pool.

The reflecting pool is exactly on the west side of the National Mall. It is about 618 m long and 51 m wide, around 46 cm deep on the sides and 76 cm deep in the mid-

dle. Completed in 1924 and demolished in 2009, it held 25.5 billion litres of water, much of which evaporated or continually leaked from the pool. More than 113.6 billion litres of the city's potable water were needed each year to replenish the old pool, which became cracked and fragile over the years.

It was built with an asphalt and tile bottom on poorly supported soil, consisting primarily of marshes. The unstable subgrade had deflected 30.5 cm over the past 90 years under the pressure exerted by the reflecting pool above. In 1980, a new concrete slab was poured over the existing one, but the added weight simply worsened the soil settlement, causing subsequent leakage.



The reflecting pool still radiates the energy of its meaningful events which took place in the past

It was imperative to stabilize the sub-grade and to minimize the settlement potential to the new reflecting pool structure. A watertight concrete mix design by Sika USA was required to meet all the project specifications for durability, shrinkage and water tightness. To ensure the water tightness of the entire project, a cost effective and efficient joint sealing system was also needed. To stabilize the pool, 2,133 timber piles were driven into the bedrock to provide more stable support. The concrete specifications called for a highly durable, watertight concrete, with minimal shrinkage. And so the reflecting pool is poised to add to an already rich history of unforgettable events, as locals and guests alike meanwhile enjoy their morning sports and evening work-outs in the surrounding park.





Skyline of Singapore with Marine Bay Areas in the middle

WHAT ABOUT SINGAPORE?

Singapore is a city-state in the center of Southeast Asia. Founded in 1965, the country is less than 50 years old. About 700 km² in size and with a population of 5.5 million people, it has seen an enormous transformation from a fishing village to one of the most prosperous nations on earth. Much of the meteoric rise can be attributed to the foresight and determination of its founding father and first prime minister Lee Kuan Yew. He put in place the necessary efficient institutions, built good relations with neighboring states, and ruled with an iron fist.

TEXT: JUNIA KOMALAWATY

PHOTO: LIM LIAN HAI, JUNIA KOMALAWATY, TESSY REUMER



- > Present-day Singapore is a modern state with the world's best airport, countless skyscrapers, a state-of-the-art mass rapid transport system and a high standard of living. We wanted to take a look behind the scenes and so met up with Roland Mathys, the General Manager of Sika Singapore.

What is your job about?

As the General Manager of Sika Singapore I head a small team of 20 people. In addition, I also hold the position of Target Market Manager Concrete for Asia Pacific. But my main focus now is clearly on Singapore, where Sika has been present since 1978. Despite being established here for so long, the company is still comparatively small. One of the reasons for this is that Sika Singapore has up to now been operating as a trading company

without its own production facilities, which put some restrictions on growth. That's why in early 2013 I recommended the acquisition of leading dry mortar producer LCS Optiroc Pte Ltd. In mid-December 2013, Sika agreed to purchase this company.

This will certainly bring us to the next level and make us the leader in the Singapore market. I personally spend a lot of time visiting customers together with my staff, and my key challenge is to build a team that can bring the company to this next level in an environment where the labor market is very tight and job opportunities in more glamorous sectors are available in abundance.

Singapore is known for its variety of cultures and diverse population. As a

sovereign city-state and island country it has a unique status among its South-east Asian neighbors. What makes it special in your eyes?

Singapore is indeed amazing and special in many ways. As a Swiss, I am used to pretty high standards when it comes to infrastructure, working institutions and safety. But I would say that Singapore tops all of that!

Singapore's government, which is dominated by one party (PAP – People's Action Party), has created a very pragmatic and efficient administration and runs the state like an enterprise. That's why it is sometimes referred to as Singapore Inc. While the country is a parliamentary democracy, the average person on the street is not politically minded. The



Gardens by the Bay – one of the most popular parks in Singapore

- > written deal is that as long as the government manages to create economic growth, provide a mechanism for wage increases and assure good living conditions, the citizens will keep quiet.

Two more remarkable factors worthy of mention are Singaporeans' love of food, and the genuine diversity of the population. While the majority are ethnic Chinese, there are substantial groups of Malays, Indians, Indonesians and many others. The government has managed to maintain an impressive degree of racial harmony among the various ethnic groups, not least by handing out draconian punishment for racist behavior or activities.

And of course one of the real highlights is the variety of food in Singapore. You

can eat an entire meal at a food stall for CHF 3, but of course you can also dine at a Michelin-starred restaurant. Whichever side of the spectrum you choose to eat at, you can savor any cuisine that this planet has to offer!

What do you enjoy most about your surroundings in Singapore? Have you become an island hopper during your vacations?

Singapore is located in the center of Asia. That makes it convenient to reach anywhere in Asia within just a few hours, not just the islands. But since you mention islands, there are two that my wife and I regularly visit.

One is Phuket in Thailand, where we go when we need to relax. We have found

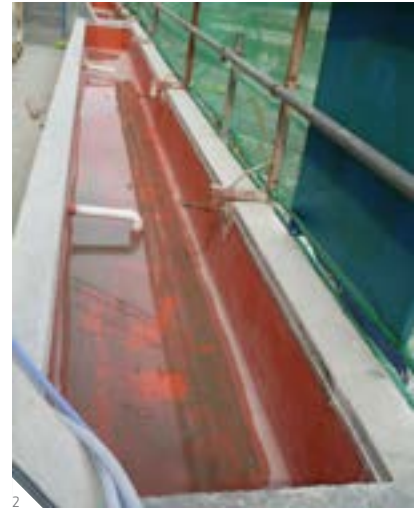
a nice, secluded stretch of beach, away from the mass tourism, where we try to unwind from time to time. The other is Bali in Indonesia, where we go more for the culture. My wife supports a number of local artists, and this gives us an opportunity to spend a few days there occasionally.

On the subject of economics, Singapore and Southeast Asia offer a very versatile and demanding environment for multinational companies. Where do you see the chances?

I must say that the opportunities are tremendous in Asia. GDP growth rates are above 6% on average, a new middle class is emerging, and demand for all sorts of goods and services is growing fast. More than 40% of total global con-



1 Sarnafil Green Roof 2 for HDP Multi-Storey Carpark (public housing)



2 Sarnafil Membrane for Planter Box at Marina Bay Sands

3 Sikafloor for SAESL (test bed area)



struction spending is in Asia, with the lion's share in China, Japan and India. But smaller countries such as the Southeast Asian nations are also showing staggering growth rates in the building industry. There are three main drivers: first, the favorable demographics with a huge population below 20 years of age, second, an almost unlimited need for infrastructure such as power plants, ports, airports, roads and railways, and third, an urbanization drive on a scale never seen before in human history. So to sum up: if you want to work in an environment where everything is growing at tremendous speed, Asia is the right place.

Singapore's economy has been ranked as the most open in the world, the least corrupt, the most pro-business, with

low tax rates (14.2% of gross domestic product [GDP]) and the highest per-capita GDP in the world. All this sounds really positive. Is there a catch? And what is the outlook for Singapore in your opinion?

Yes, it is astonishing to see the meteoric rise in prosperity and the establishment of world-class institutions over the last 50 years. The problem now is that it is difficult to top that, which creates a feeling of "it can only get worse"! As I mentioned earlier, the citizens expect things to get better every year, which poses an immense challenge to the government.

A further challenge is that the current economic tide is no longer lifting everyone the same way. In other words, the wealth gap is growing wider and more

and more people are not earning enough to make a living.

But I have to say, since it was formed in 1965, Singapore has re-invented itself a few times through economic restructuring, and I am pretty confident that this will happen again.

Singapore will certainly not be able to grow at the same pace as its less developed neighbors, but I am convinced that things will turn out well for this amazing island.

There are quite a number of substantial construction projects outlined for the next 15 years, such as the relocation of the Singapore port (the world's second busiest) to free up space for residential developments, and various studies un-



Leadership Team at Sika Singapore with General Manager Roland Mathys in the middle

> derway to look into expanding the city downwards under the ground, just to name two.

How about the construction market? Where does Singapore need Sika?

We have some great opportunities in Singapore, especially now with the acquisition of LCS Optiroc Pte Ltd. When you look at the impressive skyline, it would not necessarily occur to you that the many methods and solutions used in Singapore are not the latest and most advanced ones. We therefore spend a lot of time introducing state-of-the-art solutions and systems into the market. One of them is SikaProof® A, designed to permanently stop leaking basements, which at the moment is the most common cause of damage to residential buildings. We are also teaming up with government bodies and the Singapore Institute of Architects to train and further educate the industry.

Are there any extraordinary Sika projects you would like to tell us about?

Of course, Sika products were used on many of Singapore's iconic buildings. A few years back, Singapore built two in-

tegrated resorts with casinos (Marina Bay Sands and Resort World Sentosa). Sika was significantly involved in both of these, mainly with roofing, waterproofing and coating solutions.

More recently, we completed a number of flooring jobs, including more than 30,000 m² for a Rolls Royce jet engine assembly plant in the north of Singapore.

Still ongoing is the iconic Sports Hub, a new national stadium and sports center scheduled to start operation in 2014. Among the products we supplied was a tailor-made 1 mm thick PVC membrane, which helped ensure that all the parameters were met and the necessary approvals obtained.

Let's not forget our industry business, which is currently engaged in various marine projects and is also the sole supplier for the approximately 700 additional buses built in Singapore to cater for growing public transportation needs.

Where is Sika Singapore heading in 2014?

One of our key activities will be to integrate the new acquisition and unlock as

many synergies as possible. Besides that, we will have to continue driving the solid progress we made in past years. To profit from the major infrastructure projects is a key priority, in addition to building and training our Sika team further.

The appeal of Singapore and the opportunities the country offers mean that basically any global and regional competitor you can think of will have established offices here. So the competition is always fierce. But we are ready to go confidently into 2014 and face it.

What do you personally wish Singapore for the future?

As I mentioned before, things are pretty good here. The abundant opportunities have meant that people put a lot of emphasis on money and material possessions. It's very often all about the newest car, the latest gadget or the must-have designer label. While it sounds a bit idealistic, I would hope that people here could balance this a bit more with other important things in life, such as family, care and compassion.



THE RIGHT CHEMICALS FOR HONEYMOONERS

Seychelles (officially the Republic of Seychelles) is a 115-island country spanning an archipelago in the Indian Ocean, some 1,500 km east of mainland Southeast Africa, northeast of the island of Madagascar. Other nearby island countries and territories include Zanzibar to the west, Mauritius, Rodrigues, Agaléga and Réunion to the south, and Comoros and Mayotte to the southwest.

TEXT: SEBASTIEN DEBETENCOURT
PHOTO: SEBASTIEN DEBETENCOURT



> Numbering an estimated 86,500 inhabitants, Seychelles has the smallest population of any African state. It has the highest Human Development Index in Africa and the highest income inequality in the world, as measured by the Gini index. Seychelles is also a member of the African Union.

The most beautiful of beaches, white sand and rich aquatic life combined with a varied tropical environment with almost 100 endemic plants attract some 200,000 tourists and honeymooners a year. Most likely many of us would wish to be right there now when we close our eyes. Besides all the natural attractions, Seychelles offers extraordinary overnight

accommodations, one of which is about to celebrate its opening: the luxury 5-star Savoy Resort & Spa Seychelles, situated in Beau Vallon, one of the most celebrated bays north of Mahé, the main island of the Seychelles archipelago. The hotel boasts 163 luxurious suites and rooms.

To make this holiday dream come true, Sika Mauritius supplied a variety of products ranging from green roof membranes, facade water repellent, and tank, pool and roof waterproofing to epoxy flooring. These mainly large-area applications were very diverse, making the project a highly interesting challenge.

As it is often the case with major proj-

ects in Seychelles, the team was a very international one, with the promoter from Russia, the project manager from Tunisia, the architect from Indonesia, the main contractor from Seychelles, the engineer from Russia, the quantity surveyor from India, and suppliers from all over the world. And with most of the laborers on construction sites in Seychelles coming from India, Hindi and English are the main languages spoken on site. Both the scope of the project and the technical specifications were unique.

Savoy Resort & Spa was an upmarket project requiring high standards of product quality and technical support from all the suppliers involved. Most of the proj-

THE CLIENT AND HIS TEAM GREATLY APPRECIATED SIKA'S HONESTY AND PROFESSIONALISM



Training with Sikalastic 850W at the construction site

ect specifications were for waterproofing and roofing. An eco-friendly roofing solution was stipulated, with green roofs on more than 5,000m² of residential area as well as on some of the exposed roofs covering the technical rooms. The pool bar design included a flat exposed roof and a dome roof, with PVC membrane specified.

Applications such as these are technically quite intricate, especially the green roofs requiring several underlayers such as a filter, and drainage layers placed under the final root-resistant PVC membrane. The demand for green roofs is very low in the region owing to the high costs entailed and the complexity of the complete system.

The client benefited from Sika's know-how, a case in point being the recommendation to shift from an acrylic-based liquid compound to a double-layer bituminous roofing membrane so as to guarantee a long-lasting system. Specifications for the waterproofing of the bathrooms were also revised by Sika Mauritius to allow the contractor to employ a fast-application ready-for-use product not requiring a power supply. The client and his team greatly appreciated Sika's honesty and professionalism in suggesting the most suitable solutions for the client's particular needs. As there are only a few skilled and specialized experts in Seychelles, Sika committed to providing training in the application of all the Sika

products supplied, as well as to supervising progress on a regular basis.

Now everything's ready and everyone, not just honeymooners, can go there and enjoy this wonderful hotel complex. You will discover that Seychelles is just as beautiful beneath the water as above it. Seychelles is, by the way, the oldest and only mid-ocean granitic island destination in the world that offers both granite-based reefs as well as the more common carbonate tropical reefs, both flourishing with diverse marine life.



EARTHQUAKE STRENGTHENING SOLUTIONS FOR NEW ZEALAND

Earthquakes can be utterly destructive and occur by the thousands every single day around the world, usually in the form of small earth tremors. Scientists assign a magnitude rating to earthquakes based on the strength and duration of their seismic waves. A quake measuring 3 to 5 is considered minor or light; 5 to 7 is moderate to strong; 7 to 8 is major; and 8 or more is great.

TEXT: DUNCAN ROBERTSON
PHOTO: DUNCAN ROBERTSON



Auckland's Grafton Bridge, the world's largest single span reinforced concrete arch bridge when constructed in 1910, has continued its history of innovation by using Sika CarboShear technology in its 2010 strengthening. Sika CarboDur® plates provide flexural and shear strengthening

> Some 80 percent of all the planet's earthquakes occur along the rim of the Pacific Ocean, called the "Ring of Fire". On average, a magnitude 8 quake strikes somewhere every year and approximately 10,000 people die in earthquakes annually. Collapsing buildings claim by far the most lives, but the destruction is often compounded by mud slides, fires, floods, or tsunamis. Security can be improved through emergency planning, education, and the construction of buildings that sway rather than break under the stress of an earthquake.

In early September 2010, Christchurch, New Zealand's third largest city, was struck by a magnitude 7.1 earthquake. As violent as that quake was, the city miraculously escaped without any direct deaths or major damage.

But just six months later, on 22 February 2011 a second large earthquake struck. Even though this one was smaller (6.3 magnitude) than the earlier one, it was far more damaging because there was very high "ground acceleration". Ground

acceleration measures how much and how fast the ground, and the buildings on it, move during an earthquake.

185 people died in this second earthquake and 164 people were seriously injured. Many of Christchurch's stone and brick heritage buildings were badly damaged. In total up to 100,000 buildings were damaged and 10,000 of them needed to be demolished. The total cost to insurers of rebuilding is estimated to be \$40 billion.

A "REAL WORLD" TEST FOR SIKA STRUCTURAL STRENGTHENING SYSTEMS

Prior to the earthquakes, the Christchurch Arts Centre was in the process of being restored. Considered the cultural centre of Christchurch, the Arts Centre is one of the city's most significant heritage sites. It was established in 1873 as the University of Canterbury and is one of the New Zealand's best examples of Gothic Revival architecture.

With a Category 1 rating from the New Zealand Historic Places Trust, the Arts



MARC STEWART
Project structural upgrading engineer for Sika New Zealand's FRP installation experts BBR Contech with another completed seismic strengthening project in Wellington.

Centre's restoration plan required meticulous attention to detail and compliance with the highest standards of conservation practice. This extended to the earthquake strengthening project at the former Arts School building.

Working closely with main contractor Fletcher Construction and structural engineer Holmes Consulting Group, Sika New Zealand's installation experts BBR Contech strengthened five of the Arts School building's key internal walls with Sika's fibre reinforced polymer (FRP) technology.



185 people were killed and over 100,000 buildings were damaged in the 2011 Christchurch earthquake – one of the nation's deadliest peacetime disasters

- > FRP offers a number of significant advantages to restoration projects such as this. Lightweight and with thicknesses of just 0.5 mm to 1.5 mm, it's easy to apply while offering an impressive strength-to-weight ratio. It's also corrosion resistant and can be covered with a variety of plaster finishes and coatings making it ideal for heritage building structural strengthening projects where the goal is to achieve a close-to-original finish.

“Because this is an historic building, we were required to remove then replace the original wall linings,” says John Hare, Director of Holmes Consulting. “Using FRP with an applied thickness of just 3mm enabled us to do this with little impact on the existing linings.” After some rebuilding of the underlying original volcanic basalt stone walls, BBR Contech applied

200m² of SikaWrap®. The internal linings were then reinstated to return the rooms to near-original condition with no visible sign of the restoration work beneath.

Then came the big earthquakes. The 7.1 magnitude earthquake and the devastating 6.3 earthquake just six months later subjected the strengthening work at the Arts Centre to dramatic real life testing under extreme seismic loads. The strengthened buildings performed very well and to expectations. The former Arts School was one of the few buildings on site to suffer only minimal damage.

EARTHQUAKE STRENGTHENING MAKES THE FRONT PAGE

Earthquakes are not uncommon in New Zealand, yet many of the country's heritage buildings lack “earthquake resis-

tant” structural strengthening. The New Zealand Government estimates there are 15,000 to 25,000 at-risk buildings in the country. A national register of these buildings is being compiled and building owners have been negotiating with the Government to establish a deadline for when these buildings will have to be either structurally strengthened or demolished.

The risk of future earthquakes will not diminish either – there have been over 13,000 aftershocks in the Christchurch area alone since the first major quake in 2010.

In July and August 2013, Wellington, the nation's capital city, was hit by two strong (6.2 and 6.3 magnitude) quakes. They were the most significant earth-

FACT PANEL

New Zealand has an estimated 15,000 to 25,000 "at risk" buildings 8% to 15% of building stock is earthquake prone.

Most of these structures were built between 1880 and 1935.

The New Zealand Government is proposing a tough new strengthening regime.

The Government wants 193,000 major structures assessed by 2018. Affordability is a huge issue for building owners.

THERE HAVE BEEN OVER 13,000 AFTERSHOCKS IN THE CHRISTCHURCH AREA ALONE

quakes Wellington had experienced in decades. Even though damage was minimal, these quakes were a sharp reminder to commercial building owners and politicians of the need for urgency in seismic strengthening.

Not all commercial building owners were waiting for the Government's lead however. In December 2013 Wellington's main newspaper the Dominion Post ran a front page story on Sika's strengthening system being installed in a heritage building in the city.

Newspaper Story (edited):

"Like many Wellington buildings, 61 Thorndon Quay is below what is considered safe in a quake, meeting about 50 per cent of the new government building standard. The company which recently bought the building, wants to convert it into a new apartment hotel complex, and aims to get it up to 70 per cent of the standard. The building's columns however don't have enough ductility, which means they could crack in a quake."

Project structural upgrading engineer Marc Stewart says steel is what provides the flexibility for columns to survive a quake. "But the ones at 61 Thorndon Quay don't have enough of it. In a quake they would stay rigid, and seismic force would shake and crack them. Until the 1990s, the most common way to strengthen columns such as these was by adding more steel and concrete to them. You lose some of your inside space, and you're adding mass to the building, so it's strengthening for the sake of strengthening," Mr Stewart said.

Now, steel is often replaced with something different – a carbon-fibre weave wrapped around columns and stuck in place with epoxy glue. The wrap works in the same way as steel, by allowing the

column to move with the quake, absorb its energy and dissipate it. BBR Contech installed the carbon fibre, developed by building technology company Sika, on four floors of the building. It will also be used on some of the ceiling beams, which need work after the interior is remodelled.

The wrap can also be inserted into unreinforced masonry, or used on the exterior of a building and covered with facade – a possibility for some of Wellington's heritage buildings needing work."

Link to full newspaper story:

<http://www.stuff.co.nz/dominion-post/business/9446434/Wrapping-a-building-can-be-quake-saviour>

HERITAGE BRIDGE STRENGTHENING USING CarboDur®

When it was completed in 1910, Grafton Bridge was at the forefront of construction technology, boasting the world's largest single span of reinforced concrete.

The 296-metre-long bridge, which soars 43 metres above Auckland's central city Grafton Gully, has attracted international acclaim as an engineering structure of unique value.

Almost 100 years after it was built, the bridge was strengthened as part of the Auckland Central Connector transport project. This has provided it with essential seismic resistance (enabling it to withstand a one-in-1000-year earthquake) as well as the capacity to carry increased bus traffic and cope with future transport innovations such as light rail – all without altering the bridge's appearance.

As part of the strengthening project, over 600 metres of Sika CarboDur® FRP

strips and 830 CarboShear L plates were attached to the bridge structure. The CarboDur® strips were applied to the underside of the beams to provide additional mid-span moment resistance. The CarboShear L plates were installed in pairs around the beams and up into the deck slab to improve shear performance.

Completed well ahead of schedule, the work has once again placed this iconic structure at the forefront of concrete construction technology, ensuring that the grand old bridge will continue to serve Auckland for many generations to come.

EXPERIENCE THE STRENGTH OF SIKA'S FRP SOLUTIONS ON YOU TUBE!

A panel of unreinforced fibreboard breaks easily when 50 kg is placed on top. But after being reinforced with CarboDur®, a same sized panel will support 150 kgs plus 80 kgs of Navindra from a Sika warehouse.

<http://www.youtube.com/watch?v=XSxb7yKME8s>

This video uses two thin concrete beams, one reinforced with a single strip of CarboDur®. While the unreinforced beam won't support the weight of one person, the CarboDur® strengthened beam supports seven people easily.

<http://www.youtube.com/watch?v=2U3CHLp1v7E>

"One key strength of these videos is that the core message of how exceptional our FRP products are under load can be easily understood in just a few minutes by anyone from commercial building owners to architects or structural engineers," says Peter Withell, General manager of Sika New Zealand.

COLORFUL ARCHITECTURE IN BERN, SWITZERLAND – THE MODERN MEETS THE HISTORIC

Anyone wanting to visit Bern's Historical Museum and planning to arrive by public transport is in for a truly red experience when they get to the station.

TEXT: JEANNINE LEUPPI
PHOTO: RICARDO GOMEZ, FLORIAN KOHLER

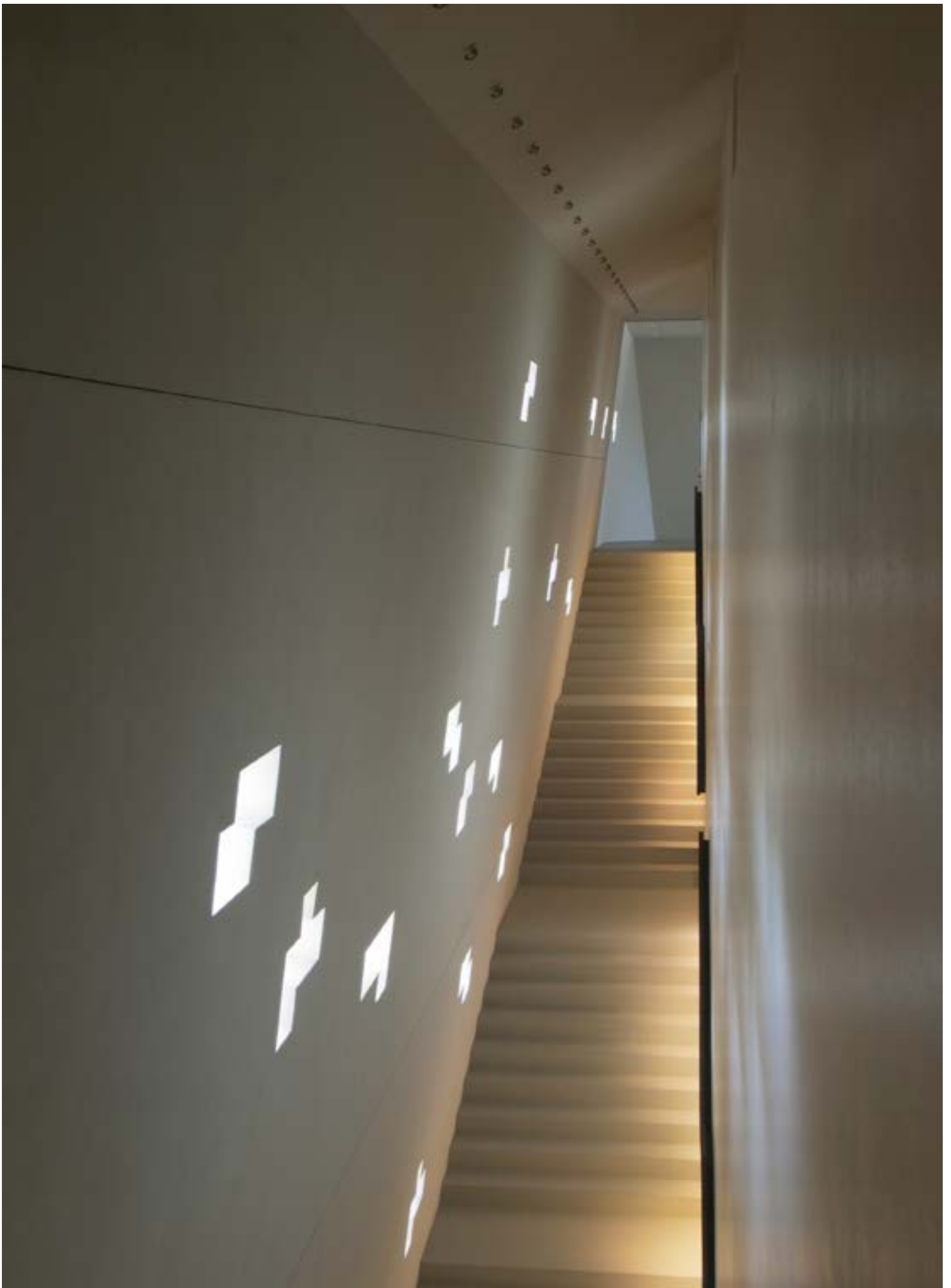


A MAJOR 16-MONTH RECONSTRUCTION PROJECT WAS COMPLETED

- > Bern Station Square is one of the most important hubs in the Swiss capital of Bern, accommodating public transport, cyclists and pedestrians, as well as being home to Bern train station, the second busiest in Switzerland. A major 16-month reconstruction project was recently completed to bring the square into line with state-of-the-art standards and to give it the aesthetic appeal that befits the gateway to Switzerland's capital.

Landmarks around the station, such as bus and tram stops, elevators, taxi stops, telephones, information signage, lighting and drainage, are all colored in the shade of red used by Bernmobil, Bern's public transport company. Stairwells, telephone stands and concrete structures at the station were also colored red. Other concrete colors were applied around the square to enhance the urban landscape and turn the square into a lively meeting place.







- > After all this colorful “hustle and bustle”, visitors arriving at the museum can enjoy a symbiosis in light gray between the modern and the historic, coupled with an incredible amount of charm. The simple beauty blends in perfectly with the cityscape.

Bern Historical Museum was designed by André Lambert in 1894 in a Revivalist style to recall the architecture, especially the castles, of the 15th and 16th centuries. Over time, the museum, which houses collections devoted to prehistoric material, folk art, ethnographic objects, and various kinds of decorative and applied art, found it had outgrown its size. To make the most of the limited land area available, the extension has been built partly above and partly below ground level. The texture of the building’s walls and the varying angles of the concrete facades are designed to reflect the irregular construction of the original building.

The objective was to create a modern extension that would harmonize with the existing classically designed structure, including a new interpretation of the original traditional materials such as sandstone, plaster and stone. To this end, the color of the concrete played an important role in the construction.

Colored concrete offers a multitude of decorating solutions with a wide range of colors. It fits perfectly in a dynamic sustainable building and modern architecture. Colored concrete is a durable and aesthetic solution for all modern architecture. It retains its color and resists mechanical damage.

Sika Switzerland produced colored concrete samples for the architect to choose from prior to construction.

Come over and enjoy Switzerland!





A STOREHOUSE OF KNOWLEDGE

TEXT: MARYE SLAG
PHOTO: MIRANDA AARSMAN
(DOTZ & PIXELS)

As you enter the library's wholly innovative world, you will forget all about your e-books. This amazingly equipped public library in Lelystad is part of the network of Flevomeer libraries in the youngest province of the Netherlands, Flevoland. From 2005 until 2009, numerous experts, including Assen-based Aequo BV Architects, worked on a new concept for the library: inviting, challenging, inspiring new thoughts and ideas, but also ready to provide answers.

- > The library's three zones - past, present and future - are a response to the new concept. The past or first section of the library, encompassing mostly books (the Book Boulevard), gives answers to questions. The present or middle sphere houses a lot of exhibits and displays presenting current issues to visitors, who are both surprised and inspired also to find a coffee bar, new titles, and information selected by staff. The third area is dedicated to the future. Situated deeper in the library, it consists of work and study places in an environment conducive to giving readers new ideas.
- As a "storehouse of knowledge", the library applies retail techniques: departments have their own look and feel. Window dummies wearing T-shirts with adjustable texts are a frequent sight. Images and communications appropriate to the setting serve as signage at strategic points.



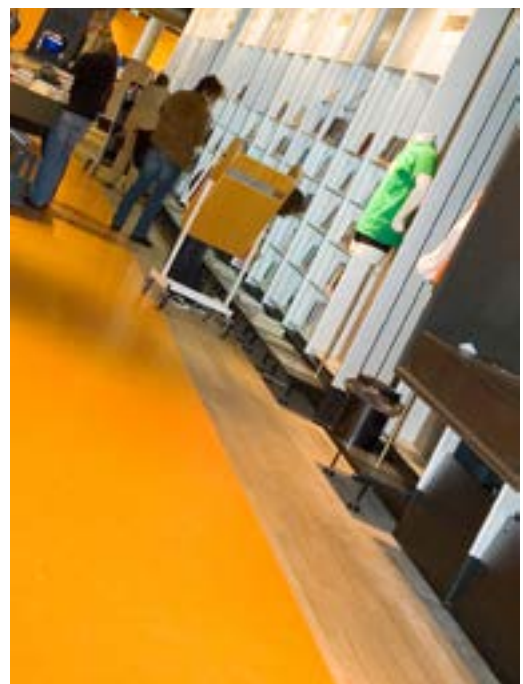
THE DESIGN REMIT WAS TO CREATE THE "LOOK AND FEEL" OF HIGH-QUALITY DEPARTMENT STORES

The newly developed aluminium shelving system, with built-in lighting and an airport-like book display trolley for new titles, is starkly innovative. Self-service is the motto everywhere: there are hardly any desks present and staff move and work among the visitors. Digital signage and shopping baskets at the entrance underscore that Lelystad is exploring new ways which are there to be discovered.

Before it was opened, the library had to find a suitable ambience and unique style to attract users and visitors. The design remit was to create the "look and feel" of high-quality department stores.

In terms of the floor finish, the architects wanted durable, hard-wearing, acoustic dampening, and a sturdy, striking design. Another key requirement was sound absorption with very good resilience and elastic recovery properties, a floor capable of making minor indentations disappear after temporary loading is removed.

The Sika® ComfortFloor System by Sika Netherlands was the solution that met all of these essential requirements, all assets for any busy library. After the new cementitious floor

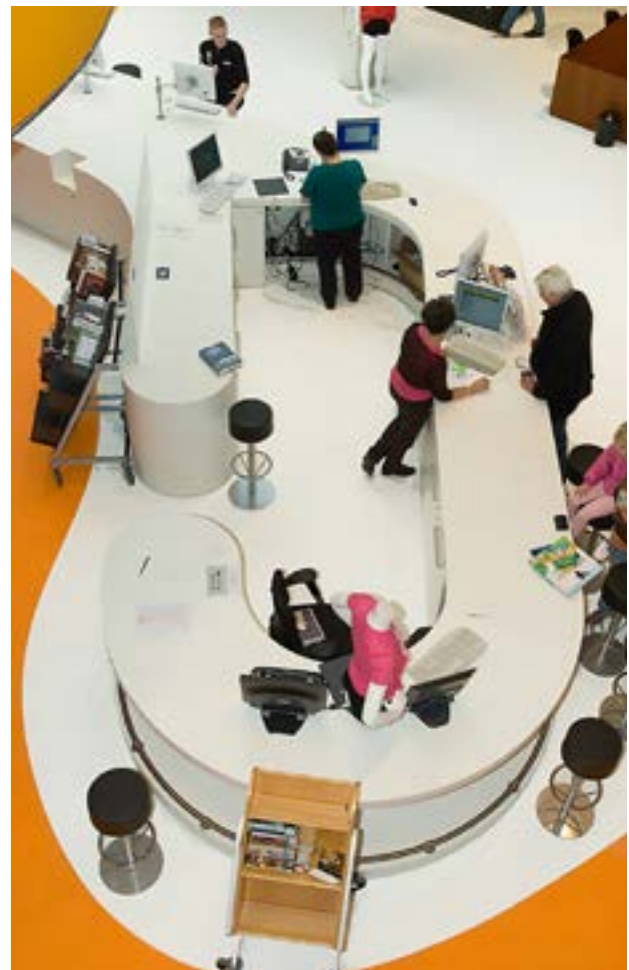




- > screed was vacuum blast cleaned, its surface was primed with Sikafloor®-161, a solvent-free epoxy primer. The highly flexible intermediate layer was then applied using Sikafloor®-330, a low VOC elastic polyurethane-based material. After curing, Sikafloor®-330 W, a polyurethane-based top coat, was applied to the architects' bold colour design, to achieve a very smooth, matt, heavy-duty surface.

A sustainable solution was delivered and an ambience created where visitors can feel cosy as well as inspired. You can study, you can read, you can find out what you need to know about any topic whatsoever, you can do research, you can socialize and have a cup of tea or coffee. For bookworms a great reading experience was about to begin when the library reached completion in 2009.

YOU CAN DO RESEARCH, YOU CAN SOCIALIZE AND HAVE A CUP OF TEA OR COFFEE





GROUNDWATER PROTECTION

Groundwater plays an essential role in the hydrological cycle and is critical for maintaining wetlands and river flows and acting as a buffer during dry periods.

TEXT: JIM FREDRIKSSON, PETTER E. JENSEN
PHOTO: MISC.

- > In other words, it provides the base flow (i.e. the water which feeds rivers all year round) to surface water systems, many of which are used for water supply and recreation. In many rivers across Europe for example, more than 50% of the annual flow is derived from groundwater. In low-flow periods this figure can rise to more than 90% and hence, deterioration of groundwater quality may directly affect related surface water and terrestrial ecosystems.
- Groundwater constitutes the largest reservoir of freshwater in the world, accounting for over 97% of all freshwaters available on earth (excluding glaciers and ice caps). The remaining 3% is composed mainly of surface water (lakes, rivers, wetlands) and soil moisture. Until recently, focus on groundwater mainly concerned its use as drinking water, and recognizing that it is also an important resource for industry (e.g. cooling waters) and agriculture (irrigation). It has, however, become increasingly obvious that groundwater should not only be viewed as a water supply reservoir, but should also be protected for its environmental value.
- Abundant, high quality groundwater is essential to all nations and citizens. Our most precious natural resource, the groundwater, is to be protected for all of us. Access to clean, safe drinking water is the essential ingredient to a healthy and

GROUNDWATER SHOULD ALSO BE PROTECTED FOR ITS ENVIRONMENTAL VALUE



viable community. The ongoing worldwide discourse on water quality protection and pollution prevention continues to rank high on worldwide agendas.

Since groundwater moves slowly through the subsurface, the impact of anthropogenic activities may last for a long time. This means that pollution that occurred some decades ago – whether from agriculture, industry or other human activities – may still be threatening groundwater quality today and, in some cases, will continue to do so for several generations to come.

The Norwegian company Borregard has high focus on risk assessment and prevention. The international group which

holds sales offices and plants in 16 countries, has one of the world's most advanced and sustainable biorefineries. For its tank farm in Sarpsborg in Norway the company decided to have a robust groundwater protection against chemicals in case of any accidents. Therefore highly chemical resistant membranes for safe and fast upgrading of floors and retaining walls were a must. The use of a membrane simplified the renovation without complicated renovation of the concrete.

After cleaning of the surface with high pressure water, Sikaplan® WP 6200-20C membrane was installed by Borge Miljøservice AS. In addition to high chemical resistance the membrane also

withstands UV-radiation. The product is made from Polyolefin (FPO), and is produced without phthalates and can be recycled after end of lifetime.

According to WHO (World Health Organization) an estimated 768 million people did not use an improved source for drinking-water in 2011 and 185 million relied on surface water to meet their daily drinking-water needs. Freshwater continues to be limited and its quality is under constant pressure. Preserving freshwater quality is important for drinking water supply, food production and recreational water. And securing industrial plants and farms for sure will help to keep water's quality safer.



AGAIN PROVEN TO BE EXCELLENT

A Review of "Green Roof of the Year 2005" -
Sika Sarnafil Green Roof System.

TEXT: JANE RUEEGG
PHOTO: JANE RUEEGG



> In 2005 the green roof at the European Investment Bank, Luxembourg was selected by The Professional Green Roof Association of Germany (FBB) as the "Green Roof of the Year". The FBB is a Trade Association for companies involved in the design, construction and maintenance of green roofs and facades on both new and existing buildings for their environmental improvement. At that time, the roof refurbishment of the European Investment Bank Buildings in Luxembourg was created and waterproofed using a Sika Sarnafil green roof system. Today, 8 years after the installation, the green roof of this building is still perfectly waterproofed, which again proves Sika Sarnafil to be able to provide the best green roof solution.

The total roof area of this multifunctional building was 3500m² and needed to be refurbished in 2005. The owners and their architects wanted green roofs, which could become a valuable recreational space that was also both ecological and good looking. Additionally they wanted to reduce the 'heat island effect', by improving the microclimate around the building, plus to maximize the recreational roof area's impact and airborne noise insulation from the offices below. The result was 3 levels with different green roofs for the building:

- The upper level is an "intensive" green roof, meaning it has spacious and deep planting areas for larger bushes and small trees, plus it includes, a fine croquet lawn, grass tennis courts, plus access driveways and parking areas.

The planting is also illuminated for effect at night, and the lawn is decorated with huge Corten steel sculptures by the Hungarian artist Tamas Trombitas. The three ponds with fountains then make the whole landscape come to life.

- The central courtyard level is designed to provide the view from the office and meeting room windows that open towards it. This area is also an intensive green roof with substantial planting and grass lawns together with another two ponds with fountains.

The lower level is a "utility" type of intensive green roof, designed as a large plaza that is mainly hard landscaped with natural stone paving, which is also interspersed with deep planting areas. Underneath this green roof is the building's cafeteria.

All of these green roofs needed to have a totally reliable waterproofing system that was extremely durable to provide a long service life and require as little maintenance as possible. Sika Sarnafil green roof solutions were selected for this project because of their proven durable performance in such demanding situations, together with the complete system solution, roof build-up and direct support provided by Sika sales and technical force. These systems are suitable for new and refurbishment works, are root resistant, extremely durable and economic, providing long-term, lowest maintenance solutions, which are therefore more sustainable and also save the building owner's money.



Sika employees solidarity activity with Coanil children

BUILDING A DREAM IN THE EYES OF CHILDREN

An earthquake brings together the lives of Sika Chile employees and the children of a nearby shelter. This is their story, as told by one of the protagonists.

TEXT: SANDRA ROMÁN
PHOTO: SANDRA ROMÁN

> This story did not begin well, but just like a fairy tale, it did have a happy ending. After the horrendous earthquake that hit Chile on 27 February 2010, seriously damaging the Coanil Foundation's Juan XXIII residential shelter, Sika Chile and the Romuald Burkard Foundation were stirred into action to help the children affected.

In the aftermath of the quake, Sika Chile began looking into ways to assist the

victims. Head Office gave the green light to a request to reconstruct damaged schools. However, there was one condition to meet: the building could not be more than 200 km from our offices. After an intense search, we chose to help children from the Juan XXIII shelter by the Coanil Foundation. Located in the town of Buin in the Metropolitan region, the shelter accommodates over 60 mentally disabled children.

"When performing an assessment, we realized that the main damage had been to the house. So, we decided as a first stage to reconstruct rooms module-wise. In a second stage, we restored the school, and in a third stage, we developed a permanent activity area to bring the children into contact with nature and teach them about sustainability and ecology", explained Francisco Jimenez, General Manager of Sika Chile.



View of the new building of John XXIII Home, Coanil

MANY OF THE PEOPLE IN OUR TEAM BECAME INTERESTED IN HELPING IN OTHER WAYS AS WELL

> **GETTING DOWN TO WORK**

Reconstructing the house was no easy task, as the idea was not to construct a single house as such, but eight independent cabins with suitable amenities to meet the youngsters' needs. We also repaired communal areas and added new facilities, including a laundry and a dining room. This was a major project.

It took months of hard work. The children deserved the best and they deserved to get it as soon as possible. As the project progressed, the bonds between Sika and Coanil grew stronger; many of Sika Chile's employees got involved in the Foundation's work. "We were moved by the children's plight and wanted to do more than

just reconstruct their shelter, we wanted to be part of reconstructing their dreams of a better quality of life. So apart from working on the actual rebuilding project, many of the people in our team became interested in helping in other ways too, such as visiting children on Christmas Eve to put a smile on their faces and give them a nice time" said Danilo Leon, Human Resources Manager at Sika Chile.

And finally 7 December 2011 arrived, the day of the opening of the new facilities at the Juan XXIII shelter. Representatives of various charitable organizations, the local authorities and, of course, numerous people from our team turned out. But beyond a doubt, the children from the

shelter were happiest playing and running from one place to another, smiling; that was our biggest reward.

A NEVER-ENDING PROJECT

After opening the cabins and the common areas, we began constructing a greenhouse. "The children's tutors had told us that harvesting and gardening had therapeutic benefits and that this greenhouse was a dream come true" Danilo Leon added.

This was a great motivator, and at long last we were able to hand over a lovely greenhouse – a seedbed of hopes for these children, who, after all the difficulties they had faced along their lives,



HOWEVER, OUR TASK IS NOT OVER; THE BOND WE CREATED CANNOT BE BROKEN

today have a place that they can literally call home. However, our task is not over; the bond we created cannot be broken. We remain in contact with the members of this shelter and, of course, continue to devote all our energy to providing support. For instance, we helped to make a trip to the beach possible, and we also supply basic daily essentials.

In short, this is a never-ending project. We are committed not only to delivering solutions as and when called for, but also to creating ties with the children, children that need us and who we want to be there for at all times.



Greenhouse of John XXIII Home, Coail

BIKING FOR A GOOD CAUSE

From its early beginnings, founded in 1911 by Douglas Macmillan, Macmillan Cancer Support has grown to become the largest cancer care and support charity in the UK. Macmillan Cancer Support provides practical, medical and financial support and push for better cancer care. They have the target to reach and improve the lives of every one of those people. They as well research into health services and the numbers, needs and experiences of cancer patients and their carers. This organization of course depends on donations and Sika UK had a great idea how to support it.

TEXT: CHERYL DOUGLAS

PHOTO: MISC.



Ambitious team: Sika employees, families, friends and customers likewise met up on to complete the cycling distances



> On 7th September 2013 nearly 100 cyclists of Sika UK – made up of staff, family, friends, and customers – descended on the tranquil Trough of Bowland to complete what will forever be known as one of the toughest cycle rides known to mankind... With two routes available (one at around 86 miles and one just short of 50 miles) there was no shortage of lycra and friendly competitive banter as Sika UK was prepared for what they anticipated to be a reasonably difficult route.

The long distance cyclists headed out of Slaidburn car park early in the morning, with two colleagues overtaking our route marker and tour master whilst still putting out the way markers! The 50 milers joined the group later on as the route reached Gisburn Forest and the first of three tough climbs. The hills were relentless and by the time they were heading for Jubilee Tower there were more walkers than cyclists, many of whom were slightly soggy after experiencing the joys of the Lancashire weather.

However some of the downhill sprints gave a chance for recovery with only one

or two casualties – the worst of which was one colleague who ended up in hospital with multiple stitches but all were assured he is doing fine! Throughout the day the SikaRide volunteers were on hand to provide refreshments, encouragements and first aid for the weary cyclists. Everyone agreed that one of the most welcome sights of the day were colleagues at Dunsop Bridge cheering the cyclers on with the reassuring cry of “Only three miles to go...”

The event took a large amount of organization both in terms of planning the route and the hospitality for lunch and back at the Tickled Trout Hotel. Sika UK thanks all of the volunteers who braved the cold and wet weather, and of course the whole thing wouldn't have been possible without the determination of the cyclists – young and old, fit and... not so fit. Everybody did a fantastic job and made it a day to remember. But the best part of all is the fact that as a team Sika UK has raised more than 2,600 € for Macmillan Cancer Support.

TRAINING OF HUNDREDS OF SIKA EXPERTS

One of Sika's key characteristics is the technical advice service. Let's have a look at Sika Uruguay how they provide trainings to customers before, during and after the purchase of products.

TEXT: ROSARIO LISTE
PHOTO: MISC.



Trainings especially for small construction firms can be helpful to get the utmost out of the products

> Of the many channels we use to provide information to our customers, one of the most high-profile and highly valued is the "charlas técnicas," or "tech talks" initiative, a technical seminar offering traditionally geared to professionals from the construction industry and students at universities or technical colleges.

As a result of Sika's strong presence in the market, for some time now there has been a need to deliver this sort of training to the end user, as well as to construction workers and small construction firms. This is due to the fact that the technology, which was originally used almost exclusively for major projects, is now accessible to all for use in repair and maintenance jobs on medium- and small-scale projects. We decided to use our extensive nationwide chain of distributors to deliv-

er this information to our customers, this being the link between the end user and the target product as well as the right place for advice to be given to customers at the time of purchase.

With a view to meeting this need, it was in 2001 that we first introduced the "Sika Expert" concept, based on a round of training aimed at sales associates working at Sika distributors (lumber yards, hardware stores, paint shops, etc.). The intention here was to provide every distributor with its own Sika Expert, specially trained to provide customers with advice and recommendations on the use, application, advantages and benefits of the products and to be the undisputed "go-to" person for all things Sika at that distributor.

This offers not just security and confidence to the customer purchasing a Sika product, but also an advantage over the competition, as the salesperson will recommend the product they know and about which they can offer advice, thus potentially increasing their sales.

This first incarnation of the initiative covered a limited range of products, participants and course durations. Among other materials, all participants were provided with a manual containing 100 responses to 100 frequently asked questions on the products presented in the lectures. The manual was written in a much more practical and less technical language than the general product catalogue and covered only those Sika products with which the recently qualified Sika Expert was fully familiar.



THE TECHNOLOGY ON MEDIUM- AND SMALL-SCALE PROJECTS IS NOW ACCESSIBLE TO ALL

It was in a second phase, in 2006, that the previous experience and the increase in products supplied to distributors brought about a second incarnation of the Sika Expert initiative. This time around, the scope of the initiative was broadened to include more participants and a wider variety of products. The training was provided at the premises of Sika Uruguay to those employees designated by the relevant distributors, or those considered the most suitable by reason of their training, experience or development prospects.

The course was split into two sections, a theoretical section based on an improved manual with "400 responses to 400 frequently asked questions," providing participants with the tools required to answer the most common questions

likely to be put to Sika Experts. The other section of the course was practical, and focused not only on ability to recognize products by looking at them, but also on handling them, thus getting to know them both inside and out.

The 2006 training round was a great success, with the almost 500 participants receiving not only training but also an opportunity to tour Sika's premises and become familiar with the manufacture and packaging of the products they would later be selling.

In the last few years, Sika Uruguay has strengthened these qualifications by way of "Road Shows," updating the information provided and bringing new technologies to any business with at least one "Sika Expert."

Sika Uruguay is now looking to repeat this experience in 2014 and to further extend its reach by training almost 700 new "Sika Experts." This year we are aiming not only to once again increase the number of participants, but also to cover more products in more depth, offering more and better information of interest as well as practical knowledge.

Undoubtedly we will be coming back to this topic once the training round has been completed to look at how well we have met the expectations raised along the way and to share the opinions of the customers participating in this new and improved incarnation of the "Sika Expert" initiative.



TORRE PUIG - THE HEIGHT OF FRAGRANCE

Puig is an international company operating in the fashion and fragrance sectors. Founded in 1914 by Antonio Puig Castelló in Barcelona, Spain, it is still managed by the Puig family today. Employing 4,136 people worldwide, Puig markets its products in 130 countries and is directly present in 21 of them.

TEXT: WERNER WAGNER, LAURA EGLI, ASTRID SCHNEIDER
PHOTO: MISC.

- > In the late 1990s in line with its expansion policy, Puig acquired several Spanish companies. These operations strengthened its leadership of the Spanish market. Under the acquisition drive, not only were Adolfo Domínguez, Massimo Dutti, Italy's Prada, France's Jean Paul Gaultier and other brands assimilated into the Puig portfolio, 45% of the shares of the French group Hermès were also purchased.

And there was just one thing needed to complete the company: new headquarters at the heart of its home city of Barcelona. Strategically situated, the building is located in the municipality of Hospitalet de Llobregat, close to Barcelona's Fira, the international exhibition area. The lead architects were Rafael Moneo and Lucho Marcial and the main construction phase was from July 2012 to August 2013.

The 22-storey tower is an amazing 109 meters high with a total facade area of 20,000 m² (double skin). Though much of the building's energy needs is covered by solar collectors and photovoltaic panels there was a strong request of energy conservation, both for operational energy for cooling and heating as well as for embodied energy of construction materials. The glass and metal elements are bonded entirely with Sikasil® SG-550, the new generation of high-strength silicones. The challenge here was to bond very big glass panes of 2.6 x 2.7 m solely with silicones. Average pane sizes are in the region of 1.5 x 2.5 m. The bigger the panes, the higher the loads to be borne by the silicone joints. Additionally, high wind loads of 3.1 kPa (twice those in Central European countries such as Germany and Switzerland) also had to be factored in because of the "once in a century" storms expected in Barcelona.

Both facts are counterproductive to the key feature for the architects; the slim aspect of the aluminum frames was a source of satisfaction to both them and the building owner. But by using



THE CHALLENGE HERE WAS TO BOND VERY BIG GLASS PANES OF 2.6 X 2.7 M SOLELY WITH SILICONES



> high-strength Sikasil® SG-550, the aspect of the frames could be reduced by 30% (from 30 mm to 21 mm; 2 x 9 mm = 18 mm.). For the owner this spelled a saving of 10% in aluminum material and costs. Ultimately, material cost savings of 15% were made with aluminum, spacer and silicone consumption.

Further, Sikasil® IG-25 HM Plus is used as insulating glass secondary sealant. Using argon-filled instead of air-filled IG units reduces the transfer of energy from the facade by about 30%. This means lower energy consumption for cooling in summer and less heating in winter. Employing Sikasil® IG-25 HM Plus as IG second-

ary sealant, an argon loss rate of as low as 0.5 % per year can be achieved. So even after a service life of 30 years, the energy efficiency level will still be very high.

To see the amazing Torre Puig go to: <http://youtu.be/LLdBkiTLzwg>

