

# AMBITIONS

A dive into Sika's world



## A GREEN ROOF BRINGS RELIEF

Experience Bratislava from top!

18

## THE BEST PROJECT IS ...

23

## SIX-PACK FOR VESSELS

42

## DRINKING WATER

5,000 people in Burundi get saved.

47

## FLOORS' COLORED ATMOSPHERE

Come with us to Finnish Kokkola and explore how comfort, hygiene and cost savings provide attractive added bonuses.

5

# TRANSFORMATION



ASTRID SCHNEIDER  
Marketing & Product  
Communications Manager  
Sika Services

Transformation refers to the act of transforming or the state of being transformed. Regardless of whether the more active or passive action, it indicates a marked change in appearance or character, usually for the better. Transformation also plays a vital role in the sciences, including mathematics, physics, linguistics and genetics. Here, however, we are speaking about the basic meaning. When someone or something goes through a transformation, is being transformed or transforms someone or something else, this is evidence of development, change or maybe even innovation, or perhaps is a sign of revolution in the air. While revolution can fulfill long-forgotten dreams if it succeeds, transformation might release enough power to self-perpetuate. Basically, everything we can sense and smell – even if invisible to the eye – is subject to change every minute and every second. This is true for all of us as well. As a consequence, we too can engender transformation. Countries such as Burundi (p.47), with one of the highest hunger rates in the world, greatly seek to improve their daily life. Sika has enabled access to clean drinking water for around 5,000 people, particularly children. It is also organizing environmental training on the management of natural resources and renewable energy. Having reliable access to drinking water marks an immense transformation in people's lives and perspective. In Spain (p.13), projects involving the use of Sika products were judged in terms of the property, the builder or contractor, the process, the products applied, the surfaces treated, and consumption. Among the aspects to be assessed by the panel of recognized experts were the volume, quality and difficulty of the work, the innovative solutions employed, improved runtimes, and iconic features. Better, faster, more sustainable work methods mean more quality, higher esthetic value and a longer lifetime. This too is a transformation – brought about by actions of ours as human beings. New infrastructural amenities and leisure opportunities can also spell transformation for a city. As a state-of-the-art, multi-purpose facility, the new stadium built with products and services from Sika Poland (p.36) meets all the most stringent international organizational and technical standards and provides the inhabitants of Cracow with a venue where they can enjoy major sports and music events.

Yours sincerely,

ASTRID SCHNEIDER

## CONTRIBUTORS



DAGMAR DROBNA  
Marketing Specialist,  
Sika Slovakia

There are several shopping centers in Bratislava, but Centrál is unique because of the beautiful green park on the roof. Sika cooperated with the architect in the phase of designing and delivered solutions really from basement, floors to membranes for different types of roofs.



LUIS CARLOS GUTIÉRREZ  
Communications Manager,  
Sika Spain

We are proud of the contest "The best Sika project". The successful initiative already is now in its ninth edition and has become an important event for our customers, who have the opportunity to make their best works visible.



KATARZYNA SPYRA  
Technical Marketing Department

Poland is an exciting place with plenty of opportunities as well as challenges on the way. Sika's growth shows that we know how to take our chances and make the success story to be continued.



CHRISTIAN RIIS  
Corporate Key Account Manager,  
Marine

I give support for joint sales calls, training of internal employees, external installers or shipyards. In addition I provide seminars to our customers and support in finding the correct solution in any given project related to our key products in the marine, sealing, bonding and the Sikafloor Marine acoustic range.

# AMBITIONS #20 2015



5 FLOORING  
Floors that make you feel special

8 WORLD VIEWS  
What about Poland?

14 STADIUM  
New event space for Krakow

18 **ROOFING**  
A place of peace in the middle of all  
the hustle and bustle

23 **CONTEST**  
And the winner is...

30 URBAN INFRASTRUCTURE  
A bridge that takes it all

34 PUBLIC TRANSPORT  
A cross-city link supports Zurich

42 **MARINE**  
Six-pack flooring for vessels

45 DIY  
Sika products in my home

47 **SOCIAL RESPONSABILITY**  
Drinking water for Burundi

## IMPRINT

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The great majority of the floors in the building, including the stairs, have been covered with a durable, user-friendly Sika ComfortFloor flooring system.



# FLOORS THAT MAKE YOU FEEL SPECIAL

Kokkola is the capital and largest city in the western Finnish region of Central Ostrobothnia. It is located on the coast of the Gulf of Bothnia, the northernmost arm of the Baltic Sea, 480 km north of Helsinki. The major local industry and employer is the chemical and metal ore processing sector. Kokkola is well-known for its international cargo transshipment port. Further important industries include metalworking, textiles, plastics, food, and wood processing. Luxury sailing boats such as the Swan Nautor are famous throughout the world.

TEXT: SIRPA LUND, ASTRID SCHNEIDER  
FOTO: PEKKA AGARTH

> Kokkola is also known for its schools. The region's population is bilingual and some of the pre-schools even offer a dual language curriculum. Secondary education is provided by 25 Finnish- and 8 Swedish-speaking schools. Higher and adult education falls under the remit of the Chydenius Institution in Kokkola, a university consortium that carries out teaching and research under the auspices of the universities of Jyväskylä, Oulu and Vaasa. The institution provides Open University studies and further education for Finnish and foreign professionals in the fields of education, social services, health services and management.

The campus hall is used for a variety of events and can also be hired. During the day, the hall's main occupants are school-children and students. Sports clubs and other outdoor activity associations use the facility in the evening.

The developer's architectural specifications were that the campus hall should not only look like a sports venue, but that it should also function as a concert hall as well as be able to accommodate a variety of meetings, parties and other events. Special curtains allow the hall to be divided into 4 different areas. It has a special sound system and is fitted with a six-by-six-meter screen.

The great majority of the floors in the building, including the stairs, have been covered with a durable, user-friendly Sika ComfortFloor flooring system. The seamless, fully bonded liquid polyurethane flooring is easy to clean and maintain. Its impervious and dense surface provides a very hygienic and safe solution. As a ductile material, Sika ComfortFloor reduces noise and is extremely comfortable for foot traffic. The flooring system fulfills the most stringent EU criteria for flooring air quality in an indoor environment. The cafeteria is like a living room for the whole campus site. Including the entrance, this is the area exposed to the greatest traffic and mechanical stresses.

>



The walls in the washing and communal areas were treated with seamless Sikagard Hygienic coatings – a novel solution for Finland.

- > One important criterion was to design flooring which is highly wear-resistant and easy to maintain.

The main users of the building are young people. The designers wanted to create a lively and expressive interior by selecting bright and powerful colors – challenging the customary practice of choosing neutral colors for public areas. The color scale of the floors ranges from green, blue and magenta red to grey.

The walls in the washing and communal areas were treated with seamless Sikagard Hygienic coatings – a novel solution for Finland. The new Sika hygienic wall coating was applied to the underlying rock aggregate. The system comprises a primer followed by glass fiber fleece, which is surface-laminated with resin. This surface is then primer-sealed. The final layer consists of two coats of pigmented acrylic-based Sikagard hygienic coatings. The surface of the floorings in the wet rooms was made anti-slip by using glass beads in the final topcoat layer. These safe, state-of-the-art Sikafloor



solutions were selected and customized to meet users' needs. Students, teachers and visitors will enjoy them for a long time to come. Every event, concert or school session seems to be more fun

inside a functional, decorative building where everyone feels special. And that's not all: comfort, hygiene and cost savings provide attractive added bonuses. <



The main users of the building are young people. The designers wanted to create a lively and expressive interior by selecting bright and powerful colors.

# WHAT ABOUT POLAND?

There can be no doubt that since communism collapsed in 1989, after the hecatomb of the 1939-1945 war and almost half a century of Soviet domination, Poland has experienced a remarkable reversal of fortune – regaining independence, a booming economy and re-integration with the rest of Europe. One may marvel at Poland's achievements in establishing the fundamentals of a democratic system and productive free market economy in such a short period of time. Let's take a closer look at what role Sika plays in the Polish construction market after 25 years of democracy. We were able to talk to Maciej Horaček, the General Manager for Sika Poland.

TEXT: KATARZYNA SPYRA, ASTRID SCHNEIDER  
PHOTO: SIKA POLAND, FOTOLIA







Leszek Legat / @Pekabow Bet 5 A



**Maciej Horaček**, the General Manager for Sika Poland.

## AS A SPECIALTY CHEMICALS SUPPLIER, SIKA POLAND OWNS THE LION'S SHARE OF THAT MARKET

- > **Mr Horaček – you've been Sika Poland's General Manager for over 10 years, during which time the company has witnessed enormous growth. What are your personal secrets in leading a successful team?**

I truly believe that the key to success lies mainly in the human factor and proper management of people's talents, and in clarity and transparency of the structure. It is essential to establish a clear set of responsibilities and goals as well as providing tools for achieving them. If employees have freedom of action within a certain framework, they are likely to find optimal paths to work effectively and responsibly.

The ongoing monitoring of the whole

process is also significant. It helps to react relatively fast, revise and adjust the framework if necessary. Most of our leading sales engineers have worked with us for over 10 – 15 years now, which means they must have found their own paths within the offered structure which give them confidence and satisfaction.

**Sika is currently one of the leading specialty chemicals suppliers in Poland. What are the targets of Sika Poland now? Where is it heading?**

I like the definition "leading specialty chemicals supplier" as it exactly reflects our strengths as well as a potential future direction. It's true that Sika Poland has a leading position in specialty chemicals, which is very significant in the cur-

rent golden age of the Polish construction market. Never before has Poland received such substantial financial support for infrastructure construction as it is obtaining now from numerous EU development programs. As a result, for the last 10 years enormous infrastructure investments have been spreading across the country. As a specialty chemicals supplier, Sika Poland owns the lion's share of that market. However, one has to bear in mind that EU financial support will one day come to an end and it is of the utmost importance to find new, profitable sectors within the construction market. Sika Poland's chance for future growth can be found in "mass" chemicals, including such products as silicones, caulking foams and cementitious mortars. How-



"I truly believe that the key to success lies mainly in the human factor and proper management of people's talents, and in clarity and transparency of the structure."

> ever, if we want to offer competitive pricing and boost our market share in this particular segment, launching a local production operation is inevitable. Sika is the only construction chemicals supplier with no local production base in Poland. Another opportunity for growth lies in a continuously expanding residential construction market. Sales in this sector are based on a distribution channel; therefore Sika Poland needs to develop a solid and coherent distribution strategy over the next couple of years.

#### **What is the condition of the construction market in Poland? Where exactly does Poland need Sika?**

The current situation of the Polish construction market is complicated. There are numerous gaps in regulations and weak points in tender principles where price is still the main issue. All these may result in poor construction projects where quality is often pushed out by low price. Even today a number of structures completed not long ago already require some refurbishment.

Sika Poland supplies high-quality technologies, but there is much more to do. We actively participate in the development of construction regulations and cooperate with technical universities. Thanks to strong cooperation between our specialists and acclaimed academic institutions (the Concrete Producers Association, Building Research Institute, Road and Bridge Research Institute, etc.) new European harmonized norms and quality standards are being widely introduced and applied. We have made our mark especially in the propagation within Poland of concrete standard EN 206-1 and of concrete refurbishment standard EN 1504, to name the main activities in this field.

This year Sika Poland is working jointly with the Building Research Institute on technical directives regarding the application of waterproofing systems and construction strengthening. Hopefully our fruitful cooperation with the Building



Research Institute can improve the quality standards of the construction market in Poland.

#### **You've mentioned that Sika Poland supplies only high-quality products. Can you tell us something about recent key projects in Poland?**

Sika Poland participates in the most significant projects all around the country. Completed last year, Kraków Arena is the biggest sports and entertainment venue to which Sika has supplied roofing and flooring solutions. At the other end of Poland, in Gdańsk, the first car tunnel under the river is being built – all 7.7 thousand precast tubings for this project were produced with Sika concrete admixtures.

Moreover, 110 km of the brand new concrete A2 highway, together with several bridges and engineering structures, were almost exclusively completed using various Sika technologies. Every year Sika plays a part in almost all key infrastructure projects in Poland. Nevertheless, we have achieved great things in the industry segment too. It is worth underlining that no bus or train is produced in Poland without Sika Industry products – we supply our solutions to the key vehicle producers like Volvo, MAN, Solaris, etc.

#### **The Polish economy is the sixth-largest in the EU and the largest among the ex-**

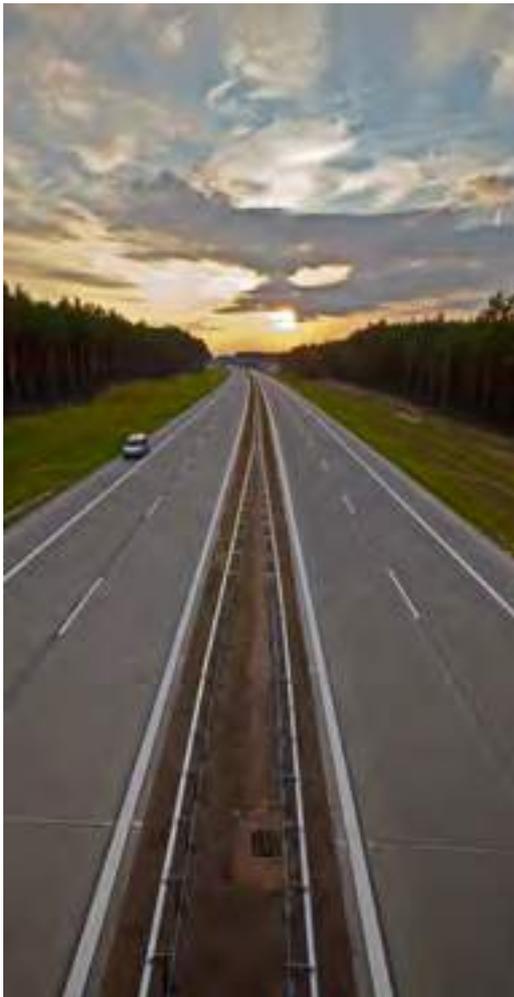
**communist members of the EU. Before the late-2000s recession it recorded a yearly growth rate of over 6.0%. According to the Central Statistical Office, in 2010 Poland's economic growth rate was 3.9%, which was one of the best results in Europe. It is expected to grow by 3.7% in 2015. That seems like a positive outlook, doesn't it?**

It may seem positive on the surface, but the current situation of the Polish economy is much more complex. The economic growth rate of 3.7% is definitely not enough to catch up with the world at large. The fact that at this point we are getting a little bit closer to the Western countries is a result of the crisis in Europe and lower results there.

However, one has to take into account the source of the growth in Poland. First, the financial support from the EU is probably helping to stimulate our economy but, as I mentioned before, this will eventually come to an end. Second, the low salaries and labor costs in Poland have recently attracted numerous production factories. This may have decreased the unemployment rate for a while, but what Poland is aspiring to is to get closer to an average European salary. It's just a matter of time until these companies move their factories to other locations with a cheaper workforce and lower labor costs. Hence, changes in our local law should



A typical gorgeous, café for having coffee, tea and cake.



The brand new concrete A2 highway.



Oscypki – the famous Polish cheese of the city.

be proposed to ensure fast economic growth. There is too much redundant bureaucracy and a complicated tax system, which discourages potential investors and young, well-qualified and energetic people, who prefer to move their businesses abroad.

Nevertheless I believe that Poland is a beautiful place to live and has much to offer. We just have to address our local regulations and simplify the law in order to unlock the dormant potential for entrepreneurial activities and innovation.





# NEW EVENT SPACE FOR KRAKOW

Krakow is the second largest and one of the oldest cities in Poland. The city has grown from a Stone Age settlement to Poland's number two city. Situated on the Vistula River, it dates back to the 7th century. It has enjoyed a tradition as one of the leading centers of Polish academic, cultural, and artistic life and is one of Poland's key economic hubs. The capital of Poland from 1038 to 1569 has a population of approximately 760,000. Some 8 million people live within a 100 km radius of its main square.





Lech Karłowicz / OPIERBO-PROJEKT

The roof construction required the use of high-quality membranes to provide maximum insulation.

- > In 1978, Karol Wojtyła, archbishop of Krakow, was elevated to the papacy as Pope John Paul II – the first Slavic pope ever, and the first non-Italian pope in 455 years. Also that year, UNESCO included Krakow's historic old town district among the first ever sites for its new World Heritage List. In 2000, Krakow was named European Capital of Culture. The city will be hosting the next World Youth Day in 2016.

Krakow has a lot to offer its inhabitants and tourists. Tauron Arena Krakow, for instance, is one of the largest and most modern entertainment and sports venues in Poland. It is used to host a variety of sports events, including badminton, boxing, curling, acrobatic and artistic gymnastics, indoor football, hockey, basketball, track and field, figure skating, volleyball, handball, martial arts, extreme sports, tennis, table tennis, equestrian competitions and sports dancing contests.

The arena boasts Poland's largest LED media façade, with a total surface of 5,200 m<sup>2</sup> of LED strip lighting enveloping the stadium, as well as one of Europe's largest LED screens, measuring

over 540 m<sup>2</sup>. The facility area covers 61,434 m<sup>2</sup>, and the largest single space within the arena is the 4,546 m<sup>2</sup> court. The average concert capacity is 18,000.

As a state-of-the-art, multi-purpose facility it meets all the most stringent international organizational and technical standards. It can host mass sporting and cultural events, exhibitions, fairs and much more. It will come as no surprise to learn that building a world-class venue called for nothing less than the very best systems and products.

A major construction of this magnitude demanded on-site technical support on various levels, e.g. suitable systems selection and work quality control. And most importantly, the project needed a well-established building chemicals provider with a proven performance history as the project specifications for the venue in Krakow were highly restrictive.

The roof construction required the use of high-quality membranes to provide maximum insulation. Moreover, the applied system mechanically fastened at a height of 28 meters had to be resilient to challenging external conditions such as

strong wind uplift forces. Areas with car parks and walkways required resistant flooring systems that could withstand a footfall of thousands of visitors to the venue. An additional crucial requirement was the color scheme for the flooring system.

Sika Poland provided all necessary technical support throughout the project – engineers specializing in flooring and roofing offered on-site assistance. As a reliable partner with a strong track record in similar venues all around the world Sika was able to provide only top quality and technically tried and tested systems and products.

Sika technologies were used to ensure tight insulation for a 13,000 m<sup>2</sup> roof. To fulfill all the requirements, including increased resistance to strong wind uplift forces, Sarnafil® membranes were used. They were fastened mechanically to the roof deck by a Sarnafast system. A strong track record shows that even in difficult conditions Sika's membranes will stand the test of time, ensuring safety and comfort to all spectators.

And then the fun could start. The arena



The arena boasts Poland's largest LED media façade, with a total surface of 5,200 m<sup>2</sup> of LED strip lighting enveloping the stadium.

Lech Kwartowicz / ©FERB-PROJEKT



Lech Kwartowicz / ©FERB-PROJEKT

accommodates an average of 15,000 for sport events, but can hold a maximum of 22,800 spectators. Since the arena's inauguration in May 2014, locals and visitors alike have been enjoying this amaz-

ing events hall. Keep your eyes and ears open to find out which music or sports event is on when you visit Krakow as a tourist. <



# A PLACE OF PEACE IN THE MIDDLE OF ALL THE HUSTLE AND BUSTLE

Bratislava is the capital of Slovakia and, with a population of about 500,000, the country's largest city. Located in southwestern Slovakia, Bratislava occupies both banks of the River Danube and the left bank of the River Morava. Bordering Austria and Hungary, it is the only national capital that shares a frontier with two other countries.

TEXT: DAGMAR DROBNA, ASTRID SCHNEIDER  
PHOTO: FOTOLIA, EVA RIPPELOVA

- > Bratislava is the political, cultural and economic center of Slovakia. It is the seat of the Slovak president, the parliament and the Slovak executive. It is home to several universities, museums, theaters, galleries and other important cultural and educational institutions. It has a very pleasant medieval inner city with narrow, winding streets, a hill-top castle next to the river, and many historic churches and buildings to visit. The old town is centered on two squares. Some of the communist-era buildings found in the modern parts of the city are of a rather different architectural character. Move further east and there are plenty of rural places to explore. Less than 50 km to the north and east of Bratislava you can find farms, vineyards, agricultural land, and tiny villages.



The roof before getting green.



Time to relax in the sun: visitors of the center enjoy a coffee after shopping.





The multifunctional Central building, for example, is a unique complex connecting a shopping center with offices, a hotel, a medical center, a spa and a spacious green roof park all in one place.

# ON THE ROOF OF THE COMPLEX IS A LARGE GREEN PUBLIC PARK, AN OASIS OF CALM AND TRANQUILITY

> Today, Bratislava and its surroundings form the most prosperous region in Central and Eastern Europe, with a per capita GDP of around 186% of the EU27 average and it is the fifth most prosperous region in the EU. Many of Slovakia's large businesses and financial institutions also have headquarters there. The city's healthy economic development, which brings with it an increase in consumption and the need for a robust urban infrastructure, is triggering demand for challenging construction projects.

The multifunctional Centrál building, for example, is a unique complex connecting a shopping center with offices, a hotel, a medical center, a spa and a spacious green roof park all in one place. It was this perfect synthesis and functional organization of space that convinced the jury of the national "Building of the Year" competition to award it first prize. The 4-storey building houses a shopping

center with a 3-storey underground car park, and two other high-rise buildings. There are business offices located on the higher floors and a four-star hotel on the lower one.

On the roof of the complex is a large green public park, an oasis of calm and tranquility. The roof of the shopping center offers a 6,000 m<sup>2</sup> natural setting and ample opportunities for an entire family to relax. Besides trees, benches and playgrounds, there is even a summer amphitheater and an outside area for the kids' corner. Peace, fresh air and a place for families and children to enjoy some leisure time – all this is part of the added value that the Centrál site delivers. The architect and investor opted to include a swimming pool and relaxation area in the new structure as a reminder that the location had previously housed a spa and baths.

A number of different roofing systems were installed by Sika Slovakia. For the greened terraces above the shopping center, premium quality membrane Sikaplan® with an inlay of non-woven glass was used as it is resistant to root penetration. The highest roofs were waterproofed with the mechanically fastened Sikaplan® system, which is designed for exposed roofs. The other non-accessible roofs are protected with a Sikaplan® membrane covered with gravel.

The underlying idea is to enhance the multifunctionality of the building with a natural haven of recreation for visitors. Green roofs can serve many purposes, offering birds and bees a refuge from the urban surroundings and providing human guests with some respite from the stresses of everyday life and a chance to admire the beautiful flowers and garden created high above the sky. <



During construction time: The roof of the shopping center will offer a 6,000 m<sup>2</sup> natural setting and ample opportunities for an entire family to relax.



## AND THE WINNER IS...

On April 23, during a dinner hosted at Madrid's spectacular Hotel Palace, the prizes for the ninth Sika "Best Project" competition were presented to companies which had come up with exceptional ways to apply Sika solutions. The dinner was attended by winners, jurors and directors of Sika Spain, accompanied by their partners.

TEXT: LUIS CARLOS GUTIÉRREZ, ASTRID SCHNEIDER  
PHOTO: SIKA SPAIN

> After the dessert course it was time for the award ceremony. Prizewinners had an opportunity to outline the development and features of their projects and take questions before picking up their awards to well-earned applause from the audience.

Earning the recipient a wonderful trip for two, the "Best Project of 2014" award went to CIMA for the Puente Cristo del Amor de Marbella. Winners in the other

categories each received a prize plus an exquisitely executed painting. This year's competition was a success, attracting a total of 72 submissions from 40 companies, including 19 first-time entrants. The idea behind the "Best Project" contest is to give Sika an opportunity to recognize specialized applications of their technology. Companies can submit photos (digital or paper) of a reference project embodying emblematic technical qualities or a novel form of implementation.

The different award categories are civil engineering repair and waterproofing, roof waterproofing, construction repair and strengthening, pavements, decoration, plus a special accolade for the best sustainable construction. A book containing a collection of all the project profiles is also produced and mailed out to architects, government agencies, engineers and other subscribers. The winning references are published in leading magazines.

Constructing adequate energy infrastructure  
in a building at Plaza Arenal, Chiclana, Cadiz,  
Southern Spain.







1.-7. Refurbishment and better isolation will support the climate inside the buildings during the hot summers (up to +35°) and humide autumns and winters at the Atlantic coastline of Southern Spain.



THE WINNING REFERENCES  
ARE PUBLISHED IN LEADING  
MAGAZINES



The adjustment of energy use was one big topic at these roofing works.



Cracks in the old roof.

> As well as five quality digital photos, entrants must provide information on the project start and end dates, the property, the builder or contractor, the process, the products applied, the surfaces treated, and consumption. Among the aspects to be assessed by the panel of recognized experts are the volume, quality and difficulty of the work, the innovative solu-

tions employed, improved runtimes, and iconic features.

A firm date on the agenda of professionals working with Sika solutions, the “Best Project” contest gives them an opportunity to showcase their foremost work to market leaders. <

# URBAN INFRASTRUCTURE





# A BRIDGE THAT TAKES IT ALL

Durban is a natural paradise known for its gorgeous coastline of sun-kissed beaches and subtropical climate. Situated on the eastern seaboard of South Africa the city is the third-largest in the country and is built around one of the busiest ports in Africa.

TEXT: ASTRID SCHNEIDER  
PHOTO: FOTOLIA, SIKA SOUTH AFRICA

The standard segmental method of bridge building for two directional ramps at the intersection was therefore scrapped in favor of the innovative method known as incremental launch.



- > The city focuses on providing visitors with a unique set of experiences that go beyond the beach and into the realm of Durban's varied culture, urban way of life and scenic diversity. An elegant, mature and ambitious city, Durban is a trendsetter in offering great lifestyle, speckled with adventure activities. Blessed with natural beauty, it is an astonishingly livable city. Whether you're in Durban for business or leisure, it exudes a warm African flavor that will capture your heart forever.

According to the official municipal website, the city, with its 3,442,398 inhabitants, has set itself the ambitious target of being Africa's most livable and caring city by 2030. Key to reaching this goal is a well-functioning infrastructure, including the massive ZAR 352 million Umgeni Interchange upgrade currently underway along one of Durban's arterial routes.

Affecting two major highways, the main focus of the project is to keep traffic disruption to an absolute minimum by building a bridge on the N2 Northbound freeway. The main challenges were space constraints caused by the nearby Umgeni River and the adjacent residential and commercial developments. The standard



segmental method of bridge building for two directional ramps at the intersection was therefore scrapped in favor of the innovative method known as incremental launch. This method entails building the entire bridge deck from one end of the structure and eliminating the need for formwork, thereby allowing traffic flow to continue uninterrupted.

Incremental launch technology involves

sliding sections of bridge deck over special bearings, namely concrete blocks covered with stainless steel and reinforced elastomeric pads. The first such bridge constructed was 232 m long, from Umgeni Road onto the N2 Northbound, while the second measured 205 m from the N2 Northbound onto Umgeni Road.

Sika South Africa supplied the project with SikaPlast, an aqueous polymer solu-

According to the official municipal website, the city has set itself the ambitious target of being Africa's most livable and caring city by 2030.



tion that is a multi-purpose water reducer and superplasticizer for shotcrete, and SikaTard, a retarding concrete admixture developed for the control of cement hydration. Sikadur was applied to the base plates of the supporting columns used in the incremental launch method of bridge construction. As a concrete-curing compound, Sika Antisol was sprayed onto all bridge decks and columns to prevent premature water loss. Exposed rebars were protected by SikaTop-Armatec 110 EpoCem, an anti-corrosion coating and bonding agent that provides excellent adhesion to steel and concrete.

When construction on the ZAR 352 million project commenced in March 2011, three of the neighboring communities benefitted greatly as local labor was used to fill 150 newly created jobs. The

Umgeni Interchange upgrade, which is nearing completion, will significantly alleviate traffic congestion by allowing the free flow of approximately 14,000 vehicles during morning peak hours and some 16,000 vehicles during afternoon peak hours.

As one of the biggest bridges in Durban and the largest undertakings of its kind in South Africa, this project will set an international benchmark for similar projects in the future.

Projects like this make the city more livable: fewer jams and much more free time. Durban is sometimes unfairly passed over for its 'cooler' Capetonian cousin Cape Town. But this isn't fair; there's a lot more to fun-loving Durbs than meets the eye. Durban's downtown

area – a buzzing, gritty grid comprising grandiose colonial buildings and fascinating art deco architecture – throbs to a distinctly African beat. As home to the largest concentration of people of Indian descent outside of India, Durban also boasts a striking, unmistakably Asian feel, with the marketplaces and streets of the Indian quarter replete with the sights, sounds and scents of the subcontinent. <

## DURBAN IS SOMETIMES UNFAIRLY PASSED OVER FOR ITS 'COOLER' CAPETONIAN COUSIN CAPE TOWN

# A CROSS-CITY LINK SUPPORTS ZURICH

Zurich is the largest city in Switzerland, though Berne is the de facto capital – a fact that many people don't know. Zurich is located in north-central Switzerland at the northwestern tip of Lake Zurich. The lake, the surrounding hills and woods, the nearby mountains and the old traditional houses are what make the city so charming and unique. The municipality has around 400,000 inhabitants, and the Zurich metropolitan area 1.83 million. Zurich is a hub for railways, roads, and air traffic. Zurich's airport and railway station are the largest and busiest in the country. The city is also home to many of the employees in Sika's corporate and Sika Switzerland team.

TEXT: JASMINKA KOCEV, ASTRID SCHNEIDER  
PHOTOS: RICARDO GOMEZ, FLORIAN KOHLER





Over half a million passengers per day will pass through Zurich main station in 2020.





Just imagine running thousands of people up  
and down every day.





> Despite its relatively low population, Zurich is a leading global city and one of the world's largest financial centers. It is home to a large number of financial institutions and banking giants. Most of Switzerland's research and development centers are concentrated in Zurich and the low tax rates attract overseas companies to set up their headquarters there. Some international surveys rank Zurich first on a list of the top 25 cities in the world to locate a base.

The surge in population seen in recent years has to be addressed by expanding urban infrastructure. Over half a million passengers per day will pass through Zurich main station in 2020. It is the central hub for rail traffic in Switzerland. With trains pulling in and out virtually every minute, some 400,000 passengers arrive, depart or change services here every day. Commuter volumes are constantly on the rise. A new cross-city

link was designed to ease the bottlenecks and provide more trains for Zurich.

The "once-in-a-lifetime" cross-city link project was launched in 2007 in response to the growing passenger numbers. The multi-billion project comprises a 9.6 km rail section including the new Löwenstrasse through-station, Letzigraben bridge, Kohlendreeck bridge and Weinberg tunnel. The four-track underground station, located some 16 m below two existing tracks, forms the heart of the new link.

The site of the through-station posed severe difficulties given that it occupies part of the canton's largest groundwater system and crosses below the River Sihl as well as all three existing station malls. The new station was designed with wide platforms, numerous spacious access stairways and state-of-the-art security installations.

The challenging concreting operations – partly carried out without interruption of the train services in the overlying main station – placed high demands on the entire project team. During excavation, Sika® ViscoCrete® technology was used for the approx. 2,000 m<sup>3</sup> of special self-compacting concrete placed for the umbrella seal. The admixtures were used for the 130,000 m<sup>3</sup> of structural and fair-faced concrete.

To make way for the construction of new bridges, some sections of existing track had to be altered or lifted. The formwork erection and concreting works for the bridges are performed high above ground level while the normal train services continue to run. When finished, the Letzigraben bridge will be Switzerland's longest railroad viaduct. The works are progressing to plan and look set for completion in 2015. The bridges incorporate some 25,000 m<sup>3</sup> of structural concrete

# OVER HALF A MILLION PASSENGERS PER DAY WILL PASS THROUGH ZURICH MAIN STATION IN 2020



## THE LETZIGRABEN BRIDGE WILL BE SWITZERLAND'S LONGEST RAILROAD VIADUCT

- > using Sika® ViscoCrete® superplasticizer, Sika® Retarder and Sika® Fro V-5 for improved frost resistance.

Approximately 5 km in length, the twin-track Weinberg tunnel forms the important central section of the cross-city link. In an elongated S-bend, it crosses under the historic landmark southern block of the main station, the River Limmat and Zürichberg mountain before converging with the cutting on the approaches to another station.

The construction of the cross-city link involved the excavation of a million cubic meters of rock and soft ground. The Weinberg tunnel required top-quality concrete in a variety of forms: concrete with a stripping time of only 4.5 hours for the tubbings, in-situ concrete for the tunnel arch and shotcrete for stabilization. The sheer volume of concrete placed testifies to the imposing size of the tunnel structure: 45,000 m<sup>3</sup> of arch concrete, 25,000 m<sup>3</sup> of shotcrete, and 45,000 m<sup>3</sup> of tubing concrete. The main 4,200 m

section of the Weinberg tunnel was driven by an 11.3 m diameter tunnel boring machine and lined with 30 cm thick reinforced-concrete tubbings. Overall, some 14,000 concrete tubbings were cast for this one tunnel alone.

The entire tunnel was waterproofed by approximately 140,000 m<sup>2</sup> of 3 mm Sikaplan® FPO membranes as well as 6,000 m of Sika® waterbars for the compartmentation. A lot of the people working in Sika's corporate and Swiss team



are looking forward to the inauguration because it marks the beginning of a new era of sleeping longer on weekday mornings, safe in the knowledge that they can get to their offices fast thanks to the new public transportation infrastructure.





## SIX-PACK FLOORING FOR VESSELS

A ship requires the right flooring solution to be able to weather rough seas. To dampen vibrations, the vessel needs a visco-elastic floor in the structure of the hull. A floating floor reduces the airborne-like sound from the engine as well as impact noises such as doors slamming, somebody knocking on the deck or people walking. If you are hoping to get some relaxation on a cruise holiday, you want noise levels to cause as little disturbance as possible, including other vacationers' footsteps. Depending on the noise situation, you have to find the correct floor solution. And it goes without saying that floors always have to be safe and non-slippery.

TEXT: CHRISTIAN RIIS, ASTRID SCHNEIDER  
PHOTO: FOTOLIA



> The new six-pack from Sika can be described as simple to use with enhanced green features, taking the Sikafloor range to new heights for its customers. The six are the outcome of two years of intensive R&D and independent verification by third-party agencies, plus additional field testing. “We can proudly say that these products are all one component – just add water,” explains Christian Riis, Key Account Manager at Sika Marine. “And as there are no isocyanates, there is nothing to declare on the green passport,” he says.

So although the challenge of making concrete bend like elastic was comparatively easy, it was no simple task to make it self-recovering as well – not to mention cutting out the toxic elements normally used, such as isocyanates, solvents

and PVC. “Our first testing was a sort of craftsman’s R&D,” Carsten Jørgensen, Product Field Engineer Marine, says with a smile, recalling the stage before official verification. “But now, these products bear the wheel mark sign of EU approval.”

Sikafloor Marine Elastic is a waterproof mortar membrane for sealing off wet areas using a very thin 1-2 mm layer with flexible crack-bridging properties. Riis explains: “It definitely won’t crack if it’s less than 3 mm because it’s elastic, but it can be stretched. It can be applied by roller, brush or spatula, depending on the water quantity when mixed. And it can be applied on humid substrates with no need to wait days for the humidity level to fall to an acceptable level – the next day is fine.” Sikafloor Marine 107 is an ultralightweight self-leveling deck covering

which, in comparison with previous solutions, requires 200 grams less per square meter for every millimeter of thickness applied. “It’s ideal for passenger ships, where weight is critical and the savings made are vital in light traffic areas such as cabins. Its excellent self-leveling properties mean it spreads out more or less by itself after some guiding,” Riis says.

Another self-leveling compound is Sikafloor Marine 118-FC (the last two letters referring to its fast-curing ability), requiring just two hours to level out any deck. “Its compressive strength is very high and, at the same time, it is the first self-leveling product that can be spike-rolled to get an even surface,” Riis points out. “Being pumpable, it is ideal for refurbishments and refits with tight time restrictions.” The Sika team has come up with a



> real breakthrough for floating floors. Sikafloor Marine Litosilo FC not only possesses the above attributes, it is also non-combustible and magnesium chloride-free. “Because it is non-combustible, it is A60-compliant. It can also be built up to any height required and is very flexible. If a higher strength is needed, then steel-wire mesh can be added.

In the case of floating floors, it is built up on rock wool. As a leveling component it can go directly on steel,” Riis reveals. “But because it contains no magnesium chloride, there is no danger of corrosion starting if water penetrates down to the steel deck. Magnesium chloride-based systems can advance corrosion at a rate of half a millimeter per year, so with a deck 5-6 mm thick, it doesn’t take long to cause serious damage and expense.”

The last two in the pack are new visco-elastic products, as their lettering suggests. Sikafloor Marine VES 515 is a visco-elastic steel damping system. When tiles are needed in a VES, this is the one to use thanks to its adhesiveness. “Steel tiles 1-3 mm thick can also be placed on top of a vertical surface and there’s no sliding down even on a coating 1-2 mm thick. And it is silicone- and PVC-free as well. Customers can switch to this with-

out losing any damping, which compares well against today’s products with a loss factor of 21%,” Riis stresses.

However, to build up an isocyanate-free visco-elastic solution on a steel deck, it has to be mortar, and Sikafloor Marine VEM is the right choice. In addition to the basic qualities they all share, it is pumpable, requires only 1-2 mm covering and is very flexible and difficult to crack. The high structure-borne damping efficiency effect is achieved by using Sikafloor Marine 18 or Marine 118FC as the constraint layer. “It is the first ever visco-elastic mortar on the market and no damping properties are lost by changing from products containing isocyanates,” Riis emphasizes.

As part of the rollout, Sika held a series of intensive seminars for shipbuilding experts, including demonstrations and a tour around the craftsman’s testing R&D laboratory at their facility in Northern Italy. One of the specialists who attended, STX Finland Sound & Vibration Project Engineer Berndt Lönnberg says: “I think it’s great to see materials suppliers who are serious about the challenge of developing new products that address environmental concerns. It proves that Sika listens to contractors, subcontractors

and yard installation personnel when it comes to making their work easier,” Lönnberg says. “Installation conditions, both ambient and time-wise, flexibility of delivery – as it’s one-component – and the testing they have carried out, show a degree of dedication that others would do well to copy. It was good to hear that they are one-component products containing no hazardous ingredients. It means no more two- or three-component compounds requiring special transportation before we could even use them – instead, just a nontoxic powder in a bag.”

Sika applied more than 100,000 m<sup>2</sup> of flooring material to the famous cruise ship Oasis of the Seas before it left the Turku Shipyard in Finland. Besides the visitors, the 4,000-strong staff and crew will also enjoy the comfort guaranteed by the floor: thousands of people walking, dancing or just talking in a relatively confined space. <



## SIKA PRODUCTS IN MY HOME

Hello. My name is Markus Jahn. I have worked for ten years as a product engineer for sprayed concrete, first with Sika Switzerland and now with Sika Services. Four years ago, my partner Susanne and I bought an old log-built house in Flums, Switzerland. The property included an outbuilding and some grounds. In earlier times it used to house a wine press for Gräplang Castle, which is situated on the opposite side of the valley.

TEXT: MARKUS JAHN  
PHOTO: MARKUS JAHN

> When we bought the property, the outbuilding was effectively as good as new, but the house itself was certainly not. It is not easy to establish its age, although we know from accounts given by some long-time local Flums residents that about 60 years ago the house was actually moved several hundred meters down the hill. Apparently, this used to happen quite frequently with these types of property for a number of reasons and the original log construction method is tailor-made to accommodate this, because the horizontal beams of the outer walls can

be dismantled relatively easily and then equally easily joined back together in a new location.

Our plan was to achieve a sympathetic renovation of the house and to convert the outbuilding to use as a barn for a few animals. We set ourselves two conditions: firstly, to do as much of the work as possible ourselves, and secondly, to use as many Sika products as possible, whenever feasible. With regard to the first condition, I should mention that some 20 years ago I completed a mason-

ry apprenticeship and later studied construction engineering, as did Susanne. The second condition came from my present job – Sika has very good products and as an employee I am at the source and can contact colleagues if I have any questions relating to products and areas outside of my own areas of expertise.

Early in April 2013 we began excavating for groundworks beneath the house and continued to manage all the building works and most of the joinery for the project ourselves. I must say that we



Relaxing on the sunny terrace.



The pearl is ready.

> could never have coped with everything on our own, but we were very fortunate to have had helpers who have actively supported and assisted us again and again with good advice throughout the building works.

We used more than 20 different Sika products when building the house, including various admixtures and synthetic fibers in the concrete and mortars, together with pre-bagged Sika repair, grouting and sprayed mortars, plus several kinds of waterproofing products. Naturally we also needed Sika products for the concrete curing, strengthening and bonding.

In retrospect I can say that this was also probably the most intensive product training I have ever had: 'learning by doing'.

On April 1, 2014 we finally moved into our self-rebuilt home and I cannot say enough how very satisfied and happy we feel here. After moving into the house, we turned our attention to the outbuilding. With its conversion to a small animal barn now also complete, this February we brought in two pregnant goats about to give birth to their young kids. And from the spring onward, the goats can enjoy the company of a number of rabbits.

Another project we will be tackling this year is to build a dry stone wall behind the house, which has me busy now reading technical and historic literature to learn more about this ancient craft. Since a dry stone wall only needs stones and not mortar, we probably won't be able to use any Sika products, but then again... but let's see what else we can build in the future. <

THIS WAS  
THE MOST  
INTENSIVE  
PRODUCT  
TRAINING  
I HAVE  
EVER HAD



# DRINKING WATER FOR BURUNDI

Burundi, or to give its official name, the Republic of Burundi, is a land-locked country in the African Great Lakes region of Southeast Africa, bordered by Rwanda to the north, Tanzania to the east and south, and the Democratic Republic of the Congo to the west.

TEXT: KLAUS STRIXNER, ASTRID SCHNEIDER  
PHOTO: FOTOLIA, GLOBAL NATURE FUND

> It is also sometimes considered part of Central Africa. Burundi's capital is Bujumbura. Although the country is land-locked, much of the southwestern border is adjacent to Lake Tanganyika. Burundi lies mainly on a high plateau with a considerable variation in altitude, ranging from 772 m to 2,670 m above sea level.

Burundi is one of the five poorest countries in the world and has one of the lowest per capita GDPs of any nation in the world. The country has suffered from warfare, corruption and poor accessibility to education. Burundi is densely populated and has witnessed substantial emigration as young people seek opportunities elsewhere. The DHL Global Con-

nectedness Index ranks Burundi as the least globalized of 140 surveyed countries.

According to the 2013 Global Hunger Index, Burundi has an indicator ratio of 38.8, earning the nation the distinction of being the hungriest country in the world in terms of percentage. Poor families often find themselves in situations where they can no longer feed all their children, some of whom end up being sent to work or to beg on the streets. Others leave home of their own volition. As important as eating, or even more important, is drinking. The WHO estimates that about 884 million people have no access to clean drinking water, even though

the UN had declared water to be a human right in 2010. Reliable studies from recent years have shown that less than 40% of the rural population and only 27% of schoolchildren cannot get clean water. As a consequence, diseases such as cholera and diarrhea are very widespread. Added to this is the fact that long journeys must often be undertaken to reach the water sources – time which, particularly in the case of young girls, is taken away from school and education.

Sika undertook a project which concentrates on the villages of Kagwema and Rukaramu, north of Burundi's capital Bujumbura. These regions are two of the country's neediest areas in terms

Wherever we look, water is the most essential element on earth: for humans, animals and plants.



- > of drinking water availability. Together with the environmental organization Biraturaba in Burundi and water experts Pureflow from Kenya, the Global Nature Fund (GNF) – with Sika's help – is enabling access to clean drinking water for around 5,000 people, particularly children. It is also organizing environmental training on the management of natural resources and renewable energy.

Groundwater drilling was overseen by Kenyan water expert David Maina. At both project sites, the drinking water supply is to be secured by drilling new boreholes and providing access to groundwater. As is the case in many regions of Africa, including the project areas, the electricity supply is very unreliable. To get round this problem, the boreholes were equipped with a solar

pump, allowing villagers to draw water independently of a mains electricity grid. Drinking water can also be obtained for a small fee from a local kiosk which has been fitted out with a water storage tank and water tap.

According to project leader Emmanuel Nshimirimana, public support is increasing continually as the project successfully advances. News of the discovery of water

in Kagwema even led to massive crowding, as hundreds of people came to fetch water within a very short space of time. This incident shows how important a secure supply of drinking water is, especially in the rural regions of Burundi.

As part of the project, a number of information events were staged, dealing with environmental training, hygiene and sustainability. Workshops provide informa-



tion to civic leaders, school heads and teachers on the considerate use of natural resources and on forms of renewable energy. Moreover, these workshops are intended to bring about increased awareness of problems relating to water and hygiene. Alongside the environmental education measures, local technicians are to be trained to maintain the equipment, including after completion of the project.

## BURUNDI IS ONE OF THE FIVE POOREST COUNTRIES IN THE WORLD

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