

AMBITIONS

A dive into Sika's world



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Step into a new born
Yangon

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HOUSE OF WORSHIP

27.000 elements of steel, marble
and glass

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HARBIN OPERA HOUSE

Sealants made for temperatures from
-40°C to 50°C

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AMBITIONS ISSUE #25

BUILDING TRUST



STEADFASTNESS



ASTRID SCHNEIDER
Marketing & Product
Communications Manager
Sika Services

The term “steadfast” might be used to describe a person who is fiercely loyal to another person, a group, a company, work, ideas or thoughts, to name only a few examples. Remaining steadfast can help us to withstand upheaval and other blows of fate during our lives. And it’s comforting in a way as well. Just imagine changing your entire mindset every day – or moving house every two months. No, that sounds too exhausting. But it is of course not only us who need steadfastness. The construction world out there is exposed to very different complex external conditions which have to be overcome by professional systems and solutions. The Harbin Opera House in Northeast China has to endure severe weather conditions. Its steadfastness originates to a large part from the sealants, which have to be able to withstand seasonal temperature changes for a period in excess of 10 years. In winter, when the snow-melting device installed at the bottom of the aluminum cladding facade begins to work, the facade’s temperature will immediately rise 90°C from -40°C to 50°C. Under such conditions, a standard 4,000 mm by 2,000 mm aluminum cladding panel will experience a 9.7 mm linear deformation, which must be absorbed by the sealants (p. 5). Lifelong stability is also absolutely essential for the Grand Theatre in Rabat, Morocco, a veritable architectural pearl. With flooding a fundamental concern in the area surrounding the building, the site has been raised to five meters above the river level. Despite this, the required basement depth means that some parts of the building are still permanently below the water level, and large-scale tanking measures are being adopted to deal with this. The nearby river has created special challenges for the waterproofing concept for the building foundations, placing exceptionally high demands on the waterproofing systems, which Sika provides (p. 28). And while on the subject of strong waterproofing options, we are looking forward to celebrating with you the 30th birthday of the cementitious waterproofing coating SikaTop® Seal-107 (p. 42) and showing you some more solutions for wet rooms (p.34) – to keep them steadfastly protected against moisture, rising damp and any other water damage.

Yours sincerely,

ASTRID SCHNEIDER

AMBITIONS #25 2016



CONTRIBUTORS



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Marketing & Communication
Sika Italy

With our social project of the gynecology and pediatrics clinic, we are proud to offer a second opportunity for people in need. Sustainable Flooring & Coating solutions have been applied for the “Associazione Caterina” medical clinic.



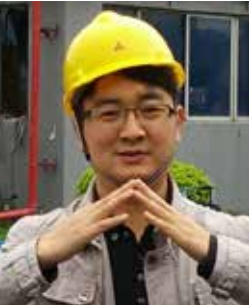
MATTHIAS ARNET
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Sika Services AG

Sika proves its role as the leading waterproofing company: 35 years success with SikaTop®Seal-107 – the reliable choice when it comes to waterproofing mortars, all over the world! This is Building Trust, continuous improvement paired with long-term experience.



WINT YUPAR MOE
HR Office & PA
Sika Myanmar

I am the youngest employee in Sika Myanmar and I do really enjoy my job and being with my colleagues. Sika feels like family for me.



LINGANG SI
Product Management
Manager, Sika China

Sika FFI team devotes to building trust with key accounts by supporting the market with reliable products, leading solutions and complicated service. Sika engineering silicones inside of thousands of buildings greatly enhanced the facade safety reliability and long-term water-proofing performance.



KARIMA NGAIZI
Marketing & Communications
Coordinator, Sika Morocco

Recently I had to queue in a public institution in Casablanca and I heard a conversation by chance of the two men who were behind me, one of them said “Have you noticed that Sika lately is more visible? Wherever you go in Morocco you see their triangle...” Hearing these words was really heartwarming for me.

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In 2010, Harbin was awarded the title “City of Music” by UNESCO. The new opera house will add even more value to this place.

SEALING

THE ECHO OF NATURE

The Harbin Opera House is situated in the wetlands of the Songhua River in Northeast China and is designed to reflect the force and spirit of the northern city’s untamed wilderness and rigid climate, with an appearance of snowy mountains. In February 2016, the opera house was named one of the world’s best buildings by ArchDaily*. Sika China has played its part in creating this amazing landmark, using its silicone sealants to bond the aluminum cladding and glass facades.

TEXT: APRIL LV, SI LINGANG
PHOTO: HUFTON AND CROW

> Harbin is also known as “Ice City” or “Moscow of the East”. It grew from a small village into a modern city during the late 1800s and early 1900s, in tandem with the construction of the Chinese Eastern Railway, which was financed by Russia. Thousands of foreigners from over 30 countries gathered there, bringing with them their cuisine, culture and architecture, each of which was integrated into the local lifestyle.

Western music was a special gift bestowed on the city. China’s first symphony orchestra was founded in Harbin in 1908. Over a century later, music is deeply ingrained into the daily life of Harbin residents. It is said that one out of every nineteen families in Harbin has a piano. The Harbin Summer Music Concert, first held in 1961, has become one of the foremost concert events in China. In recognition of the city’s music heritage, in 2010, Harbin was awarded the title “City of Music” by UNESCO.

2015 saw the inauguration of the Harbin Opera House, a palace of music and art for the city, marking the end of a five-year construction period. The opera house is located on the north bank of the Songhua River, where the riverbed forms various curves due to constant water level changes. The form of the building evokes a response to the location’s natural elements, appearing as if it was also sculpted by the water. The edifice, with its fluid curvilinear structure, rises like a ribbon from the ground and then gradually descends. It is designed to reflect the surrounding natural environment.

The opera house was designed by the Beijing-based studio MAD. The fluid-shaped building wrapped with smooth white aluminum panels and white stone concrete resembles a mountain capped with shining ice and snow. Harbin goes through sharp temperature changes, measured as low as -40°C in the winter, but rising to 40°C in the summer. This poses a great challenge in terms of the

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In winter, when the snow melting device installed at the bottom of the aluminum cladding facade begins to work, the facade's temperature will immediately rise 90°C from -40°C to 50°C.



The building interior also emphasizes the interaction of humans, buildings and nature.



On entering the grand lobby, visitors will see large transparent glass walls which allow full natural light in daytime.



The smaller theatre, which can accommodate 400 people, offers a panoramic window behind the performance stage.

> building materials, including the sealants for bonding the aluminum cladding and facades.

The sealants have to be able to withstand seasonal temperature changes for a period in excess of 10 years. In winter, when the snow melting device installed at the bottom of the aluminum cladding facade begins to work, the facade's temperature will immediately rise 90°C from -40°C to 50°C . Under such conditions, a standard 4,000 mm by 2,000 mm aluminum cladding panel will experience a 9.7 mm linear deformation, which must be absorbed by the sealants. Sikasil® WS-305 CN, known for its excellent movement capability, can ensure a long durable function for such joints.

The opera house merges with nature and its surroundings not only as regards its appearance, it is also designed to connect to the city and its residents. "We don't want the opera house to serve just as a photo backdrop, like so many iconic buildings in other cities. We want people

to approach it, enter it and even climb it," said Ma Yansong, founder of MAD. In addition to a large public leisure plaza, the opera house allows people, whether ticket holders or general visitors, to explore the facade's carved paths and ascend the building as if climbing a snowy mountain. Visitors will discover an open, exterior space that serves as an observation platform with views of Harbin once they finish their climbing journey.

The building interior also emphasizes the interaction of humans, buildings and nature. On entering the grand lobby, visitors will see large transparent glass walls which allow full natural light in daytime. The crystalline glass curtain wall, composed of transparent pyramids, is designed as an intact 3D curved surface. Consequently, only the axisymmetric pyramids are identical, every other pyramid is different. The special design and thermal insulation function of the curtain wall poses a huge challenge with regard to glass production and installation. Each pyramid is composed of two straight-an-

gled glass triangles of different sizes.

To ensure a good thermal insulation effect, the curtain wall uses three-layer insulating glass to cover a large area. To achieve the special curved surface design, the glass units of each insulation glass are of different sizes. Sikasil® IG-25 is used as a secondary IGU sealant to make sure that the glass is able to stand up to the stress, movement and deformation after bonding. Moreover, it also prevents condensation forming within the insulating glass under low temperatures.

To make sure every glass panel was installed safely and properly, the project designers stipulated strict requirements for the facade structural adhesives. Sikasil® SG-500CN / Sikasil® SG-20 was used for the facade structural bonding to provide a safe curtain wall which is watertight, windtight and resistant to wind pressure.

>

The fluidshaped building wrapped with smooth white aluminum panels and white stone concrete resembles a mountain capped with shining ice and snow.



> The opera house consists of two theatres. The grand theatre, which can seat 1,600 people, is surrounded by wooden walls around its stage and seating area, providing world-class acoustics. The smaller theatre, which can accommodate 400 people, offers a panoramic window behind the performance stage. This wall of sound-proof glass provides a naturally scenic backdrop for performances and turns the stage into an extension of the

outdoor environment, integrating performance, nature and the audience as a whole. In February, 2016, the Harbin Opera House was finally awarded the accolade of one of the fourteen World's Best Buildings of the Year, selected from over 3,000 buildings around the world on ArchDaily. It is the only building from China which received this honor. <

* ArchDaily was founded in March 2008, and is the world's most visited architecture website. It is an online source of continuous information for a growing community of thousands of architects searching for the latest architectural news on projects, products, events, interviews, competitions, etc.

WORLD VIEWS

WHAT ABOUT MYANMAR?

Myanmar (population: approx. 55 million) covers a total area of 676,578 km². It is a multi-religious nation with numerous indigenous languages. As Myanmar continues to open up to the outside world, more foreigners are venturing to this alluring country.

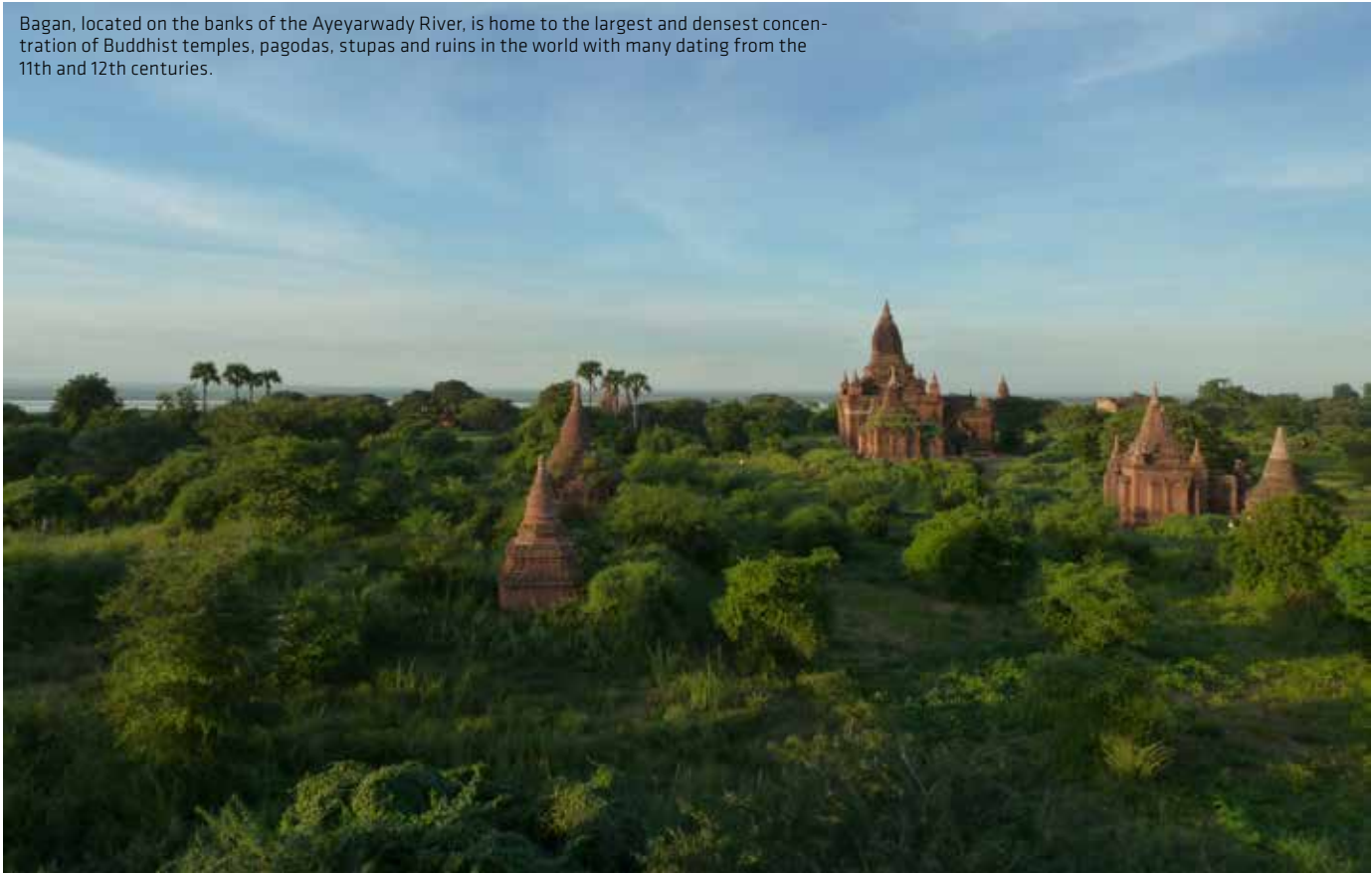
TEXT: ASTRID SCHNEIDER
PHOTO: SIKA MYANMAR, ASTRID SCHNEIDER

> The Aung San Suu Kyi-led National League for Democracy came to power in Myanmar in the historic general election of November 2015, and the country is embracing change. As a nation that has seen decades of harsh military rule, it conveys a sense of hopeful but cautious energy. However, in 2013 Myanmar was classed as having a low level of human development, ranking 150 out of 187 countries. Now the country is undergoing a rapid transition and has opened up its econ-

omy. We took a flight from neighboring Bangkok to Myanmar's biggest city, Yangon, to visit Torsten Novack, the General Manager of Sika Myanmar.

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Bagan, located on the banks of the Ayeyarwady River, is home to the largest and densest concentration of Buddhist temples, pagodas, stupas and ruins in the world with many dating from the 11th and 12th centuries.





Sika Myanmar are supplying concrete admixture to one of the largest projects in Yangon. The project is owned by Vietnam's Hoang Anh Gia Lai group. The entire project value is US\$ 550 million, and the total volume of concrete admixture required is 2,2 million liters. Sika will supply 100% of this.



Team of Sika Myanmar.

> **What are your personal secrets for leading a team?**

I don't think there are any secrets. We are working with different people from different backgrounds and different cultures. Not everyone was lucky enough to go to university, but all my colleagues are curious, they like to explore new things, are willing to learn and are highly motivated. As Sika General Manager, it is my responsibility to identify my team's strengths, so we can lead and guide them and give them an opportunity to develop, enabling them to become the backbone of our small organization and work together as part of the Sika family.

What is the first thing that springs to mind when someone asks you what it is like to work in Myanmar?

Well, when Sika sent me here in September 2012, I had a laptop and 5,000 US dollars in cash on me. Myanmar was one of the last frontier markets and it reminded me a bit of India. The country had just opened up and begun to implement a democratic system. I realized that Myanmar has huge potential for Sika because of its infrastructure needs and the fact that it's located on the Indian Ocean, which creates good opportunities for foreign investors. The country is also rich in



The Shwedagon Pagoda in Yangon is the most sacred Buddhist pagoda in Myanmar. Many times in history it became a political arena for demonstrations against the military regime.

natural resources. Personally, it was a great opportunity for me to build something up from scratch for Sika. And so I did.

How about the construction market? Where exactly does the country need Sika?

The country has to invest heavily in infrastructure, especially in the energy sector, in bridges and airports, in hotels, as well as in the real estate market. This is where Sika can provide technology support, particularly in the concrete sector, in order to protect the environment and safeguard resources.



Torsten Novack, General Manager of Sika Myanmar.

Any new trends in construction?

Right now, Myanmar is in the process of implementing building quality standards to ensure safe conditions by using technology instead of manpower.

Where is Sika Myanmar heading?

Sika Myanmar's main focus now is to be the market leader and to build up brand awareness. I can see Sika Myanmar rapidly growing over the next decades to match our Thailand or Vietnam operations in terms of size.

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Swimming gardens: a village in Inle Lake, a freshwater lake in Shan State, Myanmar.

IT WAS A GREAT OPPORTUNITY FOR ME TO BUILD SOMETHING UP FROM SCRATCH FOR SIKa



What do you personally enjoy most about living in Myanmar?
I personally enjoy waking up every day to face new challenges and to work with my team and watch my little Sika Myanmar family grow daily.

What do you wish for your country for the future?

I wish Myanmar success both in establishing political stability to attract foreign investors and in increasing the level of education.



Yangon is the country's largest city with a population of nearly 6 million, and is the most important commercial centre, although the military government officially relocated the capital to the newly built city of Naypyidaw in 2006. Though underdeveloped, it has the largest number of colonial buildings in the region.



The Lake Suites, which form part of the HAGL Myanmar Centre, are designed to be earthquake-resistant in compliance with international standards. The first phase includes office space and a five-star hotel, plus a shopping center. Phase 2 of the project comprises two more office towers and five residential blocks. This project is the first large-scale project in Myanmar and Sika is part of it.

DISCOVER THE MAGNIFICENT BAHÁ'Í TEMPLE IN CHILE

The Bahá'í faith has followers in more than 100,000 localities in virtually every country and territory around the world. Bahá'í is one of the world's fastest growing religions by percentage. As of 2002, the Bahá'í faith was established in 247 countries and territories, represented over 2,100 ethnic, racial, and tribal groups, had scriptures translated into over 800 languages, and an estimated seven million adherents worldwide.

TEXT: SANDRA ROMAN, ASTRID SCHNEIDER
PHOTO: ALONSO REYES



The idea is to transform the nine faces into translucent wings, rising from the ground to the petal-shaped cusp, with a slight overlap and slits to let the light into the temple.



> Bahá'í notions of progressive religious revelation result in their accepting the validity of the well-known religions of the world, whose founders and central figures are seen as manifestations of God. The religion has its roots in Persia, during the Ottoman Empire in the 1840s. South America's first Bahá'í House of Worship, or the Bahá'í Temple of South America, was designed by architect Siamak Hariri. "The aim was to achieve interplay of seeming contradictions: stillness and movement, simplicity and complexity, intimacy and monumentality, solidity and yet a building capable of dissolving in light," said Hariri. "The architectural challenge was to design a sister temple to the existing Temple of North America, while also enabling it to find its own unique presence at the foot of the Andes."

After five years of construction, the South American Bahá'í Temple is taking shape and is scheduled to open by the end of 2016. Located in the city of Santiago, the new House of Worship is intended to be a unique place in South America for people who want to pray, meditate or simply admire this architectural masterpiece.

The 30-meter-high building, situated on



the hills over an area of 83 hectares, is in no way dwarfed by the amazing view of the capital Santiago de Chile, as the thousands of potential visitors will find out as they enjoy and get to know this new urban milestone.

Nine doors, nine sides or faces (the number nine symbolizes a place open to the people, regardless of race, culture or religion), a central dome with the capacity to seat 600, and superlative landscaping are among the temple's most attractive fea-

tures. The idea is to transform these nine faces into translucent wings, rising from the ground to the petal-shaped cusp, with a slight overlap and slits to let the light into the temple. According to the construction designers, this is intended give visitors the impression of floating on a mirror of water, allowing the light to filter through during the day and emit a warm glow from the interior lighting at night.

>

TECHNOLOGY HAS BEEN CRUCIAL TO MAKING THIS CONSTRUCTION POSSIBLE, AND SIKA SOLUTIONS HAVE PLAYED A MAJOR ROLE

- > “Technology has been crucial to making this construction possible, and Sika solutions have played a major role,” says Eduardo Rioseco, Director of the Bahá’í House of Worship in South America. “This is a work of high complexity, with countless challenges. One of them was the manufacture of the molten glass, forming the outer coating of the temple.

ple. The work was commissioned to a Canadian craftsman, who after two years of studies and tests was able to achieve the desired result. The craftsman made glass plates, which then had to be cut, and in the case of curved pieces, the glass had to be cast in a mold, which proved another major challenge,” Rioseco said.

While the nine wings forming the temple are identical, each of them is formed by 3,000 unique elements of steel, marble and glass, which has implications not only in terms of design and manufacturing, but also for the logistics of shipment to Chile, on-site warehouse organization and final assembly.



While the nine wings forming the temple are identical, each of them is formed by 3,000 unique elements of steel, marble and glass.



The coordination of manufacturing across different countries was another interesting challenge. The glass was manufactured in Canada, the marble was bought in from Portugal, the steel was made in Turkey, and the entire assembly was completed in Germany for later erection in Chile.

The unusual and spectacular curtain wall assembly was achieved thanks to the technology of Sika’s structural silicones and its specialized Sikasil SG and Sikasil WS lines, which offer high structural and weather resistance. Without question, the major challenges were to specify a system with suitable products that provide structural bonding as well as to thoroughly check the design of every detail



The glass was manufactured in Canada, the marble was bought in from Portugal, the steel was made in Turkey, and the entire assembly was completed in Germany for later erection in Chile.

and each wing of the structure. This in turn called for a special technology that guarantees permanent cleanliness of the joined surface, anti-tarnish protection and resistance to rain runoff, all of which combine to deliver a delicate aesthetic finishing that is superior to conventional weather silicon.

Furthermore, the use of SikaMembran Universal provided a high-resistance membrane semipermeable to steam, thus producing an airtight and breathable space. “Building this temple is like assembling a giant jigsaw puzzle with

>



A LITER OF LIGHT

TEXT: RODRIGO SILVA, ASTRID SCHNEIDER
PHOTO: LITER OF LIGHT BRAZIL



- The Temple is located on 83 hectares and is 30 meter height.
- The construction with a flower or bud shape is inspired in number nine, which means it is open to all people with no distinctions of any nature.

- Bahá'í community has 6,000 followers in Chile. A bit more than 10% of them live in Santiago.
- Bahá'í believe in Bahá'u'lláh ("glory of God") who is considered the divine messenger, like Jesus, Moses, Buda and Mohammed.

- They believe in equality between men and women, soul life, that transcend death and that pray contribute to an intimate relationship between person and God.

- 1 The spectacular curtain wall assembly was achieved thanks to the technology of Sika's structural silicones and specialized Sikasil lines, which offers high structural and weather resistance.
- 2 The Bahá'í House of Worship in New Delhi, India: similar architectural idea. While traveling, the author found it relaxing to hide inside from the 45°C of the city and have a siesta.

> more than 27 thousand pieces of molten glass, steel, marble, bronze and wood. In such a scenario, having reliable insulation and sealing is essential. Sika products give us the confidence of knowing that each corner of the temple is impermeable," states the director, adding "the use of such technologies has brought us invaluable help along the entire process of insulation".

interior finishing and the installation of various systems for the temple and attached buildings, the erection of fountains in the temple square, landscaping, civil works and the construction of a new access road. Everything is being done with the same care that characterized the last 5 years, where gardens are not conceived as a decorative element, but a sacred area for prayer. The paths were designed in a spiral shape to permit quiet walks in harmony with nature. <

Currently, Sika Chile is working on the

Liter of Light is a global, grassroots movement committed to providing affordable, sustainable solar light to people with limited or no access to electricity. Through a network of partnerships around the world, volunteers teach marginalized communities how to use recycled plastic bottles and locally sourced materials to illuminate their homes, businesses and streets.

LITER OF LIGHT HAS ALREADY INSTALLED MORE THAN 350,000 BOTTLE LIGHTS

> Liter of Light has installed more than 350,000 bottle lights in over 15 countries and taught green skills to empower grassroots entrepreneurs at every stop. The organization's open source technology has been recognized by the UN and adopted for use in several UNHCR camps. The NGO is the proud recipient of the 2015 Zayed Future Energy Prize and a winner of the 2014-2015 World Habitat Award.

The Liter of Light organization in Brazil also aims to provide an economically and ecologically sustainable source of light for homes and schools without resources or access to electricity. The light source consists of a plastic bottle filled with a solution of water and bleach, placed in small holes in the roofs of houses. The aim is to refract sunlight in order to illuminate the area beneath. The bottled light was created by Brazilian mechanic Alfredo Moser, who hung an improvised lamp in the roof of his home in 2002 during a blackout. And it was not long before his neighbors picked up on the idea.

Philippine national Ilac Diaz, creator of the MyShelter Foundation, which develops low-cost sustainable projects, saw the solution as an opportunity to help poor families in their country and was inspired by it to initiate the Liter of Light project. The idea has since been developed and applied in more than 20 countries on 4 continents, including Kenya, Colombia, Honduras and, most recently, Brazil.

South America's leading proponent Colombia aims to light up 100,000 homes this year. The MyShelter Foundation provided for the installation of 1 million bottles worldwide in 2015. The Liter of Light project commenced activities in South



Liter of Light in Colombia wants to light up 100,000 homes in 2016.

America in 2013 in Camboriú Municipality, installing its own team at headquarters located in the state capital Florianopolis.

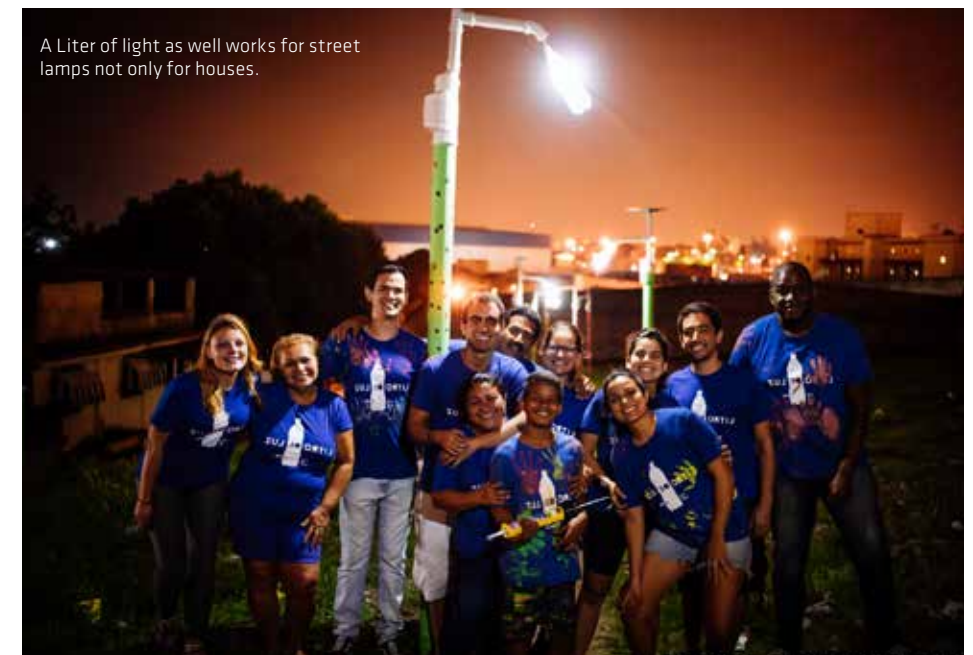
Sika Brazil has been supporting the NGO by gifting Sikaflex® and SikaBond® as well as providing financial aid. "It is essential to bring this partnership to Brazil as we can serve a greater number of peo-

ple. The donation of sealants represents a saving of 70% on our final cost," says Liter of Light president Vitor Belota Gomes.

"The challenge facing the NGO was to find a company offering the necessary high standard of technology and guarantee high-performance durable products that can withstand the weather condi-

tions," points out Sika Brazil's Marketing Coordinator Rodrigo Silva. Sika Brazil also offers the complete gamut of technical support required for the application.

Besides Brazil, Sika supports projects in Bangladesh, Colombia, India, Mexico, Nicaragua and the Philippines, among others. The project was also given public



A Liter of light as well works for street lamps not only for houses.

exposure at the World Resources Forum in Davos.

You have to see a liter of light with your own eyes. These movies will inspire you: https://youtu.be/o-Fpsw_yYPg

<http://uk.reuters.com/video/2011/07/11/bringing-light-to-the-poor-one-liter->

[at?videoid=216968892](https://www.hks.harvard.edu/news-events/news/alumni/a-liter-of-light-goes-a-long-way)

<https://www.hks.harvard.edu/news-events/news/alumni/a-liter-of-light-goes-a-long-way>



PUSHING LIMITS OF ARCHITECTURE

“I am delighted to be building the Grand Theatre in Rabat”, said superstar architect Zaha Hadid in 2010. “Morocco’s unique musical traditions and rich cultural history in the performing arts are renowned throughout the world. I am honored to be part of the cultural development of the nation’s capital.” The Iraqi lady with a British passport was known as the queen of curves. When she passed away in Miami, Florida in March 2016, the world of the architecture held its breath.

TEXT: KARIMA NGHAIZI, HARRIET SHIN, ASTRID SCHNEIDER
PHOTO: SIKI AG, FOTOLIA

The building shell features a combination of steel framing and concrete. The overall structure stands on 325 piles connected to a slab-on-grade, which, due to structural requirements, is one meter thick.



THE NEARBY RIVER HAS CREATED SPECIAL CHALLENGES FOR THE BUILDING FOUNDATIONS



> The monumental theater for the whole country, a cultural highlight with first-rate amenities – this has been the vision of the country's leaders. Zaha Hadid was commissioned to draw up an avant-garde design.

The 27,000 m² structure is sited on a floodplain site in the center of the city, which is currently undergoing major residential, commercial and leisure regeneration. Hadid's design is based around the idea of a smoothly-formed monolithic concrete wrap, wound around a set of auditorium spaces within. The areas between the auditoria and the external envelope form zones for circulation. These extend out onto the site to create a vast new public landscape, including an outdoor amphitheater with a 7,000-seat capacity.

Flooding is a fundamental concern, and the site has been raised up to 5m above the river level accordingly. Despite this, the required basement depth means that levels below the flood plain are unavoidable: large-scale tanking measures are being adopted to deal with this. This nearby river has created special challenges for the waterproofing concept for the building foundations. Although the theater site has been raised to a level five meters above the river, some parts of the building are still permanently below the water level. Hence there are exceptionally high requirements for reliable waterproofing systems.

The Bou Regreg valley is subject to seismic activity, and the saturated fine-grained soils mean that liquefaction occurs during seismic episodes. The theater

is thus supported on large-diameter piles which can withstand seismically induced lateral loads by acting as cantilevers 12 – 15 m long, supported by the stiffer soils below.

The building shell features a combination of steel framing and concrete. The overall structure stands on 325 piles connected to a slab-on-grade, which, due to structural requirements, is one meter thick. The construction is complicated additionally by the geometry of the walls, which are curved in both horizontal and vertical planes. Further demands are imposed by the size and weight of the steel roof framing.

To the west of the theater is a bridge which is heavily used by private vehicles

>



The nearby river creates special challenges for the waterproofing concept for the building foundations. Although the theater site has been raised to a level five meters above the river, some parts of the building are still permanently below the water level. Hence there are exceptionally high requirements for reliable waterproofing systems.

> and streetcars. This traffic poses acoustic problems, but excellent solutions have been found for the acoustic inside the theatre. In the main structure, acoustic quality is thus paramount; structural separation is adopted throughout, with the steel roof sandwiched between two thin concrete shells. This sits on concrete perimeter walls, separated by isolation

bearings. These steelwork trusses span up to 60 m to create a column-free internal void for the theatre itself. The floors also feature metal decking covered in concrete to create the requisite acoustic mass. Together these create an impressive and complex form reflective of, and indeed reflected in, the adjacent waters of the Bou Regreg.

SikaProof® A fully bonded composite sheet membrane system was chosen to waterproof the foundations – the first time this product has been used in North Africa. Sika® ViscoCrete® was added to the concrete, while other products such as SikaSwell® were also used in this special project. The wholehearted support provided by Sika's experts in Morocco

was very much appreciated, while the on-the-spot training for applicators, provided by Sika representatives sent specially from Switzerland to Morocco, served as further proof to all that the right decision had been made.

Rabat itself is the capital of Morocco. It boasts the country's seventh largest city center and has a population of over 1.2 million. The city is located on the Atlantic Ocean at the mouth of the river



Bou Regreg. Rabat is an important center of the textile, food processing and construction industries. In addition, tourism and the presence of all foreign embassies in Morocco serve to make Rabat one of the country's most important cities. The Grand Theater will be inaugurated in 2018 and further enhance the city's cultural importance.

https://youtu.be/1RUOTtX_xf8

<http://www.archdaily.com/90812/rabat-grand-theatre-zaha-hadid>

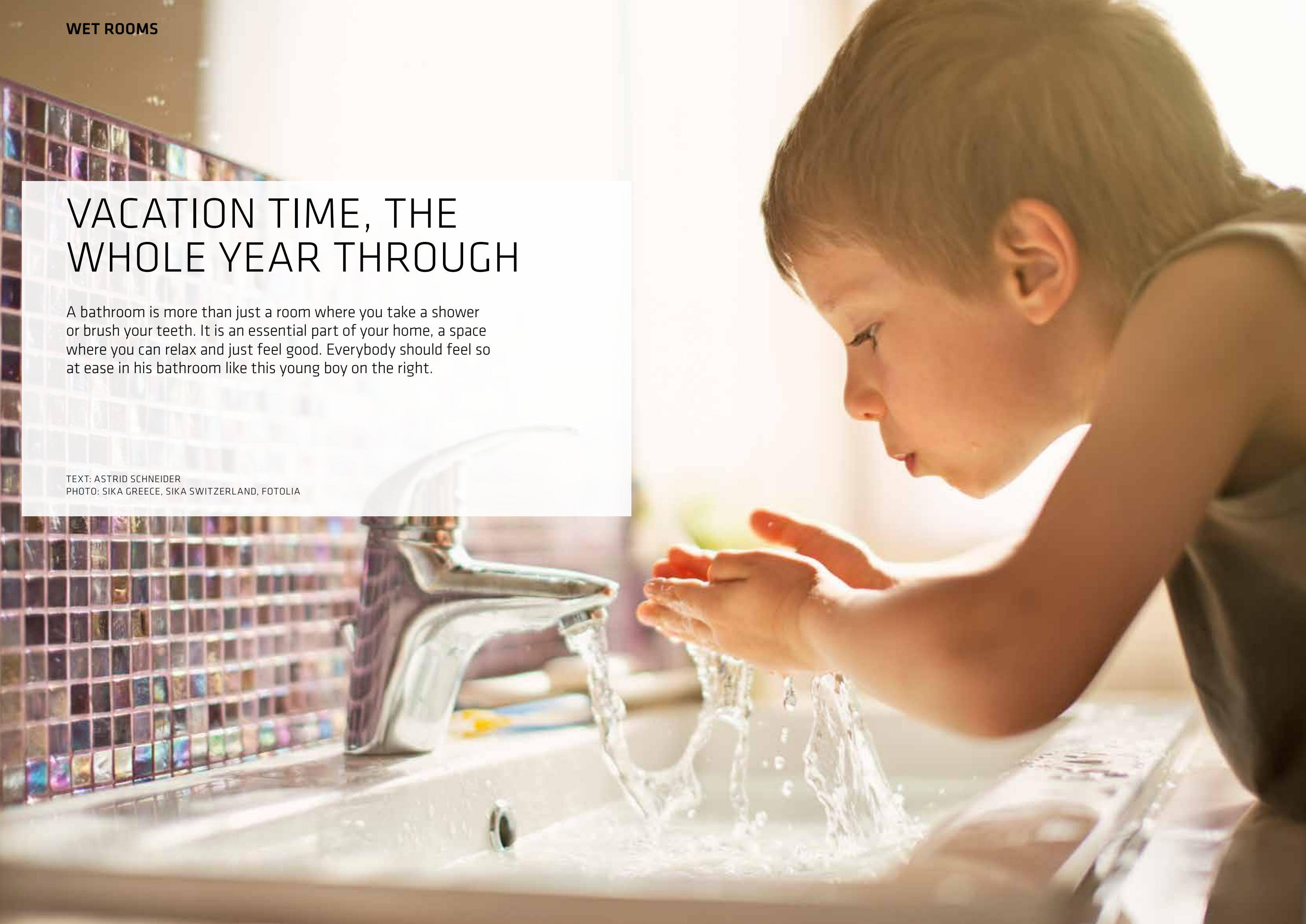
<http://www.dezeen.com/2010/11/22/rabat-grand-theatre-by-zaha-hadid-architects/>

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VACATION TIME, THE WHOLE YEAR THROUGH

A bathroom is more than just a room where you take a shower or brush your teeth. It is an essential part of your home, a space where you can relax and just feel good. Everybody should feel so at ease in his bathroom like this young boy on the right.

TEXT: ASTRID SCHNEIDER
PHOTO: SIKI GREECE, SIKI SWITZERLAND, FOTOLIA



This is becoming more and more popular: a bathroom in which the shower is not separated off from the rest of the room with a built-in shower cubicle, but where the room itself acts as the enclosure.





Insula Alba is the latest 5-star hotel construction in Iraklio, Crete. It is a luxurious sea-side spa hotel with a capacity of 140 rooms and suites plus seven indoor and outdoor swimming pools.



> Something which is becoming more and more popular these days is the so-called wet room – a bathroom in which the shower is not separated off from the rest of the room with a built-in shower cubicle, but where the room itself acts as the enclosure.

Such wet rooms offer a huge range of benefits. Not only do they look ultra-stylish and allow you to simply walk straight into your shower area; they are generally also easier to clean and, what's more, they add value to your home!

Nevertheless, when considering a wet room or any other wet area, such as toilets, kitchens, laundries or especially swimming pools, the key factor is to properly waterproof these elements and protect the structure or the building from any water ingress. It is imperative to consider the whole structure as a system, from substrate preparation to leveling, waterproofing, tiling and sealing, as the different components need to be fully compatible, easy to apply and completely reliable in order to achieve the best results.

A very popular approach is to use system solutions with tiles as a finishing layer, as they offer a huge choice of colors and designs and are perfectly compatible with waterproofing membranes such as waterproofing mortars or dispersion-based products.

Have you ever thought about redesigning your bathroom? Before you decide on a specific wet room, cast your mind back to all the hotels you have visited in your life, because hotels often reflect the very latest style. What did you like best? Below are some examples to inspire you and

highlight the areas requiring the most care ...

Sika is a full system supplier with its roots in waterproofing, and therefore a specialist for wet rooms, wet areas and swimming pools. Here are some examples...

First let's take a look at Insula Alba, Greece, which is the latest 5-star hotel to be built in Heraklion, Crete. It is a luxurious seaside spa hotel with 140 rooms and suites, seven indoor and outdoor swimming pools, restaurants, cocktail

bars, and a spa center, as well as recreation and lounge areas. The design of the hotel dictated extensive and technically demanding tiling areas. The designer's choice of tiling was synthetic granite for the indoor and outdoor areas and specially-crafted tiles for the swimming pools.

The tile adhesives for the high-traffic (e.g. reception and lounge) areas are required to withstand a heavy load. For the submerged surfaces, the tile adhesives need to have superior durability in terms of both mechanical and chemical resistance. In this type of project, the aes-

thetic factor is also a high priority. The tile grouts need to have high mechanical and chemical resistance, with antibacterial properties and long-lasting colorations, and be durable to exposure to UV radiation and chemical cleaning agents. The finishing texture needs to meet the highest aesthetic standards.

Sika Greece used SikaCeram®-203 Superbond as the appropriate tile adhesive for the bathrooms, indoor flooring and terraces. SikaCeram® was chosen for the swimming pools and surrounding areas.

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- > The tiling grouts were of prime importance. The wide range of available colorations enabled the designer to employ four different hues, matching the tiles in use.

Leaving Greece, we now visit Tivat, a coastal town on the Adriatic Sea in Montenegro. Situated within the Bay of Kotor UNESCO World Heritage site, it is famous for its burgeoning tourism industry. Part of this development is the new yacht marina and adjacent waterfront development, with residences, apartments, bars and restaurants. The

construction of the villa residences was completed in 2015 with a total area of 3,000 m².

Tivat enjoys warm and dry weather in the summer. However, during the winter period it can see a lot of rainfall. With these conditions, an in-depth evaluation of the waterproofing requirements is needed. The contractor and designer requested a complete waterproofing system suitable for swimming pools, bathrooms and terraces. An additional challenge was the pressure of completing the project within a short timeframe.

Sika Serbia offered a complete, proven waterproofing system as the best way to meet the tight schedule for this project. Swimming pools, terraces and bathrooms were waterproofed with Sikalastic® waterproofing mortars, in combination with Sika joint and tiling solutions.

Returning to the topic of bathrooms, we now go to Arandelovac, a town in Serbia which is located 75 km south of the capital Belgrade and is famous for its mineral springs. Spa and wellness destination Hotel Izvor offers a wide choice of swimming pools and wellness facilities. When

the existing hotel was to be refurbished, the contractor and designer requested a complete waterproofing system for the bathrooms, terraces and swimming pools. Sika Serbia provided a proven system solution which included waterproofing of joints, pipes, drains and other related areas.

So whether in wet rooms, wet areas in general, or swimming pools, the essential thing is to consider the right products and materials to keep the water in its intended place from the very beginning.

Have we inspired you to acquire a wet room of your own? Then design your own style – have fun selecting tiles and materials, explore different patterns and colors, and always keep in mind the need for proper waterproofing. Soon you will be able to close your eyes, immerse yourself in the water and feel ... just as if you were on vacation. Every single day of the year.

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1 Waterproofing systems were applied for swimming pools, bathrooms and terraces. An additional challenge was the pressure of completing the project within a short timeframe.

2 Luxury villas in Marina village of Porto Montenegro Tivat is a coastal town in the Adriatic sea in Porto Montenegro. Situated within the UNESCO World Heritage site, it is part of this development of the new yacht marina and waterfront with residences, apartments, bars and restaurants.

BUILDING TRUST FOR 35 YEARS – HAPPY BIRTHDAY SikaTop® Seal-107

Do you have bathroom mold on your ceiling? If you've never experienced bathroom mold, perhaps you aren't looking deep enough into the corners of your bathroom. It's one of the most common problems in any house; it's also one of the easiest to prevent.

TEXT: MATTHIAS ARNET, ASTRID SCHNEIDER
PHOTO: SIKA SERVICES AG, FOTOLIA





Special version of SikaTop® Seal-107 for waterproofing of swimming pools in Italy.

> Lack of air, leaky toilets, sinks, and plumbing pipes or damp materials such as rugs, wood, wallpaper, grout, drywall, and fabric are often the reasons for the hassle of mold. And what about drinking water reservoirs? The hygienically pure water has to stay in the interior of the tank without leakage, while outer dirt must be kept 100% outside. These are only two examples why waterproofing is essential.

One solution that Sika offers is cementitious waterproofing, which has many advantages. Waterproofing mortars make a structure impermeable to liquid water, but allow water vapor to permeate. Plus, they are relatively easy to apply and very cost-effective.

The wide range of potential applications for waterproofing mortars include waterproofing of water tanks, drinking water reservoirs, water channels and basements, as well as waterproofing below the tiling in swimming pools and wet rooms or on balconies. Cementitious waterproofing is suitable for new and refurbishment projects.

While there are many advantages to

these products, what is it that makes a cementitious waterproofing product exceptional? Is it its reliable usage paired with outstanding properties, its broad area of application or its ease of handling?

In this connection, we have a birthday to celebrate. Back in 1981, a product was launched that fulfils precisely these attributes: The cementitious waterproofing mortar SikaTop® Seal-107 was brought to market in Switzerland and has since become a byword for reliability and user-friendliness.

This two-component, polymer-modified cementitious product is perfectly suited for a wide range of waterproofing applications: keeping water in or out of a structure – whether below the tiling in wet rooms, for tanks and reservoirs, for positive or negative-side waterproofing in basements, or as a protection coating to increase the durability of concrete structures such as bridges or facades.

Sika's vast experience with waterproofing and waterproofing mortars in particular goes back to the beginning of the 20th century, when the railway tunnels

in the Swiss Alps had to be prepared for the electrification of trains. Sika was able to offer the appropriate admixtures for preparing mortars to waterproof the tunnels.

This knowledge was used to develop and improve the waterproofing mortar ranges over the years, and in 1981 the first version of SikaTop® Seal-107 was launched in Switzerland. Nowadays, this product is applied all over the world and sold in more than 50 countries. The experience acquired in the course of these years is immense: customer advice and continuous improvement are the basis of this product's dependability today.

SikaTop® Seal-107 is delivered in a two-component kit including the cementitious powder and the polymer dispersion. The polymer improves the waterproofing properties, increases adhesion to the substrate and enhances the crack-bridging characteristics. The product permits the sealing of hairline cracks and reduces permeability to liquid water.

A key feature of the product is its adjustable consistency and excellent workability: depending on the customer's needs

NOWADAYS, THIS PRODUCT IS APPLIED ALL OVER THE WORLD AND SOLD IN MORE THAN 50 COUNTRIES

and preferences, the product can be applied either by trowel or by brush as a slurry. Additionally, the product comes delivered ready to use, meaning no additional water needs to be added.

The dense structure of the mortar reduces not only the transmission of free water, but also the ingress of substances such as chlorides or sulfates that can at-

tack the concrete substrate or even the reinforcement bars.

All that remains for us to do is wish SikaTop® Seal-107 Happy Birthday. The millions of people worldwide who have built and are benefiting from tight waterproof structures will doubtless want to add their congratulations too. <



- 1 Water channel
- 2 Water reservoir
- 3 Wet room
- 4 Waterproofing of drinking water tank in Spain



MEDICAL CENTER FOR THE POOREST

The BBC recently quoted Italy's National Institute for Statistics (ISTAT) as stating that 4.6 million people in Italy were now unable to afford goods and services "essential to avoid grave forms of social exclusion". Poverty levels are now at their highest point since records were first compiled in 2005. In the less-developed south, 10% of people live in absolute poverty.

TEXT: JESSICA AUDINO, ASTRID SCHNEIDER
PHOTO: SIKA ITALY, ALESSANDRO NEGRINI

> Italian media said some of the change could be attributed to migrant families, almost a third of whom live in absolute poverty – more than 153,000 migrants arrived in Italy last year. The number of people who are living in poverty in Italy has doubled since 2012. Over a million Italians are unable to afford to eat meat or pay for basic necessities such as heating for their houses. It is estimated that poverty in Italy is more acute than it has ever been within the last 16 years.

Relative poverty is defined as a family of two members living on a monthly salary of 991 euros or less. This applies to around 12% of families in Italy. About 8% of the Italian population is living in total poverty, i.e. below the minimum acceptable standard of living.

"It is a reminder, if one were needed, of

the severity and scale of Italy's recession, the longest since the Second World War. Italy may be the comeback kid of the global sovereign debt markets, but its economy does not look as though it will ever come back – and it was not even strong to start," said Nicholas Spiro, head of Spiro Sovereign Strategy about ISTAT's report.

The recession is taking a massive toll, currently plunging approximately 40 percent of Italian youth into unemployment. One third of people aged 15 – 29 are either without education or without a job. And only 58% of those who have graduated from college are able to find jobs out of school. This is far below the average of 77.2% for Europe as a whole.

According to INSTAT, poverty in Southern Italy especially has increased by a mas-

sive 90% over the past five years, a clear indicator of the economic gap between Northern and Southern Italy. 16.6% of families living in poverty in Italy are not receiving sufficient nutrients.

The NGO Catherine Onlus Association helps precisely where help is needed. The organization was formed in 2006 and since then has cared for the very poorest section of society in the southern Italian province of Salerno. On 12 April 2011, its "soup kitchen" was inaugurated. This 400 m² property was entirely financed by volunteers and donors.

The cafeteria building provides an additional approx. 300 m² of space where "Association Caterina" wishes to tackle some of the most serious difficulties of the poor population. Thus the building also houses modern medical zones that

are available to the most vulnerable, such as pregnant women, children, immigrants and elderly people in economic difficulties, giving them access to a basic right: health care.

The medical volunteers who have joined the project will provide a permanent health service that will give many families access to health care. Trained physicians will provide pediatric, gynecological and general medical care. The gynecology department looks after expectant mothers and babies, while general practitioners will provide assistance to other patients.

Sika Italy will provide hot meals throughout 2016 and medical equipment to support its day-to-day activities. Moreover, Sika is installing Sikafloor® systems as a hygienic, durable and environmentally compatible solution for the medical facilities' floors.

<http://www.caterinaonlus.it/web/index.php/it/>



