GEBERIT

View

Reference magazine
2013

"Emporia" shopping mall in Malmö

Strong focus on environmental friendliness

UniCredit Tower and Bosco Verticale

A completely new district is being created in Milan

We build perfect waterways.

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“Those who demand structural and functional quality make a lasting and sustainable investment. This is why Geberit sets new standards by consistently implementing eco-design and makes no compromises when it comes to product development.”

Buildings are investments that are designed to be used for a long time. Whether this is possible depends on a building’s suitability and quality. What is planned today determines the living environment of future generations. The durability of materials and systems and the economical use of resources play a significant role in this regard as they help shape the quality of living environments. Geberit has devoted itself to comprehensively sustainable products that meet the highest standards, thus providing innovative system solutions for sustainable building.

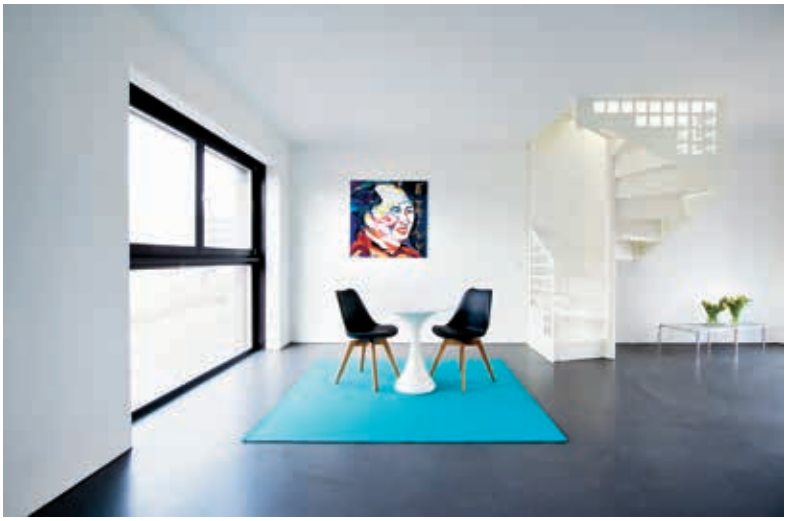
In the current issue of our reference magazine “View 2013”, we highlight construction projects from around the globe that have distinguished themselves both thanks to their outstanding architecture and also through the award of internationally renowned sustainability labels. Geberit’s role in the foundations of sustainable building is documented by projects such as the Giant’s Causeway Visitor Centre in Northern Ireland designed by Heneghan Peng Architects, which was awarded BREEAM “Excellent” certification (pages 30/31). The Geberit products used here contributed significantly to the building meeting the sustainability label’s stringent requirements. For the Al Bahar Towers in Abu Dhabi, our products met all the requirements for LEED certification and in doing so played their part in creating this green building (page 21). In the Museum of Contemporary Art in Ohio (USA), low water consumption and other sustainability criteria had to be met in order to achieve LEED certification – a challenge our installation systems met with ease (page 17).

I wish you an enjoyable read.

Albert M. Baehny, Chief Executive Officer (CEO) and Chairman of the Board of Directors

2

← The second -tallest building in the world – CCTV Tower from the Chinese state television broadcaster in Beijing.



1 ↑ The prefabricated town house "Case Study #1" was built as part of the IBA international building exhibition in Hamburg.

→ A completely new district designed according to ecological criteria is currently being created in Milan. 20 high-rise buildings are being built in Porta Nuova, with each needing to achieve LEED certification.

3

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→ Exceptional architecture and green building – the "Emporia" shopping mall in the Swedish city of Malmö.

5

4 ↑ The "Titanic" was once built on this site. Today, it is home to a new visitor center that shimmers like an iceberg.

← The iPad app for the reference magazine 2013 contains a range of images, videos and animations, plus information on a whole host of reference objects. Install and start the free app "Geberit Magazines" via the iTunes App Store.

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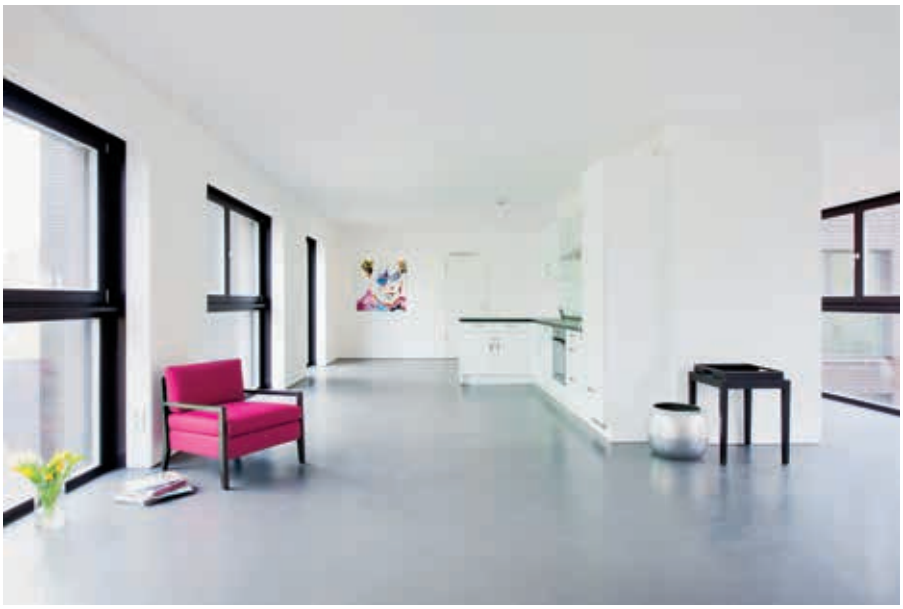
Homes of the future

Innovative projects for modular building at IBA in Hamburg, Germany

↑ Groundbreaking interpretation of the prefabricated home – the innovative town house "Case Study #1".

What do modern houses that can adapt to the lives of their inhabitants, can be built anywhere and at a reasonable price and also offer optimum energy production and maximum efficiency look like? Answers to this question are provided by the building "Case Study #1" at IBA Hamburg designed by the architects Fusi & Ammann.



↑ "Case Study #1" is a flexible loft house type that can be continually adapted to the lives of its inhabitants.

"Case Study #1", Smart Price Houses, IBA Hamburg (DE)

Building owner: SchwörerHaus, Hohenstein (DE)
Architects: Fusi & Ammann, Albstadt (DE)
Completion: 4/2013
Plumber: Harald Meyer, Sittensen (DE)

Geberit know-how
GIS installation systems
Silent-db20 piping systems
Mapress carbon steel piping systems

→ **Green building: KfW Efficiency House 55**

The innovative prefabricated town house "Case Study #1" was built as part of the international building exhibition IBA 2013 in Wilhelmsburg, Hamburg. The IBA builds upon the tradition of previous building exhibitions and searches for answers to the most pressing questions faced by modern cities. How will we live, work and learn in the future? Where will our energy come from? How will we tackle the challenges of climate change? How can cities grow in a sustainable way, and where will they expand to? By means of more than 60 social, cultural and building-related projects on the future of cities, IBA Hamburg shows how a metropolis can continue to grow in a socially and ecologically balanced way.

New building typologies

The main feature of the IBA is the "Building Exhibition within the Building Exhibition" located on an old railway goods site. Here, architects and investors have implemented groundbreaking solutions with their 17 experimental "Case Study Houses of the 21st Century", which are divided into four topic areas – highly versatile "Hybrid Houses", intelligent, sustainable "Smart Material Houses", "WaterHouses" constructed on water and "Smart Price Houses" such as the aforementioned "Case Study #1" by Fusi & Ammann.

The goal of the "Case Study Houses" is to create new building typologies. In this regard, the building designed by Paolo Fusi and Stefanie Ammann offers a groundbreaking reinterpretation of the prefabri-

↑ The modules can be combined vertically or horizontally, resulting in different floor plans and external spaces.

Geberit products can also be found in many other buildings at IBA Hamburg, including the following:

1 Case Study #1

2 Wälderhaus (Studio Andreas Heller GmbH Architects & Designers, Hamburg): DuofixBasic installation systems, Duofix installation elements for WCs, washbasins and urinals

3 Soft House (Kennedy & Violich Architecture, Boston): Silent-PP piping systems

4 Smart Material House (zillerplus Architekten und Stadtplaner, Munich): Mapress stainless steel piping systems

5 Inselparkhalle (Allmann Sattler Wappner, Munich): Kombifix WC elements, Tango actuator plates

6 Igs-Zentrum (Nägeliarchitekten, Berlin): Kombifix WC elements

↑ The "Building Exhibition within the Building Exhibition" at IBA Hamburg

cated home as a town house. With "Case Study #1", the architects have developed a flexible loft house type that can be continually adapted to the lives and requirements of its inhabitants. The house has four floors and comprises six differently sized loft apartments with a range of potential uses and living areas of between 45 and 140 square meters.

The main structure of the town house "Case Study #1" is a prefabricated module with square ground plans, which is composed of prefabricated elements such as prestressed concrete ceilings and timber framework as well as exposed concrete walls. The 45-square-meter modules can be joined together or stacked vertically or horizontally, resulting in different floor plans that allow for units to also be split over several floors. The modules are centered on a shaft made of drywall elements, which contains the building's technical installations and acts as a static anchor point.

Prefabrication and cost certainty

The modular structure of "Case Study #1" enables industrial mass production with a high degree of prefabrication, which helps to achieve cost certainty and ensure the provision of affordable living space. As such, "Case Study #1" meets the core goal of the "Smart Price House" pilot project, namely developing an affordable inner-city town house typology that also enables people from medium- and low-income groups to rent or buy their own inner-city home. In addition to the innovative multi-story construction technique and the low overall costs, this project also paid special attention to sustainability aspects. The resource-conserving design fulfills the highest energy requirements and meets the standards of a low-energy house (KfW Efficiency House 55). ←

IBA Hamburg: event and tour programs up to November 3, 2013.

→ **www.iba-hamburg.de**

Complementary contribution on this issue

Useful information on the "Solar Decathlon" project designed by the Vienna University of Technology can be found in the iPad app for the reference magazine.

↑ The loft house comprises six differently sized apartments with a range of potential uses.

↑ Geberit GIS installation system

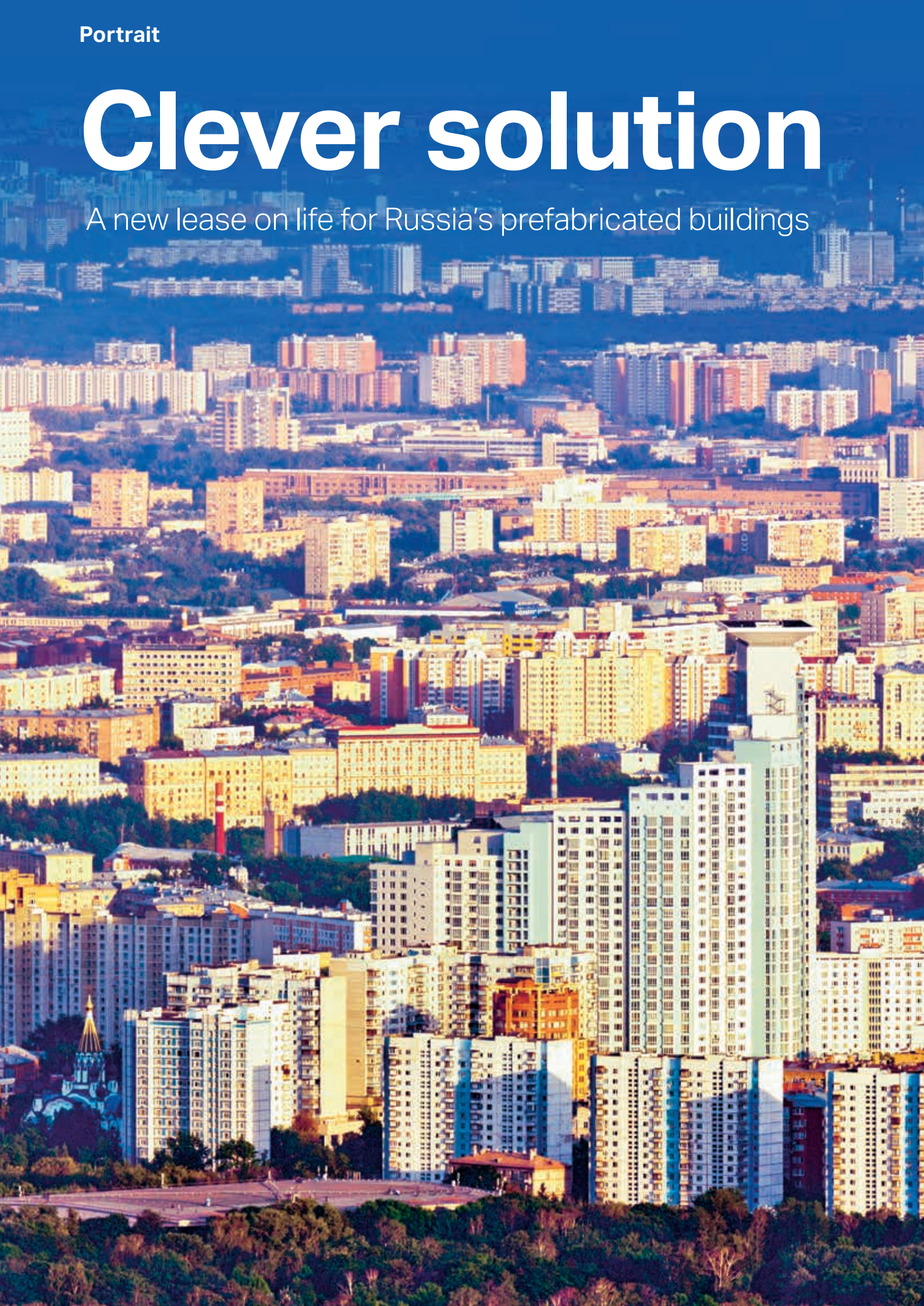
GIS installation system – "just in time"

Thanks to the high degree of prefabrication, "Case Study #1" was built in only three months. However, such an extremely short construction period is only achievable if the individual prefabricated building units are also mounted on the construction site in a timely fashion, which is why industrial prefabrication is the safe and transparent solution for the sanitary industry. Thanks to their modular design, the prefabricated GIS installation walls from Geberit are suited to projects of almost any size and when it comes to meeting the tightest of schedules. Architects value the associated safety in terms of compliance with schedules and cost calculations, as well as the reduction in construction periods. The universal GIS installation system is also very flexible and perfect for implementing individual and creative room solutions. Certified, regulation-compliant fire protection, sound insulation and static protection features are built right in.

With Geberit GIS, complete sanitary walls through to tile-bearing paneling are created in just a few steps. Potential construction tolerances can be easily compensated for on site. Thanks to tool-free connection technology, a single person can carry out the mounting without further assistance, just like at the construction site of "Case Study #1". Here, the responsible plumber had already assembled the sanitary walls for the bathrooms in the six apartments, delivered them to the construction site "just in time" upon which they were promptly mounted, connected and subsequently paneled, thus enabling the tight schedule to be comfortably met.

Clever solution

A new lease on life for Russia's prefabricated buildings



← Most people are looking to improve their quality of life in the standardized apartments found in prefabricated housing estates.

An impressive 80 percent of available living space in Russia is located in prefabricated buildings. These blocks of houses made of prefabricated concrete slabs do not exude a special charm, which is why more and more people are looking to improve the quality of life in these standardized apartments. Offerings such as the specially developed renovation kits for prefabricated buildings from Geberit (see box) simplify WC and bathroom modernization considerably and are affordable for Russian end users. This represents good news for creative interior designers such as Marina Urmancheeva and Natalia Dvoretskova. In the following interview, they explain how these customized solutions are opening up new perspectives in bathroom design – perspectives from which more and more Russians are benefiting. ←

↓ A bathroom before (left) and after (right), the modernization with the Plattenbau solution from Geberit.

Tailor-made solutions

The special feature of Geberit Plattenbau solution lies in the wall-fastening system for the Duofix installation element, which enables individually adjustable fastening of the concealed installation, thus paying heed to the cramped conditions in the pipe duct. The old pipes can continue to be used. Geberit Delta for Plattenbau comprises a Duofix installation element for wall-hung WCs, the aforementioned wall-fastening system and the actuator plate Delta21. With Geberit Sigma for Plattenbau, customers can choose an actuator plate from the wide selection in the Sigma line.

→

Natalia Dvoretskova, Starik Hottabych Moscow (RU)

"Customized solutions are the way forward in terms of achieving more comfortable living environments."

Starik Hottabych

Designer Natalia Dvoretskova has been working for Starik Hottabych, one of Russia's leading interior fittings and decor companies, since 2002. The roots of the chain store date back to 1994. Even then, the company also focused on sanitary facilities in addition to carpets and flooring. Each of the 34 branches contains a design studio, where a specialist inputs customers' specifications directly into a CAD program and compiles the products required to realize their project.

↑ The prefabricated building kit from Geberit facilitates customized solutions for bathrooms and WCs.

Interview with interior designers Marina Urmancheeva and Natalia Dvoretskova on the need for renovation bricated building kit from Geberit.

Modern and esthetic bathrooms

Ms. Dvoretskova, how are prefabricated buildings viewed in Russia nowadays?

Natalia Dvoretskova: Although most people do not really like them, they are in great demand among the growing Russian middle class. They are affordable and quickly available thanks to their short construction and renovation periods.

Many of these buildings are now fairly old. In your opinion, how great is the need for renovation and the resulting market potential?

N. D.: The potential here is considerable. Around Moscow in particular, prices are continually on the up, and more and more people are deciding to invest their money in converting their old apartments.

Ms. Urmancheeva, your company Office Design Studio operates from St. Petersburg. From your standpoint, how would you describe the significance of prefabricated buildings today?

Marina Urmancheeva: Around 80 percent of available living space in Russia is accounted for by prefabricated buildings. This figure illustrates just how vital it is for the value of these buildings to be maintained through renovation. At the same time, we are witnessing a development where new technologies are leading to changes in perception and a new appreciation for prefabricated buildings.

Could you provide some examples?

M. U.: Specific preferences such as having sufficient space, modern materials for ceilings, walls and floors and sophisticated lighting can now all also be realized in prefabricated apartments. Our customers have recognized this – unlike Russian providers of such products, who have failed to make the leap into the 21st century.

← With the Geberit solution, all connections can be installed behind the wall, which noticeably improves the sense of space.

Marina Urmancheeva, Office Design Studio St. Petersburg (RU)

"New technologies are leading to a new appreciation for prefabricated buildings."

Office Design Studio

Born in St. Petersburg, Marina Urmancheeva received her doctorate in architecture from the St. Petersburg Academy of Arts. In 1992, she founded the company Office Design Studio together with her husband Ali Urmancheev. The couple have received a range of design awards both at home and abroad for their design projects in the private and public sector. Office Design Studio holds over 20 patent rights in the area of product design.

And what role does the sanitary industry play in this regard?

M. U.: Sanitary products are of key importance when it comes to meeting the changed needs of customers. Many of our customers are looking for exceptional products such as multifunctional showers. I believe that the future belongs to such clever products.

Ms. Dvoretskova, what requests are you confronted with when advising customers? Are they as uniform as the apartments themselves?

N. D.: The common denominator is the tight living area. For example, there is not enough room for a bidet in the bathrooms. Shower toilets therefore represent a possible solution. Customized solutions are the way forward in terms of achieving more comfortable living environments.

Apart from comfort, are there any other needs that can be met with sanitary solutions?

N. D.: The topic of sustainability has become more important. When it comes to the bathroom in particular, technologies that use water economically such as dual flush are very much in demand. In many cases, bathtubs are also being replaced by showers in order to save water.

What benefits do Geberit Sigma and Delta series for Plattenbau bring?

M. U.: The benefits are immense. Both systems enable us to switch from floor-standing to wall-hung WCs while leave existing connections to the piping system as they are. The results are there for all to see, with bathrooms obtaining a modern look and feel.

In Moscow, is it a case of preaching to the converted with these Geberit solutions for Plattenbau?

N. D.: Absolutely. The main benefit of these kits is that all connections are installed behind the wall, which noticeably improves the sense of space. Smooth walls that facilitate creative freedom are now finally possible. Sigma also provides a range of actuator plates to choose from – from classic right through to touchless – thus enabling design and aesthetics to come into their own. ←

The best view in Europe

The Shard, London, Great Britain

↑ London's tallest skyscraper: "The Shard" designed by Renzo Piano.

With the opening of the viewing gallery, "The Shard" was opened to the public for the first time on February 1. However, the interior development work for the office, restaurant and hotel levels in the pyramidal glass skyscraper will continue until the end of 2013.

The impressive and polarizing building was designed by Renzo Piano, the man behind the Centre Georges Pompidou in Paris who was also involved in a range of other large-scale projects, including the redevelopment of Potsdamer Platz in Berlin. At 306 meters, the mixed-use skyscraper erected close to London Bridge towers above every other high-rise in London. Prior to completion of the 332-meter-high Mercury City Tower in Moscow, "The Shard", was the tallest building in Europe for a few months. The pyramidal tower is fully glazed with 11,000 panes of glass and features 72 floors, which are used for various purposes such as living, working and shopping. While more than 55,000 square meters on the wider lower floors are reserved for offices and stores, the 200 hotel rooms from the Shangri-La chain are located between floors 34 and 52. Above this – from floors 53 to 65 – are ten luxury apartments. The viewing gallery "The View" is situated at the top of the high-rise from floor 68 upwards. ←

→ **www.the-shard.com**

The Shard, London (UK)

Building owner: Sellar Property Group, London (UK)
Architects: Renzo Piano Building Workshop, Genoa (IT)/Paris (FR), in collaboration with Adamson Associates Architects, London (UK)
Completion: 7/2012
Plumber: D G Robson Mechanical Services Ltd, London (UK)

Geberit know-how

Duofix installation systems
PE piping systems
Silent-db20 piping systems
Mapress stainless steel piping systems
MapressCuNiFe piping systems
Mapress copper gas piping systems

↑ Inside, the high-rise offers an impressive view of the city.

Robin Riches, Key Account Director, Geberit Great Britain

"The MapressCuNiFe piping systems from Geberit met the unusual requirements demanded when constructing 'The Shard' perfectly. The high-rise is cooled using water siphoned off from the River Thames. This water can lead to corrosion in many piping systems. However, Geberit MapressCuNiFe is corrosion-resistant and durable, which is why it was used."

↑ Dynamic gesture: Zaha Hadid's "pierresvives".

A "concrete tree" in motion

pierresvives, Montpellier, France

pierresvives, Montpellier (FR)

Building owner: Département de l'Hérault, Montpellier (FR)
Architects: Zaha Hadid Architects, London (UK)
Completion: 9/2012
Plumber: Multitec, Pérols (FR)

Geberit know-how
Duofix installation systems
Actuator plates Bolero

The characteristic flowing forms immediately reveal the architecture firm behind the new iconic complex in Montpellier. pierresvives designed by Zaha Hadid Architects is a 28,500-square-meter complex that was built on behalf of the regional administration. The five-story hybrid houses a library, an archive and a sports department as well as administrative facilities.

Everything in this typical Hadid building appears composed and well-coordinated. According to the architects, the design for this structure located in a suburb of the Mediterranean city in the south of France was inspired by a horizontal "tree of knowledge." The archive is located at the solid base of the trunk followed by the slightly more open library, with the sports department and the offices on top where the trunk branches off further.

Thanks to extensive glazing, the entrance area is both bright and open. Upon arrival, visitors are directed from here to the reading rooms of the archive or via elevators and stairs to the library and the sports department. Located at the heart of the building are the auditorium and meeting rooms, which are shared between all three institutions.

The catalyst for this new building was the regional administration's massive archive, which required more space and updated facilities. The building owner did not want to simply erect a dull concrete structure, but instead create an architectural gesture. With this in mind, the renowned architect Zaha Hadid – famed for her spectacular buildings – was selected to carry out this project. The glazing and ceilings in the pierresvives building flow and even the elevators look dynamically curved, although this is more for show than part of the actual structure. pierresvives shall play a role in helping the northwest of Montpellier attain a new identity that radiates far beyond the city limits. ←

Nicolas Fricero, Head of Planning, Multitec

"We often work together with Geberit and know about the good reputation that the brand and the products enjoy. I can always rely on Geberit's support when it comes to finding solutions for tricky installation jobs. For the pierresvives project, we installed over 40 Duofix installation systems in all of the building's toilet facilities. The architects also opted for the Bolero actuator plate from Geberit because its simple, elegant design fits well into the architecture and due to its water-saving dual-flush."

↑ Beijing's colossal new complex is home to the main state television broadcaster in China.

China Central Television Headquarters, Beijing (CN)

Building owner: China Central Television, Beijing (CN)
Architects: Office for Metropolitan Architecture (OMA), Rotterdam (NL)
Completed: 5/2012
Plumber: China State Construction Engineering Corporation, Beijing (CN)

Geberit know-how
Duofix installation systems
Electronic lavatory taps
Electronic WC and urinal flush controls

A landmark "on the air"

China Central Television (CCTV) Headquarters, Beijing, China

After a period of planning and construction lasting ten years, the new broadcasting center of the Chinese state television broadcaster China Central Television (CCTV) "went on the air" in June 2012. The colossal complex, which stands out in the skyline of downtown Beijing, was designed by the architects Rem Koolhaas and Ole Scheeren of the Office for Metropolitan Architecture (OMA). Although the Rotterdam-based architecture firm won the international competition for this project as far back as 2002, the realization was continuously delayed over the years due to excessive costs, the complex interior development work and a fire in a neighboring hotel complex.

With a gross floor area of over 473,000 square meters, this sensational building is second only to the Pentagon in Washington as the world's largest office building. For the OMA architects, this building represents their largest project and their first in China. The spectacular building is made up of two diagonally opposing towers that slope at an angle greater than that of the Leaning Tower of Pisa. Depending on the angle it is viewed from, the iconic building sometimes looks like a loop structure and other times slender and tall like a normal high-rise. The effect produced by the building is further emphasized by the irregular grid structure that runs through the entire shiny silver opaque window facade like a network. ←

Qingning Zha, Chief Engineer North Technical Center, Geberit China

"High quality standards were demanded when constructing CCTV Tower. Geberit products were chosen in order to ensure that these requirements could also be met when it came to the sanitary facilities. The electronic lavatory taps and WCs and urinal flush controls also meet the increasingly important sustainability standards in China."

Mirrored solitaire

Museum of Contemporary Art (MOCA), Cleveland/Ohio, USA

Museum of Contemporary Art (MOCA), Cleveland/Ohio (USA)

Building owner: MOCA, Cleveland (USA)
Architects: Farshid Moussavi, London (UK)
Opened: 9/2012
Plumber: Northern Ohio Plumbing, Ohio (USA)

Geberit know-how
Duofix installation systems

→ Green building: nominated for LEED Silver certification

The Museum of Contemporary Art (MOCA) in Cleveland, Ohio, is one of only a few non-collecting contemporary art museums in the USA. As a result, the new exhibition complex could dispense with storage areas and the entire space could be set aside for the museum. The building was designed by London-based architect Farshid Moussavi, who was co-principal of Foreign Office Architects (FOA) until the cessation of the studio's activities in mid-2011.

Located on the corner of a triangular site, Moussavi designed a solitary building structure that leaves sufficient scope for an urban space. The building is clad in mirror-finish black stainless steel that reflects its urban surroundings, changing in appearance with differences in light and weather. The interior of the 20-meter-high complex is characterized by flexibility and displays works in a great variety of media and artistic genres. The four-story museum sits atop a hexagonal base, ending in a square form in which the 560-square-meter primary exhibition space is housed. This top floor has no fixed dividing walls, allowing for a variety of configurations. All four floors contain areas that can be used for exhibitions as well as other public events. The flexible concept is supported further by the entrances on all sides of the building. Upon entering the building, visitors find themselves in a full-height atrium where they can see the dynamic shape and structure of the building as it rises. This space leads off into the lobby, café and museum store. The upper floors are accessed via the staircase, a dominant architectural feature of the building. ←

→ www.mocacleveland.org

↑ Adaptable museum behind a mirrored facade – the MOCA in Cleveland.

← The primary exhibition space can be used for art exhibitions and other public events.

Jim Roddy Jr., Project Manager, Northern Ohio Plumbing

"We install Geberit installation systems at many locations throughout Northern Ohio because quality and water savings are important to us and our customers. At the museum, water efficiency takes on a dual purpose in helping obtain points for LEED Silver certification."

A modern interpretation of Czech cubism

Keystone Building, Prague, Czech Republic

↑ The facade comprised of geometrically angled panels gives the building a sculptural appearance.

Keystone Building, Prag (CZ)

Building owner: Real Estate Karlin Group, a.s., Prague (CZ)
Architects: EM2N, Zurich (CH)
Completion: 7/2012
Plumber: Hydroplastik s.r.o., Velká Chyška (CZ)

Geberit know-how
Duofix installation systems
Duofix WC elements
Pneumatic urinal flush controls and lavatory taps
Actuator plates Bolero

Located in the immediate vicinity of the Vltava is the flourishing business district of Karlín, a once suburban industrial district that has undergone rapid structural change in recent years. The Keystone Building, which was designed by the Swiss architects EM2N, was opened here in summer 2012. The Zurich-based architects Mathias Müller and Daniel Niggli were awarded the contract for the office complex by the Karlin Group, an investor that aims to realize various buildings by internationally renowned architects.

The new eight-story building, whose name "Keystone" is a play on the striking corner construction, is situated in a prominent location and forms a "gateway" to the rapidly changing district of Karlín. One of the building's most striking features is its facade, which is comprised of geometrically angled panels and – according to the architects – echoes Czech cubist art from the early 20th century. The double-layered facade not only produces a sculptural outer skin, it also improves the performance of the building in terms of thermal and acoustic insulation, resulting in improved building physics and lower energy consumption. The ground floor contains stores and showrooms, while the upper floors are reserved for offices. The top three floors, where the facade's panels are less geometrically angled, are set markedly back from the two adjacent streets. Through the contrast to the exterior, the impressive entrance hall where EM2N installed high-quality materials and elegant surfaces establishes a certain formal tension. The hall is clad with polished chrome steel, terrazzo flooring and stucco lustro. ←

Stanislav Stradal, Executive Director, Hydroplastik s.r.o.

"We have been working with Geberit products for a long time – particularly with the installation systems – as we rate the durability and quality of the products very highly. Thanks to their simple, linear design, the Bolero actuator plates also fit in perfectly with the high-quality bathrooms in the Keystone Building."

↑ The EYE's reflective facade changes color depending on the weather and time of day.

A storyboard building concept

EYE Film Institute, Amsterdam, the Netherlands

EYE Film Institute, Amsterdam (NL)
Building owner: ING – Real Estate, The Hague (NL)
Architects: Delugan Meissl Associated Architects, Vienna (AT)
Opened: 4/2012
Plumber: ULC Verwarming B.V., Utrecht (NL)

Geberit know-how
Mapress piping systems

The crystalline white building at the north bank of the river IJ behind Amsterdam Central Station dominates the cityscape. With its radiant facade made of aluminized sandwich panels, the EYE Film Institute reflects light and changes the color of the building depending on the weather. EYE, as the building is known for short, came about following the amalgamation of the Dutch Film Museum and several small film foundations. In 2005, an international competition was advertised for a new building, which was won by the Austrian architecture firm Delugan Meissl. "Both the EYE Film Institute's concept and urban implementation are based on an overlay of two creative disciplines which have at their core reality and fiction, illusion and real experience," the architects explained. They developed the building design like a storyboard. The building continually changes shape as you walk along, thus resembling a movie sequence. The room set-up consists of one large auditorium and three smaller cinemas. In addition to offices and a laboratory in the basement, the film museum features an interactive area and 1,200 square meters of exhibition space on the second floor. EYE is accessed over a gently sloping ramp that leads into the heart of the building – the foyer – a spectacular room comprising a multi-level bar and restaurant that overlooks the water from behind a large glass facade. ←

→ **www.eyefilm.nl**

Eric Hintzen, Project Manager, ULC Verwarming B.V., Utrecht

"We chose Geberit Mapress in order to realize the connections from the main distribution system. The building has such a specific design, with very little space in the ceilings. Therefore, it was difficult to make a connection pipe from the main system to the devices. The Geberit Mapress press connection system was the ideal solution for this situation."

Aluminium wickerwork

New exhibition hall, Basel, Switzerland

New exhibition hall, Basel (CH)

Building owner: MCH Messe Schweiz AG, Basel (CH)
Architects: Herzog & de Meuron, Basel (CH)
Opened: 4/2013
Sanitary engineer: Huustechnik Rechberger, Zurich (CH)
Plumber: Arge Rosenmund, Alpiq InTec West, Alltech Installationen AG, Basel (CH)

Geberit know-how
Duofix installation systems
Duofix elements for WCs, washbasins and urinals
Actuator plates Mambo
PE piping systems
Silent-db20 piping systems
Pluvia roof outlets
Shower channels
Fire protection technology

→ **Green building: Minergie label**

At 32 meters in height, 90 meters in width and 220 meters in length, the new exhibition hall in Basel designed by Herzog & de Meuron is an impressive complex that stands out in particular due to its spectacular white lamellar facade. The bright facade structure with its flexible appearance immediately catches one's eye. After a period of construction stretching 22 months, the environmentally friendly building – which has been awarded the MINERGIE label – was completed at the beginning of 2013 and inaugurated during the "BASELWORLD Watch and Jewellery Show" held later that April. The 40.305-square-meter building is made up of three hall elements positioned one on top of the other, each of which protrude onto the square to varying extents. The ground floor is a natural continuation of Messeplatz (Exhibition Square) and was designed first and foremost with generous, large-area glazing. The two upper stories of the hall are displaced vis-à-vis each other, contrasting with the transparent ground floor due to their closed design. The facade is comprised of interlaced aluminium strips, which bestow a liveliness upon the complex – a theme that continues with the displacement of the two upper floors. The building appears to have been set in motion, exuding a dynamism and restlessness that the architects modeled on the stream of movement of visitors to the fair. Visitors enter the hall complex through the new "City Lounge", a covered part of the Messeplatz which also boasts a striking atrium. ←

→ **www.mch-group.com**

↑ The main facade of the 32-meter-high exhibition building is staggered and covered in aluminium panels.

René Schenker, Technical Advisor, Geberit Switzerland

"The new exhibition building was constructed in record time. The delivery readiness, availability of the installed products and the support provided by Geberit's team of technical advisors were key factors in the decision-making process for the fair management team in order to meet the short deadline for completion. To ensure that everything at the fair runs smoothly, the quality and functional reliability of the installed WC facilities are essential."

Innovative twins

Al Bahar Towers, Abu Dhabi, United Arab Emirates

Al Bahar Towers, Abu Dhabi (UAE)

Building owner: Abu Dhabi Investment Council (ADIC) (UAE)
Architects: Aedas, London (UK)
Completed: 11/2012
Plumber: BK Gulf LLC, Dubai (UAE)

Geberit know-how
Duofix WC elements
Actuator plates Samba, Bolero and Sigma20
Electronic WC flush controls Mambo
Electronic urinal flush controls Mambo

→ **Green building: nominated for LEED Silver certification**

Haitham El Maghraby, Technical Advisor, Geberit Golf Region

"Geberit provides interior designers, architects and planners in the Gulf Region with a tight support network of technical consultants at each stage of a building project, from delivery right through to construction on the building site. For the prestigious Al Bahar Towers project, Geberit products met all the requirements for LEED certification and in doing so played their part in creating this green building."

↑ The translucent elements cover the towers like honeycombs.

The Al Bahar Towers in Abu Dhabi are not only remarkable due to their unusual facade – the twin towers also distinguish themselves through their innovative, sustainable design. The 145-meter-high towers were designed by the London-based architecture firm Aedas. One of the 25-story towers is home to the headquarters of the Abu Dhabi Investment Council (ADIC), which was also the building owner for this project. The head office of Al Hilal Bank is located in the second tower.

The greatest challenge for the architects was designing a sustainable building that is also compatible with the difficult climatic conditions. They achieved this by means of a cream-colored outer skin made of 2,099 translucent elements that cover the two towers like honeycombs and serve as a computer-controlled shading screen. These elements are mounted on the west, east and south side of the towers and automatically open and close as the sun moves over their surface. With its design, Aedas was inspired by the traditional Arabian latticework known as "mashrabiya", which was mounted on the facade of houses to protect the private interior from public view. According to the architects, this dynamic solution has resulted in a reduction in energy consumption in the towers of around 50 percent compared with conventional buildings. Furthermore, photovoltaic cells are installed on the south-facing roofs of each tower, generating an additional five or so percent of the required energy. ←

↑ A new urban district is being created in the heart of Milan – Porta Nuova. 20 high-rise buildings, parks, underground car parks and a metro station are currently being built here in accordance with stringent sustainability criteria.

Milan's new skyline

Porta Nuova, Milan, Italy

A district with a completely new design is currently being created in Milan: Porta Nuova. By the year 2015, this area will be home to 20 high-rise buildings, parks, a new metro station and underground car parks. Thanks to its rigorous sustainability concept, Porta Nuova could serve as a model for future urban development projects. The new district contains a host of prestigious buildings, including UniCredit Tower and the two "Bosco Verticale" residential towers. As with all the projects constructed in the new district, both of these structures also meet the stringent requirements of LEED certification.

Milan, the second-largest city in Italy, was the country's main industrial center for many years. Heavy industry has since moved elsewhere, and the Milan of today has long since transformed into a financial and services center. From an urban development perspective, Milan is therefore faced with the challenge of reusing large derelict areas of land. It is not a question of simply creating high-quality residential and office buildings, but also infrastructures that provide a groundbreaking answer to the changed economic, urban development and environmental conditions prevalent today in densely populated metropolises throughout the world.

In Milan, this problem is being addressed in an area measuring 290,000 square meters around the Garibaldi railway station. For 50 years, people in the city had been discussing what to do with the district located right in the heart of Milan that borders the exuberant artistic and cultural district of Brera. Thanks to the financial backing of the international real estate firm Hines – and with Expo 2015 in Milan in mind – an ambitious concept (entitled "Porta Nuova") was developed for the redesign of the Garibaldi district, which was then divided up into three areas: Porta Nuova Garibaldi, Porta Nuova Varesine and Porta Nuova Isola. Thanks to its rigorous landscape and sustainability concept, the Porta Nuova project could serve as a model for future urban development projects.

Sustainable district

Construction work began in 2008. 20 high-rise buildings, parks, cultural centers, a new metro station and underground car parks are under ongoing construction in the three project areas. Around 360,000 square meters will then be available for new offices, apartments and commercial premises. Internationally renowned architects such as Cesar Pelli, Nicholas Grimshaw, Stefano Boeri and Kohn Pedersen Fox were commissioned to design the new high-rise buildings.

One of the project's first completed buildings is the UniCredit Tower high-rise complex in Porta Nuova Garibaldi, designed by Cesar Pelli. The bank headquarters is constructed from glass and steel and comprises

↑ Already completed is the 231-meter-high UniCredit Tower designed by Cesar Pelli, a high-rise complex that towers over all the other buildings.

UniCredit Tower, Porta Nuova Garibaldi, Milan (IT)

Building owner: Hines Italia, Milan (IT)
Architects: Pelli Clarke Pelli Architects, New Haven (USA)
Completion: 12/2012
Plumber: Cefla Impianti Group, Milan (IT)

Geberit know-how
Sigma concealed cisterns 12 cm (UP300)
PE piping systems
PE Sovent fittings d110

→ Green building: LEED Gold certification

a total of three towers, the largest of which stands at 231 meters. The complex is therefore currently the tallest building in Italy. The impressive structure is also the first green building in Porta Nuova to be completed and LEED-certified. The structure accommodates 4,000 employees and should reduce its CO_2 emissions by around 30 percent. Among other things, this considerable resource efficiency includes low energy and water consumption, the use of rainwater and the use of recycled materials during construction. Furthermore, the design of the interior and work areas is based on innovative office concepts that aim to improve communication and teamwork. Around 80 trees between three and eight meters in height were planted in the open spaces inside the building reserved for recreation and business meetings, ensuring that a feeling of nature is also experienced in the building during breaks, meetings

↑ The two "Bosco Verticale" residential towers will feature a living area of 50,000 square meters and 10,000 square meters of forest.

and conferences. 30 percent of the total office space is reserved for these open spaces.

Like UniCredit Tower, all of the other high-rise projects must also meet the stringent requirements of LEED certification. However, environmental friendliness is not just limited to the buildings themselves – the entire Porta Nuova district is traversed by a network of bike lanes. The center of the newly designed district features a large park around which the high-rise buildings are being built. This park constitutes the heart of Porta Nuova, where people can travel from one area to the next without needing to cross a road. Milan-based architect Stefano Boeri, who also designed the much-discussed "Bosco Verticale" project, was responsible for the design competition for the park.

Living in a vertical forest

Just under five minutes away from UniCredit Tower are the two "Bosco Verticale" residential towers, which are currently being completed. This project is part of "biomilano", a manifesto written by Boeri on the sustainable urban development of Milan. According to Boeri, the idea for the green residential towers came to him during a visit to Dubai in 2007, where he realized the explosive rate at which environmentally inefficient high-rises are being thrown up around the world. This situation prompted him to think about realistic sustainable alternatives in the area of high-rise construction. His solution came in the form of green, organic facades, which became an integral part of the "Bosco Verticale" project that he designed for the Porta Nuova Isola area. The innovative residential buildings are a prime example of a sustainable building system of the future.

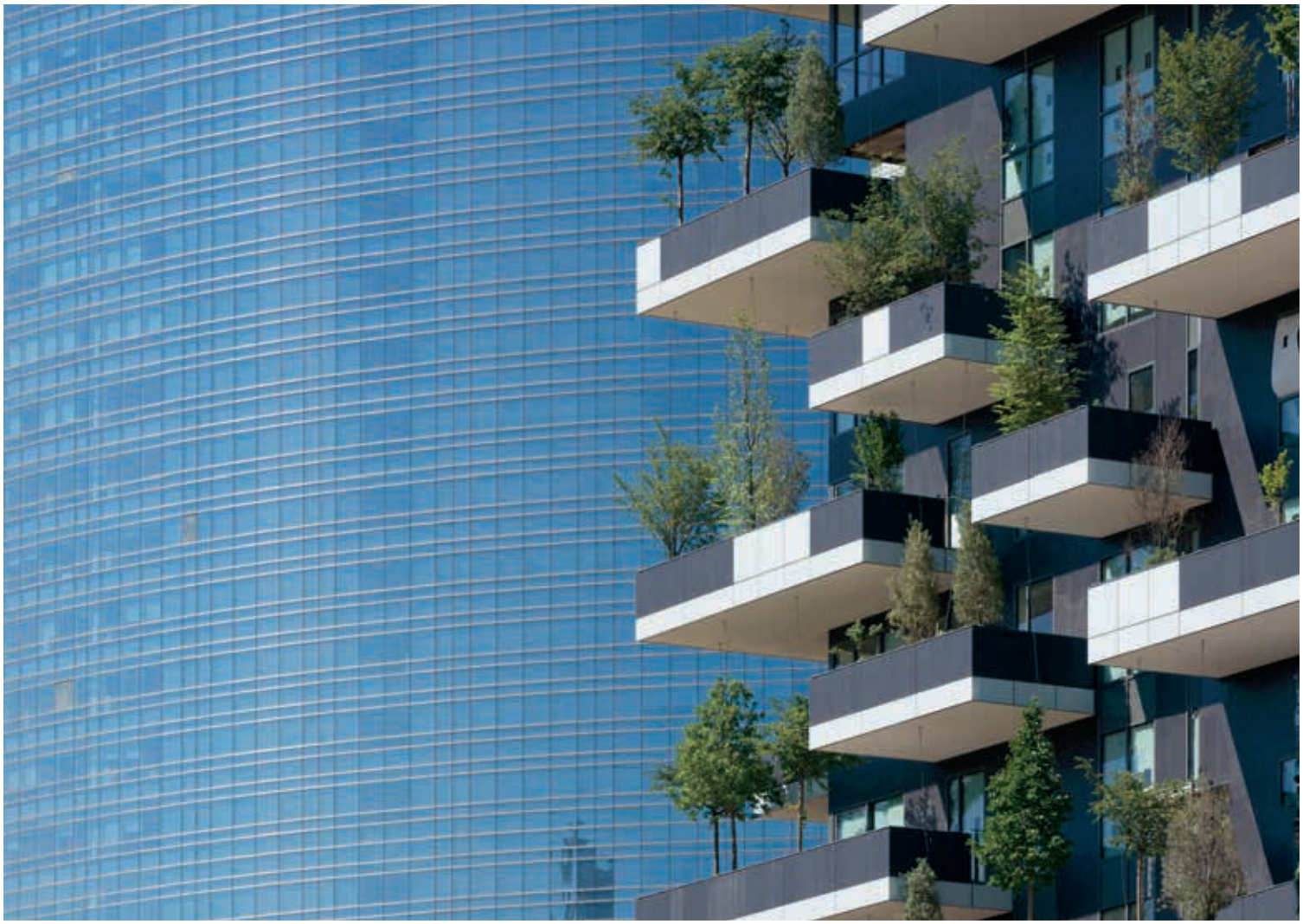
Bosco Verticale, Porta Nuova Isola, Milan (IT)

Building owner: Hines Italia, Milan (IT)
Architects: Stefano Boeri Architetti, Milan (IT)
Completion: end of 2013
Plumber: COIMA, Milan (IT)

Geberit know-how

Sigma concealed cisterns 12 cm (UP300)
Actuator plates Bolero
Mepla piping systems
PE piping systems
PE Sovent fittings d110

→ **Green building: nominated for LEED Gold certification**



↑ The first mini forests are already growing on the balconies. In the background, the glazed facade of UniCredit Tower.

The "vertical forest" – as "Bosco Verticale" translates in English – aims to actively contribute to the regeneration of the environment and increasing biodiversity in major cities. With his unusual project, Stefano Boeri intends to help greatly improve the well-being of people in today's densely populated metropolises. Measuring 80 and 112 meters, the two towers feature a living area of 50,000 square meters and an additional 10,000 square meters of forest, with 730 trees, 5,000 shrubs and 11,000 perennials and groundcover on the building facades. Each of the apartments in the two residential towers comes with a spacious balcony with its very own mini forest that offers protection from the sun, noise and the polluted urban air. The balconies extend 3.35 meters from the apartments on all four sides of the building. Their irregular arrangement was designed to create a natural effect, while also providing sufficient room for the plants.

Before construction got underway, complex and lengthy studies first had to be carried out, for which Boeri assembled an interdisciplinary team of architects, structural engineers and botanists from the Faculty of Agricultural and Food Sciences at the University of Milan. They investigated which trees are suited for the project based on their resistance to cold, wind and drought. Structural and safety aspects had to be clarified and the right location had to be found for each tree in terms of sunlight, wind and humidity. The ideal plants were cultivated in a greenhouse two years before construction got underway.

Other Porta Nuova projects in which Geberit is represented with its products:

1 UniCredit Tower

2 Bosco Verticale

3 Diamond Tower, Kohn Pedersen Fox Architects, in collaboration with Jacobs Italy (completion end of 2013): PE-HD piping systems, PE Sovent d110

4 Porta Nuova Offices, Kohn Pedersen Fox Architects, in collaboration with Jacobs Italia (completion end of 2013): PE-HD piping systems

5 Palazzo Lombardia government building, Pei Cobb Freed & Partners (completed in 2011): PE-HD piping systems, Pluvia roof drainage systems

6 Building E1-E2, +Arch- (completion end of 2013): PE-HD piping systems, Pluvia roof drainage systems

"The two residential towers create a pleasant microclimate, with the high density of plants filtering dust particles from the air," explains Boeri. The specific selection and variety of trees and shrubs ensures that the right level of humidity is created and CO_2 is absorbed. Plant irrigation is mostly taken care of through the use of gray water, while power is supplied by wind and solar energy systems installed on the buildings. "Bosco Verticale" therefore not only improves the quality of life of its residents, it also reduces their ecological footprint.

Construction work is still underway in Porta Nuova. All the high-rises are to be completed and LEED-certified by 2015, at the latest. ←

→ **www.porta-nuova.com**

Geberit PE Sovent d110 – a sustainable solution for high-rises

The flow-optimized Geberit PE Sovent fittings facilitate an optimal layout of waste water discharge stacks in high-rises. They prevent hydraulic closures in the discharge stacks, which on the one hand increases the capacity of this pipe by up to four times and also makes the installation of a separate ventilation pipe unnecessary. Unlike with roof drainage systems, for instance, negative pressure in a building's discharge pipes is to be avoided. This essentially clears out the traps, making them ineffective. For this reason, conventional discharge stacks without Geberit Sovent are equipped with an air bleed. With the Geberit PE Sovent d110, hydraulic know-how from Geberit is now also available for discharge stacks with a diameter of 110 mm. This discharge stack size enables the drainage of waste water from up to 66 residential units and is primarily installed in high-rise hotels, residential and office buildings, such as in the 231-meter UniCredit Tower and the two "Bosco Verticale" residential towers.

With products such as the PE Sovent fittings d110, Geberit also helps with the implementation of green building concepts and standards such as LEED. During the development process, all Geberit products are optimized in terms of their environmental friendliness, resource efficiency and durability and are comprehensively aligned towards sustainability in eco-design workshops. PE pipes from Geberit perform very well from an ecological perspective. They are durable, made of unproblematic materials and distinguished by their minor environmental impact during their usage phase. The environmental impact associated with production has been significantly reduced, and these products can be recycled 100%.

↑ "Titanic Belfast"'s bow-like building structures soar into the sky. The facade shimmers in the light like an iceberg.

The "Titanic" returns home

"Titanic Belfast", Northern Ireland

A new visitor center is located on the site where the "Titanic" was once built. The spectacular structure, which shimmers like an iceberg, recounts the story of the legendary ship, vividly portraying the social and economic conditions in Belfast in the early 20th century.

100 years after the disaster in the North Atlantic, the "Titanic" has returned to the city of its birth. The new visitor center, which is reminiscent of both a ship and an iceberg due to its pointed, radiant facade, is located on the site of the Harland & Wolff shipyard in Belfast, where the art of shipbuilding once reached its pinnacle with the construction of the "Titanic" and its sister ship Olympic. The iconic structure was designed and planned by London-based company CivicArts/Eric R. Kuhne & Associates, with Todd Architects from Belfast responsible for the implementation. It took three years to complete the building – the same amount of time it took to build the "Titanic" itself.

A journey through time

Four building structures that resemble bows soar into the sky and are the same height as the bow of the "Titanic". As a result, the panoramic window on the top floor, where a replica of the legendary Grand Staircase is also located, provides visitors with the same view as back in 1911 when the "Titanic" was launched on the slipway. For the facade, the architects used 3,000 aluminum shards that reflect light coming at it from all angles so that it shimmers like an iceberg in the sun.

"Titanic Belfast" tells the story of the legendary ship across 14,000 square meters spread out over six floors, with nine multi-

media galleries vividly portraying the various stages from its construction through to the sinking and the discovery of the wreck in 1985. Visitors are also treated to some historical background, learning more about the social and economic conditions in Belfast in the early 20th century. The tour of the exhibition ends in the Ocean Exploration Centre.

The architects continued with the ship theme when designing the interior. With an almost scale replica of the Grand Staircase, individual cabins and the large atrium in which steel beams evoke a shipyard and engine room atmosphere, the visitors to the museum are sent on an impressive journey through time. You can even hear the construction noise and smell the stench of the welding work.

"Titanic Quarter"
After the decline of Belfast as a highly productive industrial location in the 1960s and the decades marked by the Troubles, the signing of the Good Friday Agreement in 1998 signaled a period of change. Upmarket shopping centers emerged in the city and restaurants revitalized the streetscape. In 2002, the former docklands were renamed "Titanic Quarter". With a multi-purpose sports arena, film studios, the "Gateway" office complex, hotels and the campus of Belfast Metropolitan College, the old waterfront has developed into one of the largest inner-city regeneration projects in Europe. "Titanic Belfast", which exceeded expectations by over 100% by attracting over 800,000 visitors in its first year, appears to be the main highlight for the time being. ←

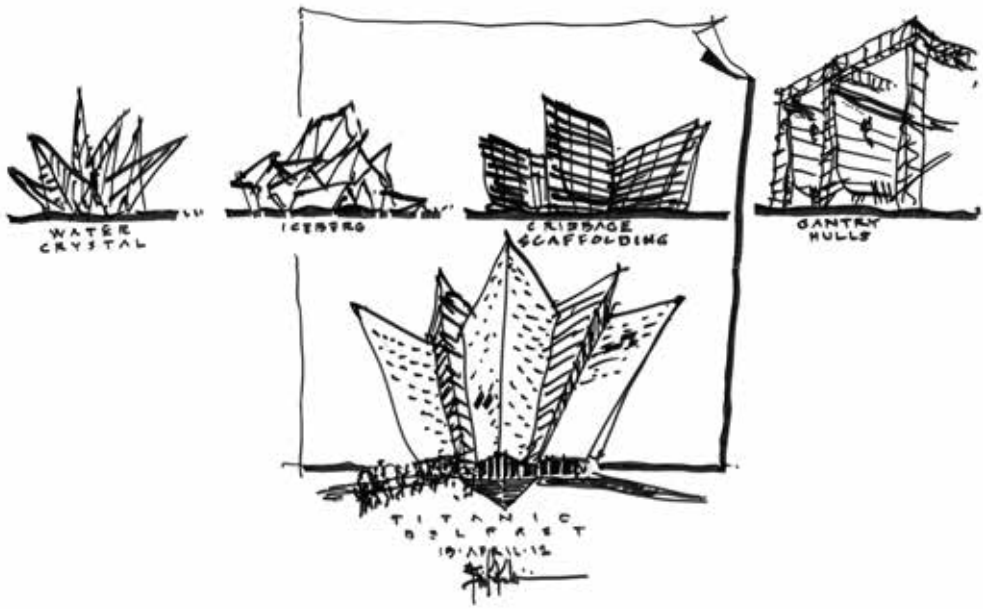
→ **www.titanicbelfast.com**

Titanic Belfast, Belfast (UK)

Building owner: Titanic Foundation Ltd, Belfast (UK)
Architects: CivicArts/Eric R. Kuhne & Associates, London (UK); Todd Architects, Belfast (UK)
Opening: 3/2012
Plumber: Harvey Group plc, Belfast (UK)

Geberit know-how
Pluvia roof drainage systems
Mapress copper piping systems
PE piping systems

→ **Green building: nominated for BREEAM "Excellent" certification**



Interview with architect Angus Waddington (Todd Architects) on the challenge of building "Titanic Belfast":

"The watertight solution we needed"

"Titanic Belfast" was designed to celebrate the great era of shipbuilding in Belfast. Was that overarching narrative mirrored in your practical work on the project?

We were dealing with a fast-tracked project, so there were all sorts of engineering challenges and collaboration issues as we moved along. The actual narrative became our concern when it was time to cooperate with the exhibition designers and their requirements.

What were the challenges you had to meet with regard to sanitary engineering?

The very special geometry of the roofs made water collection a central issue. A suction solution was our first choice, as the anticipated volume of water was immense. Having worked with Geberit back in London, I would not rely on any other technology than Geberit Pluvia.

What convinced you that Geberit Pluvia was also going to meet your expectations for this unique project?

Part of our design brief was to account for an emergency overflow. Geberit and the planners suggested weirs on various levels catering for a calculable amount of water for each of the inlets. That was literally the watertight solution we needed. ←

↑ The structure of the Giant's Causeway Visitor Centre comprises vertical stone mullions that echo the basalt columns which form the impressive coastal causeway and provide the inspiration for the area's name.

According to legend, the Giant's Causeway was built by giants. The highly popular, mystical location now has its own dedicated visitor center, which was designed very much in reference to the impressive causeway made of dark basalt columns.

It is easy to see why legend has it that this impressive place was built by giants. 40,000 basalt columns, most of which are hexagonal in cross-section, form an impressive causeway fitting of the name. According to legend, the causeway was built by the giant Fionn mac Cumhaill so that he could travel by land to Scotland to fight his Scottish adversary Benandonner.

Myths and geology

In reality, the dark lava columns were formed by volcanic activity some 60 million years ago. However, the causeway still retains all of the enchanting mysticism associated with the legend to this very day. The Giant's Causeway, which is also located along the Causeway Coastal Route – one of the world's most beautiful coastal roads – was declared a World Heritage Site by Unesco in 1986. Despite being a highly popular tourist destination, it did not have its own dedicated center for visitors to learn more about its history.

In March 2013, the Giant's Causeway Visitor Centre was finally opened after several years of planning and construction. Here, audiovisual presentations vividly bring the legends and myths to life, while visitors can also learn more about the geology of the region. The Giant's Causeway Visitor Cen-

Giant's Causeway Visitor Centre, Bushmills (UK)

Building owner: The National Trust, Swindon (UK)
Architects: Heneghan Peng Architects, Dublin (IE)
Completion: 3/2013
Plumber: Vaughan Engineering Services Ltd, Newtownabbey (UK)

Geberit know-how
Duofix installation systems
Actuator plates Mambo and Sigma50
Mepla piping systems
Mapress carbon steel piping systems
PE piping systems

→ Green building: BREEAM "Excellent" certification

↑ In the Visitor Centre, the legends and myths surrounding the Giant's Causeway are vividly brought to life in audiovisual presentations.

Dam of the giants

Giant's Causeway Visitor Centre, Antrim, Northern Ireland

tre was designed by Dublin-based architecture firm Heneghan Peng Architects, which had won the international competition in 2005.

Building becomes landscape

The structure of the facade comprises vertical stone mullions that echo the landscape formed by the basalt columns. Heneghan Peng Architects utilized the large difference in level across the site to enable visitors to enjoy an unobstructed view of the surroundings. The building itself extends the line of the cliff, with the car park constructed at a lower level. The connecting paths between the two were designed to depict the natural "folds" in the landscape. The basalt used for the building was quarried in Kilrea from the same lava flows that formed the Giant's Causeway itself.

The goal of the architects was to design a structure that merges into the landscape. As Heneghan Peng Architects puts it: "The building becomes landscape and the landscape itself remains spectacular and iconic." ←

A model of sustainability

Thanks to its sustainable concept in the areas of design, material, energy and ecology, the Giant's Causeway Visitor Centre has received BREEAM "Excellent" certification. Among other things, recycled concrete was used and the roof landscaped to enable the building to be carefully integrated into the landscape. As particularly highlighted by the toilet facilities, the building also complies with the highest sustainability criteria in relation to water consumption and recovery. For example, cisterns with dual flush were installed and only gray water and rainwater are used for the toilet flushes. Electronic lavatory taps also play their part in reducing water consumption. The Geberit products used here – such as the Duofix installation systems and the cisterns with dual flush – contributed significantly to the building meeting the stringent requirements for BREEAM "Excellent" certification.

A view of city life

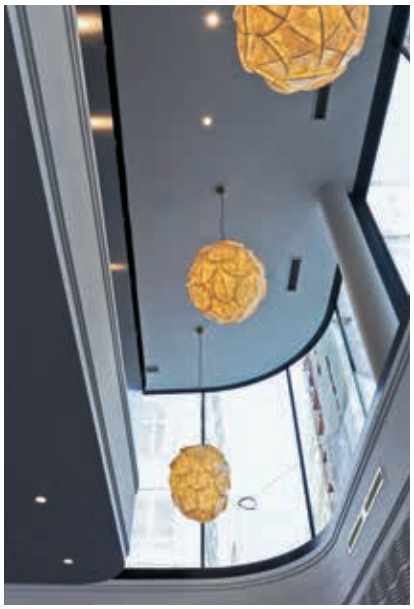
Hotel Topazz, Vienna, Austria

← Thanks to its dark facade that flows around the street corner and its protruding windows, Hotel Topazz creates an architectural accent in the Viennese cityscape.

The design hotel Topazz was built in the heart of Vienna on a corner plot comprising a mere 153 square meters. Its striking dark facade and slightly protruding porthole-shaped windows clearly set the building apart from the neighboring structures from the Austro-Hungarian period.

Geberit DuoFresh – for pure fresh air at all times

Geberit DuoFresh brings a whole new feeling of freshness to the bathroom. A switch on the actuator plate activates the odor extraction unit. The unpleasant odors are directly suctioned out of the toilet bowl through the flush water inlet, purified with active carbon and then released back into the room. This means that odors are not simply covered up, as is the case with scent sprays. All of the functions are located behind the elegantly designed actuator plate Sigma40 and can be easily and quickly accessed. Thanks to its easy-to-operate odor extraction unit, DuoFresh is a solution that offers optimum comfort both in the home as well as in public areas. As the "Topazz" is also equipped with DuoFresh, its guests are guaranteed complete bathroom freshness at all times.



↑ The curvature of the building can also be felt in the hotel's reception area.

← The hotel rooms are fitted with curved window recesses for sitting or lounging, from which guests can watch the hustle and bustle of city life below in comfort.

A new building located close to St. Stephen's Cathedral in the heart of downtown Vienna clearly sets itself apart from the neighboring Austro-Hungarian structures from the 19th century, not least thanks to its unusual facade. On a plot of land comprising a mere 153 square meters, the Vienna-based architecture firm BWM Architekten und Partner and architect Michael Manzenreiter built the boutique hotel Topazz. The four-star hotel, which was named one of the 100 most beautiful hotels in Europe by the travel magazine "GEO Saison" back in February 2013, features 32 rooms of various sizes starting from 21 square meters and a penthouse suite.

Dark glass-mosaic cladding

With its gently curved facade, the building structure literally flows around the corner onto Kramergasse. Owing to its rounded corner construction, the hotel is reminiscent of the generosity associated with Wilhelminian-style buildings. The main architectural emphasis is on the striking facade with its elliptical window openings and dark glass-mosaic cladding. The windows jut out slightly and open out like eyes towards the surrounding urban space. To make optimal use of the space in the individual rooms, the hotel rooms were fitted with curved window recesses which serve as niches for sitting or lounging from which guests can comfortably watch the hustle and bustle of the city life below.

The architects playfully staggered the oval windows at different intervals to match the differing floor heights of the neighboring historical buildings, thus contrasting their strict uniformity. The ground floor is extensively glazed, revealing the reception area and the subjacent guest lounge area, which serves to intensify the urban, inviting character of the building even further. The interior was designed by Michael Manzenreiter, who drew his inspiration for the room furnishings from Wiener Werkstätten – an early 20th century community of Viennese architects, artists and designers who were committed to designing art that is accessible to the masses. The design of the fabrics, furniture and accessories is an elegant play on the motifs of the time around 1900.

Low-energy hotel

Environmental friendliness also played a role when planning the hotel. In terms of building materials, physical and structural characteristics and energy requirements, Hotel Topazz is very much designed with sustainability and resource-efficient energy use in mind and meets the Austrian requirements for a low-energy house type "A". ←

→ **www.hoteltopazz.com**

Hotel Topazz, Vienna (AT)

Building owner: Lenikus Group, Vienna (AT)
Architects: BWM Architekten und Partner and Michael Manzenreiter, Vienna (AT)
Opened: 4/2012
Specialist consultant: Ing. Gerhard Heiling Ges.m.b.H, Wartmannstetten (AT)
Plumber: Licht-Loidl, Pinkafeld (AT)

Geberit know-how

Actuator plates Sigma40
DuoFresh odor extraction
Mapress piping systems
Mepla piping systems
Huter installation elements

→ **Green building: low-energy house type "A"**

A real village atmosphere

Geriatric Center Simmering, Vienna, Austria

↑ The multi-faith meditation room stands alone in the park-like garden landscape.

↑ Open lounge areas are located along the "alleys".

Geriatric Center Simmering, Vienna (AT)

Building owner: Senuin Beteiligungsverwaltungs GmbH, "Neue Heimat", Vienna (AT)
Architects: Josef Weichenberger Architects + Partner, Vienna (AT)
Completion: 2012
Awards: AIT Award 2012, Global Award for the very best in Interior and Architecture, cat. "Health + Care"
Plumbers: Richard Hofer GmbH, Pinkafeld (AT); Ortner GmbH, Vienna (AT)

Geberit know-how

Pluvia roof drainage systems
PE piping systems
Sigma concealed cisterns 12 cm (UP300)
Huter installation elements for WCs, washbasins and tap connections

With a new and innovative concept, the new Geriatric Center Simmering shows how you can create high-quality living for senior citizens in need of care and assistance. The project is based on the image of an established old town center.

"Senior-friendly construction" is currently a hot topic of discussion. A good example of how houses for the elderly and those in need of care can be designed was recently realized by Josef Weichenberger Architects+Partner in Vienna's 11th district of Simmering, located in the southeast of the city. 14 inpatient care units are housed in the newly constructed complex. The center also features day-care facilities for up to 50 senior citizens as well as examination and therapy areas and 56 apartments.

A green oasis as opposed to a hospital atmosphere

The complex is comprised of three building structures, one in front of the other in a semi-offset fashion, which shape the building structure to a considerable degree through the interplay of different overall heights. The architects' main goal was to create high-quality living in a green oasis for senior citizens in need of care and assistance – without the usual sterile hospital atmosphere. The new center was constructed on a lush green site with old, mature trees that were integrated into the project to a large extent, meaning the Geriatric Center is flanked on all sides by high treetops.

A novel concept for the individual wards sets the center apart from comparable projects in terms of its innovation. For example, the floor plan for the individual wards is based on the image of an established old town center with different and varied spatial arrangements and room qualities. The architects divided the floor plans into day rooms, lounge areas and small living units along the so-called alleys.

Small town center

Every living unit has a naturally lit bathroom as well as a balcony or loggia. The rooms face outward onto the old trees and inward through glass partitions onto the "village squares" on the inside of the wards. As a result, the residents can be an active or passive part of center life depending on their respective wishes. The ground floor also resembles a small town center, with stores, a cafe, a treatment and therapy center, day-care facilities and a multi-purpose hall. A multi-faith meditation room is located on the north side in front of the nursing home. This deliberately breaks with the design of the rest of the building with its crystalline concrete structure and stands alone in the park-like garden landscape. ←

Geberit Huter installation elements – barrier-free bathroom design

With the Huter installation elements, Geberit offers barrier-free bathroom designs especially for hospitals, nursing homes, rehabilitation and assisted living facilities and geriatric clinics. The installation elements are designed in accordance with customer demands and the building's specific requirements, manufactured in the plant and premounted, with delivery made directly at the construction site. This system thus provides building owners with calculable installation times and cost transparency. With installation elements suited to the needs of disabled persons or those in need of care such as those found at the Geriatric Center Simmering, all fastenings for special support handles, folding seats, etc. are mounted directly on the elements. The installation elements also come with integrated fire protection, sound insulation and static protection features.

Concept Car

Flushing in style

The new Geberit actuator plate Sigma70

Geberit actuator plate Sigma70

The market launch date for the Geberit actuator plate Sigma70 is January 1, 2014. The actuator plate can be combined with the Geberit Sigma concealed cisterns 12 cm (UP320/UP300, manufactured from 2002) and can be retrofitted in older bathrooms and WCs in next to no time.

Although it will not be released on the market until January 2014, the Geberit actuator plate Sigma70 is already receiving awards.

Back in March 2013 at ISH 2013 in Frankfurt, the world's largest sanitary trade fair, the plate's design study attracted a great deal of attention. At the trade fair, the Sigma70 already received a first prize – the prestigious "Design Plus powered by ISH" award – which is presented by the jury on the basis of the overall concept, design quality and innovation as well as technical and ecological aspects.

Soft-touch function

The entire actuator plate is also the actuator button. When the left-hand side is gently pressed, a large volume of water is released, while gently pressing the right-hand side releases a small volume of water. Using the Sigma70 is therefore child's play. The new plate thus sets completely new standards in terms of both design and comfort. The high-quality surface is made of either stainless steel or glass and is available in the colors white, black and umber.

The Sigma70 was made possible thanks to a newly developed technology. The core technology behind the plate is a hydraulic servo lifter, which uses the pipe pressure for the flush actuation. Thanks to the soft-touch function, the flush actuation reacts when gently pressed. Because the WC actuation does not require an electricity connection or batteries, it can be installed anywhere. As a result, this is also a perfect solution when it comes to bathroom renovations.

Seamless design

With its elegant, seamless design, perfect ground edges and rounded corners, the Sigma70 is a creative continuation of the successful actuator plates from the Geberit Sigma line. The Sigma70 was designed by industrial designer Christoph Behling, who had previously designed the Sigma40, the Sigma50 and the surface-even, refined Sigma60.

As with all Geberit products, the design of the Sigma70 was also driven by the courage to create the invisible. The technology and the construction – the expertise behind the Sigma70 so to speak – are invisible. However, they still influenced its form. In order to be able to integrate the control system for the hydraulic servo lifter into the plate, the plate could not be placed directly on the wall. As a result, the mere four-millimeter-thick Sigma70 is fastened to a narrow frame behind which the technology disappears, which gives the plate the appearance of floating in front of the wall.

Further development of the "floating plate"

As with the previous Sigma plates, the source of creative inspiration for the Sigma70 was the "floating plate" design study (see article "Courage to create the invisible" in "View 2012", pp. 36/37). Thanks to a non-visible fastening, the new plate sits a couple of centimeters in front of the wall. In a style that pays homage to the floating plate study, the Sigma70 combines esthetics with perfect, uncompromising functionality. With the new plate, Christoph Behling has achieved the maximum reduction to the absolute essentials and thus a systematic further development of the visionary design study developed some years ago. Christoph Behling on his design: "The principle of 'less is more' also applied when it came to the design of the Sigma70. The plate celebrates the beauty of minimalism – the 'almost invisible' – while also distinguishing itself through its clear incisiveness." As with the design of the plate, its handling also conveys a feeling of ultimate perfection, the industrial designer explains. ←

↑ Transparent architecture: With a roofed forecourt area and extensive glazing, the courthouse opens up to the public square in Esch-sur-Alzette.

Safe transparency

Geberit installation systems – tested statics

The new "Justice de Paix" (Justice of the Peace) in Esch-sur-Alzette fulfills all the requirements of a modern administration building and symbolizes openness thanks to its transparent architecture. By using highly developed products that are tested for their load-bearing capacity in special structural analysis tests, the static safety of the installation systems is ensured by Geberit.

L'Hôtel de la Justice de Paix, Esch-sur-Alzette (LU)

Building owner: Administration des bâtiments publics, Luxembourg (LU)
Architects: Atelier d'Architecture et de Design Jim Clemes, Esch-sur-Alzette (LU)
Completion: 4/2012
Sanitary engineers: BLS Energieplan, Luxembourg (LU)
Plumber: Rudolf Lütticken, Wittlich (DE)

Geberit know-how
Duofix installation systems
Mapress stainless steel piping systems
Electronic urinal flush controls and lavatory taps

"Vérité, Indépendance, Humanité" (truth, independence, humanity) – the facade of the new "Justice de Paix" in Esch-sur-Alzette in Luxembourg proclaims the ideals and standards of the institution. The gray concrete cube was designed by the local architecture firm Atelier d'Architecture et de Design Jim Clemes. The goal was to meet today's working procedures and energy consumption requirements while conveying a visual image of a modern judiciary. The new building was built on the edge of the Rathausplatz, where it bridges the historic town center and the newly developing residential and business district. Thanks to

← In the staircase, counterposed offset galleries connect the individual floors to one another.

generous window areas, the courthouse opens up to the public square. A roofed forecourt area with fine pillars guides visitors from Rathausplatz to the main entrance. According to the architects, the fully glazed security gate area was designed to underscore the sense of "transparency and openness" – a concept that also continues inside the building in the foyer.

Concrete, wood and glass

Inside the building, the atrium – with its bright concrete surfaces and anthracite-colored imprinted lettering forming words such as "Loyauté" and "Humanité" – picks up on the elements on the outer facade. Large window areas and skylights create a bright space. The staircase is also open and connects the individual floors to one another via counterposed offset galleries. The hearing and conference rooms are located on the ground and first floor. The second and third floors contain the rooms for judges, judicial officers and court clerks. In keeping with the esthetics of the building, the bright concrete design aspect continues through these rooms. The concrete is complemented by glass and wooden surfaces made of bog oak. While sandblasted glass ensures privacy in the rooms on the ground floor, the conference rooms, offices and library on the upper floors open up outwardly and towards the foyer via large windows. For the architects, the new "Justice de Paix" in Esch-sur-Alzette is a "place of mediation and facilitation that is characterized by openness and transparency where everyone can feel free".

Static safety

When constructing buildings with an open and transparent design such as the "Justice de Paix" in Esch-sur-Alzette, special consideration needs to be given to static aspects. In order to also be able to supply highly developed quality products in this area, Geberit works continuously on new developments and on the optimization of existing systems. This is why the company has been practicing applied research and development for decades. In its very own building technology and acoustics laboratory, the acoustic and structural properties of both individual components and entire installation systems such as the Duofix installation systems installed in the "Justice de Paix" are tested, as are the GIS installation systems. Custom-made facilities and equipment have been developed for the structural analysis tests. These tests are conducted in special installation boxes and reveal that Geberit prewall systems can withstand a static load of over 100 kg for urinals, over 150 kg for washbasins and even topping 400 kg for wall-hung WCs. The load-bearing capacity and deformability of room-height Geberit installation partition walls are tested under a weight of up to 20 tons using a force framework specially constructed for this purpose. ←

Special solutions for special problems

In addition to standard solutions, Geberit also offers solutions customized to individual situations in order to meet special static demands. This was the case in another court in Luxembourg – the Court of Justice of the European Communities – where twin towers were added in 2008 based on the plans of architect Dominique Perrault and in which GIS installation systems were installed. The specific challenge posed in this project was the fact that the ceilings had to be subsequently lowered during the first phase of construction after 95 percent of the walls had already been mounted. In order to continue to meet the static requirements despite these changed conditions, special structural analysis tests were conducted at Geberit's premises in Jona. These tests confirmed and ensured that the GIS installation systems were able to meet the structural requirements, despite the extent to which the ceilings were lowered.

White style icon

Hotel d'Angleterre, Copenhagen, Denmark

Hotel d'Angleterre, Copenhagen (DK)
Building owner: Remmen Foundation, Copenhagen (DK)
Architects: C.F. Møller Architects, Copenhagen (DK); GA Architects, London (UK)
Reopening: 5/2013
Plumber: Wicotec Kirkebjerg, Lejre (DK)

Geberit know-how
AquaClean Sela
AquaClean 8000plus
Duofix installation systems
Actuator plates Sigma50
Silent-db20 piping systems
Mapress stainless steel piping systems

After a period of extensive renovation lasting two years, the d'Angleterre in Copenhagen opened its doors once again in spring 2013. The hotel rooms exude pure elegance and luxury in line with the 250-year tradition of the five-star hotel. Fulfilling all the needs and wishes of discerning international guests in a stylish atmosphere was at the forefront of the decision to undertake the redesign work. This included ensuring a top level of comfort in the bathroom, which is where the Geberit AquaClean came into play.

↑ All of the hotel's public areas – including the bar – were fitted with luxury materials.

The d'Angleterre in Copenhagen has been accommodating international guests for 250 years. The magnificent white building is located right at Kongens Nytorv, the largest square in the Danish capital and picturesque heart of the metropolis. Charlottenborg Palace, the Royal Danish Theatre and Scandinavia's oldest department store "Magasin du Nord" are located in the immediate vicinity.

The "White Lady" sparkles anew

The d'Angleterre was founded in the middle of the 18th century by Jean Marchal. The young hairdresser traveled to Copenhagen with his theater troupe. Enchanted by the pulsating port city, he decided to stay and became a valet at the royal court, where he met and fell in love with Maria Coppy, the daughter of the royal chef. After they got married, they opened a small restaurant on the site where Danish architect Vilhelm Dahlrup built the current hotel building in 1873.

In 2011, the aging hotel was closed for extensive renovation. Two years later, the "White Lady" – as the hotel is colloquially known – stands shining in bright white once again.

C.F. Møller Architects in Copenhagen and London-based firm GA Architects were commissioned with the renovation and interior decoration. One of their central goals was to grant the hotel a grander sense of space. As a result, the individual rooms were enlarged, reducing the original total of 123 hotel rooms and suites to 90. Today, the smallest hotel room is 35 square meters, with the largest suite measuring 250 square meters. In addition to the hotel rooms, all the hotel's public areas – including the restaurants, halls, staircases and reception area – were also renovated with great care and fitted with luxury materials, such as hand-woven carpets, silk wall coverings and marble. An original old fireplace was restored, as was a balcony that was rediscovered during renovation in the "Palm Court" under the historical glass mosaic roof. The new hotel restaurant led by Michelin-star chef Ronny Emborg now bears the name "Marchal" in homage to the founder Jean Marchal.

Comfort and well-being

"We want our guests to feel completely comfortable and to see our hotel as their home away from home. To achieve this, it is important that they find the same level of comfort here as they do back home," says Dorte R. Hansen, Director at the d'Angleterre, explaining the concept behind the renovation. Great importance was therefore attached to selecting materials of the very highest quality. This also included the bathrooms, which were all fitted with Geberit AquaClean shower toilets. "We opted for Geberit AquaClean Sela and 8000plus as these shower toilets represent

↑ Magnificent white icon in the heart of Copenhagen – the Hotel d'Angleterre.

a perfect combination of a toilet and a bidet. Many of our hotel guests come from countries and cultures where shower toilets or bidets are a matter of course. By opting for the AquaClean products, we can meet this need perfectly. Thanks to their elegant design, the shower toilets from Geberit also fit in very well with the classic, elegant style of our new bathrooms," explains Dorte R. Hansen. ←

Complementary contribution on this issue

In the Hotel Maritim Pine Beach Resort in Belek (TR), Monolith sanitary modules were opted for. Find more information about it in the iPad app for the reference magazine.

Geberit AquaClean Sela and 8000plus

Design is playing an increasingly important role when it comes to bathrooms. People are not looking for fancy products but instead convenience and a pleasant, calm atmosphere. The Geberit AquaClean shower toilets offer quality, design and convenience all in one product. Two different shower toilet models from Geberit were used at the d'Angleterre, namely the 8000plus and Sela. As they meet the highest requirements, the elegantly designed Geberit AquaClean 8000plus shower toilets were installed in the bathrooms of the large, luxurious hotel suites. In addition to spray functionality, the 8000plus features temperature regulation and enables the individual setting of the position and intensity of the shower spray. The automatic odor extraction also ensures that the room remains pleasantly fresh. All functions can be regulated and stored using a remote control.

The Geberit AquaClean Sela shower toilet designed by architect and designer Matteo Thun was installed in the bathrooms of the d'Angleterre hotel rooms. Thanks to its timeless design, the Sela – which has already won a range of design awards – does not look at all like a shower toilet. It can be discreetly incorporated into any bathroom concept. The intelligent technology for the spray functionality and the connections for the power and water supply are concealed in the ceramic appliance. As with all Geberit AquaClean models, the shower toilets 8000plus and Sela comply with the requirements of the European Ecodesign Directive. Thanks to the energy-saving function, they also feature minimal energy consumption – even in standby mode.

→ **www.geberit-aquaclean.com**

A green shopping experience

"Emporia" shopping mall, Malmö, Sweden

↑ The amber-colored entrance welcomes visitors to "Emporia" in impressive style.

"Emporia" is one of the largest shopping malls in Europe. However, the impressive shopping center not only sets itself apart thanks to its striking architecture – it also fulfills all aspects of a sustainable green building and has received BREEAM certification.

"Emporia" is the name of the new giant shopping mall that was opened in Malmö at the end of 2012. With a store space of 68,000 square meters and around 200 small and large stores, "Emporia" is one of the largest shopping centers in Europe. Each day, up to 25,000 visitors flock to the fully glazed building. The new shopping center is located in Hyllie, a thriving district of Malmö that is planned in accordance with energy-efficient standards, with the goal of being a model example of sustainable urban development. 2,500 new homes are to be built in Hyllie by 2016.

Colors and plants

"Emporia" was designed by Gert Wingårdh, one of the most well-known Swedish architects. Wingårdh created a striking complex, whose characteristic architecture clearly sets it apart from the faceless facades of conventional shopping malls. The most distinctive feature is its organically curved, amber-colored entrance that welcomes visitors in impressive style. On the opposite side of the center is a second entrance, which was fitted with marine-blue panes of glass. Over 800 colored panes of glass were used for the two entrance areas, which bear the names Amber Entrance and Sea Entrance in line with their respective color.

"Emporia" is divided up into five galleries, which are also designed in different colors in order to facilitate orientation as visitors move through this giant mall. The shopping center also features a Flower Court, where the elevator towers are clad with flowers and seven ropes are suspended from floor to ceiling which house climbing plants. The over 3,000 plants featured here make this area particularly atmospheric and tranquil. The mall's furnishings were also planned right down to the smallest detail. As well as being a shopping destination, floors four to six of "Emporia" also feature around 10,700 square meters of office space.

Holistic approach

This giant complex is topped off by a roof park that spans more than 26,000 square meters and is open to the public. Interconnected by pathways, the park's undulating hillocks create areas for play, events and relaxation. As well as offering a magnificent view across Öresund and Malmö, the beautiful park also fulfills crucial sustainability requirements. The park is one of the reasons why "Emporia" was designated Sweden's first environmentally certified shopping mall. When building the shopping center, the focus was on a holistic approach. "Emporia" fulfills all the requirements of a green building, focusing on issues relating to energy, environmental management, health, transport, water, materials, waste, land use, pollution and ecology. Among other things, the green roof provides natural insulation and reduces both energy requirements and pollution, thus truly representing the icing on the cake when it comes to meeting these requirements. For its compliance with sustainability guidelines, "Emporia" received the internationally recognized BREEAM certification. ←

Emporia shopping mall, Malmö (SE)

Building owner: Steen & Strøm Sverige AB, Stockholm (SE)
Architects: Gert Wingårdh, Gothenburg (SE)
Completion: 10/2012
Plumber: Bravida Sverige AB, Stockholm (SE)

Geberit know-how
Duofix installation systems
Actuator plates Sigma10, Sigma80 and Mambo
Mepla piping systems
Mapress piping systems
PE-HD piping systems

→ **Green building: BREEAM certification**

↑ The galleries are designed in different colors to improve orientation for visitors.

↑ Plants climb up the ropes in the Flower Court.

Interview with the architects Gert Wingårdh and Joakim Lyth on the architectural concept and the importance of Geberit products for the BREEAM certification.

Economy of time and sustainable products

With its unique architecture, "Emporia" clearly sets itself apart from normal shopping malls. What was your inspiration when creating this unusual design?

Our inspiration for the architecture of "Emporia" was the sky. We played with light and space and used glass to open up and bring the sky into the building. Natural materials such as fabric and leather give the visitor a sense of belonging to nature. Our goal was to create a place where everybody would feel at home and yet still find surprises around every corner.

"Emporia" has received BREEAM certification. What measures were implemented in order to meet the required standards?

BREEAM certification entails fulfillment of a variety of targets. Everything from bicycle parking to lights has an influence on the final result. The technical installations play an important part and it was essential for us to create a building that does not waste energy. Each product must have a purpose and function and thereby contribute to the sustainability of the architecture.

What contribution did Geberit make to the construction of the "Emporia" shopping mall? Were there any particular technical challenges that were solved using Geberit products?

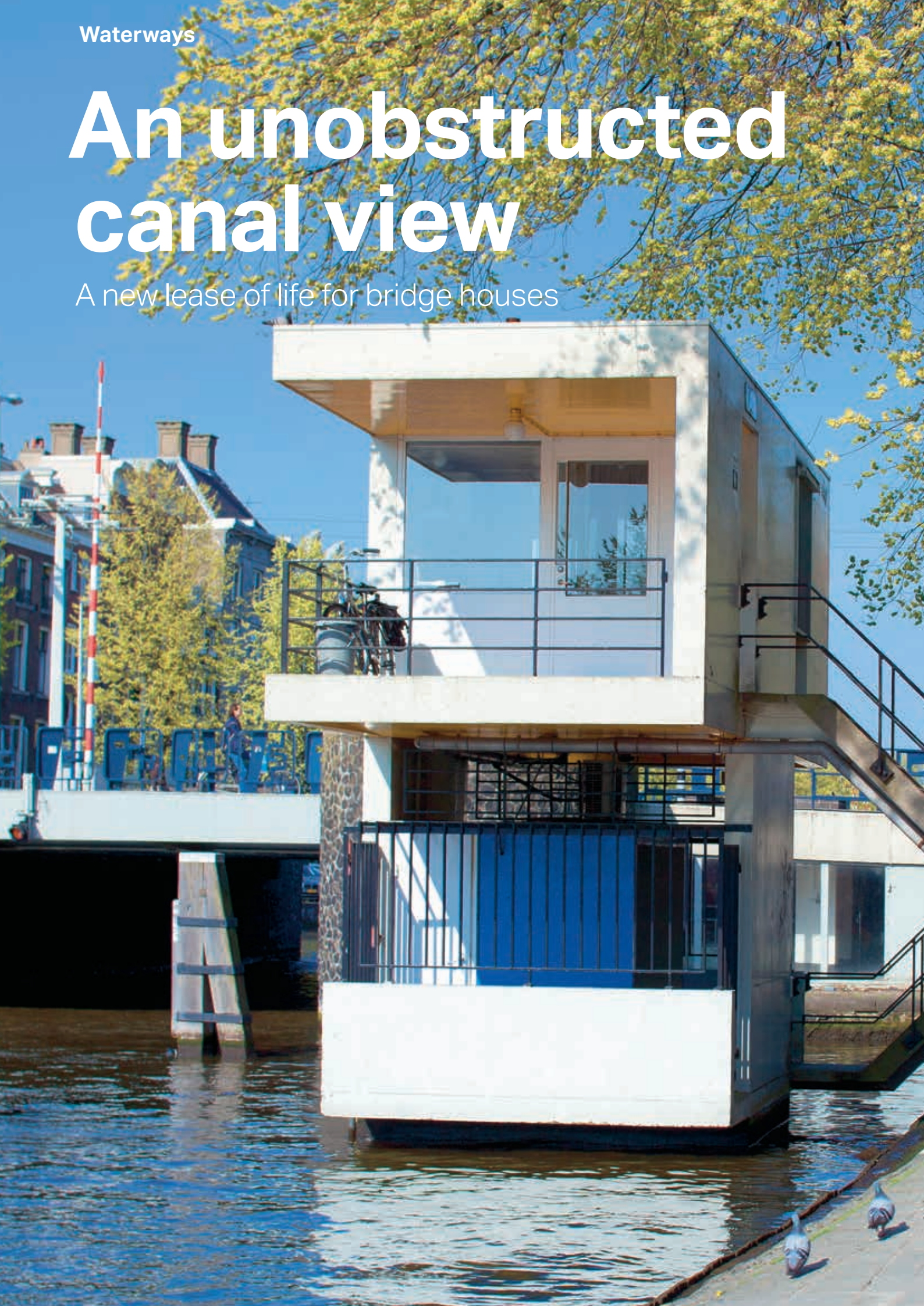
It was important in the "Emporia" project that the materials used were light and easy to work with in order to avoid any unnecessary burden for the installers. We therefore chose to use Geberit Mepla piping system rather than traditional piping which entails the welding and lifting of heavy pipes. Mepla piping system not only made it easier but also a lot faster to install the piping.

To what extent did Geberit products make a significant contribution towards achieving BREEAM certification?

In order to receive BREEAM certification, all materials had to be assessed and approved. Geberit products made it easy to achieve this approval. In particular, cisterns with a flush of 3–6 liters are required in order to achieve BREEAM certification, and with Geberit cisterns this was possible. ←

An unobstructed canal view

A new lease of life for bridge houses



Amsterdam, city of countless canals – and just as many bridges. For centuries, bridge operators sat at the heads of these bridges in little houses known as "brugwachtershuisjes" (bridge houses) and regulated the traffic on the waterways. They were in charge of raising and lowering the bridges, looked out for barges and assured them safe passage. However, these tranquil times are now very much a thing of the past. The city of Amsterdam is developing a new, centralized bridge control system that will render these bridge houses obsolete. The question of what to do with these tiny buildings, some of which were designed by leading Dutch architects such as Aldo van Eyck, Piet Kramer and Hendrik Petrus Berlage, is one that the architects from space&matter also spent some time considering.

The Amsterdam-based architecture firm developed a creative concept for reusing the bridge houses called "Sweets" – an idea inspired by the term "suite". In collaboration with Lloyd Hotel and the real estate development company Grayfield, space&matter is now converting some of these houses into tiny luxury hotels, with a total of 28 such houses to be redeveloped for this purpose. As each bridge house is different, the future mini-hotels will also be unique. On a floor space averaging 20 square meters, all of the important functions of a hotel suite are housed in these one- to two-floor "Sweets", including the full range of hotel services and a kitchenette. As the waterfront "Sweets" are interspersed throughout lively downtown Amsterdam, offering unobstructed and impressive views of the goings-on both at and on Amsterdam's canals, those who had previously used their hotel room merely as somewhere to put their head down at night for fear of missing out on something during their trip are now treated to a comfortable, trendy alternative. ←

→ www.spaceandmatter.nl

Index architects/plumbers

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Case Study #1

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Portrait, pages 10–13

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Focus, pages 22–35

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Glossar

Internationally recognized certification systems for green buildings:

BREEAM
The certificate Building Research Establishment Environmental Assessment Method was developed in Great Britain in 1990 and is the oldest certification system used around the world in the area of sustainable building. The criteria take into consideration the impact on a global, regional, local and building-internal level. The levels of BREEAM certification are Pass, Good, Very Good, Excellent and Outstanding.

LEED
The Leadership in Energy and Environmental Design certificate was developed in the USA in 1998 based on the BREEAM standard. It defines a range of standards for environmentally friendly, resource-conserving and sustainable building. The levels of LEED certification are Silver, Gold and Platinum.

DGNB
The German Sustainable Building certificate was launched in 2009. The German sustainability certificate seeks to close the gaps in existing systems and to introduce additional quality criteria. For the DGNB, over 60 individual criteria were defined, which are assigned to the criteria groups Ecological Quality, Economical Quality, Socio-cultural and Functional Quality, Technical Quality, Quality of the Process und Quality of the Location. The German Sustainable Building Certificate is awarded in the categories Bronze, Silver and Gold.

Minergie
The Minergie certificate was developed in Switzerland in 1994 and is a globally protected trademark in the area of sustainable building. To achieve certification, a compact, well-insulated and closed building shell is required, complemented by an automatic ventilation system with heat recovery. Minergie certification is available in four standards that are differently determined depending on the building category: Minergie, Minergie P, Minergie A and Minergie ECO.

The low-energy house certification (type "A+", "A" and "B") was established in Austria in 2009. This describes the energy standard that regulates the heating requirement of both new buildings and renovated old buildings. To achieve certification, energy requirements must be significantly below the maximum permissible level.

KfW Efficiency House 55
KfW Efficiency House 55 is a German certification system for low-energy houses and is comparable with the Swiss Minergie standard. This system stipulates that the annual energy required per square meter of living area must lie 45 percent below that of standard houses.

HQE
The Haute Qualité Environnementale certificate was launched in France in 1992. This standard focuses on two aspects – the ecological management of construction projects and sustainable building design. To obtain HQE certification, obligatory categories such as energy management, water efficiency and freedom from pollutants must be covered.