Edition 3

Ideas. Solutions. Possibilities.

Success stories

Layher®

More Possibilities. The Scaffolding System.

MORE PERFORMANCE.
MORE POSSIBILITIES.
MORE VALUE.

This magazine contains illustrations designated with the mixed reality symbol. Use the Layher app to bring the scaffolding structures to life. You can download the app at app.layher.com or by scanning the QR code. Try it out!

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Dear Readers,
Welcome to the third issue of our Success stories magazine.

EDITORIAL

This printed version of our online stories www.scaffoldingstories.com features new amazing projects and customer Success stories that make very enjoyable reading. It also contains interesting supplementary information, providing you with a compendium of good ideas about all the things you can do with our solutions. One of the stories in this issue is about a building designed to blend into its natural surroundings in the Black Forest. When you read it, you'll discover how crucial the scaffolding was to the project's success. Then we shift our focus further south – to Florence, the Renaissance jewel in Italy's crown, where a clever scaffolding solution made renovation work on a famous cathedral's ceiling possible without preventing congregations from attending mass. And the next story takes us another 12,000 kilometres south to a place near Johannesburg in South Africa, where Layher scaffolding and Layher SIM – a smart digital 3D-modeling process – were used in a boiler maintenance project. As a result, the weight of scaffolding material required was reduced by 50 % and the project duration was three weeks shorter. Safety was an important issue in the latter story … and how it was simply and reliably achieved with Layher's escape staitowers.

All of the stories impressively document how the Layher systems, as well as our 'More Possibilities' package of innovative products, competent advice, delivery excellence and detailed technical documentation, help our customers to operate successfully. As always, you can find our online success stories including video clips at www.successstories.com

Enjoy reading!

WILHELM GERÜSTBAU GMBH

Ruhestein Visitor Centre, Black Forest National Park

A FOREST VISITOR CENTRE

At Ruhestein, a 915-metre-high pass in the Northern Black Forest National Park, a new 3,000 m² visitor centre is being built. The design for the new building complex was inspired by the lattice-like piles of deadwood that are often found on the forest floor. The various building blocks appear to have been stacked arbitrarily and the wooden shingles covering the exterior ensure that the building harmoniously blends into the surrounding forest. One of the design highlights is an open skywalk with platform providing visitors with breath-taking views. Scaffolding services provider Gerüstbau Wilhelm is supporting the entire construction project, ensuring that the necessary scaffolding for each of the construction phases is in place.

BUILDING IN HARMONY WITH NATURE

"What the construction team needs most is flexibility," said Patrick Wilhelm, who has been a company director of the Filderstadt-based family business alongside his brother Matthias and his father Reinhard since 2017. "The special geographic location and statics here at Ruhestein pass meant it was virtually impossible to plan the scaffolding requirements in detail," said the expert. "We brought along approximately 15,000 m² of Layher Allround Scaffolding material, and the scaffoldings changed and evolved as the building work progressed."

The special design of the building exterior, which is covered with wooden shingles, meant that the entire structure needed a free-standing scaffolding without anchorage erected around it, which posed quite a challenge for many reasons – not just the hillside location. The architects' idea of leaving as many trees in place as possible also complicated matters somewhat. "A number of trees were only 20 cm away from the building exterior, and we weren't allowed to cut away any branches, so we had to build the scaffolding around some of them. It wouldn't have been possible without the comprehensive range of standard Layher Allround Scaffolding parts," said Wilhelm. "Ensuring that all the construction requirements are met was a real mental challenge for our scaffolding experts."

You could almost eat from the floor. Matthias and Patrick Wilhelm walking through the company warehouses. A member of staff with a systematic approach ensures that all materials are inspected, maintained and always in the right place.

"WE WEREN'T ALLOWED TO CUT AWAY ANY BRANCHES, SO WE HAD TO BUILD THE SCAFFOLDING AROUND SOME OF THEM"

Patrick Wilhelm,
Managing Director of
Wilhelm Gerüstbau GmbH

RELIA-BILITY AND ERGO-NOMICS

The Layher Allround Scaffolding provides the carpenters affixing the wooden shingles to the exterior of the visitor centre with a safer work environment and optimum access ergonomics. The scaffolding nodes in a 50 cm grid arrangement makes the quick and easy attachment of brackets possible so that the work platforms can be positioned at the right height for efficient working. The use of lattice beams create a safer superstructure over the flat roofs without impairing the progress of insulation and sealing work. Ergonomics are also an important aspect of scaffolding material logistics and storage at Wilhelm. Back in the 1970s the company began to palletise its material with the assistance of Layher products, and since then it has continuously optimised its storage and logistics operations.

The entire complex was covered with pre-aged shingles to camouflage it as much as possible so that it blended into the surrounding forest. The Layher Allround Scaffolding and flexibly positioned platforms made the carpenters' work considerably easier.

The use of lattice beams in some parts of the facade scaffold made it possible to build a superstructure over the flat roofs without impairing the progress of insulation and sealing work.

USED SCAFFOLDINGS:

- ALLROUND SCAFFOLDING
- SYSTEM FREE ACCESSORIES

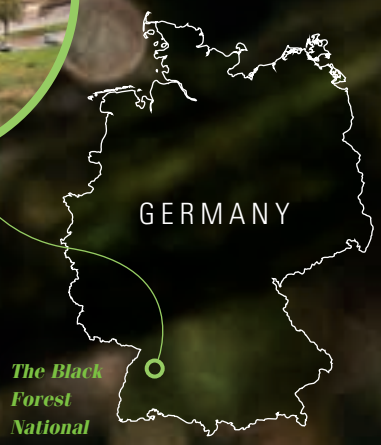
Gerüstbau Wilhelm was established as a plastering business in 1934. Even in those days they used Layher wooden ladder scaffolding. Over the generations the company accumulated more and more scaffolding material – all of it made by Layher in Eibensbach. In 1993 they decided to focus exclusively on scaffolding and, since then, they have evolved into one of the most well-known scaffolding services companies in the Stuttgart region. Reinhard Wilhelm is a restoration specialist who is particularly interested in regional church restoration projects. "It's difficult to forecast exactly how long a church restoration project will take, so the churches generally buy the scaffolding material themselves and we just erect it. The consistent use of Layher scaffolding products ensures we can always work quickly and effectively," said the senior director. Two-thirds of the projects are for customers in regional industries such as automobile manufacturing and tool making. "We provide a service portfolio that is tailored to our customers' requirements. The Layher products are extremely flexible, which means that we have the perfect solution for any challenge, however big or small, simple or complex. That's why we've been so successful for so many years," agreed the three directors.

"WE'VE ALWAYS USED LAYHER PRODUCTS"

Reinhard Wilhelm, Managing Director of Wilhelm Gerüstbau GmbH

The Wilhelm company was established in Filderstadt in 1934. Initially a plastering business, it has been a pure scaffolding services provider since 1993. Matthias and Patrick are the next generation of the family to follow senior partner Reinhard Wilhelm into the successful family business.

Video clip of the Wilhelm project



PURE NATURE

Generations of people have worked in the forestry and livestock grazing industries in the Black Forest's unique natural and cultural surroundings. The Black Forest National Park is full of contrasts. It has forests and moors, meadows and lakes. It showcases all the various faces of nature, from soft and gentle to wild and untamed.

The Black Forest National Park was established in January 2014 and it is the only national park in Baden-Württemberg. The region's diverse natural environment is mirrored in the diversity of the flora and fauna that inhabit it. At the moment spruce, fir and beech forests dominate the landscape. It's the meadows, or 'grinden' as the locals call them, as well as several moors, that make this place so special.

The national park's 'Let nature be nature' motto summarises the conservation area's most important objective. At the same time, the park is open to the public for recreational purposes. That's why the job of running it is so interesting and varied.

https://www.nationalpark-schwarzwald.de

***The pygmy owl** in Europe and the national park's mascot. It prefers to live in mountain forests where there are plenty of old trees, and eats small birds and mice. The pygmy owl likes conifers and often makes its home in hollow tree trunks that have been abandoned by woodpeckers. The national park mascot is also affectionately called 'Spauz'. It's a loner and known to be a shy creature.*


ITALY
Florence

EDILCOMIT PONTEGGI S.R.L.

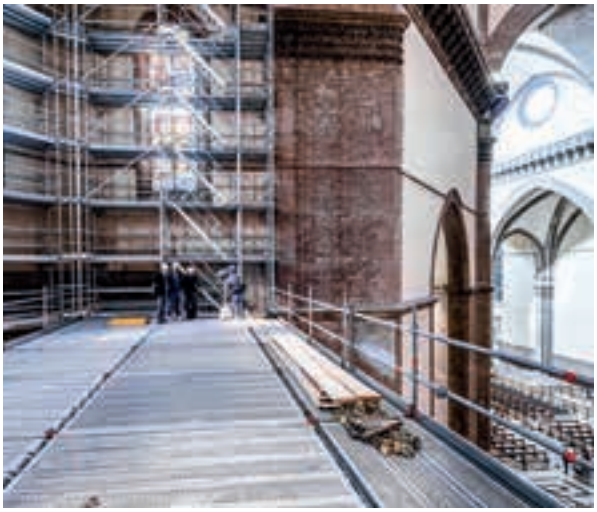
Santa Maria del Fiore, Florence

SERVICES CONTINUED THANKS TO A CREATIVE SCAFFOLDING

The Santa Maria del Fiore cathedral in Florence is one of Italy's most important tourist attractions. In 2018, a work and birdcage scaffolding had to be built inside the cathedral so that maintenance and refurbishment could be performed on one of the ceilings. The scaffolding provider faced a task that was both clear-cut and complex: to erect a scaffolding that allowed the continued use of the cathedral as a place of worship without any reduction of seating capacity. Edilcomit Ponteggi s.r.l., a Siena-based scaffolding company, accepted the challenge and delivered the perfect solution to bridge the apse – to a great extent thanks to Layher Allround Scaffolding Lightweight and the Layher Allround FW System, which was being used for the first time by the company.

TECHNICAL CREATIVITY IS ESSENTIAL

Santa Maria del Fiore Cathedral is a famous landmark in the Tuscan city of Florence. The "Cathedral of Saint Mary of the Flower," which would be the English translation, is a wonderful example of ecclesial architecture. Not only is it the fourth largest and longest church in the Christian world, it also has the largest brick dome on Earth. In mid-2018, a scaffolding had to be built under a section of the 40 metres-high ceiling in the cathedral so that inspection and maintenance work could be carried out. An important requirement was that the area of the cathedral underneath the scaffolding could still be used for services.



ONE OF THE COMPANY'S SPECIAL AREAS OF EXPERTISE IS THE RENOVATION OF THE HISTORIC BUILDINGS

Edilcomit Ponteggi s.r.l. secured the contract to build the scaffolding. The scaffolding company from the Tuscan town of Siena has decades of experience and is a sought-after partner for construction services with a reputation extending well beyond the borders of Tuscany. Founded in 1984, the company specialises in the planning and installation of construction scaffoldings, facade scaffoldings and other types of scaffolding, and it is famous for its sophisticated and creative solutions.

Edilcomit has been a Layher customer since 2004 and it is a dedicated user of the company's German-made scaffolding products. Mariangela Vallerani, managing director of Edilcomit, explained why: "Layher Allround Scaffolding is a very efficient and reliable system. It's also incredibly flexible and we can adapt it to whatever project we are working on. Layher scaffolding is very versatile, too: it can be used to build towers, support structures, formwork and reinforcing scaffolding, load-bearing structures for facade scaffoldings, work platforms, stairways, temporary bridging structures and for various other applications."

One of the company's special areas of expertise is the renovation of historic buildings and Edilcomit already has experience in projects similar to Florence Cathedral. It also used Layher scaffolding for under-roof work at the San Domenico Basilica in Siena, which also remained open to the public throughout.

To comply with the customer's request for the cathedral to remain open while the maintenance and restoration work was being performed, two platforms were built with the FW System resting on the side walls of the Layher Allround Scaffolding. The first platform, with a work surface of 13.25 m x 5.88 m, connects and stabilises the central part of the scaffolding and the second platform supports the scaffolding above it. To enable fast assembly, the supporting structure for the platforms was pre-assembled on the intermediate levels, then hoisted up and secured in place.

Edilcomit combined Layher Allround Scaffolding Lightweight with the Allround FW System for the first time in the Santa Maria del Fiore project. The Allround FW System was developed by Layher for temporary bridging structures and support loads on construction sites. It enables the implementation of effective and affordable solutions involving the Allround Scaffolding and just three additional components. Consisting of an Allround FW post, a stable Allround FW top and bottom chord and a length-adjustable Allround FW diagonal rod, the individual parts are quickly bolted together. Standard Layher Allround Scaffolding lateral bracing used.

TO COMPLY WITH THE CUSTOMER'S REQUEST FOR THE CATHEDRAL TO REMAIN OPEN WHILE THE MAINTENANCE AND RESTORATION WORK WAS BEING PERFORMED, TWO PLATFORMS WERE BUILT

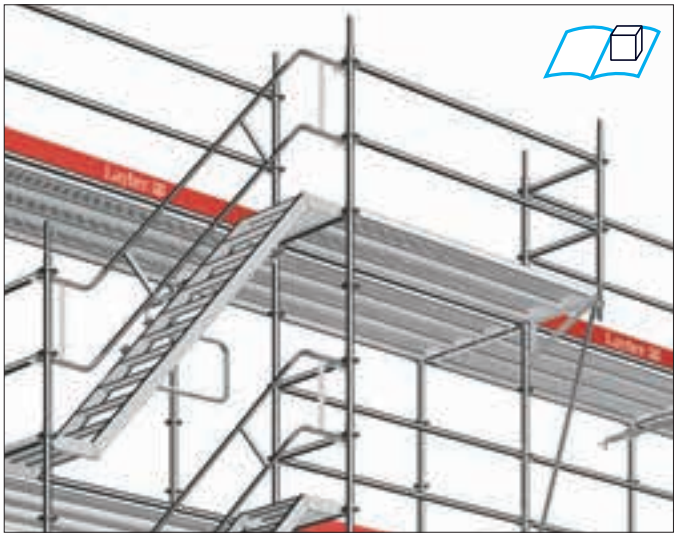
FIRST USE OF LAYHER ALLROUND FW SYSTEM

The top walk-on scaffold platform at 37.50 m in height, just underneath the main nave, allows the craftsmen and restoration experts to safely access their vertiginous workplace.

USED SCAFFOLDINGS:

- ALLROUND SCAFFOLDING
- SYSTEM FREE ACCESSORIES

CONVENIENT ASCENT AND DESCENT



Download the Layher app at app.layher.com to see the stairway in 3D.

A Layher platform stairtower provided safe access to the work platforms. The Layher platform stair makes safe and effortless ascent and material transportation possible without impairing the work area.

Matteo Milia was the Edilcomit technical project manager. He explained, "It took five of our scaffolders 31 days to put up the Layher Allround Scaffolding structure. By mid-September 2018, when the ceiling scaffolding was finished, they had installed around 5.5 tonnes of scaffolding material spanning 1,795 m² with a load-bearing capacity of 75 kg/m. The height of the last accessible platform is 37.50 m.

Video clip of the Edilcomit project

A beautiful example of Italian
EARLY RENAISSANCE
architecture

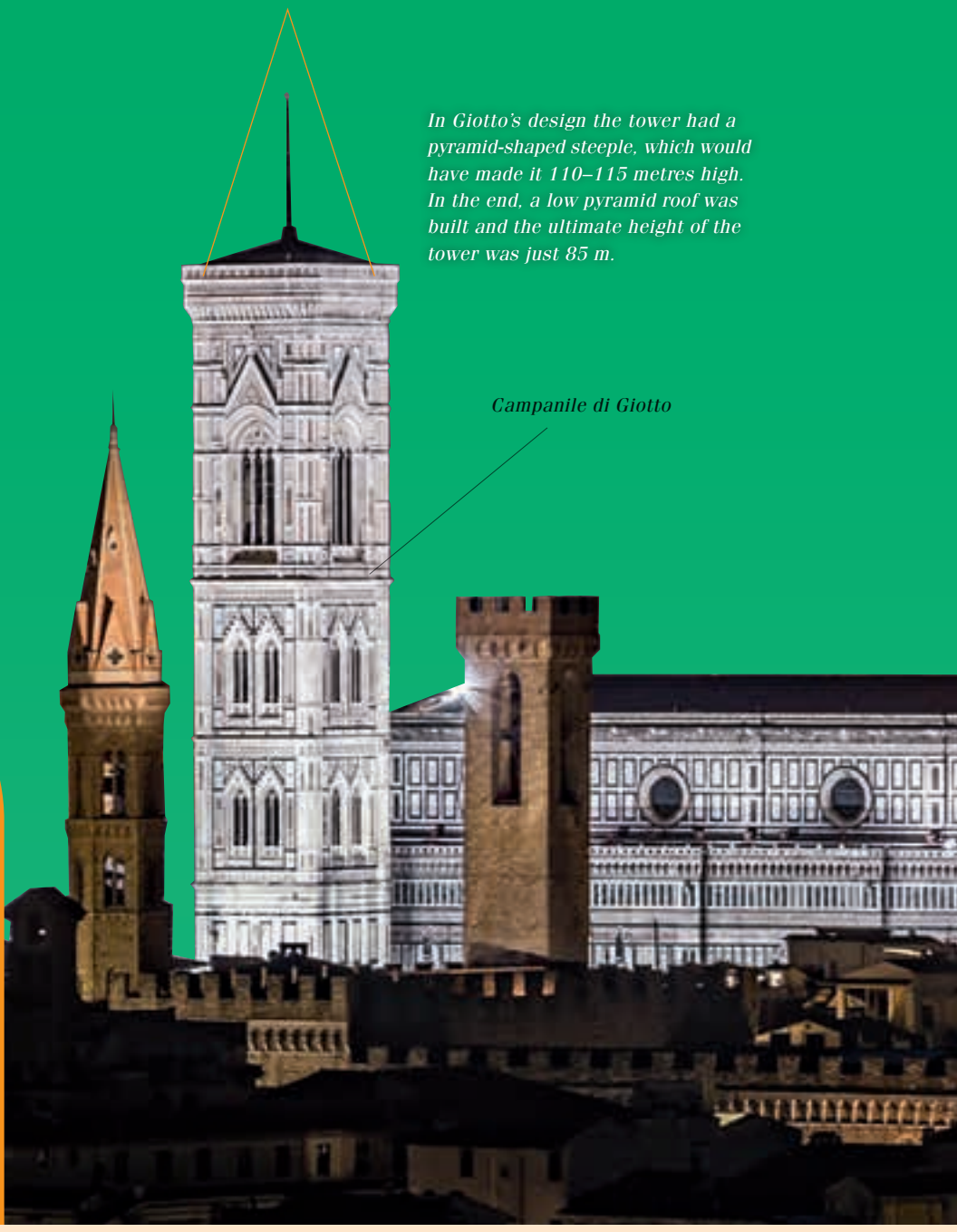
SANTA MARIA DEL FIORE CATHEDRAL

When the Florentines, led by the ambitious Medici family, decided to cover the 'big hole' in the roof of the Santa Maria del Fiore church that they had been building with a unique dome, Filippo Brunelleschi was commissioned to design it. His idea to build a dome with an interior diameter of 45 metres on 55-metres-high walls, was a controversial one, and the years of its construction until it was officially consecrated on 25 March 1436 by Pope Eugene IV were filled with intrigues and insults. When artists such as Donatello, Paolo Uccello and Luca Della Robbia had finished decorating Santa Maria del Fiore, the church finally became one of Italy's Renaissance masterpieces.

In Giotto's design the tower had a pyramid-shaped steeple, which would have made it 110–115 metres high. In the end, a low pyramid roof was built and the ultimate height of the tower was just 85 m.

GIOTTO DI BONDONE

Giotto di Bondone is the Italian painter and builder credited with being a key inspiration provider for the Italian Renaissance. He was already 68 years old when he was asked to build the 'campanile' (bell tower) in Florence. At the time of his death in 1337 only the first floor had been completed. Andrea Pisano and Francesco Talenti completed the build, after making several modifications to the original design, in 1359.



Campanile di Giotto

4 million

Brunelleschi used more than 4 million bricks to build the dome.

4.000 m²

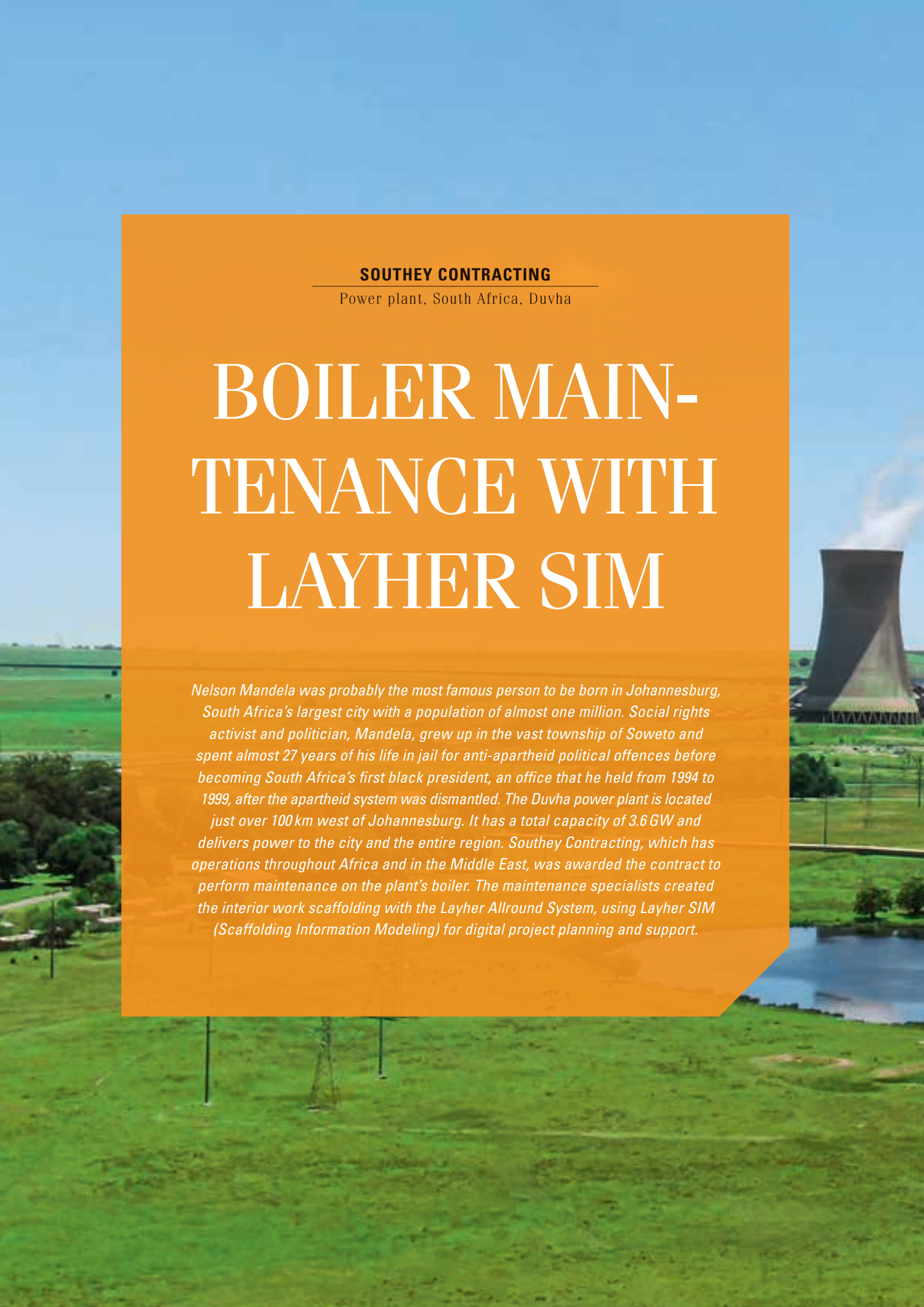
The cathedral in Florence is the fourth-largest cathedral in Europe at approx. 4,000 m².

30 thousand

The nave can accommodate almost 30,000 people.

FILIPPO BRUNELLESCHI

Filippo Brunelleschi was a leading Italian architect and sculptor in the early Renaissance period. When Brunelleschi presented his plan for the dome everyone thought he was crazy. In the year 1436, nobody believed it possible to build such a large dome. To persuade the citizens of Florence that his idea would work, and to silence his critics, Brunelleschi built a model of the later dome on the piazza. This design made him one of the greatest architects of all time. Immortalised in a statue by Luigi Pampaloni (1838), he now stands on the cathedral forecourt admiring his work.



SOUTHEY CONTRACTING

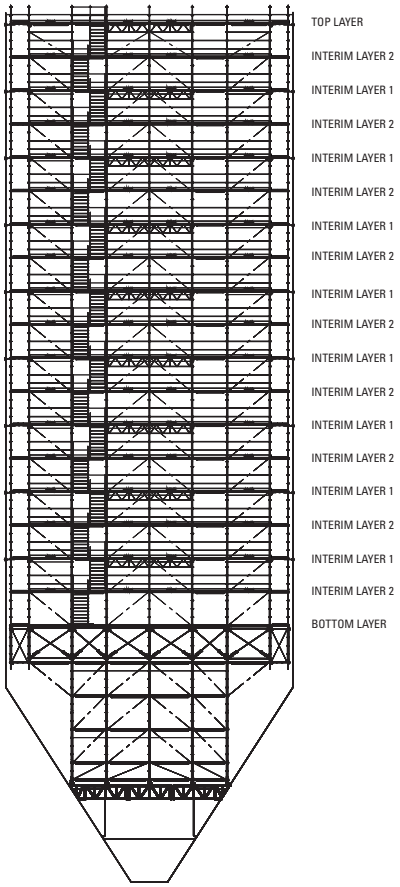
Power plant, South Africa, Duvha

BOILER MAINTENANCE WITH LAYHER SIM

Nelson Mandela was probably the most famous person to be born in Johannesburg, South Africa's largest city with a population of almost one million. Social rights activist and politician, Mandela, grew up in the vast township of Soweto and spent almost 27 years of his life in jail for anti-apartheid political offences before becoming South Africa's first black president, an office that he held from 1994 to 1999, after the apartheid system was dismantled. The Duvha power plant is located just over 100 km west of Johannesburg. It has a total capacity of 3.6 GW and delivers power to the city and the entire region. Southey Contracting, which has operations throughout Africa and in the Middle East, was awarded the contract to perform maintenance on the plant's boiler. The maintenance specialists created the interior work scaffolding with the Layher Allround System, using Layher SIM (Scaffolding Information Modeling) for digital project planning and support.


Johannesburg
SOUTH
AFRICA

AN ENERGY SUPPLY CATHEDRAL



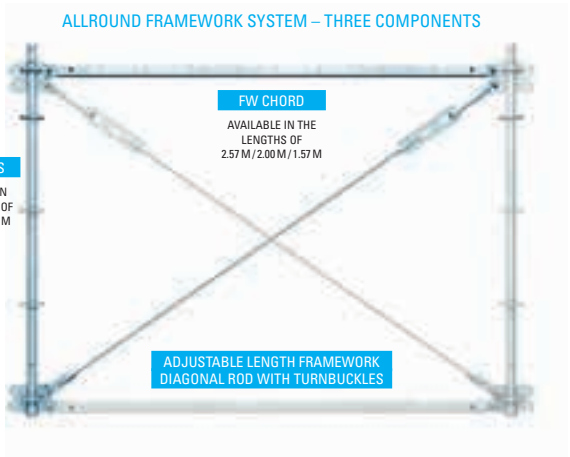
Digital planning ensures transparency in all stages of a scaffolding project, and it also helps to improve project safety and cost efficiency. By digitalising the process steps using Layher SIM, a process specifically developed for scaffolding projects, it was possible to improve budgeting and execution efficiency, and increase transparency for all the crews involved in the project. The lightweight generation of the Layher Allround System has many advantages for flexible and individual industrial scaffolding. In the

“WE SAVED THREE WEEKS OF DOWNTIME.”

Ettienne du Plessis,
Project Manager at Layher South Africa

boiler project it was used before the project kicked off to create informative 3D models of the planned scaffolding structure which were discussed in detail by the safety officers and reviewed for possible statics challenges. 3D models considerably simplify material logistics and the scaffolding build itself, and this advance planning process also minimises collisions with existing structures, which prevents time-consuming planning changes at the construction site. “The 3D data from LayPLAN CAD are available to all crews during the entire SIM process for higher-level BIM (Building Information Modeling). They make it much easier for the crews at the construction site to collaborate with each other,” said Ettienne du Plessis, Project Manager at Layher South Africa.

Southey Contracting was using the Layher Allround system for the first time, but the training and support provided to the scaffolding teams by Layher South Africa ensured that they were soon working efficiently and meeting all the deadlines. At 94 m high and 17 m wide, the boiler in Duvha is a massive structure. It took a total of 170 tonnes of Layher Allround material and an aluminium stairtower to make the inside walls of the boiler accessible.



The 40 m-high scaffold with 22 levels was built in close collaboration with Layher South Africa. Detailed planning and the use of Allround Lightweight scaffold made it possible to reduce the weight of the structure by 50 % and improve its load-bearing capacity. The Allround FW System was also used for the lower tapered end of the boiler to provide a material-saving and high-load-bearing base for the scaffold that additionally made it possible to work on the walls at the same time. The teams were able to work efficiently, build up and dismantle the scaffold quickly and reduce the entire maintenance timeframe and thus plant downtime by 21 days, which resulted in substantial cost savings for the customer.

USED SCAFFOLDINGS:

- ALLROUND SCAFFOLDING
- SYSTEM FREE ACCESSORIES

DIGITALISATION IMPROVES EFFICIENCY IN SCAFFOLDING CONSTRUCTION

The consistent treatment of scaffolding as an independent process in a construction project makes it easier to coordinate the individual steps and integrate them in a higher-level BIM process. This detailed advance planning with Layher SIM simplifies budgeting, logistics and the scaffolding build. SIM helps to make the planning, assembly and management of temporary scaffolding structures more efficient. It is based on the modules of the integrated scaffolding planning software LayPLAN SUITE. Depending on requirements it can plan simple, pre-defined scaffolding applications and produce reliable 3D plans for complex scaffolding structures, including the realistic visualisation of scaffoldings for construction process simulation and coordination. LayPLAN CAD data can also be exported to the RSTAB statics program to create material lists and construction plans. "The Layher SIM consistently transfers the BIM principle to scaffolding. It is also helpful in non-civil-engineering projects and, more importantly, a practical addition to any project because it reduces costs, improves safety and increases commercial viability," summarised Ettienne du Plessis, Project Manager at Layher South Africa.

Video clip of the Southey project

They called him
Tata

"A good head and a good heart are always a formidable combination."

Around the world Nelson Mandela became a powerful symbol of peaceful activism, promoting the rights of black people and protesting against the Apartheid regime in South Africa. He was often referred to by his traditional clan name Madiba in his home country. And sometimes people simply called him Tata, which means 'father'. Nelson Mandela spent almost three decades in jail for the sake of his cause before serving as South Africa's first black president between 1994 and 1999.

26

Nelson Mandela *embarked on his political career as president of the ANC Youth League, an association that used non-violent protests to campaign for the rights of black Africans. South Africa's white political leaders banned the ANC and revoked Mandela's passport to prevent him from leaving the country. After breaching that ban Mandela was arrested in* ***1964*** *and sentenced to life imprisonment. In 1990, after* ***spending 26 years behind bars,*** *Mandela was released with the help of the former South African president Frederik de Klerk following many years of international protests. The two men both received the Nobel Peace Prize in* ***1993*** *for the peaceful termination of the apartheid regime.*

Rolihlahla – which is roughly translated as 'troublemaker' – was born on 18 July 1918. To avoid a forced marriage, he fled to Johannesburg to become a student. The English language university translated his birth name … and from then on he was known as Nelson Mandela.

In 1948 the racial institution of Apartheid was established in South Africa. It was designed to keep the different races separate on every level of society and in every facet of life. It also gave white South Africans official license to exploit the black population.

Nelson Mandela, who had always been politically active, did everything he possibly could without resorting to violence in order to secure rights for his fellow countrymen and went to jail for 30 years as a result.

South Africa's Constitutional Court in Johannesburg *– was built on Constitutional Hill, covering some of the foundations of the controversial Number Four Prison where Nelson Mandela, his wife Winnie Madikizela-Mandela and Mahatma Gandhi were once incarcerated. The new building incorporates elements of the site's past, including old prison bricks, to symbolise the fact that South Africa has managed to build a peaceful future on the foundations of a terrible past. The court foyer is decorated with mosaics and columns symbolising the traditional trees found in South African villages under the shadow of which the clan elders held court and made decisions. This motif is also a part of the Constitutional Court's logo.*

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Roland Hassert, Head of Construction Application Technology at Wilhelm Layher GmbH & Co KG, explains how Layher's digital concept benefits scaffolding and construction companies.

Chatting to Roland Hassert

Scaffolding Information Modeling – or SIM – is a smart 3D-modeling process. SIM enables scaffolding companies to plan, build and manage temporary scaffoldings more efficiently, and also provides access to BIM (Building Information Modeling). Layher's LayPLAN SUITE provides customers with an effective tool for the SIM process.

You presented your Scaffolding Information Modeling or SIM concept at Bauma in 2019. What's it all about?

Roland Hassert: We've been using 3D planning methods at Layher for around 20 years now, so we're aware of the advantages of digital scaffolding planning in terms of cost transparency, planning reliability and deadline compliance. Building Information Modeling or BIM is increasing the importance of digital processes in the scaffolding industry. That's why we developed Scaffolding Information Modeling for our customers. It's a smart 3D-modeling process that covers all the important elements in scaffolding construction, from planning and logistics to execution – and by that I mean the scaffolding build, acceptance, use, conversion and dismantling.

How does SIM differ from BIM?

Roland Hassert: The difference is that SIM focuses on the temporary structures in the BIM process. BIM represents the building's entire lifecycle of plan, build and operate. But the scaffolding is only a temporary structure during the construction phase. SIM not only provides access to BIM, it also makes it possible to plan, build and manage temporary scaffoldings more efficiently. Also, digital scaffolding planning can be used independently of a BIM process.

> "We deliver planning reliability and transparency across all phases of construction."

What role does safety play in all this?

Roland Hassert: Safety for the user? A massive role. Important safety elements – such as three-part side guards in all the work areas, adequate passage widths, safe access routes, gap covers – can be quickly and reliably checked using the model. SIM makes a major contribution to improving safety.

What prompted you to develop SIM?

Roland Hassert: Our slogan – no our promise – is 'More Possibilities'. That's why we're always trying to make improvements and take new approaches that benefit our customers. We also analyse the challenges that our customers are confronted with and new developments in the markets such as the digital transformation.

And then we offer them solutions. The SIM process, the integrated LayPLAN scaffolding planning software and the LayPLAN SUITE as an efficient tool equip our customers for a digital future.

You say 'More Possibilities' is a promise. Can you explain that in more detail?

Roland Hassert: Sure. Our aim is for our customers to be successful. We achieve that aim in part by developing efficient scaffolding systems that improve the cost effectiveness and safety of the scaffoldings. But 'More Possibilities' also means more service in the form of comprehensive technical documentation, support from the Layher application engineers – including application and on-site advice, execution planning and project support – plus training and support from experienced

supervisors at the construction site.

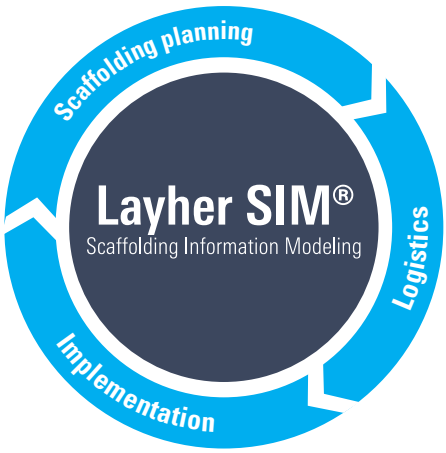
The same also applies to digitalisation. We advise customers, both scaffolding and construction service providers, on how to integrate SIM in their day-to-day work at the construction site, and how that improves project cost effectiveness and safety.

Do you also take on complete projects?

Roland Hassert: No, we don't do that. Our Layher partnership model is geared to scaffolding companies as contractors, and Layher as supplier of innovative scaffolding systems. We manufacture, but we don't build; our partners do that. But if a scaffolding or construction company needs support, we're happy to provide it.

What software do you use for SIM?

Roland Hassert: We developed our practical scaffolding planning software LayPLAN some years ago as an additional service for our customers. Like all the other Layher products, we have continuously optimised it since then. The Layher LayPLAN SUITE is an effective tool for our customers. It not only makes the transition to digital scaffolding planning easy, it can also be used by customers with the relevant experience for scaffold engineering.



What areas does the software cover?

Roland Hassert: The LayPLAN SUITE includes LayPLAN Classic, LayPLAN CAD, LayPLAN MATERIAL MANAGER and VR VIEWER. Customers can very easily configure their scaffolding, create 3D plans and visualisations, simplify their logistics and support the scaffolding build – so it covers all the elements of the scaffolding process.

Suitable partners and technical solutions have been sourced and integrated in the SIM process for other requirements – such as building surveys with 3D scanning or drone, or simple 3D scaffolding model data exchange for consultation and communication purposes.

What else are you planning?

Roland Hassert: One brand new feature is the automatic import of existing 3D scaffolding model data for static calculations in project-specific stability documentation. This makes subsequent modeling processes unnecessary, which reduces errors and saves time in the planning process.

What kinds of errors are avoided?

Roland Hassert: Let me give you an example. When subsequent modeling is performed, it is possible that the ledger connections are incorrectly assumed or oversimplified. SIM prevents this from happening.

The benefits for scaffolding erectors are obvious – but what are the benefits of SIM for construction companies?

Roland Hassert: SIM allows them to reliably plan materials, personnel and schedules, which improves cost transparency across the entire project. According to the motto of 'what you see is what you get' construction companies can use the digital twin of a total model – the building and scaffolding – before implementation. Then, based on this realistic visualisation, it can undertake detailed checks with safety experts and other trades so that any necessary optimisations can be made.

In our experience, when the schedule is tight, SIM makes an important contribution to completion on deadline because there are no delays on the scaffolding front as a result of missing material or collisions.

Often building contractors ask for scaffolding on the building shell before the tradespeople arrive, but once they arrive it turns out the scaffolding doesn't meet their requirements. Can SIM map those requirements in advance?

Roland Hassert: As I already mentioned, liaison with other trades is an important part of the SIM process – for example, with VR glasses. It ensures that the scaffolding design is adapted to their requirements before the build, avoiding unnecessary and time-consuming conversion work.

How can you support your customers in the SIM roll-out or implementation process?

Roland Hassert: Our training and workshop programme is an important element of 'More Possibilities'. It's a quick and simple opportunity for our customers to obtain in-depth training for themselves and their teams.

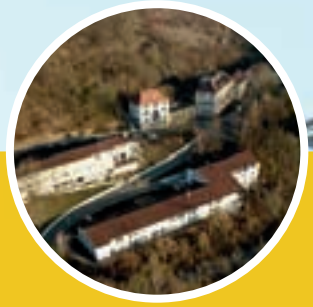
We also provide training for our LayPLAN SUITE. Experienced training engineers coach both beginners and advanced users in both theory and practice.

We recently also introduced webinars so that our customers can get training at their own workplaces without the need to travel. With us as their dependable specialist scaffolding provider and partner, the transition into the digital future is easy for our customers.

How do construction companies source their scaffolding partners?

Roland Hassert: Layher has a nationwide network of specialist scaffolding customers who have already implemented the SIM process in their businesses – and have the qualifications and in some cases many years of experience to deliver an efficient and reliable service to the construction companies. So we can put construction companies in contact with the right scaffolding providers.


Ingolf Stuber, Junior Manager
at Gemeinhardt Gerüstbau



GEMEINHARDT GERÜSTBAU SERVICE GMBH

Escape stairs, Inkelthalerhof near Rockenhausen

A FAST ESCAPE TO SAFETY IN THE EVENT OF FIRE

The Zoar Protestant Deaconry serves the local communities at 13 locations in Rhineland-Palatinate. One of Zoar's locations is Inkelthalerhof near Rockenhausen, which was founded in 1854. It offers residential and support services to handicapped individuals. To ensure that the residents can quickly escape to safety in the event of a fire, the specialists at Gemeinhardt Gerüstbau Service GmbH constructed 13 escape stairtowers and an escape bridge. Thanks to Layher Allround Scaffolding the stairtowers could be adapted to the deaconry's special needs and satisfy all legal requirements.

SPECIALIST FOR TEMPORARY ESCAPE STAIRWAYS

Download the Layher app at app.layher.com to see the stairtower in 3D.

Escape stairway specialists at Gemeinhardt Gerüstbau Service GmbH

At the beginning of 2018 the management of the Zoar Protestant Deaconry faced a major challenge. The building authority had ordered the installation of new escape stairways on several of the buildings at Inkelthalerhof for compliance with preventive fire protection regulations. Up to that time the only escape routes had been the building stairwells, and there were no other escape and rescue structures. "If a fire breaks out the hazard zone has to be evacuated quickly. That's why an adequate number of escape routes are required by law," explained Ingolf Stuber, Junior Manager at the company engaged to construct the escape stairways at Inkelthalerhof, Gemeinhardt Gerüstbau Service GmbH, Frankfurt. The building authority insisted on compliance with the legal requirement of a second escape route at each of the buildings. Since stationary external stairways were not an option for the Zoar Protestant Deaconry, it decided to use scaffolding-based fire escapes made from Layher Allround Scaffolding.

A TOTAL OF 13 DIFFERENT ESCAPE STAIRTOWERS OF BETWEEN 3 M AND 10 M IN HEIGHT

"We specialise in these kinds of temporary emergency stairways. The escape stairtowers we build with Layher Allround Scaffolding satisfy all legal requirements of width and load-bearing capacity, as well as human and material safety," emphasised Ingolf Stuber, who coordinated the scaffolding build at Inkelthalerhof. Gemeinhardt has long been convinced of the quality of Layher scaffoldings. Ingolf's father, Walter Stuber, was actually an apprentice at Layher in Eibensbach in the 1970s. The fire escapes were collaboratively planned by Gemeinhardt, Layher's technical department and a specialist engineering firm. The escape stairtowers were constructed from Layher Allround Scaffolding material by the scaffolding builders, and each of them has special features. The escape stairtowers had to be precisely adapted to the different floor heights of each building to make a floor-level exit possible. This meant converting windows into emergency doors. Up to four escape stairtowers per building were needed.

The Layher Allround Scaffolding can bear a total admissible load of 5 kN/m² and is 1.20 m wide. All escape stairways have guardrails with child protection and some have an additional waiting platform for wheelchair users for efficient evacuation of the building in the event of a fire. Layher adjustment plate for base plates ensure that the scaffolding can be assembled in a perpendicular position on sloped terrain. Any required angle can be set by pivoting the top and bottom parts relative to one another. Seven fire escapes were covered with plastic mesh for both visual protection and to alleviate residents' fears of heights. A total of 13 different escape stairtowers of between 3 m and 10 m in height, and a bridge, were constructed.

FLEXIBLE ADAPTATION TO REQUIRE-MENTS

USED SCAFFOLDINGS:

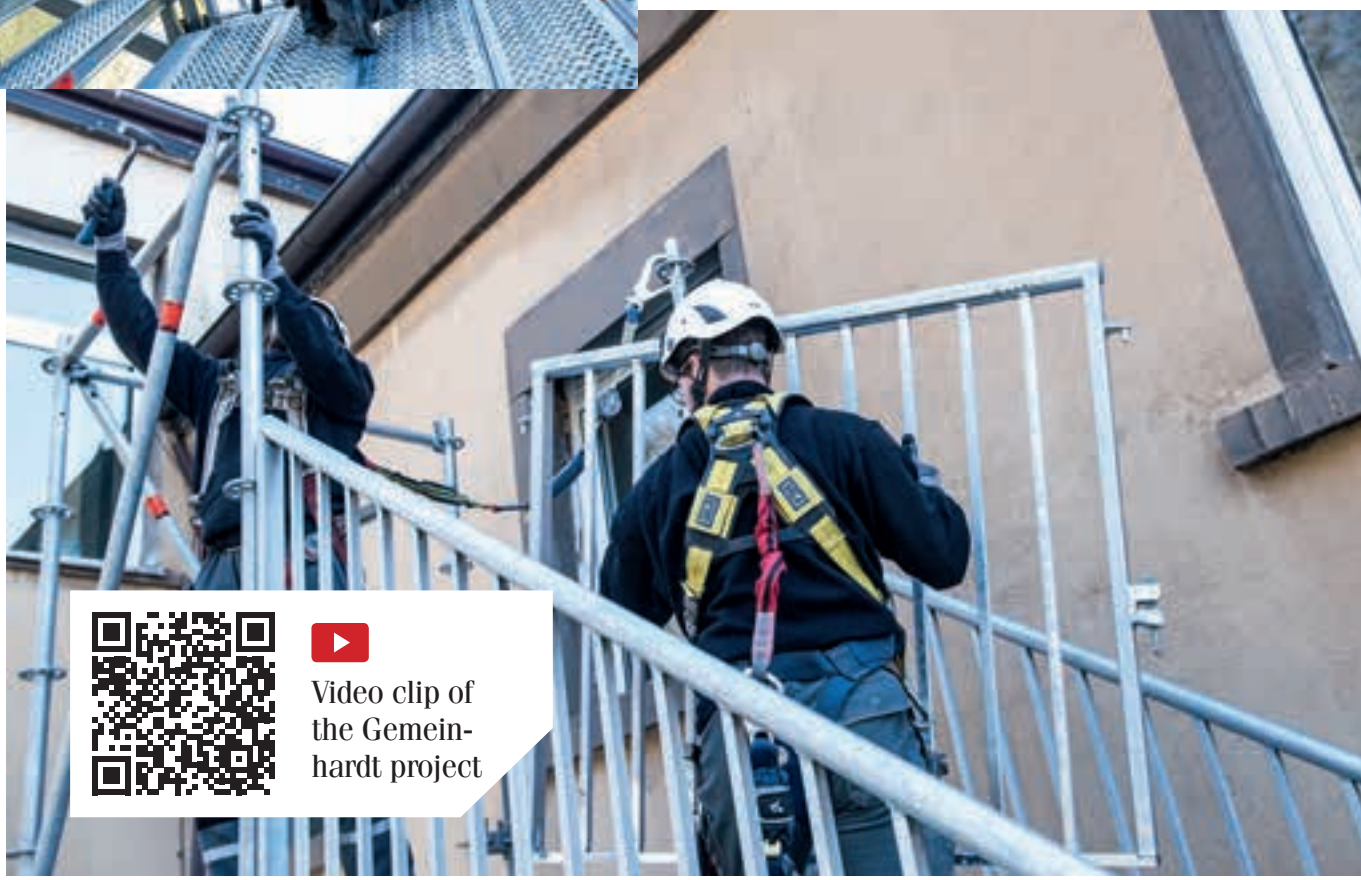
- ALLROUND SCAFFOLDING
- SYSTEM FREE ACCESSORIES

With the proven Layher Allround Scaffolding, the stair structures can be adapted to specific building architecture, e.g. exit heights. The pitch dimensions and load bearing capacity of the Layher stairway tower 750 make it ideal for escape stairtowers. Unlike custom-made steel and wood fire escapes, the modular Layher Allround Scaffolding offers the benefits of fast and cost-effective assembly.

Gemeinhardt has decades of experience in the legally compliant implementation of these kinds of projects. Ingolf Stuber explained, "We construct scaffolding escape stairways from standard Layher system components to minimise planning and time expenditure." The Layher system components are already tested to static and building regulations, and approved. This considerably simplifies the process of compliance with DIN standards, regional building codes and other regulations. "Our state-examined group leaders at the site ensure that safety requirements are 100 per cent fulfilled and that residents are treated with the utmost professionalism," emphasised Ingolf Stuber. When the Layher escape stairtowers were in place, ownership of all the material was transferred to the Zoar Protestant Deaconry. "We recommended that the customer purchased rather than leased the Layher scaffolding. It will remain in place for many years, so by purchasing it the customer profits from substantially lower costs," explained Ingolf Stuber.

MORE THAN 100-YEAR HISTORY IN SCAFFOLDING CONSTRUCTION

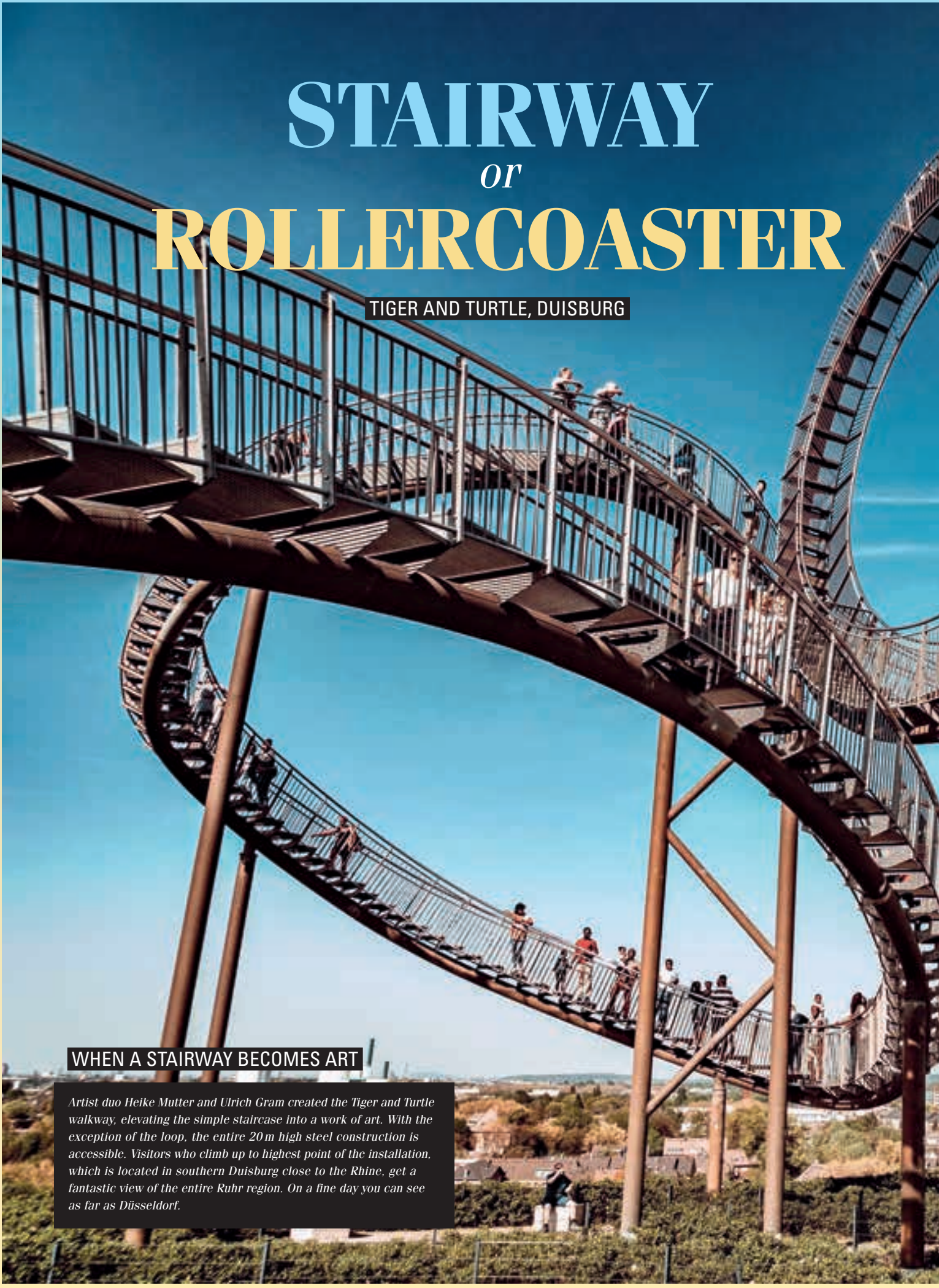
Gemeinhardt Gerüstbau Service GmbH has a more than 100-year history in scaffolding construction. Managing directors Walter Stuber and Dirk Eckart took over the Saxon branch of a Munich-based scaffolding company in a 2001 management buy-out. Today it's the headquarters, and the place where the company is writing the next chapters of its scaffolding success story. In addition to the Rosswein headquarters, which caters to customers in eastern and southern Germany, the medium-sized company has scaffolding operations in Braunschweig and Frankfurt am Main. The Braunschweig operation has an established reputation as scaffolding specialist in northern Germany, whereas the Frankfurt operation provides special scaffolding services in western Germany.



Video clip of the Gemeinhardt project

STAIRWAY *or* ROLLERCOASTER

TIGER AND TURTLE, DUISBURG



WHEN A STAIRWAY BECOMES ART

Artist duo Heike Mutter and Ulrich Gram created the Tiger and Turtle walkway, elevating the simple staircase into a work of art. With the exception of the loop, the entire 20 m high steel construction is accessible. Visitors who climb up to highest point of the installation, which is located in southern Duisburg close to the Rhine, get a fantastic view of the entire Ruhr region. On a fine day you can see as far as Düsseldorf.

The rollercoaster sculpture is built on a former slag heap in southern Duisburg and opened in November 2011. Today, the work of art which is open day and night has become a world-famous landmark of the city on the banks of the Rhine. When night falls, 880 LEDs trace the sculpture's twists and turns, bathing it in an enchanting light and transforming it into 'Magic Mountain'.

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Success stories,

plus ideas, solutions, possibilities and lots of other things at

scaffoldingstories.com

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Edition 04.2020
Ref. No. 8101.213