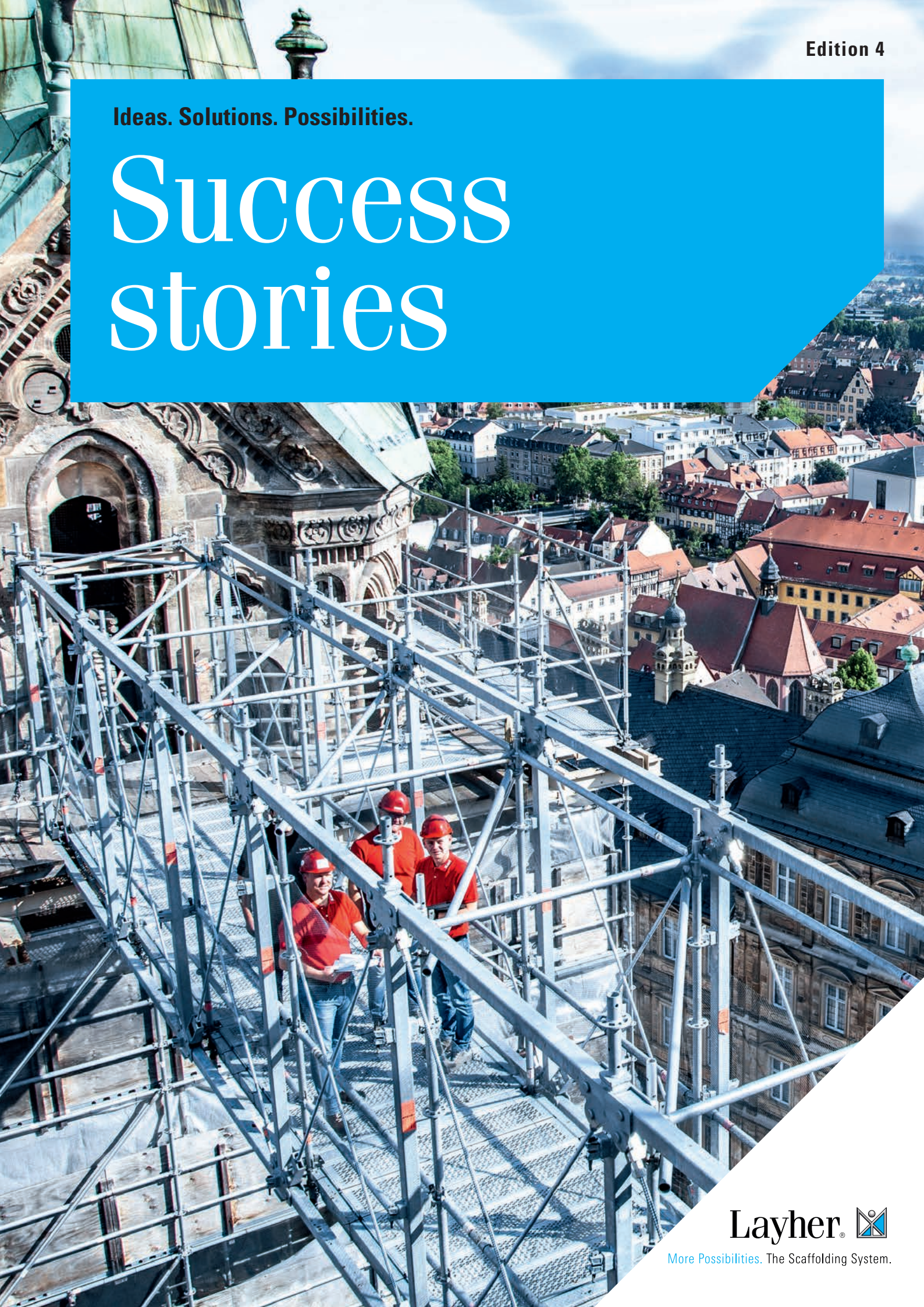
Edition 4

Ideas. Solutions. Possibilities.

Success stories



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More Possibilities. The Scaffolding System.

Team.
Work.
Passion.

The Layher name has been synonymous with safety, high-quality scaffolding systems, outstanding service and dependable partnership for more than 75 years. As a family-owned company, we are closely interconnected with our region and its people. Design, production, sales, logistics and management are at home in Gueglingen-Eibensbach. This is where we produce quality “Made in Germany”. We have a global presence with more than 1,900 employees and sales subsidiaries in 42 countries, and we live by our brand promise of “More possibilities” with enthusiasm and inventiveness. Your success is our aim.

Find out more at: **www.layher.com**

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!

Available on the App Store

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Dear Readers,
We're back again this year with the fourth edition of our "Success stories" magazine.

EDITORIAL

Despite all the pandemic-related problems, we're delighted to have more genuine success stories over the past year to report. All are impressive evidence that the best approach is to keep going and believe in the future. One of the stories we are telling you today involves the two brothers, Udo and Thorsten Karl from Bamberg, who use innovative Layher scaffolding components to develop new and unconventional solutions for projects in and around the medieval city centre. These two men are making an active contribution to shaping the future of scaffolding. The second story also has a future angle because it is about preserving an historical monument. The old blacksmith's forge at the former "Rechentshofen" Cistercian monastery near Stuttgart needed renovation, and to ensure compliance with the regulations on historical buildings, it was necessary for Jörg Dittus' experienced team to erect a roof for protection against the elements. The third story takes us to Hungary, to Róheim Villa in Budapest, an immensely significant building in the country's recent history, that will be preserved for future generations with the help of another Layher roofing solution. Lastly, we have included an article with a positive outlook on the digital future of scaffold construction which, as innovation leader, we embraced long ago with the Layher SIM® process. It provides you with more exciting insights into our world of practical innovations, competent advice and delivery excellence – all the elements of the Layher "More Possibilities" package. As usual, you can find other exciting success stories and video clips at www.geruestgeschichten.com.

Enjoy reading and watching!


Bamberg

KARL GERÜSTBAU

Bamberg Cathedral, Bamberg

BUILDING SITES, BISHOPS AND THE BAMBERG HORSEMAN

Standing on the "Upper Bridge" in Bamberg, looking across the river Regnitz to the old City Call, feels like a step back in time to the Middle Ages. That's because the historic old town is one of the largest and more-or-less intact medieval town centres in Germany. It was declared a UNESCO World Cultural Heritage site in 1993. Directly behind the Regnitz is the Domberg – site of the city's early 13th century cathedral and Bamberg's most famous landmark, the stone statue of the Bamberg Horseman. Whenever construction work is being carried out in the city Karl Gerüstbau GmbH, a scaffolding erection, rental and formwork construction services provider, is never far away. The family owned company focuses on historical building and monument protection with its purpose-built and special scaffolds. It enjoys an excellent reputation in the region and is perfectly equipped for all of its scaffolding projects with the Layher systems.

WORLD CULTURAL HERITAGE

Bamberg Cathedral is a prominent landmark of this medieval city, but it is also a permanent building site that causes the Cathedral Building Office a lot of headaches.

"We specialise in scaffolding solutions for listed building monument protection, as well as historical building and church renovations – to some extent because Bamberg has such exceptional historic architecture," explained Udo and Thorsten Karl, Managing Directors of the company that is headquartered just outside Bamberg's city gates. Karl Gerüstbau uses Layher Allround Scaffolding material because of its versatility, and is always a company to try out the scaffolding manufacturer's innovations. When new products are being used for the first time the Layher engineers and product managers are always on hand to provide advice and support in the planning and build phases.

"We appreciate the personal service and the fast decision-making processes at Layher. In fact, we believe they are the reasons why our partnership is so successful," emphasised Udo Karl in our interview. The Bambergers also pointed out the importance of the versatile Layher accessories that are integrated into the systems and have standard dimensions to maximise flexibility of use in the Allround Scaffolding structures. „The Layher Allround Scaffolding offers us endless possibilities. All the innovative products and accessories are practice-tested and noticeably improve the efficiency and reliability of our work. The accessories are also all dimensionally and statically suitable for the material we already have, including earlier generation products, which saves time during assembly and money," added the scaffolding experts.

Karl Gerüstbau was one of the first companies to use the Allround STAR Frame, the Allround Shoring TG 60, the Allround Bridging System and the innovative and advance Allround ARGS System in practice. "We are committed to continuous improvement as the foundation for our long-term success and the Layher solutions and accessories are part of that process. So we're always interested to hear about their new products and test out the ideas from Eibensbach at our construction sites. And, I have to say, we're always amazed by the improvements they keep on making even to existing products," said Kevin Fleischmann, master scaffolder and foreman at Karl Gerüstbau.

A picturesque symbol of civil unrest – the site of the former city hall at the middle of the river.

"WE SPECIALISE IN SCAFFOLDING SOLUTIONS FOR LISTED BUILDING MONUMENT PROTECTION, AS WELL AS HISTORICAL BUILDING AND CHURCH RENOVATIONS – TO SOME EXTENT BECAUSE BAMBERG HAS SUCH EXCEPTIONAL HISTORIC ARCHITECTURE."

Udo and Thorsten Karl, managing directors of Karl Gerüstbau und Schalungstechnik GmbH

Based in Bamberg, the Karl company specialises in the preservation of historical monuments. The Layher Allround STAR Frame and the Allround STAR Guardrail made it possible to reduce the time required for the scaffold build by 30%.

IN AND AROUND BAMBERG

"We currently have some exciting projects here in Bamberg and the surrounding area that showcase the scope of our services and the wide range of applications for the Layher scaffolding systems," said the foreman Mr. Fleischmann, who visits the sites on a daily basis. The scaffolding company connected Bamberg Cathedral's two towers with a suspended scaffold and float-mounted Allround Bridging System elements to simplify access to the site for the renovation of the cathedral, and significantly reduce scaffolding material requirements, in a project commissioned by the Cathedral Building Office (see images on the right).

Another project is in progress within eyeshot of the historical building to construct the new headquarters for a regional company. The Karl Gerüstbau experts are using the innovative and advance Allround ARGS System there to ensure compliance with the effective safety regulations (see images below).

Extremely cost effective and always safe – the advantages of the Allround ARGS System for facade scaffolding.

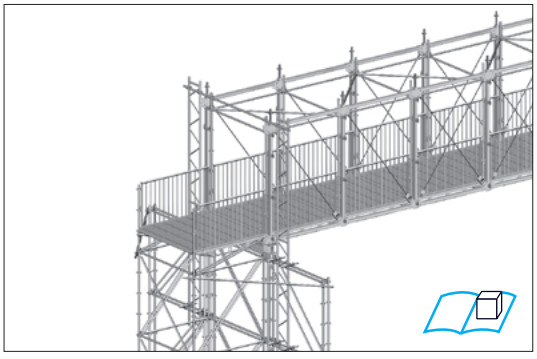
"THE SCAFFOLDING ASSEMBLY SEQUENCE WITH THE AUTOMATIC ADVANCED GUARDRAIL OFFERS MY SCAFFOLDERS MAXIMUM POSSIBLE SAFETY."

The use of the Allround ARGS System ensures that the scaffold can be always assembled without tools to create a safe and secure work area in compliance with the effective safety regulations.

The facades on the upper sections of the two front cathedral towers are currently being sandblasted and treated to help them more effectively withstand environmental impacts. The scaffolds necessary to perform that work were mounted on steel girders that had been inserted through the towers. This meant it wasn't necessary to erect a scaffold from the ground up and, as a result, considerably less material was needed.

A bridge made with Allround Bridging System materials connects the two towers. The structure was simply and safely pre-assembled on the ground and then lifted by crane to the prepared installation location.

A floating bearing arrangement compensates for the several-centimetre vibrations caused by the bells ringing.

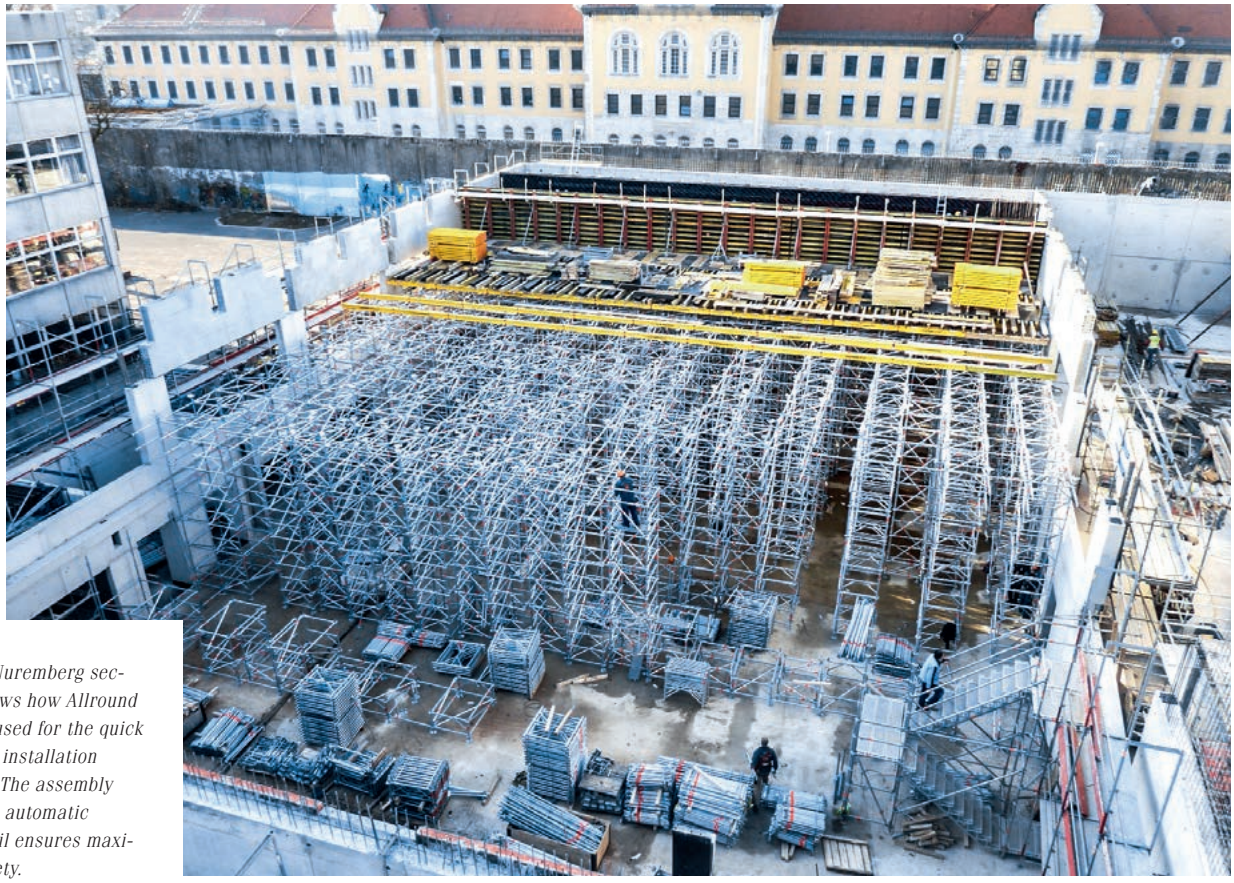


Open the Layher app, select Mixed Reality in the menu, hold your smartphone over this image and check out the Allround Bridging System in 3D.

IDEALLY PREPARED WITH INNOVATIVE SOLUTIONS

At the Dürer Secondary School in Nuremberg Allround Shoring TG 60 is being used for concrete engineering because, when assembled in conjunction with the Allround Scaffolding, TG 60 is extremely economical and reliable. Managing Director Udo Karl is a big fan of Allround Shoring: “The fast build without the need to use even a single coupler considerably shortened the construction workflow. It allowed us to complete this construction phase in just two months rather than the scheduled three. The scaffolding assembly sequence with the automatic advanced guardrail offers my scaffolders maximum possible safety.”

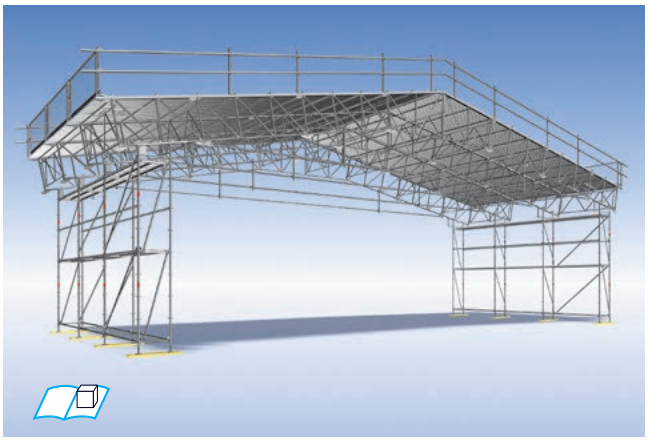
“THE FAST BUILD WITHOUT THE NEED TO USE EVEN A SINGLE COUPLER CONSIDERABLY SHORTENED THE CONSTRUCTION WORKFLOW.“



This project at a Nuremberg secondary school shows how Allround Shoring TG 60 is used for the quick and cost-effective installation of slab formwork. The assembly sequence with the automatic advanced guardrail ensures maximum possible safety.

With the temporary facade scaffold, the building looks more like a modern art project by Christo than a castle. The facade scaffold in Allround material combined with the cassette roof provide the restorers with a safe and dry place to work on all levels and a simple material transportation system. The entire scaffold was digitally planned in 3D for efficient construction planning and material logistics.

Just outside Bamberg at Seehof Palace – the former summer residence of Bamberg's prince bishops – the Allround Scaffolding was used in conjunction with a Layher cassette roof to protect the building structure during renovations. The roof elements are designed to fit the scaffolding system dimensions, and they can be simply and securely mounted. The entire scaffolding build is digitally planned in advance for precise material and logistics scheduling so that the site personnel can work as efficiently as possible.



Open the Layher app, select Mixed Reality in the menu, hold your smartphone over this image and check out the cassette roof in 3D.

The cassette roof has a span of more than 20 m and is securely affixed on top of the Allround facade scaffold. The cassettes can be quickly removed individually in case it is necessary to lower material down through the roof via crane.

A SCAFFOLDING PRACTITIONER FAMILY

"WE ALWAYS EMPLOY PEOPLE WHO HAVE EXCELLENT QUALIFICATIONS AND WE HOLD REGULAR TRAINING EVENTS TO MAINTAIN OUR HIGH QUALITY AND SAFETY STANDARDS."

Karl Gerüstbau was established in 1997 in Weiher near Viereth by scaffolding expert Otto Karl. It expanded very quickly thanks to growth in regional demand. Responding to market requirements the company supplemented its professional scaffolding erection services with formwork construction services and as the company grew, more and more family members joined it. In 2005 it was transformed into the limited liability company Karl Gerüstbau GmbH that is now managed by Udo and Thorsten Karl. They attribute the company's success to the use of innovative Layher products, which has allowed them to build competitive advantages over time and enabled them to reposition themselves in the market with a broader range of services. 30 excellently-trained professionals with many years of experience in the scaffolding and formwork construction business currently work at the company's 15,000 m² warehouse. "We always employ people who have excellent qualifications and we hold regular training events to maintain our high quality and safety standards. We also send our personnel over to Layher in Eibensbach for training in the use of new products, as we did recently when the new advance Allround ARGS System was launched. Whenever we talk to the managers at Layher they're always interested to hear our honest opinion about the daily practicalities of using their products. It's definitely what I'd call a partnership of equals. The Layher brand stands for innovation, safety, quality and cost-effectiveness, and those brand attributes help us to further our own success," concluded Udo Karl.

USED SCAFFOLDINGS:

- ALLROUND SCAFFOLDING
- SYSTEM FREE ACCESSORIES
- SHORING TG 60
- PROTECTIVE SYSTEMS
- SOFTWARE

A close partnership with Layher and the experienced applications engineers at the Technical Office ensures that cost-effective and safe solutions can be found for new challenges. As a result, Layher's customers enjoy a clear advantage over competitors.

The business model photo! The management, sales and technical staff all treat customers as partners, as was evident at this Allround ARGS System training event in Eibensbach. The Layher team is committed to supporting customers and answering any questions they have because Layher's success depends on their success.

Video clip of Karl project

THE MYSTERIOUS BAMBERG HORSEMAN

Biblical figure? Hohenstaufen dynasty king? Messiah? The Bamberg Horseman has always been a mystery figure. Nobody knows exactly who this medieval rider is and, as a result, he is swathed in myths and legends.

The only thing that experts agree on when it comes to this stone sculpture of a man riding a horse, created during the Hohenstaufen dynasty in around 1230 and located at the north pillar of St. George's choir in Bamberg Cathedral, is that no other historically significant German artwork has been interpreted in so many different ways. The life-size sandstone statue depicts a young rider wearing a crown, boots and cape sitting on a majestic horse under a stone canopy. Extensive research indicates that the unknown sculptor had originally painted his statue in strikingly bright colours. Today, however, the statue is a dull stony grey.

One theory, the so-called "Revelation Theory" is that the horseman represents the Messiah according to the Book of Revelations. Other historians believe that he represents medieval King Conrad III – or the Hohenstaufen Emperor Friedrich – or the Roman Emperor Constantine – or Alexander the Great – or Saint Stephen, King of Hungary, who according to legend rode his horse through the transept to be christened at Bamberg Cathedral. In the Third Reich the Nazis used the Bamberg Horseman's likeness as part of their Aryan supremacy propaganda. The latest research indicates that the swordless and shieldless rider is probably the youngest of the Three Wise Men and once formed part of a group of scenes depicting the childhood of Jesus in the cathedral. This Three Wise Men story is not without irony, and it renders the nationalistic interpretation of the sculpture absurd since the Bible says that the royal guests at Jesus' crib were from the Orient.

It is a fact that the Bamberg Horseman is enshrined in German culture and the figure causes many a visitor to this impressive house of God to furrow their brow in thought as he looks down on them from above.


Sachsenheim

DITTUS GERÜSTBAU

Cistercian monastery in Rechentshofen

FLEXIBLE STRUCTURAL PROTECTION WITH A TEMPORARY CASSETTE ROOF SOLUTION

The Cistercian monastery Rechentshofen is located to the south east of Hohenhaslach, a town in Germany's Stuttgart metropolitan area. The monastery was constructed around the year 1240, when the Gothic period began to shape local architecture. Today, the entire meaningful ensemble of buildings is under heritage protection and is currently undergoing extensive renovations to make space for a generous equestrian centre. The coming months will see the experts start work on the dilapidated old blacksmith building located on the property.

IT'S SIMPLE: EVERYTHING JUST FITS TOGETHER

Jörg Dittus, Managing Director of Dittus Scaffolding in Heilbronn, had his team erect a completely free-standing Allround Scaffolding for this project. It supports a fully enclosed Cassette Roof at 9 metres and 12 metres height, which will protect the ancient structure from weather conditions during the renovation works. "We have been relying on Layher products exclusively since starting our company in 1967, for the simple reason that it is the only material that offers the quality and precision we need for doing our work efficiently and safely," says Dittus in summing up his opinion. "The fact that all the various Layher components that have accumulated here over the years are still officially approved equipment that can be combined in any possible way offers my company the highest level of investment security I could possibly think of." In addition to the full range of scaffolding services, Dittus' company also offers professional solutions in the area of grandstands for a wide range of events.

Jörg Dittus (r) and his team planned all details of material requirements and logistics in advance so that they could work quickly and efficiently at the construction site.

The individual truss sections of the cassette roof were safely pre-assembled on the ground and then inserted with a crane.

A MOBILE 60 T TOWER CRANE WAS USED TO INSTALL THE SIX APPROX. 1.6 T HEAVY AND 17 M WIDE TRUSS SECTIONS.

Dittus commissioned a team of five workers to erect an Allround Scaffolding around the former monastery chapel that is structurally connected to the blacksmith building. The entire planning of the scaffolding and roof for this special project was prepared by the Layher Technical Department. The fact that the walls of chapel and blacksmith buildings were interlocking called for a solution that would allow the protective roof structure to rest on one side of the Cassette Roof without additional support. This requirement was solved by an additional transverse-mounted lattice girder to provide dedicated support for the roof truss. Additionally, the cantilever scaffolding was secured against wind impact by a wider footing and additional ballast. The six truss bays with a weight of 1.6 tons and a width of 17 metres each, which had safely been pre-assembled on the ground, were fitted at height using a mobile 60-ton folding crane, which allowed the scaffolding workers to mount the parts quickly and precisely on the prepared Allround substructure. It didn't take long for the Layher material to once again prove its outstanding flexibility when the specialists were tasked to build around a protected tree that could not be pruned. Temperatures around freezing point with intermittent soft hail were an additional challenge to the occupational safety of the workers on the roof fields. They used a safety rope, which ran across the whole length of the trusses and allowed them to work safely and without their movements being obstructed by annoying safety equipment attached to them.

1.6 t are hanging on the hook and have to be integrated into the Allround Scaffolding with millimetre precision. This is an excellent example of accurately fitting parts, as well as professional planning and assembly.

STURDY AND HIGHLY FLEXIBLE

THE INDIVIDUAL PARTS CAN BE ASSEMBLED BY TWO PEOPLE USING SIMPLE HANDLES.

The Layher Cassette Roof consists of a truss substructure with corrugated iron cassettes on top, which are easily secured using wedges and clamping plates. Transparent cassette elements are also available to provide additional daylight to the construction site. The individual components are fitted with convenient handles that allow assembly by only two workers from a secured position. Individual cassette elements can be removed to allow for access, i.e. for bringing in building materials. The structure can be walked on and will withstand snow load. The Layher Cassette Roof solution can be mounted on both the Layher SpeedyScaf as well as the Allround System and not only offers protection for construction sites, but is also a quick and straight-forward solution for temporary hall constructions when combined with the Layher Protect System. **"One of the major advantages of the systems offered by Layher is their great flexibility and range of available standard components, which allowed us to complete most of our projects without any expensive or time-consuming custom solutions,"** Dittus explains from the perspective of an experienced scaffolding expert.

The interim sections are quickly fitted with roof cassettes to create a safe and secure work area. They can also be individually removed afterwards so that materials can be lowered through the roof via crane.

ROOF SOLUTIONS THAT OPEN UP NEW BUSINESS POSSIBILITIES

Exchanging a few words with the crane operator at the site. Everything else was planned in detail beforehand.

Layher roofing solutions offer additional market potential for the business of Jörg Dittus, whose company is in the scaffolding and grandstand business. Professional structural protection is only one of the many areas where Layher Cassette Roofs are the ideal solution. They can also be used for the rapid construction of large and sturdy hall structures, i.e. for events, exhibitions or concerts. “As is the case with all Layher products, we can always rely on the precision quality and straight-forward assembly of their roof solutions”, Dittus explains. “If we ever have a question or need technical assistance in the planning phase, we simply call their engineering department who are always happy to help us out. This level of quality and service is really unique to Layher,” Dittus says in wrapping up the conversation.

USED SCAFFOLDINGS:

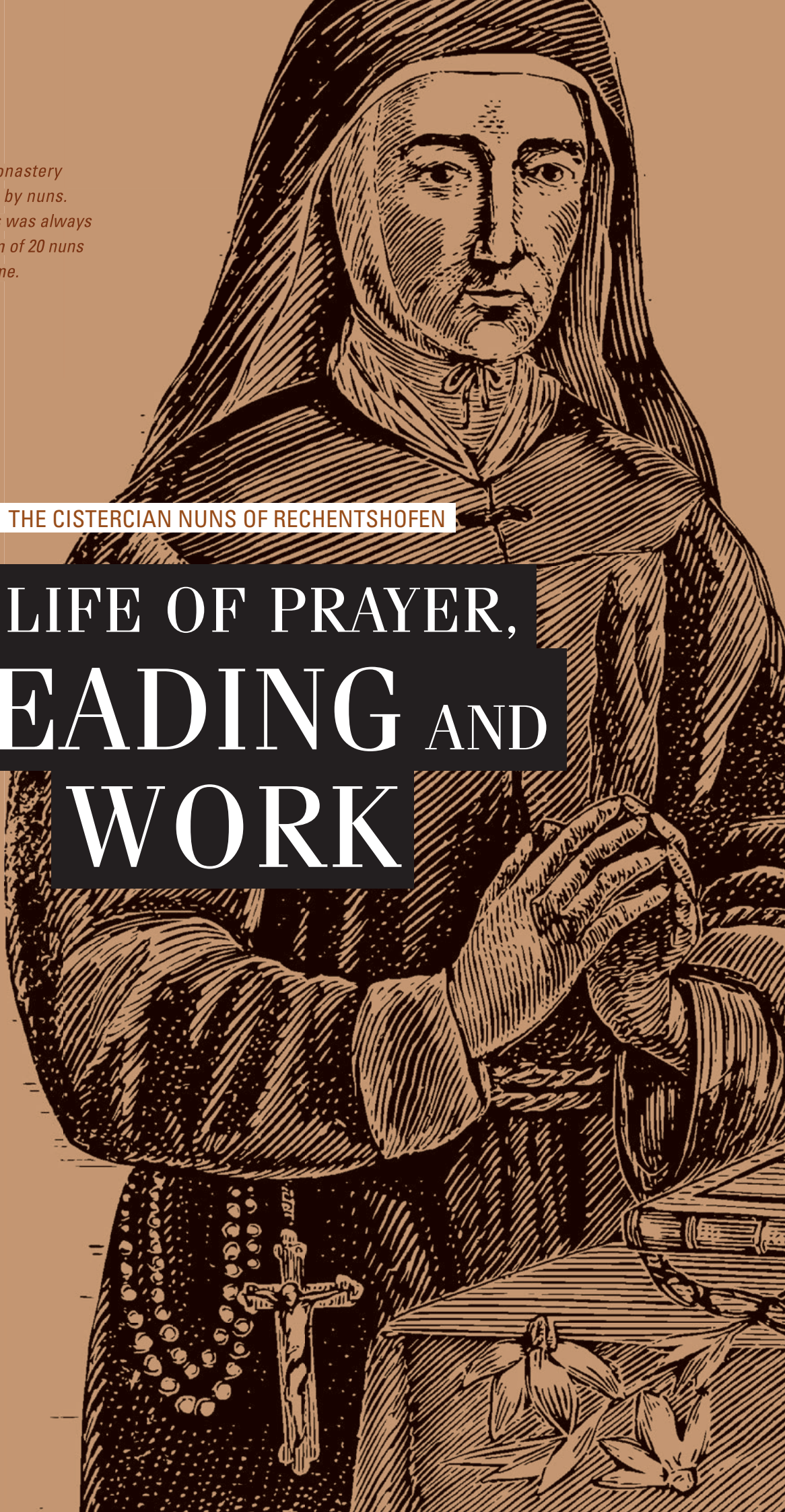
- ALLROUND SCAFFOLDING
- SYSTEM FREE ACCESSORIES
- PROTECTIVE SYSTEMS

Video clip of Dittus project

Rechentshofen monastery was only inhabited by nuns. The community of nuns was always small, with a maximum of 20 nuns at any one time.

THE CISTERCIAN NUNS OF RECHENTSHOFEN

A LIFE OF PRAYER, READING AND WORK



In the 11th century, at a time when the big and prestigious Benedictine Cluny Abbey in Burgundy was increasingly defining itself in terms of pomp and grandeur, the orthodox monks were keen to return to the original ideals of the Benedictine order of "Ora et labora et lege" (which is Latin for: pray, work and read). They longed for the simplicity of the monastery and the idea of performing manual labour to support themselves. One of those monks was Robert von Molesme, the man who joined together with other reform-minded monks in 1098 to found the first Cistercian monastery in Cîteaux. They rejected income from leases and interest, and the tradition of collecting one tenth of tenants income from land and animal farming, closed themselves off from the outside world to the greatest extent possible and laboured manually to support themselves. Until 1228, when Cistercian nuns were officially recognised, the Cistercian orders were all male. Rechentshofen Cistercian monastery was established in 1240 and given the name of Marienkron ("Corona Sancte Marie"). It accommodated the spinster daughters of local aristocratic families and, as a result, it received generous gifts of land in the surrounding area. Although there were never more than 20 nuns at a time at the convent, it ran into financial difficulties on a regular basis. In the years following the Reformation in Württemberg fierce disputes erupted between the catholic and the reformed nuns at Rechentshofen. The last nun left the convent in 1564 and it was closed. In 2009 there were around 900 Cistercian nuns living at around 60 convents. There were also around 1800 Cistercian nuns of the Strict Observance, also known as Trappists, at 72 convents.

Deed of gift signed by Count Konrad and Count Johann von Vaihingen (1350).

The Rechentshofen Estate in 1684, in the forest ledger of Andreas Kieser.

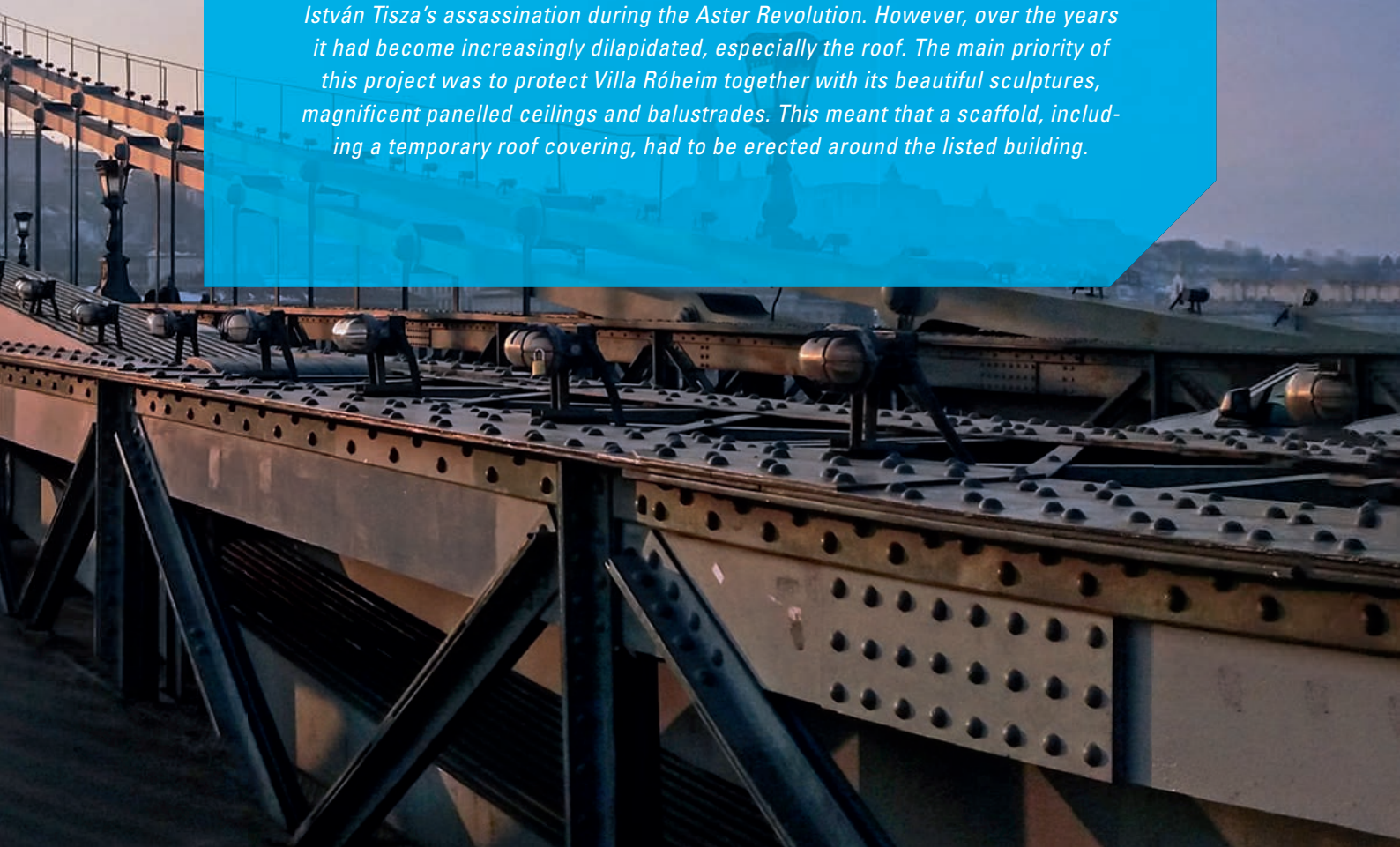
Hungary's capital Budapest is divided by the Danube. The hilly Buda quarter has been linked to the flat terrain of Pest by the Széchenyi Chain Bridge (see photo below) since the 19th century. A cable car transports visitors up the hill into the old part of Buda, where the History Museum and other buildings tell the story of life in the city. On Trinity Square you can find the 13th century Matthias Church, the towers of the Fisherman's Bastion, and breath-taking views onto the city and region below.

BUDAI MŰEMLÉK FELÚJÍTÓ

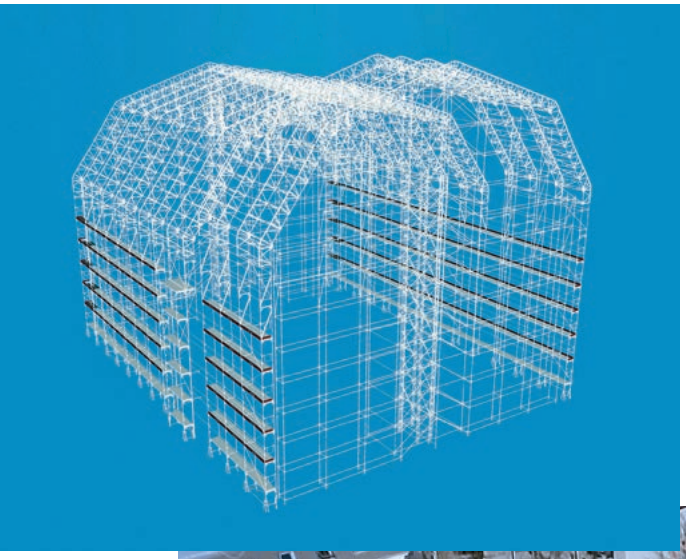
Róheim Villa, Budapest

SAVING A PART OF HUNGARIAN HISTORY

The 14th district of Hungary's capital, Budapest, is a showcase for magnificent villas and wide avenues leading directly to the City Park. One of those buildings, the neo-baroque-style Villa Róheim, was built in the early 20th century. Today, around 120 years later, it is in dire need of renovation. The multi-storey building became ingloriously famous in 1918 as the location of wartime prime minister István Tisza's assassination during the Aster Revolution. However, over the years it had become increasingly dilapidated, especially the roof. The main priority of this project was to protect Villa Róheim together with its beautiful sculptures, magnificent panelled ceilings and balustrades. This meant that a scaffold, including a temporary roof covering, had to be erected around the listed building.

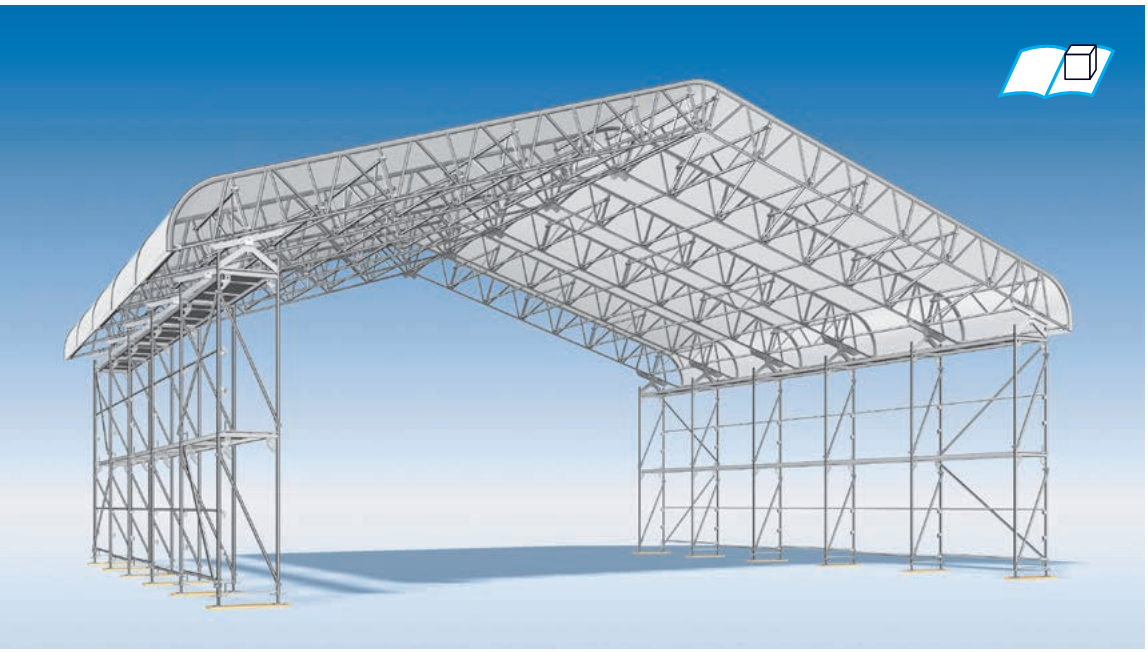


DIGITAL PLANNING FOR PROJECT RELIABILITY



The digital twin simplifies the process of erecting the scaffold on the real building.

The scaffold was designed with 3D planning technology and comprised a practical solution involving the two Layher Sytems, Allround and SpeedyScaf. It met all project requirements and ensured smooth project implementation. In close collaboration with the Layher engineers the project management team at Hungarian general construction company Budai Müemlék Felújító Kft. was looking for a solution that was not only ideal for the renovation project, but also cost-effective. “The installation of the Keder Roof XL roof covering on Layher SpeedyScaf material, the flexible Layher Allround Scaffolding on the gable and the Layher Allround FW System to bridge

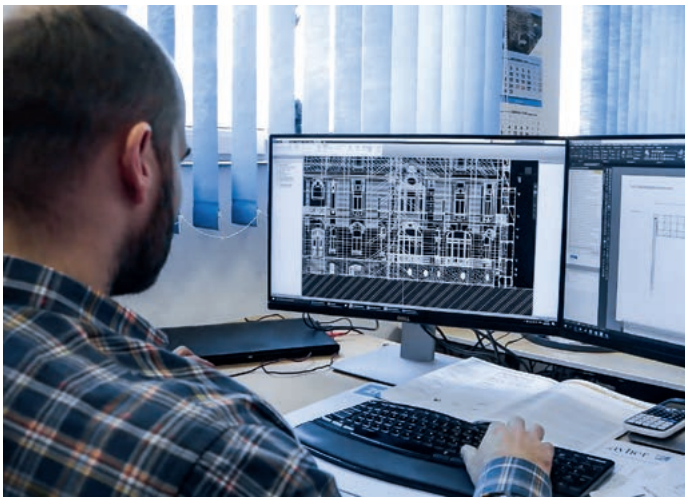


Open the Layher app, select Mixed Reality in the menu, hold your smartphone over this image and check out the Keder Roof in 3D.

the massive span made it possible to implement the project efficiently and cost-effectively, while reliably protecting this special building's historic fabric," said Tamás Szécsi, the company's General Manager.

"WITH COMPLEX SCAFFOLDING STRUCTURES LIKE THIS ONE, DIGITAL PLANNING FACILITATES FAST AND RELIABLE ASSEMBLY AND PREVENTS TIME-WASTING SURPRISES AS A RESULT OF UNPLANNED COLLISIONS AT THE CONSTRUCTION SITE."

Good planning is absolutely essential in this kind of project. The digitalisation of scaffolding-specific processes with Scaffolding Information Modeling offers brand new opportunities to project teams. "With complex scaffolding structures like this one, digital planning facilitates fast and reliable assembly and prevents time-wasting surprises as a result of unplanned collisions at the construction site. The real-time material list for transportation and assembly also considerably simplifies the advance planning of logistics operations," explained the scaffolding expert. The software modules LayPLAN CAD and LayPLAN MATERIALMANAGER – both integrated in the LayPLAN SUITE – enable the detailed and precise advance planning of projects like these. Then, based on that plan, the scaffolding can be erected quickly, reliably and cost-effectively, and the project can be implemented without any hitches. ▸▸



Scaffolding starts on the computer. Based on 3D data and with the help of Layher SIM® (Scaffolding Information Modeling) and the LayPLAN SUITE software modules the villa was completely encased in scaffold and covered with a Keder Roof.

LayPLAN SUITE

LayPLAN CLASSIC

LayPLAN CAD

LayPLAN MATERIALMANAGER

LayPLAN VR VIEWER

A COMBINATION OF SPEEDYSCAF AND ALLROUND CROWNED WITH A KEDER ROOF

The villa is ready for renovation with its stable shell made of Layher material.

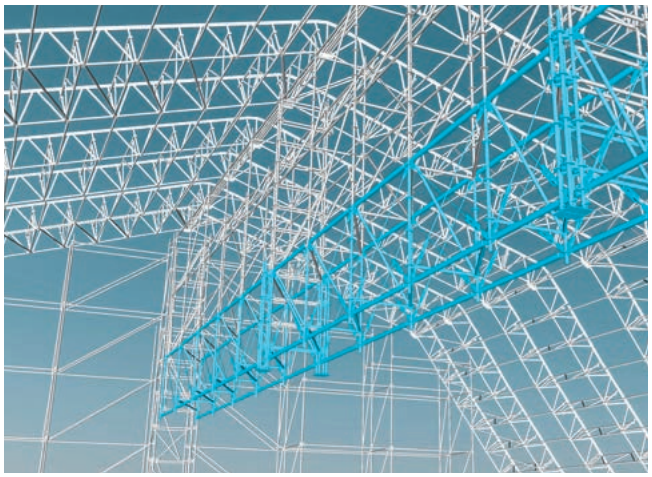
The Keder Roof XL is precisely dimensioned to the Layher systems.

A 33-METRES-LONG ROOF COVERING WITH A 28-METRE SPAN.

The engineers opted for a combination of Layher's SpeedyScaf and Allround Systems for this project, in conjunction with the system-integrated, high load-bearing Allround FW System to optimally and cost-effectively meet the villa renovation project's requirements. "The scaffolding on the elongated eaves sides of the buildings had to be used by the workmen and also support the roof covering. To expedite the process and maximise safety, we decided to use SpeedyScaf Scaffolding," explained Sándor Serdült, Managing Director Layher Hungary. SpeedyScaf is made of a light material, has a limited number of basic elements and is logically and safely assembled without bolts in a perpendicular structure, making the insertion-frame system the ideal solution as a working or support scaffold. On the eaves sides, where the architecture is highly structured and there are high wind loads, the project managers decided to use Allround Scaffolding because it has different standard lengths and is easier to adapt to the building geometry. With the right accessories, such as the high load-bearing Allround FW System, it was possible to realise the necessary longitudinal central support for the roof covering, which was 33 metres long and had a span of 28 metres, with standard parts.

The Keder Roof XL roof covering literally crowned the project. It not only protects the listed building from the effects of weather, but also enables the project team to work in all weather, which improves construction site efficiency. The very flexible Keder Roof XL System made it possible to precisely adapt the cover to the villa's roof architecture and create an arched roof structure. It also has light aluminium parts and integrated profiles for fast assembly.

The compatibility of SpeedyScaf and Allround Scaffolding materials makes it possible to combine the two systems.



The Allround FW System has been placed horizontally to provide the necessary central support for the roof.

The facade side was quickly and cost effectively covered in a SpeedyScaf, which was also used as the support scaffolding for the Keder Roof XL.

HUNGARIAN SCAFFOLDING EXPERTISE

The company, was entrusted to put up the scaffolding, Stabil Építö Kft. is also a dependable partner of Layher, based in Budapest and provides scaffolding erection and rental services. "We always use the Layher Scaffolding Systems because they offer us the ideal combination of material quality, reliability and flexibility. We have been in the scaffolding business for many years, so we have the relevant experience to realise fast builds, which is a big competitive advantage," said Zsolt Halmavánszky, General Manager, talking about the partnership with Layher. The scaffolding systems all have the necessary ÉMI and TÜV licenses and comply with the strict European Union requirements, which considerably simplifies market access. In Hungary, the Layher brand stands for "German-engineered" innovation, safety and quality, as it does in other markets, which gives it a strong USP. "As a result of our excellent partnership with Layher and their technical support we were able to provide efficient solutions for all our customer's requirements and build our reputation as project partner," Tamás Szécsi concluded. Therefore, it was a nice showcase for a great scaffolding cooperation.

High wind exposure on the eaves side and highly structured architecture prompted the decision to use standard Allround scaffolding parts for simple and flexible adaptation to building geometry.

USED SCAFFOLDINGS:

- SPEEDYSCAF
- ALLROUND SCAFFOLDING
- SYSTEM FREE ACCESSORIES
- PROTECTIVE SYSTEMS

The scaffolding systems have all necessary EMI and TÜV licenses.

A neo-baroque style villa with a beautiful facade, numerous sculptures, balustrades and panelled ceilings that is definitely worth saving.

Video clip of Budai project

Afterwards, this revolution was called the "Chrysanthemum Revolution". It was named after the flower that the Austro-Hungarian soldiers put on their caps after tearing off the imperial buttons, which then came to be a symbol of the revolution.

THE CHRYSANTHEMUM REVOLUTION

FLOWERS, BLOOD & BAYONETTES

When the Austro-Hungarian empire declared war on Serbia on 28 July 1914, one month after the assassination of Franz Ferdinand of Austria in Sarajevo, triggering the July crisis in Serbia, Hungary still firmly supported the real union with Austria. What followed was the biggest war in history, involving 40 nations and almost 70 million men under arms. Some 17 million people lost their lives as a result of the war in Europe, the Middle East, Africa, East Asia and Oceania.

During the dissolution of the Habsburg monarchy at the end of the First World War, and in view of the defeat, the Hungarian government terminated the union with Austria in mid-October 1918. In that same month the Hungarian National Council was formed as an alliance to oppose the Hungarian noble oligarchy that ruled the country. The king reacted by appointing János Hadik as the new prime minister but he was unable to appease a nation disappointed by the defeat and struggling with difficult living conditions. On the night of 31 October 1918 the military occupied the capital city of Budapest and forced the appointment of the opposition leader, Mihály Károlyi, as prime minister. In this same night István Tisza, Hungary's former prime minister, was shot and killed at his villa in Budapest by soldiers who held him responsible for the catastrophic war. He was one of the few victims of this otherwise very peaceful revolution.

István Tisza
was Hungary's prime minister and a leading Austro-Hungarian politician between 1903 and 1905 and from 1913 to 1917. As such, he also played an important role in the July crisis, which led to the outbreak of the First World War.

THE FUTURE OF SCAFFOLDING IS ALSO DIGITAL

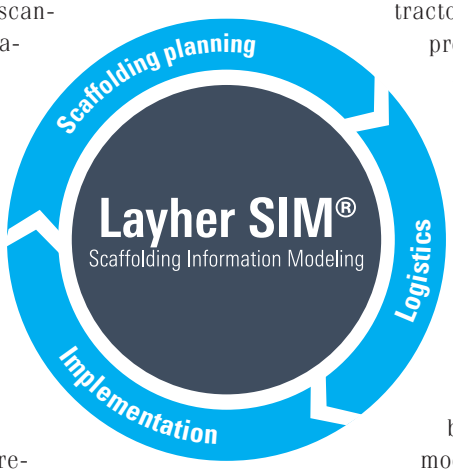
Digital processes will come to play an increasingly important role in scaffold construction in the future. Here at Layher we have long been playing an instrumental role in the development of such processes and, as the innovation leader in our market, we are in a position to offer comprehensive solutions. Our Scaffolding Information Modeling – or Layher SIM® – is a process based on 3D models to meet the specific requirements of scaffolding construction. SIM® enables scaffolding companies to plan, build and manage temporary scaffoldings more efficiently, and also provides access to integrated BIM (Building Information Modelling) solutions. That's why we plan to incorporate the numerous benefits and possibilities of our digital solutions in upcoming success stories. We'll be taking the usual effective approach of demonstrating the functions and cost saving potential of these technologies on the basis of specific projects. For now, though, we have included a number of insights into selected digital projects for you to browse on the following pages.

REAL DRONES AND DIGITAL TWINS

A DIGITALLY PLANNED SCAFFOLDING PROJECT FOR THE MOL OIL REFINERY IN TISZAUJVAROS, HUNGARY, DEMONSTRATES HOW THE USE OF LAYHER SIM® IMPROVES SAFETY AND COST EFFECTIVENESS.

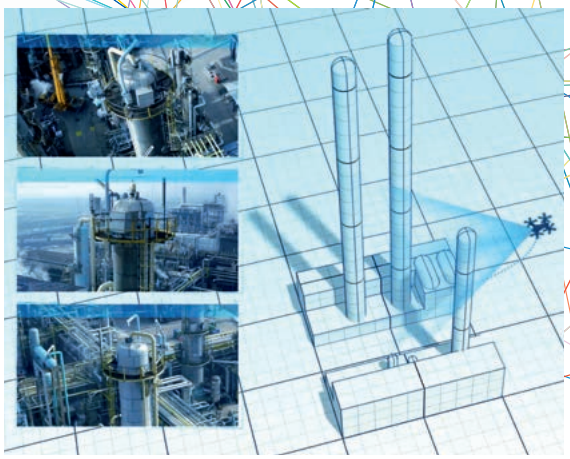
Scaffolding contractor Orszak decided to use Layer SIM® to plan a maintenance project involving several distillation columns at a refinery with the assistance of the Layher subsidiary in Hungary. 3D data of the installations to be encased by scaffolding was used as the planning basis. In this case a digital twin was generated from drone images, but it can also be generated with 3D scanner images. Shots taken from various angles are used to recreate spatial coordinates for the calculation of a detailed 3D model. The client, the scaffolding contractor, safety coordinators and the other maintenance groups were synchronously networked.

In the first step of the process the scaffolding specialists assessed the feasibility of the customer's and maintenance groups' basic requirements. Then the scaffold was planned to reflect those requirements with the help of the 3D model, and the various assembly phases were defined. At this stage of the process the material requirements and project costs could be calculated. Layher SIM® and the digital twin also made it possible to identify, assess and eliminate potential errors, collisions and risk factors. The project statics were calculated in this same process, and the necessary occupational safety and fire protection measures at the construction site were defined. The 2D, 3D and assembly plans generated from the basic data, that are available in Layher SIM® in real time, as well as 3D animations and even a virtual reality file generated in LayPLAN CAD, allow all project participants to check the scaffold's suitability for all the work to be performed, which improves planning reliability and worker safety.



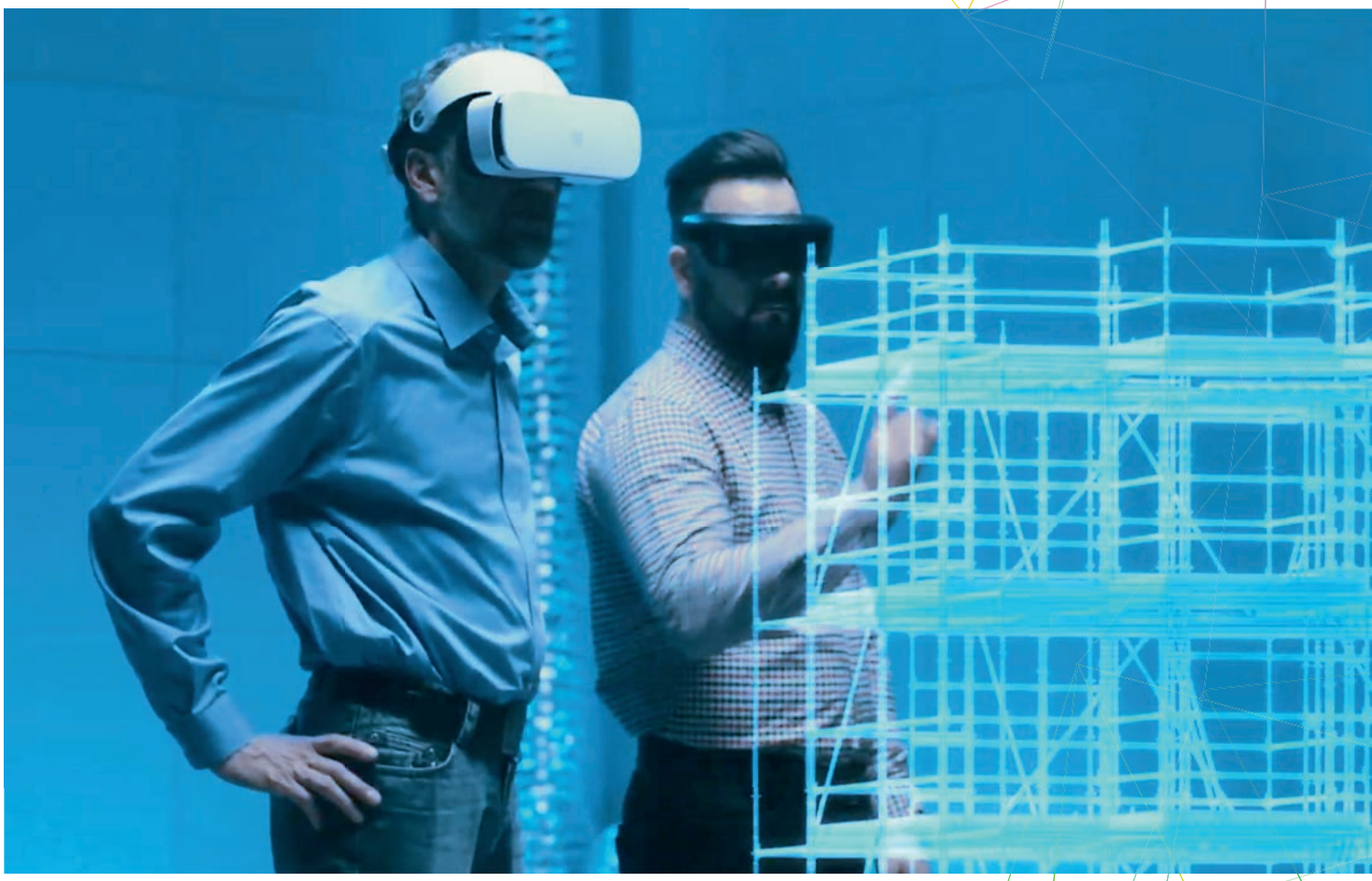
The Hungarian scaffolding contractor also used the Layher SIM® process for project coordination, as well as logistics and assembly scheduling and cost budgeting. Detailed material requirements and material flow plans were prepared for each construction phase because there was only limited scaffold material storage space, which meant the material had to be supplied on a just-in-time basis. Layher's comprehensive modular product programme and application-oriented accessory parts provide bespoke and safe scaffolding solutions that can be easily adapted to specific settings and intended use. Layher Lightweight material was used in this project. Although lower in weight it delivers the same strength, which makes it more cost-effective to transport and assemble.

During assembly, use and dismantling Layher SIM® ensured smooth and efficient project processes and even subsequent customer changes could be quickly and transparently budgeted and planned.



Drone footage from various perspectives was used to create the building's digital twin, which formed the basis for all further stages of the planning process.

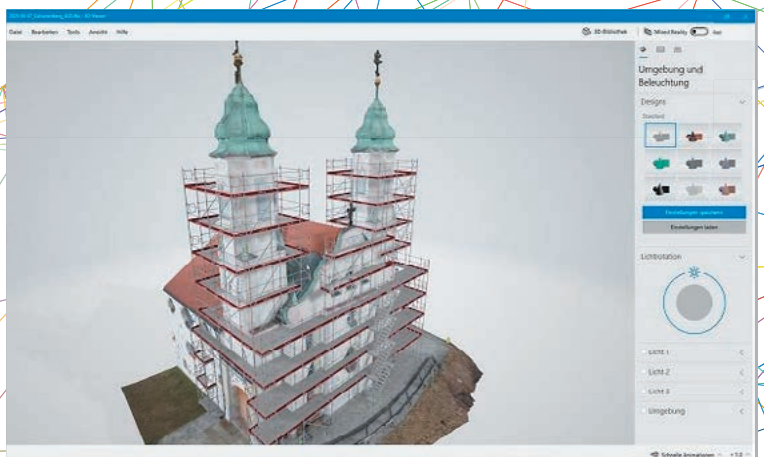
The MOL Petrochemicals Co. Ltd. refinery in Tiszaujvaros is located in north-eastern Hungary, around 200 kilometres from the capital of Budapest and was built in 1953.



Virtual reality helps to identify and eliminate many potential problems in advance. The LayPLAN CAD software also makes it possible to generate virtual reality files of the scaffolds and display them in the LayPLAN VR VIEWER. Planners and users can then "inspect" the structure before it is built to check planning, use and occupational safety criteria.

Video clip of MOL project

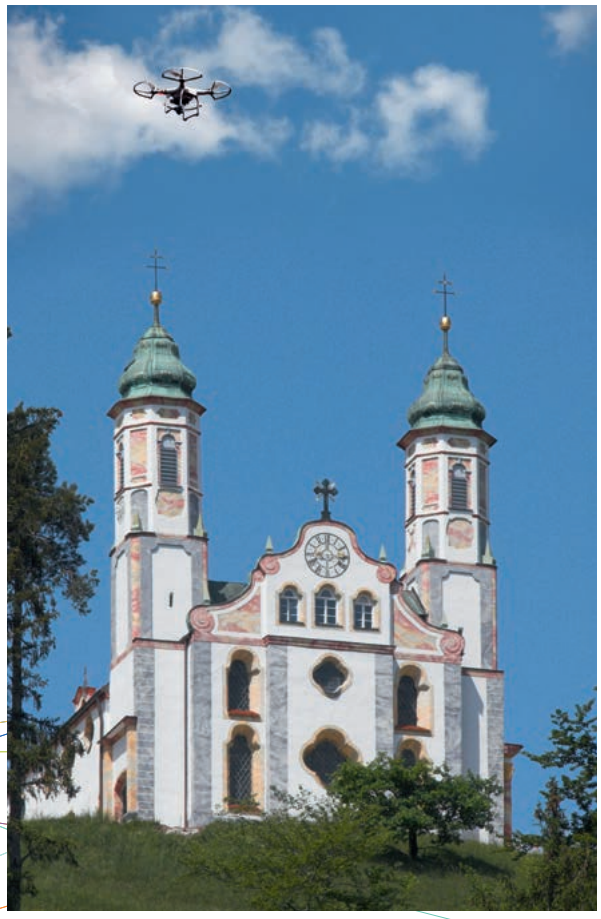
BAROQUE ARCHI-TECTURE MEETS STATE-OF-THE-ART 3D TECHNOLOGY



A building survey by drone helped the Layher application engineers to model the Church of the Holy Cross in Bad Tölz in 3D and create a detailed plan of scaffold requirements using LayPLAN CAD. The automatic materials list from LayPLAN MATERIAL MANAGER considerably simplifies material logistics, optimises transportation and helps to prevent mistakes.

There are no longer any plans in existence of the impressive church in Bad Tölz, with its two bulbous spires that are visible for miles around, which made the planning of a renovation scaffold particularly difficult. The scaffolding contractor Holzapfel decided to survey the building with a drone and import the data into Layher SIM® to generate a digital twin as the basis for scaffold planning in LayPlan CAD. The digitisation experts at Moselcopter used drones to capture detailed images of the building, which were used by the Layher application engineers to create a 3D plan. The 3D plan was then used as the basis for the contractor's material, assembly and logistics planning in Layher SIM®. This ensured that the Allround ARGS System used in this project could be erected efficiently and safely with an integrated guardrail fixture in compliance with TRBS 2121-1, but also combined with Allround standard parts for flexible adaptation to structural requirements.

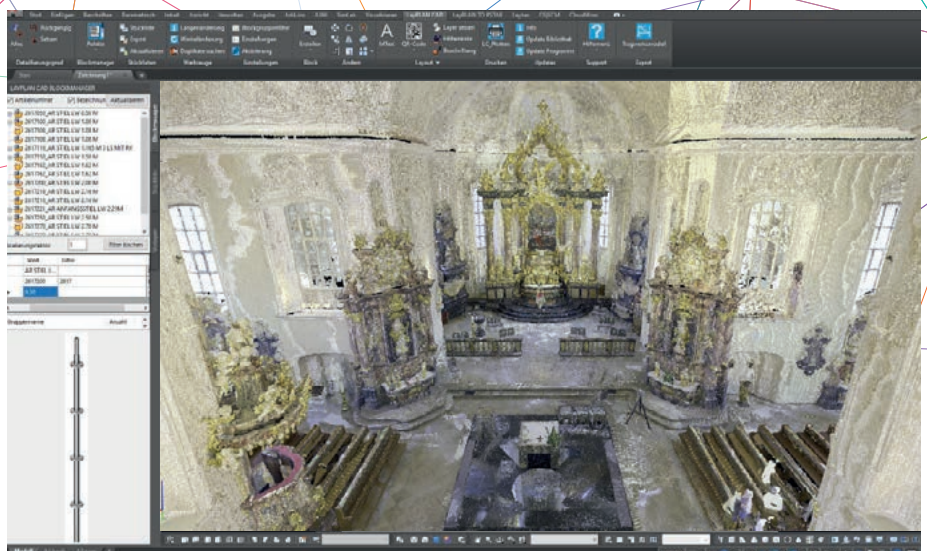
Depending on the project the experts at Moselcopter use drones (top) or stationary 3D laser scanners (right) to generate the digital data necessary to plan the scaffold.



The Church of the Holy Cross in Bad Tölz was surveyed by drone.

THE SCAFFOLD FOR THE RENOVATION OF THE BAROQUE CHURCH OF THE HOLY CROSS IN BAD TÖLZ, UPPER BAVARIA, WAS ENTIRELY DIGITALLY PLANNED WITHLAYHER SIM®.

The ideal basis for the implementation of Layher SIM® is a 3D model of the building where the scaffold will be erected. This kind of data is often not available for historical buildings, bridges, industrial installations and the like, which makes scaffold planning a more time intensive process and sometimes even impossible. Thanks to digital surveys with 3D laser scanners, or images taken by drones, it is today possible to assess the real condition of these structures. The generated data can be used to create a 3D scaffold plan in LayPLAN CAD and integrated in the overall planning process. Planning and checks implemented on the digital twin maximise transparency and permit the reliable planning of material requirements, costs and deadlines, which is an enormous competitive advantage.



The images taken with a stationary 3D laser scanner provided a cloud diagram of the church interior – and the 3D view in LayPLAN CAD is the basis for the digital twin calculation.

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