

# BAUER REVIEW

For Employees and Friends of the BAUER Group Companies

N° 55 | 2025/26

## ENERGIZED FOR THE FUTURE

■ Geotechnical Solutions:  
Complex dam projects

■ Equipment: The BCS 185  
power pack in action

■ Resources: Treating  
excavated soil





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More than 200 km of new metro lines and 68 additional train stations – these are the key figures of the Grand Paris Express project. In the center of the action: our cutting system BCS 185 power pack (right).

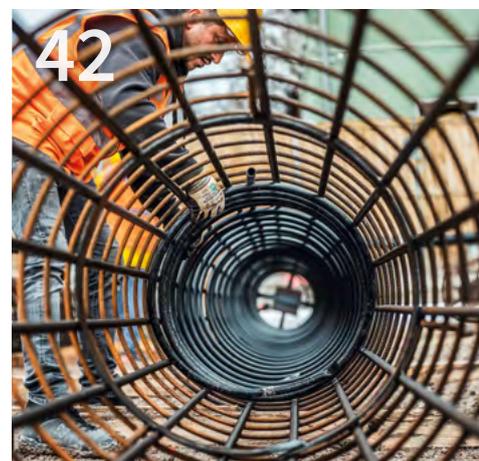


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Heating in winter, cooling in summer: Geothermally activated specialist foundation engineering components offer enormous potential. Investing today means benefiting twice in the future (right).



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*Energy is the force that connects us –  
the joy of creating, the openness to  
new ideas, and the confidence that  
comes from succeeding together.*

# Foreword

## Dear readers,

“Energized for the future” is far more than the theme of this issue of BAUER Review. It captures a mindset: tackling challenges with determination and curiosity, actively shaping the future, and always having the courage to explore new paths.

But energy is more than technical drive or innovative strength. It is the force that connects us – the joy of creating, the openness to new ideas, and the confidence that comes from succeeding together. This energy is evident in lively discussions, in the exchange of ideas, and in those moments when we meet challenges creatively and develop solutions built to last. It is also reflected in our sense of responsibility – to use resources consciously and to pursue sustainable approaches that make an impact well beyond the scope of any single project.

In this issue, we offer insights into the many ways this energy comes to life in our projects. You’ll learn how our work helps harness hydropower, the role our electrically driven cutter system plays in expanding the Paris metro, and how excavated soil from power infrastructure projects in Hamburg is kept in circulation rather than sent to landfill.

Whether alternative drive systems, digitalization, or the heat transition, the Trend section highlights the topics shaping our industry. Discover how our electric KLEMM

KR 806-4E rig successfully completed its first jobsite deployment in Oslo, how digital twins are making specialist foundation engineering processes more efficient, and the potential offered by geothermally activated foundation elements.

We also take a closer look at research and development at Bauer. Electrically powered soil-mixing tools and learning-capable assistance systems demonstrate how we continue to rethink specialist foundation engineering – setting new benchmarks while placing efficiency, sustainability, and precision at the forefront. At the same time, we proudly reflect on our roots: in 2026, we celebrate 50 years of Bauer rotary drilling rigs – half a century of innovations that have shaped our company and significantly advanced the industry.

This issue thus brings together past and future – driven by an energy that motivates us to improve a little more every day. It is what connects us all – employees, customers, and partners alike – and what moves us forward together.

Enjoy reading!

The BAUER Review team

# Facts & Figures

SOME HIGHLIGHTS FROM  
THE WORLD OF BAUER



In 2025, BAUER Spezialtiefbau Schweiz AG celebrated its **20th anniversary**. Managing Director Bruno Huber welcomed numerous guests, paid tribute to three employees from the company's earliest days, and reflected on the key milestones in the company's history. One particular highlight was the live demonstration on a construction site in Ehrendingen, where Bauer executed an excavation pit.



every year  
**220,000 kWh**

A new photovoltaic system on the roof of the Old Welding Shop features 464 modules, generating around **220,000 kWh of electricity annually** – enough to cover roughly the continuous power needs of of Bauer's head office.



CO<sub>2</sub> emissions  
**-68%**

The eRG 21 T hybrid from RTG Rammtechnik combines a powerful 430 kW diesel engine with an 88 kW electric motor. This hybrid setup enables operation with up to **68% lower CO<sub>2</sub> emissions**.



**546.7 km**

In 2025 it was that time again: Time to saddle up and hit the road! This year marked the 16th bike tour from Nordhausen to Schrobenhausen. Eleven cyclists from Bauer, Schachtbau Nordhausen and KLEMM made the journey, assisted by a trainee in a support vehicle and a colleague who met up with the group along the way. The route took the cyclists through **more than 546 km** of picturesque landscapes, challenging climbs and historical villages.



In 2025, EURODRILL GmbH celebrated its **30th anniversary**. The specialist in designing and producing hydraulic drifters and rotary heads began its success story in a small production hall in Olpe. The company rapidly grew into a construction equipment manufacturer with an extensive range of drill drives for specialist foundation engineering. In its anniversary year, Eurodrill had 95 employees and operated on a production area of 4,000 m<sup>2</sup>.

50 years

Bauer introduced its **first rotary drilling rig** in **1976**. Turn to pages 44/45 to take a journey through a dynamic history of innovation and success!

## 25.6 million



In 2025, the plant engineers from Schachtbau Nordhausen celebrated the largest single order since the division was established: **€25.6 million** was the order volume for mechanical equipment in a new filtration system at the Ruhleben sewage treatment plant. The client is the Berliner Wasserbetriebe.



In late May 2025, BAUER AG received an honorary certificate from the Chamber of Industry and Commerce (IHK) for Munich and Upper Bavaria celebrating its **235th anniversary**. Elke Christian, Member of the Executive Board for the Chamber of Industry and Commerce for Munich and Upper Bavaria, as well as Christian Krömer (left), Chairman of the Neuburg-Schrobenhausen Regional Committee of the IHK, were thrilled to present the certificate to Hartmut Beutler.

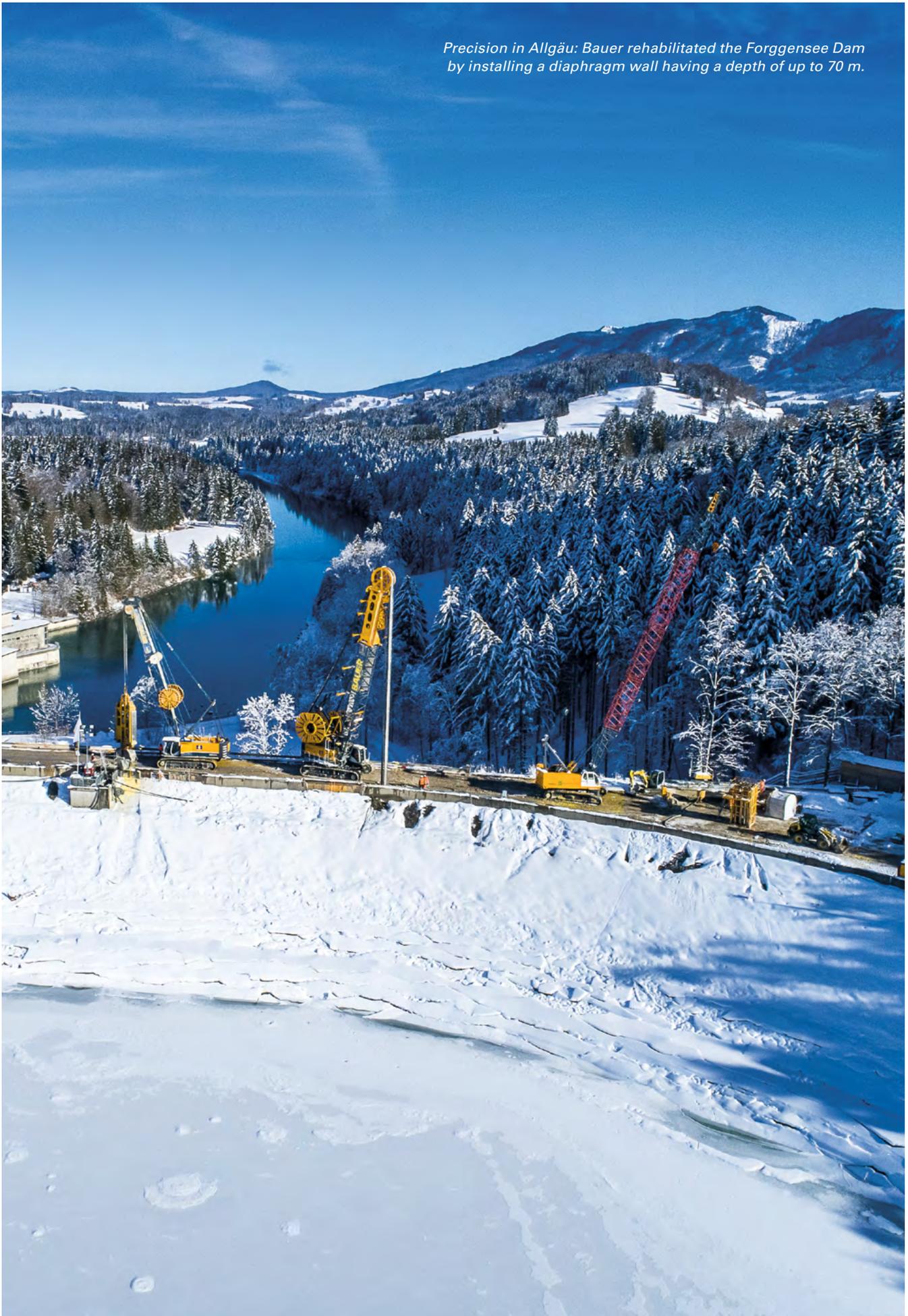
## Half a century of service



In 2025, **Horst Armbrecht** marked an extraordinary milestone: **half a century** with Schachtbau Nordhausen. As a skilled locksmith, he has long been a trusted cornerstone of the team. Even more remarkable, three generations of the Armbrecht family now contribute to the company's success – Horst, his son Denis, and his grandson Oscar. In January 2025, Oscar completed his apprenticeship and began working as a locksmith in the machine steel construction department, proudly carrying on the family legacy.



*Precision in Allgäu: Bauer rehabilitated the Forggensee Dam by installing a diaphragm wall having a depth of up to 70 m.*





# Built deep, designed for the future

DAMS ARE MORE THAN JUST ENERGY SOURCES: THEY PROVIDE CLIMATE PROTECTION, FLOOD CONTROL, AND CRITICAL INFRASTRUCTURE – AND BAUER PROVIDES THE FOUNDATION.

From waterwheels to generators: For thousands of years, humans have harnessed the power of water. Today, hydropower is considered to be one of the most reliable renewable energy sources: It generates electricity regardless of the weather conditions and time of day – a carbon-neutral and dependable source. It balances the fluctuations of wind and solar energy, stabilizing the power grids. From run-of-river and storage power stations with continuous generation of electricity to pumped storage hydropower plants covering peak demand, its versatility makes hydropower extremely flexible.

But dams accomplish a whole lot more than that: They provide flood protection, ensure the drinking water supply and offer spaces for recreation. At the same time, these complex structures require a high level of engineering expertise. Challenges include high investment costs, strict environmental requirements, impact on ecosystems and climate fluctuations such as droughts. Still, hydropower remains an important strategic pillar for achieving climate goals and increasing independence from fossil fuels.

“A dam is a structure that offers added value: for the environment, for the energy supply, and for the residents of the region,” emphasizes Martin Heinrich, Head of the Major Projects Tender department at BAUER Spezialtiefbau GmbH.

## Experience meets technology

Every dam is a complex structure that must withstand enormous loads. Dams are susceptible to settlement, while underground sealings need to resist massive water pressures. Diaphragm and cut-off walls often come into play – some of them more than 100 m deep. “A dam project is always an engineering challenge, but that’s exactly where we are at our strongest,” remarks Martin Heinrich. “We contribute our expertise gained from projects executed around the world, and combine this with state-of-the-art technology. In the process it becomes clear how crucial team work and innovation are. Without close cooperation between everyone involved, this wouldn’t be possible.”

Over the past decades, BAUER Spezialtiefbau GmbH has participated in numerous hydropower and dam projects around the world. By developing the trench cutter roughly 40 years ago, Bauer set standards, making complex dam projects feasible.



*Seismic security in Canada: Bauer reinforced the John Hart Dam using cut-off walls and soil improvement.*

Today, digital tools (see pages 28/29) and the latest equipment technology ensure precision, quality and safety – key factors in dam construction.

### **Rosshaupten Dam**

One project executed by Bauer in southern Germany, impressively demonstrates the challenges of specialist foundation engineering for dam construction. As Bavaria's fifth-largest lake and Germany's the largest reservoir in terms of area, the Forggensee Lake generates electricity and also provides flood control when the snow melt begins or after heavy rainfall in the Alps. The Rosshaupten Dam acts as the northern barrier of the lake and also feeds water to the hydropower plant. To upgrade the structure more than 60 years after its construction, Bauer Spezialtiefbau was tasked to rehabilitate the dam seal: 13,500 m<sup>2</sup> of diaphragm wall had to be built from a narrow dam crest – not even centered, but offset towards the water side to avoid cutting into the drainage layer within the seal core. Only a roughly six-meter-wide strip next to the diaphragm wall remained as a work surface for the grab, cutter, and auxiliary equipment.

### **Round-the-clock work**

The diaphragm wall, 1 m thick and up to 70 m deep, was installed in two stages. First, excavation of the upper 40 m of the dam body was carried out using a hydraulic diaphragm wall grab unit. For the remaining 30 m in natural soil and rock below the embankment, a BC 40 cutter mounted on an MC 96 duty-cycle crane was used. Thanks to a HDS-T turnable hose drum system, the site team was able to master the

challenging combination of a narrow dam crest and off-center cut-off wall. This made it possible to realign the cutter parallel to the chassis even though the upper carriage was only partially pivoted – a key aspect for executing the cut-off wall. Extensive grouting completed the rehabilitation work in spring 2019.

### **Teesta VI hydropower plant**

The successful rehabilitation in Rosshaupten is just one of many examples of Bauer's expertise in complex dam projects – not only in Germany, but worldwide. In India for example, where hydropower plays a key role in energy production, Bauer was significantly involved in the sealing and securing of dam structures for the Teesta VI hydropower plant – a project in challenging terrain with complex soil conditions. Working until fall 2024, BAUER Engineering India

Private Limited constructed an anchored pile wall, consisting of around 19,000 linear meters of piles with a diameter of 800 mm, as well as around 60,000 linear meters of anchors. The scope of works also included 4,600 m<sup>2</sup> of cutter-excavated diaphragm wall on the upstream side of the dam as well as 4,700 m<sup>2</sup> of cut-off wall, executed using jet grouting along the upstream cofferdam.

### **Dam project in the Caribbean**

The Monte Grande Dam in the southwest of the Dominican Republic is another important infrastructural element. It contributes to flood protection as well as the generation of electrical energy. Tourism and the use of dammed water for irrigation of agricultural land also play a significant role. In 2019, BAUER Fundaciones Dominicana S.R.L. was commissioned to construct a cut-off

*Specialist foundation engineering in the Himalayas: Bauer secures the complex dam structures of the Teesta VI hydropower plant.*



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*With specialist foundation engineering, we create a stable foundation for complex dam projects – in that way, we secure energy for future generations.”*

Martin Heinrich · Head of Major Projects Tender  
BAUER Spezialtiefbau GmbH



Dam project in the Caribbean: Among other works, Bauer constructed 26,000 m<sup>2</sup> of cut-off wall at the base of the Monte Grande Dam.

wall (approx. 26,000 m<sup>2</sup>) to seal off the dam base. This was followed by Phase II in May 2022, during which Bauer installed another diaphragm wall (roughly 7,820 m<sup>2</sup> in total) that protects the dam base against erosion on the spillway section. One particular challenge was posed by the hard layers of soil and rock; the subsoil on site was extremely varied and the strength of the rock, particularly the limestone and sandstone, was very high. Thanks to pre-drilling work, this hurdle was also overcome and the project was successfully completed in March 2023.

#### **John Hart Dam**

The John Hart Dam is located on the eastern coast of Vancouver Island, in the province of British Columbia. It was constructed in the 1940s. Its central functions are also power generation, flood protection, and the drinking water supply for the city of Campbell River. On this project, BAUER Foun-

dations Canada Inc. made a key contribution to the seismic reinforcement of the dam structure with a new plastic concrete cut-off wall. To carry out this work, the equipment deployed between October 2023 and July 2024 included two MC 96 duty-cycle cranes, equipped with a hydraulic grab and BC 48 cutter, three desanding plants from BAUER MAT Slurry Handling Systems along with a BG 30 drilling rig.

#### **Energy for generations**

These examples clearly show: Bauer is sought after worldwide when it comes to specialist foundation engineering for dams and reservoirs. “We lay the foundation for structures that last for generations – contributing to a safe, climate-friendly and sustainable energy future,” summarizes Martin Heinrich. This creates a stable foundation not only for dam structures, but also for a shared vision: heading full of energy into the future.

**Go to video:** Find out more about the work on the Ross-haupten Dam.



The BAUER BCS 185 power pack during cutting works on the new metro station Nanterre La Folie





# It's got the power

## THE BAUER BCS 185 POWER PACK CUTTER SYSTEM SHOWS ITS STRENGTH ON THE GRAND PARIS EXPRESS PROJECT.

Paris – the city of love, light and the arts – enchants visitors with its unique charm, rich history and incomparable atmosphere. Yet behind this impressive backdrop there is a metropolis contending with the challenges of urban growth. Roughly 12.5 million people live in the greater Paris area – more than in the entire country of Sweden, for example. On weekdays, millions of commuters flood into the densely populated city center, which has four times the population density of London or Munich with 21,000 inhabitants per km<sup>2</sup>. It's no wonder that the existing public transport network is stretched to its limits. Help is on its way with the Grand Paris Express project: more than 200 km of new, fully automated subway lines and 68 new stations. The main goal is to improve connections between the suburbs – eliminating the need to travel through central Paris.

### **New cutter technology for new challenges**

The new Metro Line 15 alone will travel a length of 75 km through 45 communities and is expected to transport more than 1.5 million passengers every day. Line 15 is subdivided into the sections South, East and West. The West section will begin operation in 2031. One of the

stations that will be newly constructed for this line is Nanterre La Folie in northwestern Paris. The VINCI Group was tasked with the specialist foundation engineering works. To build roughly 25,000 m<sup>2</sup> of diaphragm wall in total, in part for the stations themselves but also as start/end shafts for the tunnel boring machine, Botte Fondations, a company in the VINCI Group, worked from November 2024 to June 2025 using a very unique piece of equipment from BAUER Maschinen GmbH: the BCS 185 power pack.

### **Modular drive concept**

The innovative cutter system was presented to a wider professional audience for the first time at bauma 2025 in Munich. It is based on the established single-purpose cutter system BCS 185, which can be used to construct 90 m deep diaphragm walls. Yet what makes this equipment unique is the modular drive system, which offers two decisive advantages. First: freedom of choice when it comes to the drive. Depending on the project conditions, operators can choose between a diesel or electric power pack. This makes it possible to opt either for zero local emissions

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*One central project requirement was to work with zero local emissions. We were able to achieve this thanks to Bauer’s electrically powered cutter system.”*

Romain Le Jean · Project Manager  
Botte Fondations



and low-noise operation in sensitive urban environments, or the use of the diesel power pack in areas without a power infrastructure. Second: the variable positioning of the power pack. Depending on the site situation, it can be positioned on the side, rear or even apart from the machine – a major benefit for use on sites with limited space. An auxiliary drive integrated into the system makes it possible to load and unload the base machine even without a power pack.

### Powerful – but quiet

Particularly on sites in urban environments, the topic of noise is a prominent concern. This new development from BAUER Maschinen GmbH addresses the issue: The

diesel HD 1400 can be equipped with a Silent Kit, while the HE 1400 electric power pack is particularly quiet thanks to its low-noise electric engine. Compared to diesel operation, the measured sound power level decreases from 106 (108) dB(A) to 103 (105) dB(A). In practical terms, this noise reduction of -2.6 dB(A) on the construction site corresponds to a 46% decrease in perceived sound level – a significant improvement (see chart). Equipment operator Matthieu Demory from Botte Fondations also appreciates this achievement: “The machine is very easy and comfortable to operate. Plus it is very quiet, which makes work very pleasant. Both here in the operator’s cab and for my colleagues outside.”

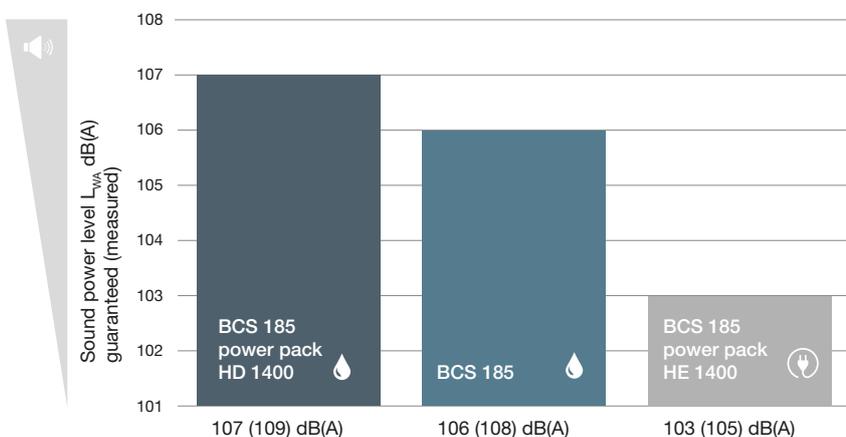
### Up to 1,000 t less CO<sub>2</sub>

Sustainability plays a key role in the major project Grand Paris Express – not only for the future operation of automated metro lines, but also starting from the construction phase itself. “One central requirement was to work with zero local emissions. We were able to achieve this thanks to Bauer’s electrically powered cutter system. The BCS 185 power pack makes it possible to conserve up to 1,000 t of CO<sub>2</sub>,” reports Romain Le Jean, Project Manager at Botte Fondations. This corresponds to the annual consumption of roughly 100 households in Germany, assuming an average of 10 t CO<sub>2</sub> per household each year including heat, power and purchases.

### From construction site to train station

The sustainability strategy of the Société des grands projets, owner of the Grand Paris Express project, goes even further. The goal is to reduce CO<sub>2</sub> emissions during construction by at least 25% compared with conventional methods. This is achieved in part by using electrically powered construction equipment, as well as through the use of low-carbon construction materials. Another core element is the circular economy: More than two thirds of the excavated soil generated during tunnel construction is recycled, for example as fill material for former stone quarries or for landscaping. This material is increasingly removed by train or barge to minimize traffic and emissions. Last but not least, the stations are also designed according to clear sustainability criteria: Energy efficiency, careful use of

### Noise emissions



*Compared to operation with a diesel power pack, the noise level is cut in half by using an electric power pack.*



**And action!**

Scan the code and experience the BCS 185 power pack in action.

materials and high life-cycle quality are central guidelines. Certifications based on international standards are planned for many stations.

**A future-oriented solution**

It's not just Paris that imposes strict limit values for noise and CO<sub>2</sub> emissions on sites. Oslo is probably the most ambitious current example of emission-free large construction equipment, closely followed by other Nordic cities (Stockholm, Helsinki, Copenhagen) and parts of Europe (Amsterdam, London). At the EU level, the basis is the Stage V

Regulation; future guidelines such as the updated Clean Vehicles Directive will further advance the use of emission-free heavy machinery.

Thanks to its modular drive concept, the BCS 185 power pack is able to fulfill even the strictest of regulations: In densely populated, emission-sensitive areas, it operates with low noise and zero local CO<sub>2</sub> emissions thanks to an electric drive. In regions without a stable power supply, the diesel drive continues to offer maximum flexibility. "Thanks to its adaptability, the BCS 185 power pack is a prac-

tical, existing and future-oriented solution: not just for the Grand Paris Express project, but for challenging construction projects worldwide," remarks Verena Schreiner.



*The BCS 185 power pack is more than just a technological innovation: it represents an essential step towards the emissions-free construction site."*

Verena Schreiner  
Product Manager for Diaphragm Wall Equipment  
BAUER Maschinen GmbH

*Reintroducing excavated soil during pipeline installation*





# The energy transition starts with breaking ground

When we think about the energy transition, we usually think of solar panels on roofs or wind turbines along the coast. But an equally important and often invisible element is the energy supply infrastructure: Pipelines reliably transport electricity, gas – and even hydrogen in the future – to wherever they are needed.

In a growing metropolis like Hamburg, new districts are constantly being developed. The industry continues to evolve. Each step increases the demand for energy, which requires pipelines. Lots of pipelines. The need for sustainability is evident not just when operating this infrastructure, but also during the construction process. After all, excavated material accumulates with each new section. In the past, thousands of tons of soil were often disposed of as waste. Nowadays, however, it is possible to close this cycle. As a joint project, Bauer Resources and the municipal network operator Hamburger Energienetze are demonstrating how excavated soil can be treated and recycled. This practice is still far from the norm in German cities, however, although the benefits and potential are clear to see. Excavated soil is becomes a valuable resource, and a challenge becomes an opportunity.

EXCAVATION WORK FOR NEW POWER INFRASTRUCTURE GENERATES SOIL – AND HAMBURG IS DEMONSTRATING HOW TO KEEP THIS WITHIN THE CIRCULAR ECONOMY.

## Recycling instead of disposal

Every year, pipeline construction projects in Hamburg generate tens of thousands of tons of excavated soil. In the past, it was often disposed of using expensive and unsustainable methods – a considerable logistical and ecological expenditure. But the accumulated soil is only actually unusable in rare cases, while the majority can be technically treated and reused. “Together with our customers, we strive to embody the circular economy by reintroducing as much material as possible back into the cycle,” remarks Yasmin Arndt, Sales Engineer at Bauer Resources. This is precisely where the rethinking process begins in Hamburg: Since 2019, Bauer Resources and Hamburger Energienetze are working together to strategically treat and then reintroduce excavated soil.



Sales Engineer Yasmin Arndt during a pipeline installation project on the Jahning in Hamburg

The results are already impressive: So far, 295,000 t of material have been recycled and reused at 650 construction sites. "Instead of disposing of the excavated soil like we did in the past, we take it to our soil treatment center in Hamburg. We are able to treat up to 50,000 t of soil there each year," explains Kathrin Hagemann, Manager of Bauer Resources' Hamburg site.

### **Not waste, but an alternative construction material**

Hamburg is significantly ahead of many other cities when it comes to handling excavated soil. And with good reason: Raw materials like gravel and sand are scarce and expensive here. Factors such as environmental protection, climate goals, and competition for land also play a role. So why

does excavated soil end up in landfills in so many other regions? "It is often underestimated as a 'troublesome by-product'. Many people think: Just get rid of it as quickly as possible," explains Ulrich Morgenstern, Head of Disposal at Bauer Resources. There is also a legal dilemma: as soon as soil has been excavated it is considered waste rather than a product, regardless of whether it is contaminated. And this deters many people. Who would want to introduce "waste" on their construction site? Economic considerations add another layer: At first glance, the costs for treatment appear higher than simple disposal, i.e. removing the excavated material and purchasing new soil. But that comparison is misleading. The hidden costs – such as raw material extraction,

land use for new quarries, or CO<sub>2</sub> emissions from transport – are not included in any calculations. "If we calculated honestly, it would be clear: Recycling is only more sustainable, but often more economical as well," emphasizes Ulrich Morgenstern.

### **From theory to practice – and to a new standard**

The soil treatment center of Bauer Resources is located right in the Port of Hamburg, one of northern Germany's key hubs for urban circular economy. Since 2019, excavated soil has been treated here for reuse on the site measuring 16,000 m<sup>2</sup>. "And it's officially certified," Katrin Hagemann notes. "In 2023, we became the first company in the Hamburg area to obtain QUBA certificates for quality-assured soil material. The path from authorizations to quality control was not always easy. But it paid off. Today, what once was theory has become everyday practice."

In practical terms, the incoming material is mechanically treated depending on its characteristics. Coarse components larger than 20 mm are separated by the flat-deck screen, while the drum screen system takes care of the fine aggregate fraction up to 3 mm. Treated materials that meet the technical and legal requirements are returned into the cycle. Only heavily contaminated soils that cannot be recycled are still disposed of normally as waste – yet in much

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*If we can successfully rethink our processes, soil will stay where it belongs: in the circular economy.”*

Ulrich Morgenstern · Head of Disposal  
BAUER Resources GmbH



smaller quantities than before. After nearly two years of running the project under new regulatory framework, Yasmin Arndt confirms: "The German Alternative Construction Material Ordinance can be implemented in a targeted and practical way – despite the challenges associated with its introduction in August 2023."

**A cycle that pays off**

Recycling soil has measurable environmental and economical effects. Every cubic meter that is not disposed of in a landfill and replaced with new material is a way to cut back on transport routes, CO<sub>2</sub> emissions, resources and money. The impact is especially noticeable in logistics: Because soil is transported directly to the nearby soil treatment center and later reused locally, double trips to landfills and sand pits are eliminated. "Our clients can deliver excavated soil and pick up treated material directly. This avoids empty trips, saves time and reduces emissions," remarks Sales Engineer Yasmin Arndt.

Hamburg's environment benefits as well: Less sand needs to be transported, natural spaces are protected – and the pressure on already scarce landfill capacities is considerably reduced. Last but not least, project owners benefit from decreased disposal costs and lower expenses for materials procurement. "In this way, a classic construction waste becomes a valuable construction material – and a

linear process is transformed into a functional cycle. This approach can act as a shining example for other cities," concludes Kathrin Hagemann.

**Hamburg sets an example**

Hamburg can serve as a real role model. Practices that are already successful there – such as conscious handling of scarce resources, functional material flow management and the interplay between authorities, construction sector and treatment operations – demonstrate what is possible elsewhere. "For other cities

to follow, one thing is essential: a change in mindset. Excavated soil can no longer be regarded as nuisance waste. Instead, but as a valuable resource," explains Head of Disposal Ulrich Morgenstern. This requires clear legal frameworks, political incentives for sustainable construction such as subsidy programs for soil recycling or ecological taxes on primary raw materials, along with confidence in the quality and safety of recycled materials. And above all, it will take honest cost accounting. "If this is successful, the exceptional case of Hamburg will soon become the new normal, and soil will stay where it belongs: in the circular economy," Ulrich Morgenstern concludes.



*Drum screen system for soil treatment*



**And action!**

*Learn how excavated soil becomes a construction material at the soil treatment center in Hamburg.*

Global

# ■ Geotechnical Solutions around the world



**Saudi Arabia** 251 bored piles and more than 2 km of secant pile wall: Bauer constructed a stable foundation for the new building of the opera house in Jeddah.



**Alaska** During rehabilitation of the Moose Creek Dam in Alaska, Bauer installed roughly 7800 Deep Soil Mixing columns up to a depth of 20 m – a demanding large-scale project involving particular challenges and tough weather conditions.

# Global





**1 | USA** At work with four drilling rigs: For the Natomas Reach A dam rehabilitation project in Sacramento, Bauer is constructing a cut-off wall with a length of approximately 3.7 km using the Cutter Soil Mixing method.

**2 | Canada** By installing a plastic concrete cut-off wall, Bauer made a decisive contribution to the seismic stability of the John Hart Dam and long-term water supply of the city of Campbell River.

### **3 | United Arab Emirates**

For the luxurious Nobu Hotel on Saadiyat Island, Bauer executed various specialist foundation engineering works: a two-level underground structure with bored piles, a retaining structure and 214,000 m<sup>3</sup> of excavation at this cultural hotspot of the Emirates.

**4 | Egypt** Specialist foundation engineering at the Mediterranean: In just six months, Bauer constructed a secant pile wall in the harbor of Abu Quir. This was a technically demanding work in unstable coastal soils.



**5 | Malaysia** For the foundation of the Westin Residence in Penang, Bauer installed 113 bored piles with diameters up to 2,500 mm at depths up to 100 m. One particular challenge here was to penetrate through 8.5 m of heavily weathered granite.

**6 | Philippines** As part of its fifth drilling campaign, Bauer carried out four geothermal boreholes with depths of up to 150 m and a diameter of 1,200 mm, including encasement and grouting work.

**7 | India** For the Teesta hydropower project in Sikkim, Bauer executed jet grouting, foundation piles and ground anchors under geological conditions that were difficult at times.

**8 | Australia** Working in the heart of Brisbane: For a skyscraper project with 49 stories, Bauer carried out extensive foundation works including diaphragm wall, barrettes and removal of more than 100 piles.

# Europe



**1 | Slovenia** An area of 6,500 m<sup>2</sup> and a depth of up to 65 m: In Krško, Slovenia, Bauer constructed an XXL diaphragm wall shaft for a repository for low and intermediate-level radioactive waste.

**2 | Sweden** Working with a Swedish partner, Bauer developed a new method for vibrationless installation of replacement columns. In Robertsfors, 176 columns were installed in sensitive clay soils – as a test for the planned Nordbotnia railway.



**3 | Netherlands** In the heart of Almelo, Bauer executed 432 anchor piles for the Gerechtsgebouw project. This was a challenging undertaking with 25-m-long threaded steel systems, involving crane operation in the city center.

**4 | United Kingdom** As part of the HS2 railway project, Bauer constructed a cut-off wall near Wendover up to a depth of 30 m – more than 2.5 km long and under demanding work conditions in places with reduced construction height.

**5 | Hungary** A major project at a rapid pace: For the EVE Power project in Debrecen, Bauer operates up to six drilling rigs simultaneously to execute 165,000 linear meters of CFA piles on time.

**6 | Switzerland** For an apartment building project on the Rhône plain in the canton of Wallis, Bauer executed 193 hybrid columns and 119 vibro replacement columns with a total length of 1,373 m.

# Germany



**1 | Feldberg** Rehabilitation of the federal highway B317: On the Feldberg mountain in the Black Forest, Bauer constructs a total of 460 piles in gneiss and rock at an altitude of 1,200 m.

**2 | Cologne** Excavation pit for the new administrative building of the “Landschaftsverband Rheinland” association (LVR): A contiguous pile wall with wood and shotcrete timbering reinforces the 8 m deep excavation pit in the north, while a secant pile wall was installed in the west.

**3 | Hessigheim** Bauer is improving the construction soil for the Hessigheim Lock. In Phase 2, the drilling team installs 330 boreholes. During the subsequent compaction grouting work, roughly 8,000,000 l of mortar are injected.

**4 | Kriegenbrunn** A feat of engineering: In Kriegenbrunn, Bauer is working together with Züblin on the new replacement structure of the lock on the Main-Danube canal – with piles drilled up to 37 m deep, ground anchors and 8,000 t of steel.





5



6



7



8

**5 | Hohenhameln** For the Bierbergen wind park in Hohenhameln, Bauer executed 610 vibro replacement columns including pre-drilling in five weeks. The total column length was roughly 5,600 m.

**6 | Berlin** MIP wall and LWS silicate gel base: As part of the foundation works for the 32,000 m<sup>2</sup> office building project Port ONE Berlin, Bauer Spezialtiefbau used the new eRG 19 T hybrid manufactured by RTG Rammtechnik.

**7 | Frankfurt** For the new construction of the regional West bypass, Bauer improved the construction soil in five weeks using CFA piles among other methods. The challenge: High voltage lines restricted the working height, which is why special drilling and vibration equipment was used.

**8 | Hechthausen** For the Oste Bridge, Bauer executed a total of 4,213 vibro replacement columns including pre-drilling. Total column length: 45,055 m.



# Trend

## Geotechnical Solutions



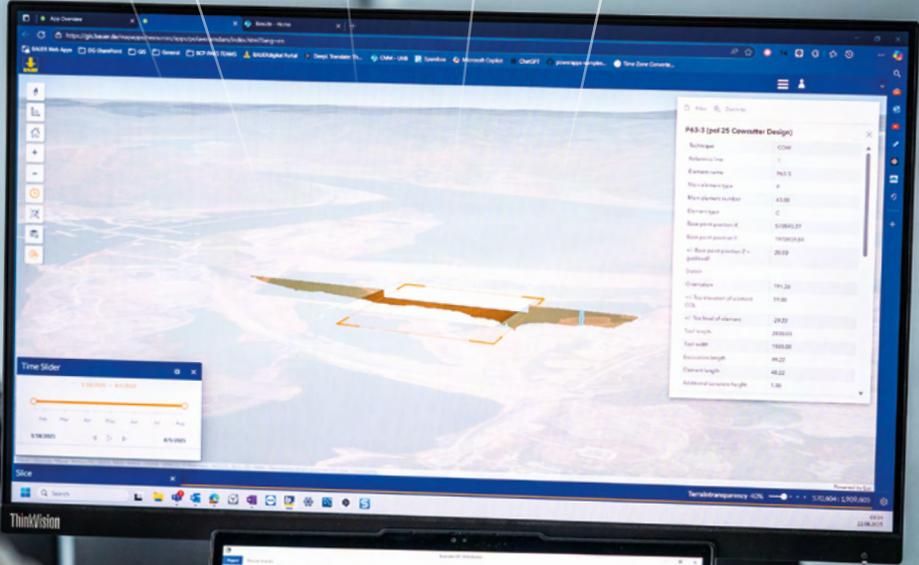
Risk minimization

Single source of truth

Process and quality assurance

Transparency and efficiency

Constructing with foresight



ID	Name	Value	Unit	Category
1	...	...	...	...
2	...	...	...	...
3	...	...	...	...
4	...	...	...	...
5	...	...	...	...
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Digital twins make the invisible visible while ensuring transparency, efficiency, and safety.

# The digital twin that provides a clear perspective

TRANSPARENCY FOR ALL PROJECT PARTICIPANTS: WITH THE DIGITAL TWIN, PROCESSES IN SPECIALIST FOUNDATION ENGINEERING BECOME MORE EFFICIENT AND FORWARD-LOOKING.

What happens underground when a pile is drilled? In the past, site managers and clients were often flying blind. But where unseen areas once remained concealed, the digital twin is now opening up entirely new possibilities: Using the building model, the twin creates a map that continuously updates itself using real data from planning, production, quality and material flows. This means that the digital twin goes a step further than the Building Information Modeling (BIM). It translates the underground work into data, diagrams, 3D models and insights. Transparency, safety and efficiency are ensured as a result. In specialist foundation engineering, the digital twin has become a key tool for the construction site of the future.

## Insights into depths

“Digital twins make the invisible visible” – it would be hard to describe the role of the digital twin more accurately. In specialist foundation engineering, that means: While equipment proceeds deep into the ground, data concerning construction method and quality are collected and translated into a virtual map. Piles, diaphragm walls or boreholes thus exist not only in physical reality, but also in a digital mirror world. This opens up possibilities that were unthinkable in the past. “We use the digital twin to systematically and semi-automatically – from collect and analyze production and quality target-actual comparisons or forecasts for upcoming construction sections to geometrical and qualitative analysis,” explains Jonas Gottwald, Head of Major Projects Service in the Digitalization department at Bauer Spezialtiefbau. “This allows us to make complex processes more transparent and easier to understand.”

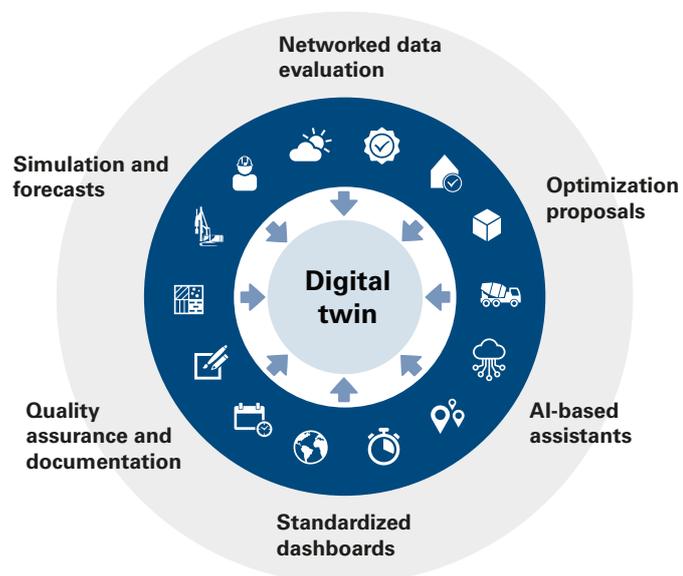
## Improved perspective on site

For the experts on site, the digital twin makes information quickly and clearly accessible via dashboards, reports or three-dimensional models. Decisions can be made based on valid data rather than just from experience or instinct as they were in the past. For clients, the digital twin primarily offers security: Risks can be minimized, deviations can be detected at an early stage and projects can be handed over on time with the desired level of quality. The “Qiddiya” project in Saudi Arabia involving the construction of a new soccer stadium is an example of how digital data can serve as the foundation for the entire reporting system. Accounting, documentation, and quality assurance are accomplished at the press of a button – precise, traceable and always transparent. “The digital twin is a milestone because it collects data that lead to improved decisions,” remarks Gottwald.

## AI as a future partner

With artificial intelligence, the digital twin evolves from a passive observer into an active partner that contributes ideas, operates proactively and enables more sustainable construction. In the future it could be possible to create assistance systems that actively support construction sites: from automated optimization suggestions all the way to assistants that give specific instructions to equipment operators. “Our goal is that the digital twin will not only document, but also contribute ideas – and help us to make projects more sustainable, efficient, and intelligent,” says Marcus Daubner, Head of Digitalization at Bauer Spezialtiefbau when describing the next stage.

With the digital twin, specialist foundation engineering is continuing its success story: By shedding light in unseen places, it provides the enabling foundation technology to master the challenges of the future.



Global

## ■ Equipment in customer operations



**Turkey** DÇÖ (Doğuş-Çelikler-Özkar) is executing the drilling work for the high-speed railway project between Yerköy and Kayseri using a total of 28 Bauer units, including drilling rigs, pile drivers, and mixing plants.



**USA** In Milwaukee, Michels Construction Inc. is using the resource-efficient CSM method to install a cut-off wall near Lake Michigan with an RG 21 T and a BCM mixing unit.

**1 | India** In Chennai, the metro is being expanded. For a new station, the Indian construction company Tata Projects is executing diaphragm wall work with a GB 50 grab carrier.

**2 | Switzerland** In Paradiso, an eight-story residential and commercial building with three basement levels is under construction. Ghelma AG Spezialtiefbau used a BG 45 for the piling works in tight spaces.

**3 | Germany** A CMS 30 mixing plant from BAUER MAT Slurry Handling Systems was used in Berlin by our customer BodemBouw to carry out diaphragm wall work.

**4 | Germany** For a steel plant in Salzgitter, the company Spezialtiefbau GmbH Magdeburg used an RG 14 T to vibrate in king piles and sheet pile walls.

**5 | Algeria** Delivering eight RB 50 to the Cevital Group – in future, the rigs will drill wells for irrigation and to transport process water in the food industry.

**6 | Kazakhstan** Almaty is currently experiencing a period of dynamic growth. For a new apartment complex, our customer Concord Development TOO installed SCM columns using a BG 23 H.



**7 | Norway** In Oslo's Bjørvika district, Geo Fundamentering & Bergboring AS executed RD piles with a steel core using the electrohydraulic KLEMM KR 806-4E for a new school.

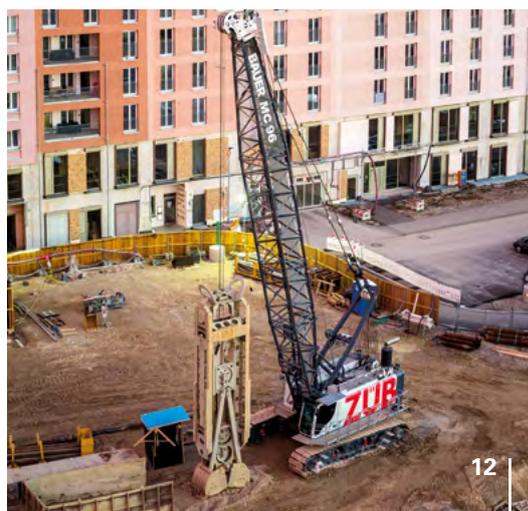
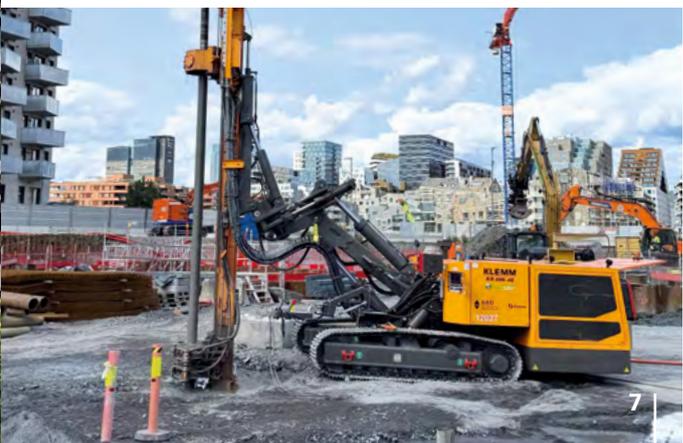
**8 | Egypt** Along the 26th of July Axis, a central traffic axis in Cairo, Arab Contractors installed piles to a depth of 20 m using a BG 36 with the Kelly drilling method for a monorail system.

**9 | China** On the Yongding River in Beijing, a wall was constructed for flood and erosion protection. Beijing Fufeng Machinery Leasing Co., Ltd. used a GB 80 S grab carrier for this work.

**10 | China** Diaphragm wall work for a new pump station in Shenzhen City: A BCS 185 cutter system and BE 500 desanding plant were deployed.

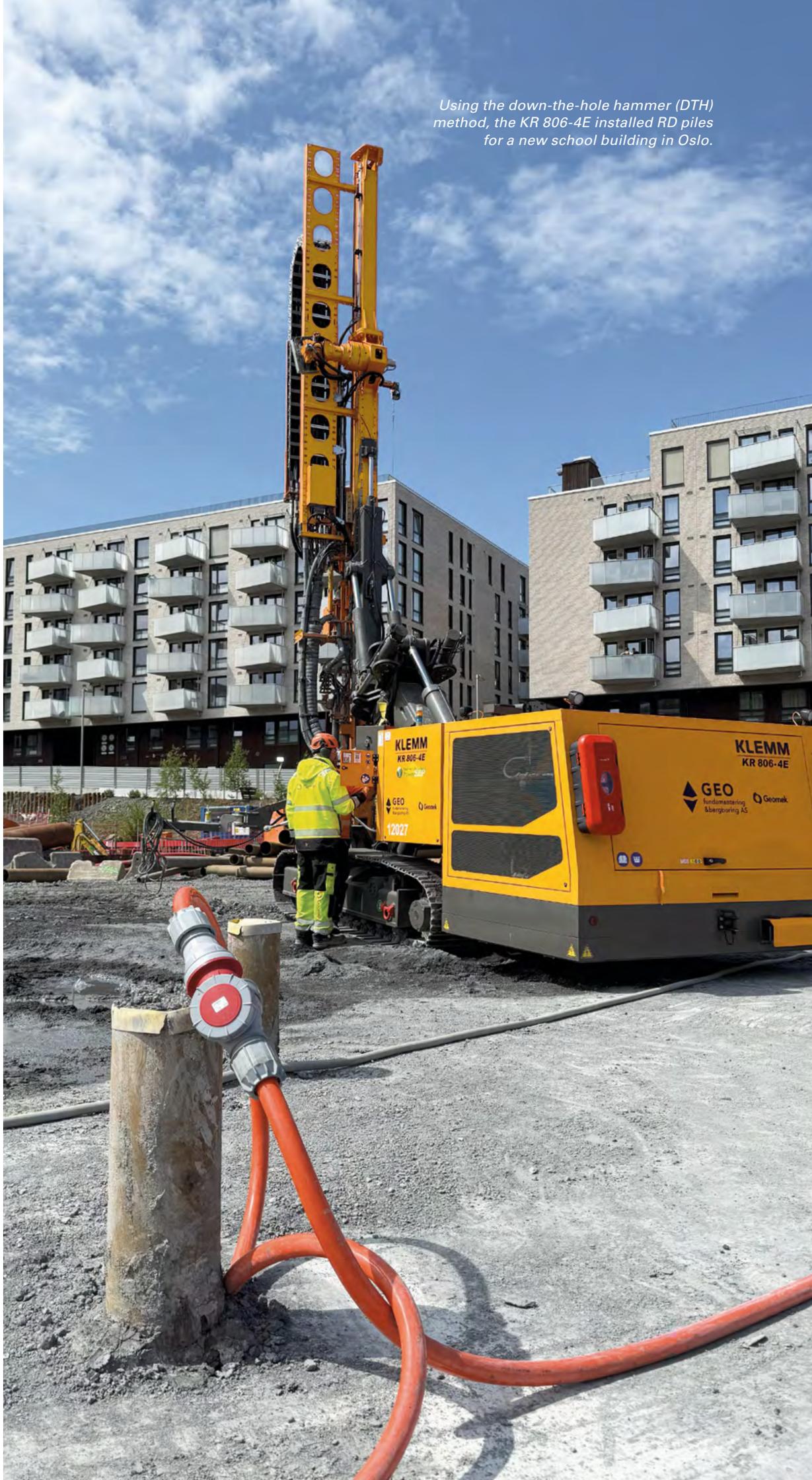
**11 | USA** In the town of Upper Sandusky in the state of Ohio, Berkel & Company Contractors, Inc. improved the construction soil using a BF 15 with the vibro replacement method.

**12 | Germany** Subway expansion in Munich: In the Bavarian capital, Züblin Spezialtiefbau GmbH carried out diaphragm wall work up to a depth of 40 m using an MC 96 duty-cycle crane and a BC 35 cutter unit.



■ Trend  
Equipment

*Using the down-the-hole hammer (DTH) method, the KR 806-4E installed RD piles for a new school building in Oslo.*



# Zero percent emissions – 100 percent performance

Oslo has set itself ambitious climate goals: by 2030, direct greenhouse gas emissions are to be reduced by 95% compared to 2009. By 2021, the Norwegian capital had already achieved a 30% reduction – despite a population increase of more than 100,000. This success is driven by measures such as the complete electrification of public transport, consistent use of renewable energy, and comprehensive emission-reduction strategies in waste management. Decarbonisation is also advancing steadily in the construction sector – ideal conditions for the deployment of the electrohydraulic KR 806-4E from KLEMM Bohrtechnik GmbH.

## Powerful, quiet, sustainable

In the heart of Oslo's Bjørvika district, the zero-emission drilling rig was used in 2025 for foundation works on a new school building. Using the down-the-hole hammer (DTH) method, the KR 806-4E installed RD piles – steel casing foundation piles with threaded connections – with a diameter of 168.3 mm and a 90 mm steel core. In this method, a pneumatically driven hammer integrated into the drill string operates directly at the bottom of the borehole, enabling precise and efficient drilling even in hard or highly compacted soils. The rig is operated both grid-connected and battery-supported – powerful, quiet, and locally emission-free.

## FROM BAUMA TO THE JOBSITE: THE FULLY ELECTRIC KLEMM KR 806-4E PROVES ITS WORTH UNDER DEMANDING JOBSITE CONDITIONS.

### Well-conceived energy architecture

The electric drive system is based on a permanently excited synchronous machine with a peak output of 180 kW. For continuous high-performance operation, the rig can be connected directly to a 250 A mains supply. Alternatively, a standard 400 V AC construction site distribution connection enables hybrid operation from mains power and battery. The integrated battery unit with active thermal management reliably absorbs peak loads and also enables fully battery-powered, off-grid operation. An intelligent energy flow management system ensures automatic recharging according to load requirements.

### Robust kinematics

The kinematics of the KR 806-4E are derived on the proven KR 806-4GM model but have been purposefully enhanced. Stiffness as well as operational and fatigue strength have been further increased, while mechanical stresses in the joints have been significantly reduced. The versatile kinematics allow not only shallowly inclined drilling but also pile drilling with offset starting points. For additional applications, the rig can optionally be equipped for high-pressure injection (jet grouting).

### A step towards the emission-free construction site

The feedback was particularly gratifying: both long-standing KLEMM customer Geo Fundamentering & Bergboring AS and KLEMM dealer GEOMEK for Scandinavia commended the smooth process and the impressive results of the work. This successful deployment of the KLEMM KR 806-4E in the heart of Oslo underscores that demanding specialist foundation engineering and active climate protection are not mutually exclusive. Rather, this project marks an important milestone on the road to the zero-emission construction site – in Norway and beyond. KLEMM's fully electric drilling technology stands as an example of innovative solutions that combine efficiency, performance, and sustainability at a very high technical level.



All technical details  
for the KR 806-4E  
can be found here



[Go to website](#)

# From research to innovation

Whether electrically powered soil mixing tools or self-learning assistance systems, search and development at Bauer consistently push the boundaries of specialist foundation engineering.

New drive technologies and digital systems are fundamentally changing work on construction sites. But what will specialist foundation engineering look like in the future? In 2025, BAUER Maschinen GmbH presented the (interim) results of two forward-looking research projects that combine performance and sustainability.

## **Electrically powered mixing – emissions-free construction**

At bauma 2025, BAUER Maschinen GmbH presented a genuine milestone: the prototype for electronic Cutter Soil Mixing (eCSM). For the first time ever, the proven CSM method is powered entirely electrically, with two powerful electric motors instead of hydraulic components. The result: enhanced performance, improved efficiency – and a clear step towards sustainability in specialist foundation engineering.

In the CSM method, the soil is loosened and simultaneously mixed with cement slurry – a technique that makes enables homogeneous cut-off walls even under challenging conditions. Bauer's eCSM system uses two electric motors that drive the mixing wheels at a speed of 40 rpm to achieve uniform mixing quality even in difficult soil conditions. By automatically regulating the extraction speed, a digital mixing assistant ensures that the quantity of bentonite is distributed uniformly over the entire trench length. The system is controlled by frequency converters, allowing precise control of the mixing wheels. Energy supply is delivered via power cable, a decisive advantage in terms of reduced emissions and improved energy efficiency.



*High-tech in operation: The eCSM prototype from Bauer during successful test use.*



The eCSM prototype at bauma 2025

”

*There is no comparable electrified diaphragm wall method currently on the market. With the eCSM, we are positioning ourselves at the cutting edge.”*

Stefan Wegerer · Project Manager  
BAUER Maschinen GmbH

The prototype is just the beginning: the next phase of development has already begun. The goal is to develop a robust, complete eCSM system that is ready for use on sites. In the long term, Bauer aims to provide a fully electric solution that offers persuasive advantages from an ecological and economical perspective: with lower maintenance, less wear and flexible applications.

#### **Intelligent assistance with AI**

Another research project funded by the Bavarian Research Foundation (BFS) demonstrates how digital technologies can assist equipment operators according to their needs: Together with the Munich Technical University and two industry partners, HAWE Hydraulik SE and Sensor-Technik Wiedemann GmbH, Bauer developed an AI-based assistance system for specialist foundation engineering equipment. The technology was demonstrated on a GB 50 hydraulic diaphragm wall grab. The main focus was on dampening vibrations and stabilizing the grab. Using a soft sensor to measure the pendulum movement of the grab unit, an assistance system was developed and successfully implemented in test campaigns. The central result of the project is a shared-control platform that enables intuitive collaboration between humans and equipment. A retrofitting solution was established that can extend existing control systems

with intelligent functions, without requiring extensive intervention into the equipment architecture.

#### **Progress with responsibility**

With the eCSM prototype and the AI assistance system, Bauer is tak-

ing specialist foundation engineering to the next level. The combination of electric drive technology and intelligent machine control not only offers technological advantages, but also paves the way for a more sustainable and safer construction process.



BAUER GB 50 grab – this machine type was used to demonstrate the technology developed in the AI research project OPA14DNCS.

Germany

## ■ Resources on site



**Heilbronn** Approximately 50 km north of Stuttgart, Bauer Umwelt remediated a former tannery site: Roughly 2,300 t of soil were excavated in batches, packed in more than 19,000 barrels in two tents, and transported away.



**Lübeck** East of the old town of Lübeck in the neighborhood of St. Gertrud, Bauer Resources installed one of the region's largest cold local heating networks, with more than 23,000 of meters drilled and 135 geothermal probes.



1

**1 | Duisburg** Near this city on the Rhine, Bauer Resources rehabilitated contaminated soil using replacement boring. Roughly 6,500 t of material were stored temporarily and disposed of at the 3,000 m<sup>2</sup> in-house soil treatment center – all from a single source.



2

**2 | Manching** Following strict safety requirements, Bauer Resources built a customized plant on a military site near Ingolstadt to treat up to 150 m<sup>3</sup> of groundwater polluted with PFAS per hour.



3

**3 | Regensburg** More efficient trans-shipment: At the soil treatment center Regensburg, Bauer Resources loaded 1,650 t of soil onto a ship in just nine hours – saving roughly 63 truck trips by road.



**4 | Jena** For the construction of the dotSource campus, this customer of Bauer Resources relied on geothermal heat: Pile walls and foundation slab were geothermally activated and now deliver 117 kW – a major contribution to the new building’s sustainable energy concept.

**5 | Dortmund** For the 2027 International Garden Exhibition in Dortmund, Spesa carried out the foundation and soil improvement work for the new “Haldensprung” pedestrian and bicycle bridge. This included the construction of 140 micro piles.

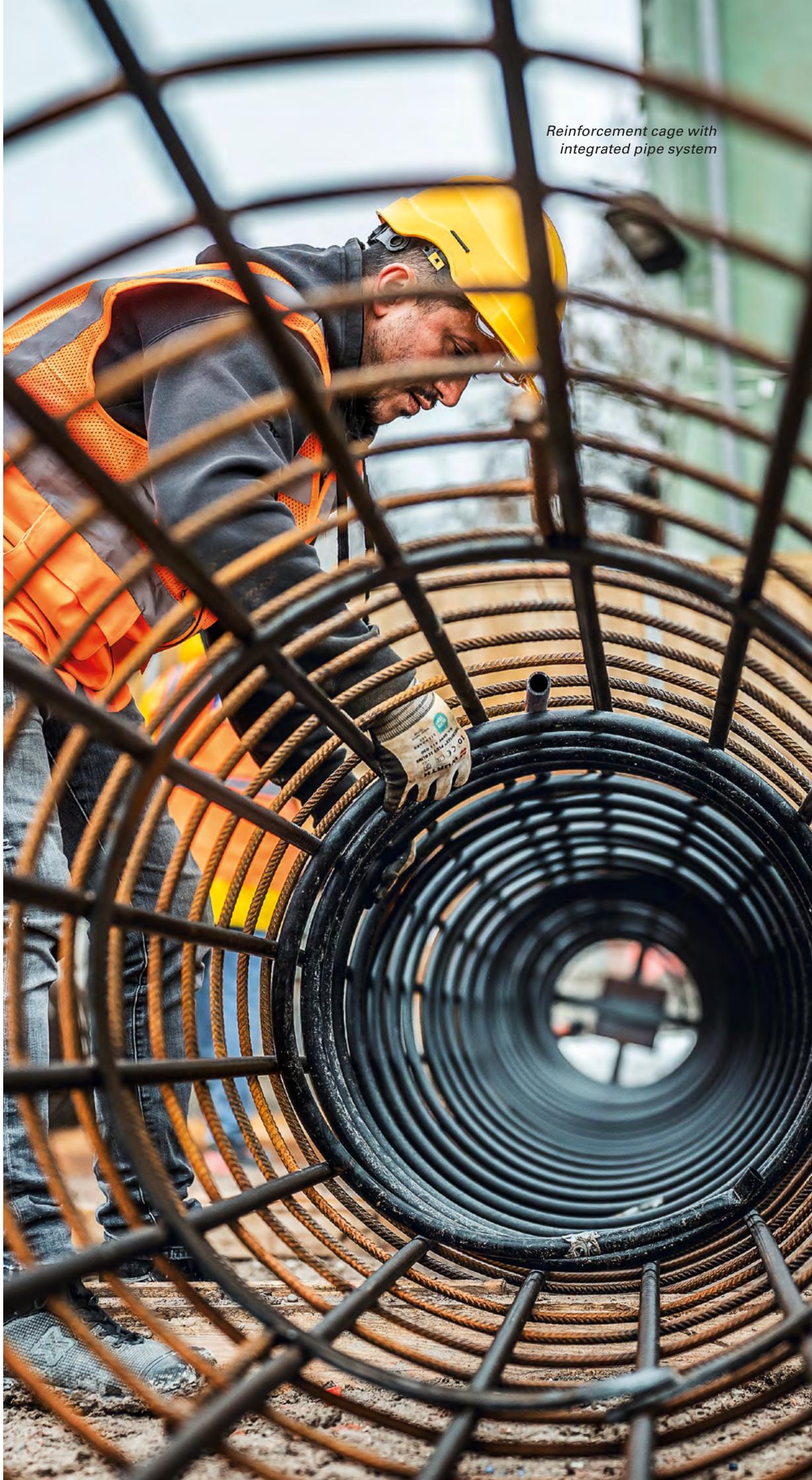
**6 | Dießen am Ammersee** For a high school, Bauer Resources installed a geothermal heat system with a total of 57 geothermal probes. In this project, two drilling teams drilled roughly 5,700 m using KR 805 rigs from KLEMM – and all during ongoing school operation.

**7 | Münster** Schachtbau Nordhausen is constructing a new bridge on the B51 federal highway on behalf of Straßen. NRW, at the crucial junction of the Münster bypass road and the Münster South interchange, using steel beams weighing multiple tons and with the utmost precision.



# Trend

## Resources



*Reinforcement cage with integrated pipe system*

# Invisible yet impactful: Geothermally activated foundation elements

FOUNDATIONS SUSTAIN NOT ONLY BUILDINGS BUT THE ENERGY TRANSITION ITSELF. EFFICIENTLY, DISCREETLY, AND SUSTAINABLY.

Climate-friendly energy is often concealed in components that are rarely seen – for example, specialist foundation engineering elements. Piles, walls and foundation slabs that are essential for many construction projects can do far more than carry loads: By integrating pipe systems, they can be geothermally activated. This opens up an enormous energy potential with minimal added effort. Bauer Resources is one of the pioneers in harnessing this hidden treasure and significantly advancing the heat transition within the construction sector.

## Smart use of heating and cooling

What exactly are geothermally activated construction components? They use the constant temperature of the ground to efficiently supply buildings with heating and cooling. For this purpose, pipe systems through which a heat storage medium circulates are integrated into piles, retaining walls or foundation slabs. This medium transports thermal energy. In winter, the geothermal heat is conveyed into the building and raised to the desired temperature level using a heat pump. This process is reversed in summer – excess heat is extracted from the building and dissipated into the ground, effectively cooling the building. Along with their structural function, specialist foundation engineering elements act as a heat source. The additional effort involved is modest, while the benefits are substantial. Applications range from residential and office buildings to public facilities or even industrial plants.

## Invest today, benefit tomorrow

Geothermally activated specialist foundation engineering elements offer a variety of advantages – and they are particularly attractive for sustainable construction. By using the constant temperature of the ground, these components enable efficient heating in winter and cooling in summer. This lowers energy consumption and CO<sub>2</sub> emissions while also considerably reducing the environmental footprint of buildings. On the long term, geothermal systems offer considerable savings. They last longer than conventional heating and cooling systems, since their service life is between 80 to 100 years – similar to that of a building. They also require less maintenance. In short, investing today pays off twice over tomorrow: financially and ecologically.

## More than 150,000 m of geothermal activation

To date, Bauer Resources has installed more than 150,000 m of geothermal heat systems for sustainable heat generation as part of specialist foundation engineering works. One outstanding example is the “Wohnen am Kreisel” residential project in Lindau on Lake Constance. Here, the team geothermally activated a 3,200 m<sup>2</sup> energy wall and a 2,000 m<sup>2</sup> foundation slab. Thanks to custom-

designed double U profiles and more than 10 km of pipelines, this system generates more than 100 kW of power – which is roughly equivalent to the heating demand of 20 modern single-family homes. In Jena as well, Bauer Resources relied on these construction components: Along with a foundation slab, a pile wall comprising a total of 374 piles was geothermally activated. The result: 151 kW heating capacity and 102 kW cooling capacity. But the most spectacular project is “The Circle” at the Zurich Airport. With more than 1,000 geothermally activated piles, this system delivers roughly 1.8 MW of total power. This makes it the largest installation of its kind in Europe. “These examples demonstrate that geothermally activated specialist foundation engineering components are capable of far more than their basic structural function. They play a key role in sustainable energy supply,” explains Dominic Haidacher, Head of Geothermal Heat at Bauer Resources. “They have enormous potential, which has been utilized far too little in previous projects.”

*For geothermal activation, the reinforcement cages of the piles are equipped with special plastic spirals.*



# Innovation with a strong foundation



50 YEARS OF DRILLING RIGS:  
IN 1976, BAUER TOOK ITS FIRST STEP  
ON A REMARKABLE SUCCESS STORY  
WITH THE BG 7.

## From in-house use to a bestseller

Originally conceived for in-house use, Bauer drilling rigs soon became a commercial success. Each new generation evolved in step with rising requirements: The first successor to the BG 7 was the BG 11, followed by the BG 22. The BG 30 was presented at the 1989 bauma in Munich. Today, the portfolio ranges from the compact BG 15 H with a mast that folds to the rear, the fully electric eBG 33 H, the powerful BG 55 with a BTM 720 torque multiplier – ideal for cased drilling at great depths and diameters – and the brand-new BTM 600 for cased CFA (cased continuous flight auger) piles presented at the 2025 bauma. “50 years ago, rotary drilling rigs were purely hydraulic: just a few levers, a few pressure gauges – nothing more” remarks Johann Kraxenberger, Head of the Drilling Rigs product line. “Nowadays we are working with digital interfaces, electric joysticks and live data – a world of difference.”

## Improved efficiency, reduced consumption

Topics like sustainability and conservation of resources now play a central role, along with digitalization. They influence the development and enhancement of Bauer equipment – and this is far from a new trend. One key example is Energy-efficient power (EEP). A whole decade ago, Bauer introduced the first drilling rig equipped with this technology onto the market. “EEP reduces fuel consumption in our drilling rigs can be reduced by up to 20% – a real advantage for both the environment and our

customers,” Kraxenberger explains. How is this achieved? For example with improved overall efficiency, energy recovery, or energy optimization of all secondary consumers. In addition, numerous assistance systems such as Stability Plus, the adaptive Kelly retraction assistant or speed limiter make the operation of Bauer drilling rigs more efficient, safe and sparing on equipment and resources than ever before.

## Driving innovation into the future

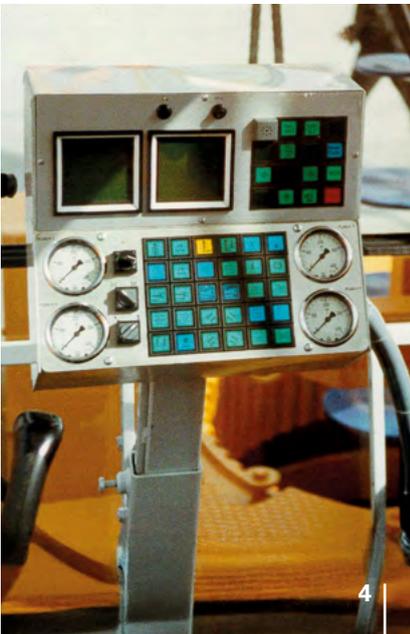
Whether electrification, CO<sub>2</sub> reduction, or smart assistance systems, Bauer takes on challenges by relying on innovation, practical application and flexibility. “The close interplay between construction sites and machine engineering is absolutely unique. This allows us the opportunity to align developments strategically based on the real world requirements and bring new solutions into practical application more rapidly,” emphasizes Johann Kraxenberger.

50 years after the BG 7, one thing is clear: Bauer drilling rigs don’t just drill deep – they also have a strong future ahead of them.

Some inventions do more than just solve problems: they change entire industries. The BG 7 is one such example – an innovation developed half a century ago out of necessity that fundamentally changed the methods of pile installation.

## Development at record speed

The drilling rigs available at the time were not able to meet the growing demands on the construction sites. Dr. Karlheinz Bauer decided: “Then we’ll build one ourselves.” In just a few months, a machine took shape that impressed with a robust mast, solid Kelly bar, powerful hydraulics and innovative cylinder feed – logically tailored to pile drilling. The first trials quickly demonstrated that this rig would fundamentally change site practice – where it was previously possible to install two piles in one week, the new machine was able to install multiple piles per day.



**1** | First pile foundation with a BG 11 equipped with auger in Wertingen in 1981

**2** | Foundation work for the Burj Khalifa (2004) – the tallest building in the world at 828 m

**3** | In 2022, Bauer introduced its multifunctional BG 33 H all electric on the market.

**4** | A glimpse into the cab of a BG 30 – this equipment attracted a great deal of attention at bauma in 1989.

**5** | Total control: Today, dozens of sensors provide the basis for the powerful B-Tronic system.

**6** | For the glass dome of Berlin's Reichstag building, Bauer drilled the required foundation piles in the 1990s.

**7** | BG 55 power pack – currently the largest Bauer drilling rig



## Girls' Day

Experiencing technology first hand

APRIL 3

Since it was first introduced, Girls' Day has been a long-standing event on the calendar for many companies in the BAUER Group. And the event is popular. At Bauer in Schrobenshausen, nearly 20 girls from various schools in the region came together in the teaching workshop on April 3. In four groups, they passed through four stations where they were given different tasks to handle: They soldered an electronic cube, mounted a smartphone holder, replicated a pneumatic circuit and engraved their names on a bottle opener using the CNC cutter. The proud participants were allowed to take their finished projects home with them.



At Bauer in Hamburg, students were given the opportunity to visit the soil treatment center. Since the initiative has now evolved into Girls' and Boys' Day, the colleagues there welcomed both female and male students. After an exciting morning and a quiz, the young guests were allowed to ride around on a wheel loader.

## Dates & Events

APRIL 7-13

### **bauma 2025**

Innovative equipment, sustainable drives, strong response

With its equipment and solutions for specialist foundation engineering, the BAUER Maschinen Group set standards once again at the bauma 2025. Thousands of visitors from the industry flocked to the BAUER City to experience the latest developments and technologies at first hand. The range of exhibits included the proven Bauer drilling rigs, diaphragm wall equipment and drilling tools alongside products from the subsidiaries KLEMM, RTG and Bauer MAT. As in previous years, Eurodrill was represented at bauma with its own stand for drill drives.

One particular highlight was the new cutter system BCS 185 power pack, which enables flexible selection between an electric and diesel drive thanks to its modular drive concept (see p. 12 et seq.). The eRG 21 T hybrid from RTG Rammtechnik also attracted attention: The combination of a 430 kW diesel engine and a 88 kW electric engine makes it possible to operate with up to 68% less CO<sub>2</sub> emissions. Among other exhibits, KLEMM Bohrtechnik presented the new KR 806-4E, an enhancement of the electrohydraulic drilling rig

# Bauer Geotechnical Day 2025

## Solutions for the challenges of the future

In April, Bauer Spezialtiefbau welcomed around 80 international guests to Bauer Geotechnical Day. This event held with the motto “Global Experts for Geotechnical Solutions” treated participants to an exciting program of presentations and project insights as well as interactive discussions.

From dam structures on Vancouver Island to geothermal heat drilling in the Philippines, the presentations from this first thematic section

demonstrated how geotechnical projects are being implemented worldwide. Dr. Assaad Salama from Salama Structural Engineers provided insights in the foundation methods used when constructing the Al Habtoor Tower in Dubai. Other presentations shed light on work under extreme conditions, for example on Lihir in Papua New Guinea, above the Arctic Circle in Diavik, Canada or off the Atlantic coast in France for an offshore foundation. Prof. Dr. Roberto Cudmani (Munich Technical University) gave a guest lecture about a project in Rosenheim to finish this thematic section.

In the second section, the presentations focused on innovative approaches for soil improvement and digitalization that are setting increasingly higher standards. The event concluded with a view to the future and exciting prospects for 2025. Bauer Geotechnical Day made one thing clear: There are no limits to geotechnical engineering.



KR 806-3E. BAUER MAT Slurry Handling Systems presented the new colloidal mixer CMS 50 and the newly fully automated injection plant IPA 250-E. One impressive innovation project on display at the Bauer stand was the prototype for electronic Cutter Soil Mixing (eCSM).

Wulf Flos, Managing Director of BAUER Maschinen GmbH: “We rely on strategic partnerships and out-

standing service. Once again, bauma 2025 demonstrated that we are advancing the industry with state-of-the-art technologies, sustainable solutions and low-emission drive systems. This was confirmed by the excellent order intake recorded during the trade fair. We received excellent feedback from customers about our BAUER City and the exhibited equipment.”



**Our bauma  
highlights 2025**



**Go to video**

JULY 10

## General Meeting

### Executive Board looks to the future

The Annual General Meeting of BAUER AG was attended by roughly 300 shareholders, guests and media representatives to learn about the company's developments and prospects at first hand. Together, Executive Board Member Lena Effinger and Interim Executive Board Member Klaus Pöllath gave an overview of the 2024 business performance as well as the ongoing year and an outlook for 2025. Despite the tense global economic and geopolitical situation, the Executive Board members were optimistic: "The high volatility on the world markets and geopolitical

uncertainties are posing major challenges for us and generating uncertainty for our business as well. But with creativity, passion and determination, we will stay the course together even in these stormy times."

In 2024, the BAUER Group considerably increased total Group revenues to EUR 2,183.4 million (+19.2%) and reduced the net debt to EUR 375.3 million. Looking at the central balance sheet figures as well, the company's performance in 2024 was encouraging. Despite the increased Group

## Dates & Events

SEPTEMBER 19

## Training Night

### Browse around, try out, decide

What apprenticeship is right for me? Young people and their parents found answers to that question at another Training Night. In September, the Training Center in Schrobenshausen opened its doors – offering an informative and entertaining evening with the largest training company in the region. The recipe for success, after many years now: a casual atmosphere and one-on-one conversations. Visitors were able to meet apprentices

and training officers in person and get informed about the 17 training professions offered by Bauer in Schrobenshausen alone. Students tested their abilities at interactive stations, from the drilling rig simulator to the forge. Training Manager Gerhard Piske also offered insight into career paths and opportunities at Bauer. The highlight of the evening: the live demonstration of a drilling rig on the plant grounds in Aresing.



revenues, the total assets remained nearly constant at EUR 1,683.6 million. At the same time, the net debt was further reduced to EUR 375.3 million. The ratio of net financial liabilities to EBITDA decreased to 1.68 – a new historic low level.



SEPTEMBER 23

## Kick-off

### Launch of Deep Sea Sampling II

A top-class consortium of industrial and scientific professionals gathered together at the headquarters of BAUER Maschinen GmbH to officially launch the innovation project Deep Sea Sampling II. The project’s goals are to develop and evaluate technological approaches for potential exploration of deep sea storage facilities, with a particular focus on environmental protection and minimizing the ecological footprint. The research project is subsidized by the Federal Ministry of Commerce and Energy (BMWE). “Raw materials such as copper are essential for energy transformation and digitalization. Deep Sea Sampling II aims to demonstrate ways of extracting these metals with minimal disturbance of the natural environment,” remarked Dr. Matthias Semel, coordinator for the overall project from BAUER Maschinen GmbH.



# News



## Official reopening

After completing the final phase of construction, the newly renovated BAUER-Strasse was officially reopened on May 6, 2025. The ceremony was held in front of the main entrance to Bauer's head office in the presence of executives and project managers, representatives from the Schrobenhausen City Administration and the City Council along with the engineers involved in the project, the company executing the works, as well as Margit and Thomas Bauer representing the Bauer family.

## Industry meets education

In late May, teachers from the Neuburg Vocational School (Department of Construction Equipment Operation) visited the BAUER Training Center for practical continuing education. The goal was to combine teaching theory with practical insights. The agenda included technology for modern drilling rigs, exercises using the simulator and practical operation of a Bauer drilling rig. Dialog and practical content made the day a valuable experience – and underscored the importance of collaboration between industry and education.



## GWE re-certified as a TOP training company

GWE has once again been certified by the Braunschweig Chamber of Industry and Commerce (IHK) as a "TOP training company". The extensive list of criteria includes an assessment of all training stages, from recruiting all the way to auditing. "Our trainees are part of our future. We are dedicated to giving them optimal assistance and preparing them for their future responsibilities. In recent years, we have achieved a 100% hiring rate," remarks GWE Managing Director Markus Hollmann. The certification is valid for three years and can be extended with a new audit.

### Education for children in South Africa

Bauer Technologies South Africa provides support for the Kwasa Education and Skills Trust. This foundation was established in 2021 to help schoolchildren in South Africa from underprivileged backgrounds to continue their schooling. The goal is to assist children through 12th grade so that they can determine their future educational and career paths independently. To launch this cooperation, Bauer provided backpacks for the schoolchildren and financed a day-long math workshop.



### Connected across generations

The traditional reunion of retirees was held in October. Head of Personnel Frank Seitz welcomed the guests. One special item on the agenda was a presentation of the planned expansion of the Aresing plant given by Wolfgang Rauscher, Head of Production worldwide. In addition, representatives from all three company segments – Geotechnical Solutions, Equipment and Resources – reported on current projects, developments and technical innovations. At the communal dinner, there was plenty of opportunity for personal conversa-



tions, memories and new encounters – precisely what has made this reunion so special for years now: shared moments and the lasting connection between Bauer and its former employees.



### STUVA 2025

The STUVA Expo 2025 in Hamburg brought together industry experts on November 25 and 26 for an intensive exchange on tunneling and infrastructure projects. The Bauer team was on site to explore new ideas in technology, sustainable solutions, and future project developments, while also expanding the professional network. The event proved to be a great success, marked by inspiring conversations and truly interdisciplinary dialogue.

### **KLEMM doubles its capacity**

With the completion of its new plant, KLEMM Bohrtechnik has reached an important milestone. The new production hall, measuring 184 m in length and 64 m in width, significantly expands the company's manufacturing capacity. Representing an investment of roughly EUR 30 million, the facility provides the foundation for the gradual relocation of production from the current site. At the same time, extensive restructuring measures are planned at the existing plant, including the expansion of service and repair operations. The new facility operates entirely without fossil fuels and draws on geothermal and air-source heating



as well as a 750-kWp photovoltaic system. As part of this expansion, the workforce is expected to grow from the current 290 employees to approximately 400 over the next few years.



### **35 years**

For more than three decades, BAUER MAT Slurry Handling Systems has been developing and manufacturing equipment for mixing, conveying, and separation technology. Looking back: In the early years, the company focused on mixing plants and systems for slurry preparation, along with various special-purpose solutions. Later, all activities involving slurry handling for specialist foundation engineering, tunneling, deep drilling, and the construction materials industry were combined under MAT Mischanlagentechnik GmbH; in 2015, the company became a branch of BAUER Maschinen GmbH. A key milestone followed two years later with the company's entry into the mechanized tunneling market: the launch of the BE 2550, still the largest separation plant of its kind. "Our technology is constantly evolving, but our commitment remains the same: delivering robust, practical solutions for the jobsite," says Branch Manager Rainer Rossbach. "This mindset has carried us through 35 years – and will continue to shape the decades ahead."

### **Award for excellence in research**

In October, Dr. Patrik Wenzl presented the 2025 Ohde Award on behalf of BAUER Spezialtiefbau GmbH. Each year, Bauer donates this EUR 1,000 prize to students of geotechnical engineering at TU Dresden. It is awarded for an outstanding diploma thesis, dissertation, or habilitation in the field of geotechnics. This year's recipient was Erik Ludwig, honored for his diploma thesis on "Anisotropy in Clays with Interbedded Sand Layers."





### 20 years since the rebuilding of the Frauenkirche

Like a phoenix rising from the ashes – that’s perhaps the best way to describe the remarkable story of Dresden’s Frauenkirche. The church was completely destroyed during World War II, and it wasn’t until 1993 that the painstaking process of clearing the rubble and reconstructing the iconic dome began. Leading the work at the time: SPESA Spezialbau und Sanierung GmbH. Since 2005, the Baroque church has once again shone in its full historic splendor. In 2025, it celebrated a significant milestone: on October 30, the consecration of the rebuilt Frauenkirche marked its 20th anniversary.

### International exchange

Together with its distribution partners BAUER Equipment America and Equipment Corporation of America (ECA), KLEMM Bohrtechnik welcomed a large group of customers from the United States and Canada last fall. The program included factory tours through the production areas, an introduction to the new assembly site, and impressive live demonstrations of the drilling rigs.



### How are Bauer rigs transported?

The hydraulic jack-up system allows the base unit to raise and lower itself – completely without crane support. The result: faster mobilization, improved safety, and significantly more efficient logistics on the jobsite.

### New Contracts for Schachtbau Kazakhstan

TOO SCHACHTBAU Kazakhstan (SBK) is set to significantly expand its activities in 2025. In Khromtau, the company has secured new contracts from its long-standing customer AO TNK KAZCHROME. Valued at roughly €22.5 million, the agreements cover more than two years of drift development and excavation of underground chambers at the -402 m level, as well as an additional three-year extension for operating the mine-ventilation shaft. SBK also achieved a key strategic milestone by winning a second major client. QAZAQ Kalium is developing a large potash deposit in western Kazakhstan. For the Satimola greenfield project, QAZAQ Kalium signed an initial contract on November 7, 2025, worth €55.2 million. Under the agreement, SBK will carry out freezing-drilling work for two shafts down to 380 m, along with installation and commissioning of the freezing plant.



**How does it work?  
Just scan the code.**



**Watch the video**

### **VDMA committee meets at Bauer**

In early February 2025, BAUER Maschinen GmbH hosted the 57th meeting of the VDMA's central "Quality & Management" committee. Roughly 25 specialists from different mechanical engineering companies came together to discuss current topics in quality management. The main topic of the conference: internal audits. One particular focus here was on how companies can use audits as tools for transferring knowledge and identifying potential (not pictured).

### **Powerful and quiet**

In Hellerup, Copenhagen, the eRG 19 T hybrid demonstrated how performance and sustainability can go hand in hand. Working on an urban project, the rig operated quietly, powerfully, and with exceptional efficiency – an important advantage, especially in sensitive urban environments. (below)

### **More than 150 Christmas wishes granted**

There's something magical about the sparkle in children's eyes, carefully wrapped gifts, and the anticipation of the holiday season – each year, these moments come together for BAUER AG's Wish Tree initiative. On December 18, the festive handover of presents that had been collected over the previous weeks took place. With remarkable dedication and a big heart, the Bauer staff once again fulfilled more than 150 Christmas wishes. The wishes had hung on a beautifully decorated tree at the company's headquarters in Schrobenhausen. Thanks to this collective effort, four social organizations were supported: the ARCHE Dollnstein children's home, A.p.e. Familienhilfe, the Bambini Haus Ingolstadt, and IG Eltern. All of them assist children and families who often cannot afford larger gifts – making the joy at receiving these lovingly wrapped presents all the greater.



### Innovation made by Bauer

The latest edition of our innovation magazine ProFound presented the MultiShaft Mixing System from RTG Rammtechnik along with other innovations: a versatile and economical solution with a quadruple mixing drive. Following the theme of "A site in motion", you can learn more about B-Tronic 5 as well as our Smart Grab Control and Stability Plus assistance systems. Additional digital innovations include tracking and tracing for drilling tools as well as the in-house platform Moniman. Bauer is making a contribution to a climate-friendly future with the new mobile soil treatment plant. Sounds interesting? Then scan the code to find out more!



### Innovation made by Bauer



Latest issue



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