

BAUER REVIEW

For Employees and Friends of the BAUER Group Companies

N° 54 | 2024

EXPLORING PERSPECTIVES

■ Geotechnical Solutions: Technical, digital, team-oriented

■ Equipment: Perspectives for sustainable drive types

■ Resources: One project, many perspectives





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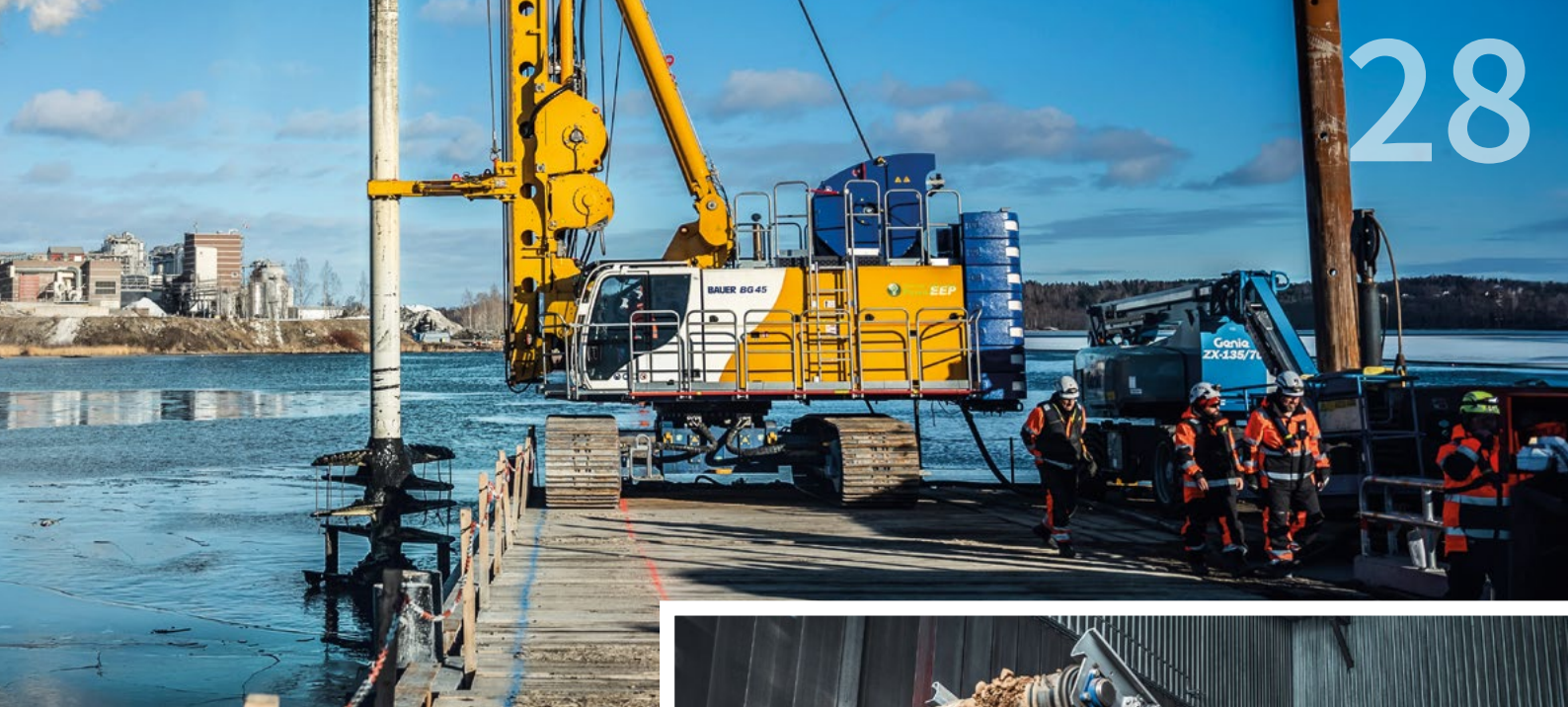
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Whether soil mixing (top), soil treatment (right) or alternative drives (bottom right): our sites uncover various perspectives on sustainability that are both sophisticated and groundbreaking.



Even more exciting projects, groundbreaking innovations, inspiring career stories and a whole lot of more can be found on the Instagram channel of the BAUER Group. And the podcast "Echt, wild & bodenständig" (Authentic, wild & down to earth) is all about the people at Bauer. Tune in now!





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We need to engage with new perspectives: whether in our sector, in collaboration with our partners or when shaping our path.”

Peter Hingott · Executive Board
BAUER Aktiengesellschaft

Foreword

Dear readers,

This year's edition of the BAUER Review is dedicated to "Exploring perspectives". This is an invitation to adopt new perspectives, discover hidden opportunities and prepare ourselves for future challenges. In an era where rapid changes are the order of the day, it is increasingly important to remain flexible and open. The only way to stay successful in the future and obtain long-lasting success in a competitive market is to engage with fresh ideas and innovative approaches. This means not only questioning existing processes, but also actively seeking out new paths.

The last months have demonstrated how crucial it is to stay flexible and remain open to transformations in a dynamic world. Despite the numerous changes and challenges in the company as well as in worldwide politics and the economy, we were able to conclude the 2023 business year successfully. And that positive development has continued in 2024. We anticipate a solid year as well as increases in our revenue and earnings figures. In addition, our order backlog and order intake rose significantly once again. I'm especially proud to report that this growth comes from all three segments, and especially from the Geotechnical Solutions segment.

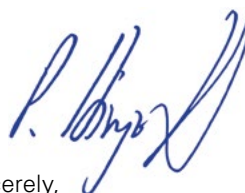
But we won't just rest on our laurels. Given the numerous global crises, the ongoing volatility of construction markets as well as the increasingly challenging price situation and competitive environment, we need to constantly engage with new perspectives: whether in our sector,

in collaboration with our partners or when shaping our own path.

In this issue, we grant you insight into impressive projects yet again: For example, digitalization is one of the key watchwords for a Bauer Spezialtiefbau project on a lock near Stuttgart. And a geothermal heat project executed by our Bauer Resources team in Frankfurt am Main demonstrates the diversity of modern site work. You will also learn more about the various drive types for our equipment, which allow us to offer our customers a great deal of flexibility on site: from conventional or hybrid all the way to electric drives. We also shed light on ground-breaking trends in this issue, such as soil mixing using the cutter soil mixing method, innovations in cutting technology or the sustainable circular economy in the field of soil treatment.

I would like to warmly welcome you to join us in exploring the perspectives that can lead us forward into a promising future.

I hope you enjoy reading!



Yours sincerely,
Peter Hingott

Facts & Figures

SOME HIGHLIGHTS FROM
THE WORLD OF BAUER



Environmental product declarations, known as EPDs for short, deliver transparent environmental impact data verified by independent experts. In February, Bauer Spezialtiefbau received an impressive **six EPDs** for the Mixed-in-Place method.



212.9

million m³

With a volume of **roughly 212.9 million m³**, the Bleiloch reservoir in Thuringia is the largest in Germany by capacity. In late 2023, the plant technicians from Schachtbau Nordhausen replaced the bottom drain valves – under full dynamic pressure at that!

Quality in a square

Exactly **70 years** ago, Schrobenhausen-based graphic designer and award-winning artist Rudolf Höfler was tasked with the first drafts of the Bauer logo. Three decades later in 1984, the familiar blue-yellow design made its first appearance and began its victory tour around the specialist foundation engineering industry with the progressive international expansion of the Group.

40

years

Four decades ago, the first Bauer cutter arrived on the market. In just four months, this innovation conceived by Bauer engineers was designed, constructed and brought to the site – with resounding success: The prototype was used to construct a 60 cm thick and 40 cm deep cut-off wall at Lake Brombach.

1,900

guests

...from 72 countries visited the in-house exhibition of BAUER Maschinen GmbH in April. Learn more about the event on page 45.

450million EUR

Since May, BAUER Spezialtiefbau GmbH has been executing the new replacement structure of the Kriegenbrunn Lock together with two joint venture partners. Net order value: **around EUR 450 million**. The official ground-breaking ceremony took place in late July.



7,500

The Karlheinz Bauer Award is presented annually for an outstanding doctoral thesis from the area of Construction and Environmental Engineering at Munich's TUM School of Engineering and Design. BAUER AG donates the **prize money of EUR 7,500**. The award winner for 2024 is Dr. Daniel Herzog. In his dissertation, he developed a method for assessing sites as well as structural/design measures. These methods make it possible to analyze, for example, how a speed restriction impacts the health of urban residents.



30 YEARS

Happy Birthday! Party vibes in Hirschfeld, Saxony: The soil treatment center here opened **30 years ago**. With an area of 24,500 m², the site is now the second-largest location of Bauer Resources.



55 participants

In March, BAUER Spezialtiefbau GmbH organized another networking event for its young professionals. **Around 55 participants** from India, Canada, Egypt, Germany and many other countries met in the desert city of Dubai to attend this multifaceted event.



During the Entrepreneur Day of the Bavarian Construction Industry Association in May, the innovation awards for the Bavarian construction industry were presented. In the category of "Innovative work processes," BAUER Spezialtiefbau GmbH was recognized for its continuous process monitoring with IoT devices in specialist foundation engineering. Patrick Wenzl (center), Head of Research & Development in the Technical Services Department, accepted the award on the company's behalf.



The soil improvements for the Hessigheim Lock are planned for completion in early 2026 after a construction period of 29 months.





Technical, digital and team-oriented

THE HESSIGHEIM LOCK PROJECT SETS NEW STANDARDS FOR EFFICIENT AND SUSTAINABLE CONSTRUCTION.

Top technical performance, excellent teamwork and digital precision: all these factors join forces for the Hessigheim Lock project. Here, the construction soil is currently being improved on an approx. 1,900 m² site. The Waterway Construction Authority of Heidelberg tasked a consortium consisting of BAUER Spezialtiefbau GmbH and BTR Bohrtechnik Roßwag GmbH & Co. KG to carry out the necessary works. Works have been ongoing since October 2023 and are planned for completion in February 2026. To get the lock ready for the future, this project centers around the latest methods and equipment technology. Not to mention a great deal of know-how.

Technology meets expertise

The construction process is divided into five phases: First, the measuring points were set up and extensive geophysical tests were carried out to document the initial situation and plan

the next steps. In phase two, it's time for the main task: The drilling team executes a total of 330 boreholes up to a depth of 33 m using the sonic drilling method. To accomplish this, BTR uses a special drilling rig with the measurement solution 3D-GNMSS. With this technology, the grouting rods are positioned in the construction soil based on their target coordinates. These are then handed over to the experts from Bauer Spezialtiefbau. The KLEMM KR 806-2DB rig particularly configured for compaction grouting is used here to precisely insert a specially developed mortar into the disrupted soil strata. The plan is to inject a total of 8,000,000 l of mortar into the construction soil using a precise step-by-step procedure. It is anticipated that this phase alone will take 20 months. During the third phase, geophysical examinations and cable core drilling works will be carried out once again. Phase four consists of targeted follow-up treatment with cement injections to fill remaining gaps. Finally, a measurement program with drilling and geophysical examinations will provide a quality control and an assessment of the future stability of the lock.

This project involves enormous challenges. For instance, the unstable construction area near the lock makes vertical work impossible. Furthermore, due to tight spatial conditions the drilling work has to be executed at an incline from a just three meters wide bicycle path. With a great deal of persuasion, Senior Site Manager Wolfgang Benz also obtained the approval of residents to use their gardens for roughly 2.5 years. "We had to get creative and convince the residents that our project is also in their interests," says Benz. The experts from Bauer Spezialtiefbau carefully prepared the site, stripped the topsoil, then gravelled and installed a concrete slab to control process water.

Teamwork does the trick

The exciting phase of design and preparation began for Bauer even before the official groundbreaking. A detailed 3D model of the site was created based on the owner's initial plans. This was the first step to fulfil the complex requirements of the project, from elaborating a mortar material design to establishing a highly precise tachymetric measurement system that monitors lock safety around the clock.

On the site itself, every day begins with starting up the equipment and testing the material batches in the site lab. The specialists control the machinery precisely and initiate new injection points. In between preparing the injection mixtures and carefully cleaning the equipment in the evenings, which takes up to two hours, there is little time for



To safeguard the lock, Bauer executes the necessary grouting work with the configured KLEMM KR 806-2DB.

breaks. "That's why we agreed on a working time model adapted to the site conditions. We work longer hours from Monday to Thursday, then we take Fridays off. The team really appreciates that," reports Project Manager Andreas Twrznik.

At the site office, daily routines center around coordination and planning. This is where all the individual elements converge: Production data are analyzed and carried over into the 3D model, while ongoing site monitoring is interpreted to determine how to proceed. "Our daily juggling act is to keep the site running efficiently while also striking a balance between the owner's interests and the team's interests," remarks the project manager. But the biggest challenge in practice is to fill in the injection material precisely into the construction soil without jeopardizing the lock or its historical structures.

The diverse nature of the project is also evident from the different departments working hand in hand: The Technical Service Department

from BAUER Spezialtiefbau GmbH takes care of the material design and monitors quality, while the Design Department is in charge of drawings and the 3D model. The Equipment Department makes sure that all equipment operates smoothly. Detailed reports are created using the fielddata platform. Finally, the Product Group Permeation Grouting executes precise grouting work including comprehensive engineering and consulting. Andreas Twrznik proudly sums it up: "Together we make a strong team that masters every challenge."

Thoroughly digital

Digital precision is essential for this project. For instance, the owners have access to continuous digital documentation and a 3D model of the site at all times. In addition, a tachymetric monitoring system



Harnessing their full team power and precision, the experts from Bauer Spezialtiefbau master all the challenges.



With the help of the 3D model, the geometry can be mapped along with injection volume and pressures.

examines the site 24/7 and reports any changes to position in real time. Even during the design phase, Bauer's expert team relied on state-of-the-art building information modeling (BIM) technologies in order to plan and coordinate every drilling and injection operation down to the millimeter. "Thanks to a detailed digital soil strata and a geotomography model, the subsoil can be examined as precisely as a doctor's CT scan," reports Wolfgang Benz. "These virtual insights enable us to examine the soil structure in detail and optimize injection strategies to proceed efficiently and in a focused manner."

The centerpiece is the BAUERdigital Portal, which acts as the central access point for the digital applications. Here, it is possible for clients, consultants, and execution staff to view the current status of injection work, monitor progress and assess the effectiveness of the activities. The model is not just a visual 3D representation, but in fact a digital twin which maps the geometry along

with injection volume and pressures. Scripts for transferring the equipment data into the 3D model ensure not only precise documentation of injection work, but also make it possible to adjust the injection concept as needed based on the latest data.

One particular focus is on the use of machine data collected by the injection equipment. During the injection work, the sensors record all relevant data, which are saved, transferred, automatically analyzed and integrated into the 3D model. In this way, every injection is documented

precisely and the quality of the soil improvements can be traced.

Marcus Daubner, Head of Digitalization at Bauer Spezialtiefbau, emphasizes: "With these digital solutions, we are not only making the construction process more transparent: We are also creating a solid foundation for future projects based on cooperative collaboration between all parties involved. This project is an excellent example for how innovative technologies are paving the way for sustainable and efficient construction."

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A construction project is only as successful as the team which masters every individual step with passion and precision.”

Andreas Twrznik · Project Manager
BAUER Spezialtiefbau GmbH

Go to video
Experience the diversity
of the site in Hessigheim
at first hand!



BAUER eBG 33 at the HS2 infrastructure project in Great Britain





The quiet revolution – Perspectives for sustainable drive types

Electric drives play an increasingly important role on construction sites, as they emit fewer harmful emissions compared to conventional combustion engines. In addition, electric drives are generally quieter than conventional combustion engines – an important criterion especially in densely populated areas. This is the reason why noise emissions are increasingly becoming a decisive factor in tenders. The result: The transformation of mobility is accelerating.

But it is also true to say that the largest sources of greenhouse gases remain cars, heating systems and energy-intensive industries. Construction machinery is further down the list of relevant emission sources. Another factor is that due to the lower quantities, the development effort for electrified construction machinery is significantly higher than for cars, for example. “Nevertheless, as a mechanical engineering company for specialist foundation engineering, we naturally want to make our contribution to lowering emissions, resulting in increased sustainability on construction sites,” says Tobias

THE ELECTRIFICATION OF CONSTRUCTION MACHINERY IS PICKING UP SPEED. BUT OTHER DRIVE CONCEPTS ALSO HAVE THEIR PLACE.

Rager, CCO/CTO of BAUER Maschinen GmbH. And Bauer has succeeded in this with a range of electric and hybrid machines, which a lot of possibilities in terms of operational flexibility.

Emission-free drilling

In 2021, Bauer launched its first electrified drilling rig on the market, the cable electric eBG 33. With a drive power of more than 400 kW, it falls in the mid-range segment of the drilling rig series and covers the entire range of possible applications of the equivalent diesel-powered models on the construction site, starting with the classic kelly drilling method to high-performance processes such as soil mixing techniques (e.g. cutter soil mixing) or drilling using the twin rotary system. Last year, the equipment gave an impressive demonstration at London's HS2 infrastructure project that heavy, electrically powered construction machinery could not only perform the same tasks as conventional diesel-powered models, but also fully exploit the advantages

of zero emissions and noise reduction on the construction site and for local residents. This meant that the residents of the adjacent apartment block were spared a temporary move through the use of the eBG 33.

In 2022, Bauer then presented the eBG 33 H all electric, its first battery-powered multifunctional drilling rig specifically for Kelly drilling and light single-pass applications. Here, not only the diesel engine was replaced by a powerful electric drive. In addition, all significant main consumers such as the rotary head and main winch are powered purely by electricity, with optimal efficiency. Battery-operated, the equipment is not tied to a permanent cable connection. With an additional cable connection to construction site power with max. 125 A, which acts as a reach extender, use over a longer period of time is also possible. Zero local CO₂ emissions and extremely low noise levels go without saying. Equipment features include the latest version of the B-Tronic 5 control system, which elevates working with a Bauer drilling rig to a new level in terms of user-friendliness and data networking.

Duty-cycle crane with electric power

But the portfolio for equipment with electric drive is not limited to drilling rigs. With the eMC 96, Bauer also offers an electric duty-cycle crane. It has a 550 kW three-phase asynchronous motor. An integrated frequency converter ensures outstanding versatility. What makes it unique:

Thanks to the different electric connection concepts, it can be operated with a cable or unplugged using a stand-alone external secondary drive (power unit or power pack), depending on the existing electrical infrastructure. This year, the eMC 96 was on its first jobsite on a cutting project for a new subway station in Hong Kong.

KLEMM's impressive e-drilling rig

In November 2023, the new KR 806-3E electrohydraulic anchor drilling rig from KLEMM Bohrtechnik GmbH was premiered on a construction site after several years of intensive development – a real milestone. As the world's first functional electrohydraulic anchor drilling rig with battery storage for overburden drilling using the rotary impact drilling method, it set new standards for BAUER Funderingstechnik B.V. in the construction of micro piles along the A9 motorway in the Netherlands. The KR 806-3E not only worked extremely quietly, but above all, impressed with its extraordinary energy efficiency: As the electric motor has an efficiency of 0.92 compared to a diesel engine with 0.4, the electric drilling rig used nearly three times less energy on the construction site.



Successful first operation of the eRG 19 T hybrid on a project at Friedrich-Krause-Ufer in Berlin.



The electric anchor drilling rig KLEMM KR 806-3E gave a convincing performance in a direct comparison on the construction site.

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*Much of what
we do today is real
pioneering work.*

Tobias Rager · CCO/CTO
BAUER Maschinen GmbH

Hybrid – the best of both worlds

Hybrid construction machinery also offers a number of advantages, first and foremost improved energy efficiency. By combining internal combustion engines and electric motors, hybrid units can lower fuel consumption while reducing environmental impact. Another advantage, as with the electric equipment, is the significant noise reduction. The biggest advantages, however, are their flexibility and versatility, as they can be used in different environments thanks to the combination of combustion engine and electric drive. As the first hybrid version in the telescoping leader segment, RTG Rammtechnik GmbH set new standards at the first presentation at Bauma 2022 with its eRG 19 T hybrid. This year, it was followed by its “big sister,” the eRG 21 T hybrid. Both are characterized by demand-specific power control shared between the electric drive and diesel engine, which ensures optimal use of these two drive types.

Research project for fuel cell drive

However, Bauer is not only focusing on electric or hybrid drives. Intensive research is also being carried out into other drive types. In October 2023,

the kick-off event took place for a research project with the potential to catapult the carbon footprint of specialist foundation engineering equipment to a whole new level. The goal: climate-neutral operation based on a fuel cell system. The consortium partners are BAUER Maschinen GmbH along with the Professorship for Fluid Systems Technology and the Chair for Fluid Mechanics at the Friedrich-Alexander University of Erlangen-Nuremberg, Germany. They are working together to develop a concept for operating construction equipment in specialist foundation engineering with zero CO₂ emissions. The plan is to integrate a drive system comprising a hydrogen fuel cell, along with all necessary peripheral components (balance of plant), into specialist foundation engineering equipment from Bauer. The research project planned for three years, with its official title “Modular drive system with fuel cells for applications in specialist foundation engineering”, has received funding from the Federal Ministry for Economic and Climate Action as part of the 7th Energy Research Program, a grant of approximately 2.5 million euros. The project represents another logical step towards the goal of sustainability.

Many paths, one goal

“Today, no one knows with absolute certainty which technological solution will prevail in which application and in which market,” according to the website of the German machine and plant manufacturing association (VDMA). In addition, the infrastructure required for the use of electrical equipment is still far from being available on every construction site. The mobility of the future therefore needs variety and an intelligent mix of alternative drives and fuels. Efficiency improvement, resulting in the energy optimization of construction machinery, will remain another important component – a topic that Bauer has already been intensively promoting for years under the keyword Energy-Efficient Power EEP. “Much of what we do today is real pioneering work,” says Tobias Rager. “In addition, there are currently a lot of developments in the market for mobile construction machinery. The prospects are exciting!”

*Energy-Efficient
Power EEP
includes numerous
modifications to
improve efficiency.*



A shining example: The geothermal probe system installed in Frankfurt, Germany is a significant step on the way to the heating revolution.





One project, many perspectives

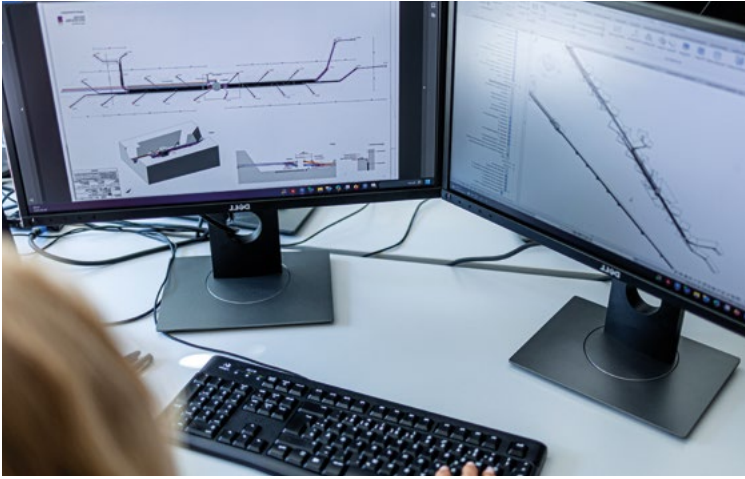
WHEN THE NEW HOUSING DEVELOPMENT IN FRANKFURT'S HILGENFELD DISTRICT IS COMPLETED, ONE OF ITS MOST IMPRESSIVE FEATURES WILL BE ITS SUSTAINABLE HEATING SUPPLY.

Every project is unique, but some stand out in particular. Without a doubt, the geothermal heat project in Frankfurt's Hilgenfeld district is one of them. Working on behalf of the regional energy supplier Mainova AG, the team from Bauer Resources installed a geothermal probe field for a new housing development in which the municipal construction group ABG FRANKFURT HOLDING GmbH is constructing 54 apartment buildings with 860 apartments as well as commercial spaces. From design to execution and beyond, the project brings together various perspectives: the thorough planning of the draftsmen, the technical sophistication of the equipment technology, the practical experience of the site managers, and the remarkable vision of the technical competence center.

Quite a complex task

Lines, symbols, markings – a complex network extends across the screen. Though it almost looks like a treasure

map, this is actually the detailed execution plan. Long before the first drilling rigs arrived in Frankfurt, the experts carefully planned their upcoming work over a period of three months. After all the available information and drawings had been thoroughly reviewed, the next step was to prepare a 3D model. Comprehensive data and parts were then derived from this model: 850 formed parts, 10 km of pipeline and a considerable quantity of excavation material. "These precise calculations are crucial for designing the materials procurement process efficiently and planning the construction process smoothly," explains Lisa Gottschalk, Draftswoman at Bauer Resources. Based on the 3D model, an installation plan was drawn up for the site team. "When we handed over the drawings to the project development team, even that felt great – after all, the geothermal probe field is quite complex. But it's even better when everything runs smoothly," emphasizes Markus Goldau, Project Engineer at Bauer Resources. The work of the specialists from the Geothermal Heat department is far from over, however: "During the implementation phase, we will continue to supervise the project," adds Markus Goldau. On site, the volume of excavated soil was regularly compared with the plans. All deviations were fed into an audit plan that documents every detail and allows for a review at the end of the process. This ensures quality and is essential for future maintenance work.



3D model of the project in Hilgenfeld, Frankfurt

Relying on the right resources

What does it take to transform the drawings into reality? That's right: skilled personnel and powerful equipment. "Given the magnitude of this project, it was far from simple to coordinate everything," explains Jan Hansen, Head of Equipment Technology at Bauer Resources. During the peak phase, many employees were working simultaneously on the site, including three drilling teams – each with an equipment operator and drilling specialist. The number of machines in use was also impressive: three excavators, two wheel loaders, a telescopic handler, a silo mixer and last but not least, three drilling rigs. One of the drilling rigs was a new arrival: a KLEMM KR 805-3GW

dubbed "Frieda". Its strengths include powerful hydraulics, high drilling output and impressive energy efficiency. This made it the perfect tool for executing the 160 geothermal probes under a variety of geological challenges. Apart from the larger machinery, a fully automated pressure testing device was used for the first time to optimize workflows. The drilling personnel started the equipment by pressing a button, and the probes were then tested in a fully automated process, resulting in one hour saved per drilling operation. Given the number of drilling operations, that added up to a total of 160 hours. "Efficiency at the press of a button," summarizes the experienced equipment technician.

Geothermal heat is the future. With our sustainable projects, we are actively advancing the heating revolution.

Far from typical

"From the very start, work on the site was unusual for our employees. The soil alone was a unique challenge," explains Raphael Werner, Site Manager at Bauer Resources. The surface of the 17.7 ha site is covered with glacial loess loam, one of the most valuable soils in the world. As a result, soil conservation was a top priority. None of the construction vehicles was allowed to drive directly over the site. Instead, additional access roads were constructed and the soil was protected using wood chips and load distribution plates. Once this was completed, the drilling rigs approached and drilled one hole after another. The particular circumstances of the subsoil introduced several challenges: On the one hand, the drilling equipment had to be adjusted frequently due to the different soil strata. On the other hand, unanticipated flushing losses occurred when the drilling fluid seeped into the surrounding sediment and was lost instead of returning to the surface. Not an easy undertaking, but this was no problem for the experts. Afterwards, 160 geothermal probes from GWE GmbH were installed down to a depth



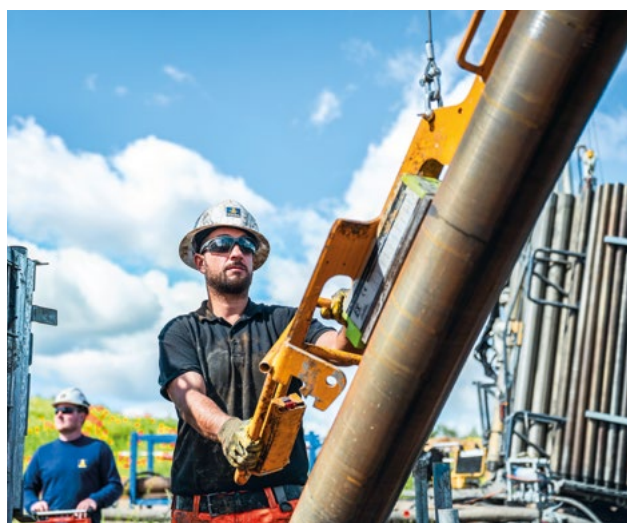
of 120 m. During the later phase in which the boreholes were grouted with thermally enhanced and magnetized special cement, resource consumption was much higher than planned in places, which required detailed coordination with various parties involved in the project. While the drilling work ran at full speed, the excavation work for the pipe trenches started in parallel. "Then this was followed by the most strenuous task: The experienced team laid more than 10,000 m of pipeline. Finally, the connections were established and the trenches were back-filled with soil. Now it's time to wait, since the geothermal heat system can't be put into operation until the first buildings are constructed.

A truly future-oriented project

One thing is already clear: The new housing development in Hilgenfeld will be greener than ever. This project will create an innovative climate protection district that will act as a shining example far beyond Frankfurt and Hessen. In part, this is because of the geothermal probe system. Combined with photovoltaic systems,

heat pumps and combined heat and power plants, 100% of the electricity and 65% of the heat will thus be generated on site. This will save nearly 2,000 t of CO₂ every year compared to conventional heat supply. The first steps toward the heating revolution have already been taken in Hilgenfeld, but in many cities this has yet to come. Bauer Resources is shaping the path

by continually expanding its Geothermal Heat division. "Geothermal heat is the future. That's why our team will continue to grow considerably in the coming years and developed into a cornerstone within our company. With projects like this, we are advancing the heating revolution," remarks Dominic Haidacher, Head of Geothermal Energy at Bauer Resources.



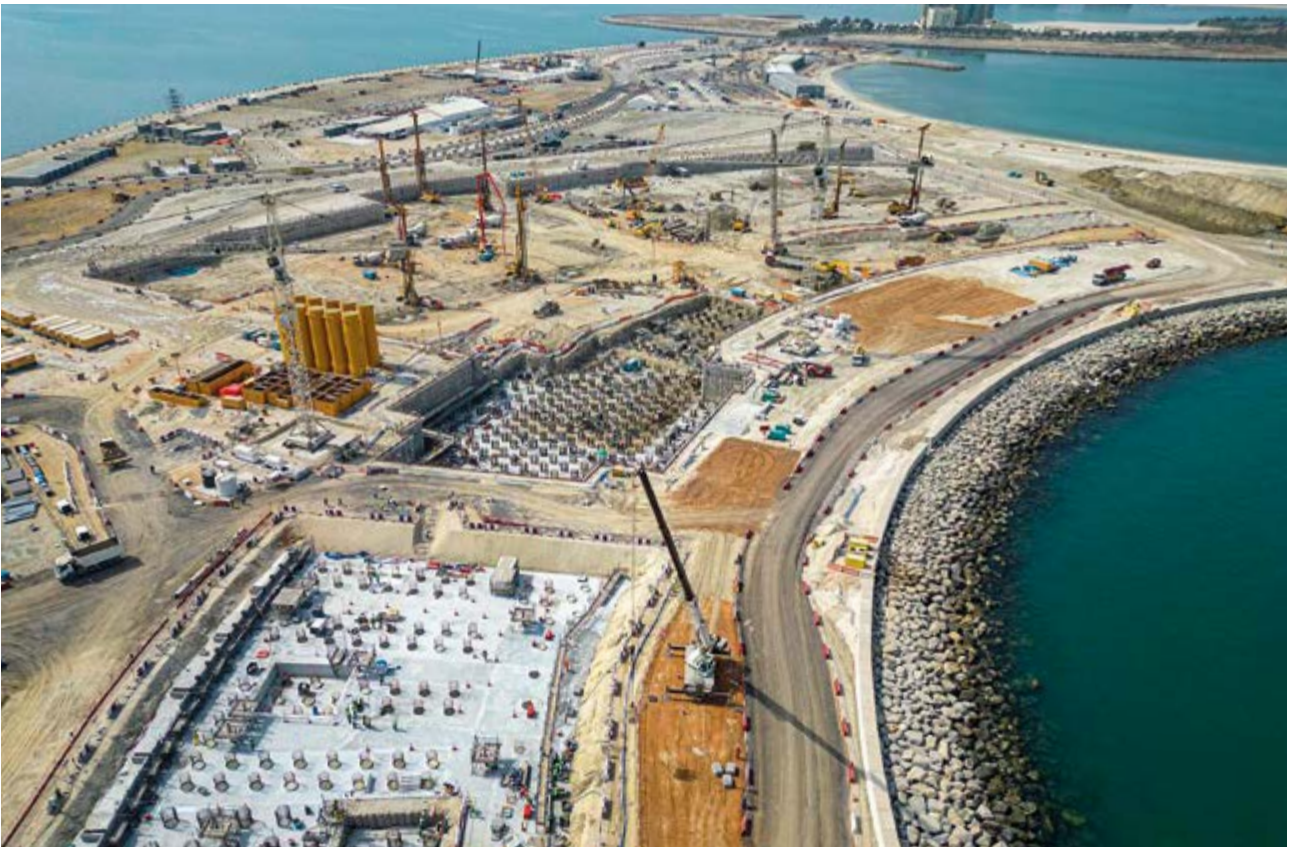
Three drilling teams worked simultaneously. (top)

160 Geothermal probes from GWE were installed down to a depth of 120 m. (left)



Worldwide

■ Geotechnical Solutions around the globe



UAE For an extensive construction project on an island in Ras Al Khaimah, Bauer carried out extensive work ranging from foundation piles and anchored shoring piles to soil improvement measures all the way to earth works.



United Kingdom For the world's first XXXL monopile factory for offshore wind farms, Bauer constructed around 1,500 bored piles and 5,500 CFA piles. The future production site extends across a 90 ha site in Teesside.

Worldwide



1 | Australia The Rockwood Weir project in Queensland encompasses the construction of a weir on the Fitzroy River for water supply, irrigation and flood protection. Bauer Australia installed 3,920 m² of cut-off wall here to mitigate erosion.

2 | Thailand For three underground stations on the MRT Purple Line South and an intervention shaft, Bauer constructed multiple cut-off walls and piles in Bangkok.

3 | Indonesia Bauer was involved in the construction of the first subway line in Indonesia. A total of 136 diaphragm wall elements were implemented to construct the underground supporting walls.

4 | Philippines Bauer installed bored piles up to a depth of 50 m with a diameter of 3 m to support the foundation during the extension of twelve bridges along the South Luzon Expressway.

5 | Dubai For Al Habtoor Tower, an 82-story ultramodern skyscraper, Bauer constructed deep barrettes along with additional foundation piles.



6



7



8



9

6 | Jordan During the rehabilitation and recovery of Dike 19 in Al Ghor Al Safi, Bauer was tasked with multiple specialist foundation engineering works including earth works, sheet pile walls and injections.

7 | Malaysia For the expansion of the Silk Highway, Bauer installed a total of 37 piles with diameters between 600 mm and 1,350 mm.

8 | Panama In total, Bauer executed nearly 17,000 m³ of diaphragm wall and HPI works for the new Line 3 of the metro. The connection between the above-ground and underground railway sections was established using the cut-and-cover method.

9 | India Bauer India constructed its deepest diaphragm wall element ever for the subway project in Patna, with a depth of 75 m: a record-breaking project for our colleagues and a particular milestone for the modernization of the local transport network.

10 | Canada Seismic upgrade of John Hart Dam: In order to increase earthquake security, extensive works are being carried out. Bauer has already installed a cut-off wall and is executing soil improvement measures.



10

Europe



1 | Netherlands The electric drilling rig KR 806-3E from KLEMM Bohrtechnik GmbH was used for the first time during the expansion of the A9 Highway to construct a total of 12,000 anchor piles for stabilization.

2 | Austria In the municipality of Sigless, a wind park was modernized. For this purpose, Bauer installed a total of 3,480 m of piles using the CFA method.

3 | Slovakia For the offices of the new, ultramodern Culenova City Center in Bratislava, Bauer executed 5,983 m of CFA piles along with an additional 3,071 m of temporary anchors.

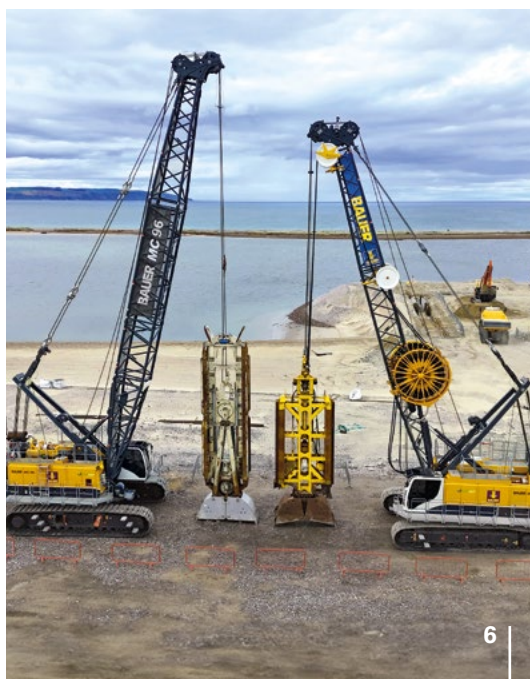


4



5

4 | Sweden Using the Deep Soil Mixing method, roughly 210,000 m³ of mixed columns were constructed under water to improve the soil. A Bauer mixing tool with a diameter of 3 m was used for this task.



6

5 | Switzerland In Aarau, the company Hirslanden AG operates the largest private clinic in the Swiss district of Mittelland. For the new construction of Building C, Bauer installed 4,000 m² of Mixed-in-Place wall up to a depth of 17 m.

6 | Scotland The port of Ardersier is being revitalized. Bauer constructed diaphragm walls up to a depth of 42 m and anchoring walls up to a depth of 27 m for a quay wall.

Germany



1



2



3

1 | Bad Wiessee During the new construction of the town center in Bad Wiessee, Bauer installed a secant pile wall, drilled foundation piles and executed additional anchoring works.

2 | Forchheim Bauer installed a pile wall and a king post wall using the Kelly method for a new production facility for the company Siemens.

3 | Ludwigshafen New building of the Rhineland-Palatinate police headquarters in Ludwigshafen upon Rhine: For this construction project, Bauer installed 369 temporary anchors with a total length of 7,700 m, including 207 anchors to protect against pressing water.

4 | Hamburg As part of the expansion of the A26, Bauer executed extensive works, including 3,000 m² of secant pile wall, 16,200 linear meters of ground anchors and 12,100 m² of soil improvement using geotextile-encased sand columns.



4



5 | Garching An excavation pit with a depth of 8 m was constructed on Schleissheimerstrasse. For this project, Bauer executed 3,000 m² of sheet pile wall, 150 anchors, 500 m³ of high-pressure injection sealing along with 1,000 m² of static Mixed-in-Place wall.



6 | Cologne For the new construction of the Center for Family Health (CEFAM) at the Cologne University Hospital, Bauer executed various specialist foundation engineering works to construct the 14 m deep excavation pit, including 8,000 m² of Mixed-in-Place retaining wall.



7 | Munich Along with other joint JV partners, Bauer is involved in the construction of the 2nd Stammstrecke (Home Line) in Munich, a massive infrastructure project. The initial excavation pit for the tunnel boring machine at the Donnersberger bridge has already been completed.

8 | Berlin A total of 350 apartments are being constructed in the water district of Oberhavel. Bauer was commissioned with all sheet pile works for the Rauchstrasse. Other services included installing a gel sealing plug, earthworks and the dewatering system.

Trend

Geotechnical Solutions



Using the Deep Soil Mixing method, roughly 210,000 m³ of mixed columns were constructed in Sweden – under water at that.

During the installation of a cut-off wall for the "Moose Creek Dam" in Alaska, the Single Column Mixing method proved to be a reliable technique.

It's all in the mix!

WHERE OTHER SOIL MIXING
TECHNIQUES MEET THEIR LIMITS,
DEEP SOIL MIXING GETS TOP
MARKS ALL ALONG.



The soil is of crucial importance when building any structure. Its properties and behavior largely determine how a construction project is planned and carried out. But what happens if the soil doesn't provide the stability that the future structure requires? Then various soil improvement methods come into play. One of these methods is deep soil mixing, DSM for short. It is not only sustainable, but also a sufficient solution for a wide variety of challenges. Bauer Spezialtiefbau has been successfully using this method for a long time – and on projects all around the world.

Versatile, efficient and sustainable

Deep soil mixing is an in-situ method of soil improvement: The existing soil is mixed with a binding agent such as cement or lime. After hardening, this mixture forms a load-bearing structure that can serve as the foundation for a building or can be used for sealing dams and dikes or stabilizing the construction soil for deep excavation pits and tunnels. One major advantage of the DSM method is that the existing soil is mixed directly on site in a sustainable and resource-efficient manner which eliminates the need for laborious soil excavation and replacement measures. And this significantly reduces transport costs as well as the environmental impact. But that's far from all: Deep soil mixing can be de-

ployed in various soil types, starting from soft and cohesive soils – within certain limits – all the way to sandy and gravelly soils. The method can even be used in soils with a variable composition and strata structure. Furthermore, DSM methods are highly flexible in terms of the depth and size of the project.

Being successful with Deep Soil Mixing

Bauer Spezialtiefbau successfully uses the deep soil mixing method worldwide. In Sweden for example, the Bauer experts carried out extensive underwater soil improvement measures using single column mixing (SCM) – a DSM method – to install the foundation for a new dam. For this purpose, 210,000 m³ of mixed columns were executed. One unique aspect of this project was the use of an exceptionally large mixing tool with a diameter of 3 m – the largest SCM mixing tool ever used on a Bauer Spezialtiefbau site worldwide.

Another example is the flood protection project "Moose Creek Dam" in Alaska. The task was to install a cut-off wall in the existing dam with the goal of preventing erosion and critical leakage. The project originally started off with cutter soil mixing (CSM). This soil mixing technique is derived from the method used by trench cutters: Cutter wheels loosen the soil and mix it with slurry to form a homogeneous soil cement mixture. However,

because the actual prevailing soil conditions were unable to achieve the targeted production rates, single column mixing (SCM) once again proved to be the right method to safeguard the project timeframe and also ultimately fulfil the high quality requirements.

"Nowadays, deep soil mixing is an essential method in construction practice that offers versatile, efficient and sustainable solutions for the challenges of the future," says Joachim Gaus, expert for soil mixing techniques in the Major Project Sales department at Bauer Spezialtiefbau.



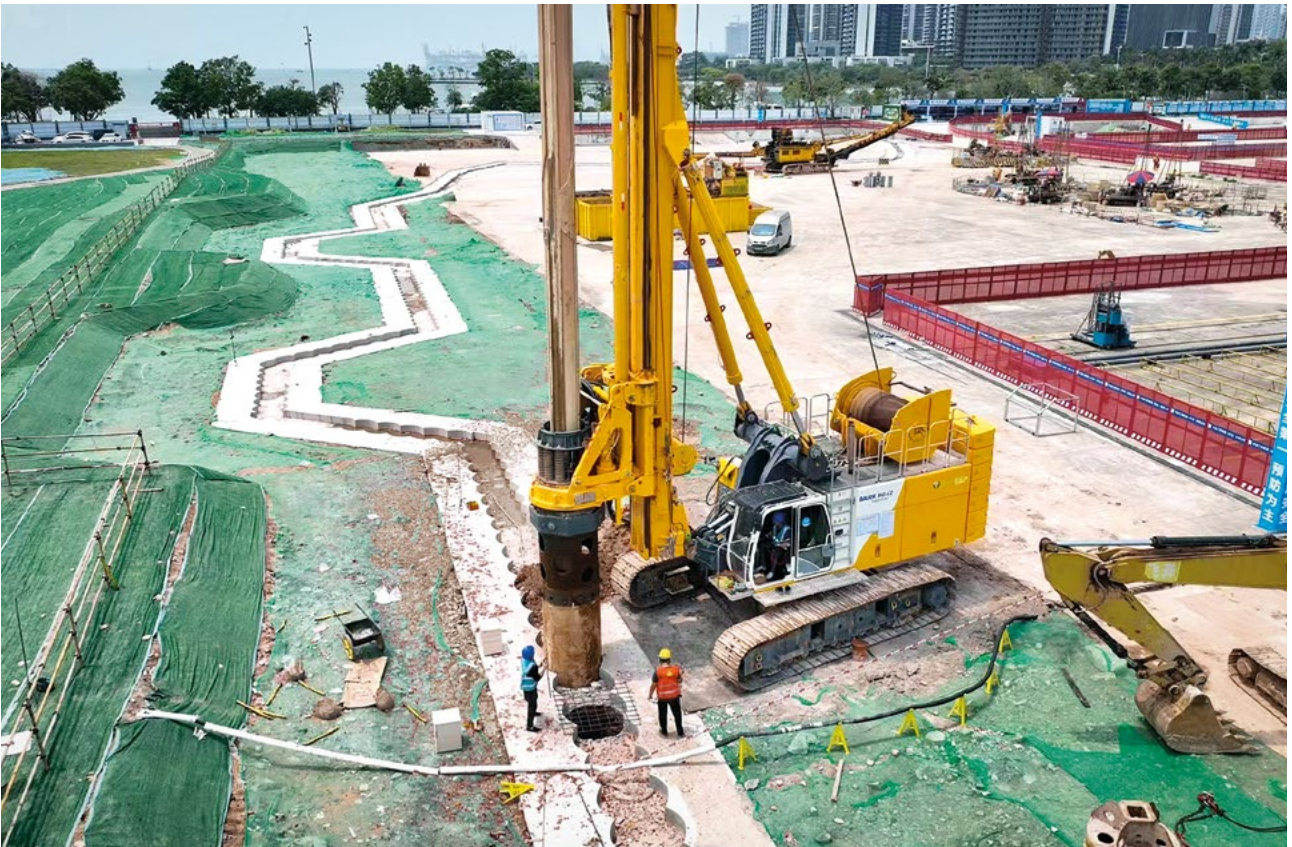
Soil improvement under water
in Sweden – dive in now!



Go to video

Global

■ Equipment in customer operations



China Shenzhen will soon have an opera. Using the kelly method, our customer Shenzhen Geokey Group Co., Ltd executed a secant pile wall for this project with a BAUER BG 42.

Malaysia Our customer Geohan Sdn Bhd installed the necessary piles for a residential and office complex in Kuala Lumpur using a BG 42, among other equipment.



1 | Germany Test run on the Bauer plant grounds in Aresing – a BE 425 desanding plant from BAUER MAT Slurry Handling Systems was among the equipment used in the process.

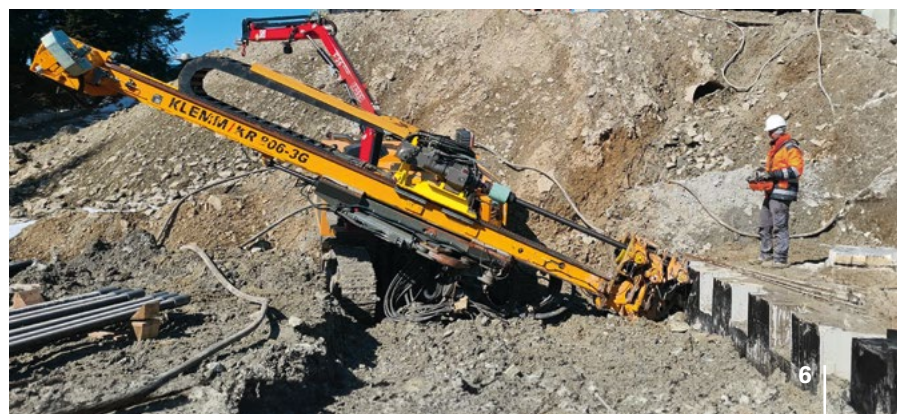
2 | South Africa The N3 Highway connects the cities of Johannesburg and Durban. For the construction of a bridge, Stefanutti Stocks Geotechnical Pty Ltd executed piles with a diameter of 1,500 mm in very hard rock using a BAUER BG 36 equipped for kelly drilling including BV 1500 casing oscillator.

3 | India In Chennai, a new metro station is under construction at Kilpauk Medical College. Under extremely tight spatial conditions, diaphragm wall work was carried out for this project using an MC 86 duty-cycle crane and a BC 35 cutter.

4 | Hong Kong The subway network in the metropolis of Hong Kong is being expanded. To construct the diaphragm walls for the Tung Chung West station, Intrafor is using a conventionally powered MC 96 duty-cycle crane as well as our eMC 96 with electric drive.

5 | Chile In the north of the Andean country of Chile, in the city of Calama, the company Hellema Holland Engineering Limitada executed exploration drilling with our RB 65 rig in a mine owned by the National Corporation of the Copper (Codelco) using the down-the-hole hammer method.

6 | Poland IMB-Podbeskidzie carried out anchor drilling work using a KR 806-3G from KLEMM Bohrtechnik GmbH to secure the construction pit.



7 | USA The company DK Drilling & Water Systems used a GEFCO 30K unit to drill a well with a depth of roughly 122 m.

8 | Malaysia Our customer Geopancar Sdn Bhd installed the necessary piles for a residential and office complex in Kuala Lumpur using a BG 28, a BG 36 and a BG 38.

9 | Greece The Ellinikon project in Athens is the largest urban renewal project in Europe. For a casino resort, our customer Kefa Attikis A.T.E installed piles up to a depth of 22 m using a BG 23 H and a BG 30.

10 | Germany The company Hölscher Wasserbau GmbH is using an RB 65 rig in the Rheinland region for large-caliber water well construction (Ø 1,200 mm) up to a max. depth of 400 m to drain the open-cast mine.

11 | USA In Naples, Florida, the company Allen Concrete constructed piles using an RG 21 T from RTG Rammtechnik GmbH.

12 | USA For our customer Stage 3 Separation in Phoenix, Arizona, a BE-300 plant from BAUER MAT Slurry Handling Systems successfully filters undesired solids from the water in a pond.



7 |



8 |



9 |



10 |



11 |



12 |

■ Trend Equipment

Once on site, the compact BCS 185 is ready for use in less than 24 hours.



Next generation cutter technology

Four decades ago, Bauer made history and used the first cutter at Lake Brombach in Franconia, Germany. Since then, Bauer Maschinen has made great strides in the development of cutter technology. "Our cutters have established themselves as reliable standard equipment in specialist foundation engineering for cutting depths between 50 m and 250 m," says Leonhard Weixler, Head of the Diaphragm Wall Equipment division at BAUER Maschinen GmbH with some pride.

About benchmarks and milestones

Particularly in the last decade, the speed with which Bauer has brought its innovations in the cutter sector to market has increased once again: In 2014, for example, the CBC 40 Silent Cutter ushered in a new generation of equipment for projects in urban environments. In 2019, an impressive record was set by a BC 50 cutter: During a mining project in Canada, cutter excavation was for the first time carried out up to a depth of 251.4 m. Another milestone was presented at Bauma in Munich in the same year: the first electrically driven Bauer cutter unit based on an MC 96 duty-cycle crane. In Hong Kong, the eMC 96 demonstrated its performance in a subway project and impressed with extremely low noise emissions. And speaking of electric: In 2021, Bauer presented its innovative Cube System, which can easily

BAUER CELEBRATES 40 YEARS OF CUTTER TECHNOLOGY – AND LAUNCHES ANOTHER INNOVATION TO GO WITH IT.

be used in tunnels measuring only 3 x 3 m thanks to its compact design.

Versatile single-purpose equipment

And finally, in 2023, Bauer launched the BCS 185 cutter system (pictured on the right) – and really struck a chord with customers. "It has been specially optimized for cutting to a depth of 90 m," explains Leonhard Weixler. One of the highlights is the twistable HDS 90-T hose drum system. This allows the cutter to be twisted continuously within a range of -50 to +95 degrees from its normal position to reach every corner in the excavation pit without a problem. And: Once on site, the compact system is ready for use in less than 24 hours.

Flexible system

After this year's Summer Olympics, the XXL infrastructure project Grand Paris Express entered the next phase. The challenge: Diaphragm walls up to 80 m deep are required for the construction of the future metro stations, the ventilation system, emergency exits and as start and finish shafts for the tunnel drilling equipment. In order to produce them as CO₂-neutral as possible (France and Paris in particular have set themselves ambitious goals here), cutters with electric drives are required. "Our solution is called BCS 185 power pack," says Leonhard Weixler. The new equipment combines the best of two systems, the BCS 185 and the compact CBC Silent Cutter. A diesel or electric power unit can be selected for operation. "In future, however, power packs based on other energy sources such as hydrogen or fuel cell technology are also conceivable,"



The new BCS 185 power pack can be combined with electrical or diesel-powered units.

explains Leonhard Weixler. "With this adaptable equipment concept, we offer our customers the greatest possible flexibility, regardless of the construction site infrastructure."



Get to know our BCS 185.



Go to video

Germany

■ Resources on site



Regensburg Precision was required for the installation of a geothermal probe system in the new modular construction of Regensburg University. Using a KLEMM KR 805-3GW, Bauer Resources constructed 24 geothermal probes in a very tight space.

Velten In the charming town of Velten, Bauer Umwelt rehabilitated a former industrial site – but not in the usual way. Using the honeycomb method, more than 2,000 m³ of soil were excavated and transported away in gas-tight containers.





1 | Duisburg As part of a joint venture, Schachtbau Nordhausen executed the new replacement construction of the “Violette Bruecke” in Duisburg. The new bridge over the Ruhr canal is an impressive 110 m long and 8 m wide single track top framework structure with a weight of 900 t.

2 | Elmshorn Since July 2023, Bauer Umwelt has been restoring a former industrial site in Elmshorn using replacement boring. More than 1,500 m³ of contaminated soil were drilled out, then dewatered in two large tents and packaged in more than 5,000 120 l drums.



3 | Bayreuth Bauer Resources constructed six geothermal probe fields in record time for a new rehabilitation clinic in Bayreuth. In total, GWE installed 128 geothermal probes up to a depth of 80 m and laid 8 km of pipelines.



1

2

3



4 | Halle-Teutschenthal To safely decommission the Saale shaft on the long term, Schachtbau Nordhausen is carrying out safeguarding work. This includes constructing an anchor system consisting of more than 8,600 m of injection drill anchors, installing a 22 m long steel plate cylinder and backfilling cavities.

5 | Roedental Spesa and Schachtbau Nordhausen are bringing the 800 m long Itztal railway overpass back into shape. For this project, all fractures will be treated and outdated parts will be replaced with new installations.

6 | Berlin-Schoenefeld Following strict safety precautions, Bauer Umwelt restored the premises of the former north tank farm at the Berlin-Schoenefeld airport. All technical facilities were stripped down and roughly 25,000 t of contaminated soil were replaced.



Trend

Resources



Drum screen plant for the treatment of soil for ecofriendly reuse

...closing the circle

Squaring the circle is a mathematical task that has occupied the cleverest minds in the world since ancient times. Today we are faced with a similar challenge: how to shape a sustainable and resource-efficient future. Even though squaring the circle is impossible, the circular economy offers a feasible solution. One promising approach is the reutilization of excavated soil material. This represents a move towards more recycling and less waste. At Bauer Resources, we are actively advancing this concept.

Recycling instead of throwing away

In Germany alone, 130 million t of excavated soil are generated by construction projects each year. Within a linear economy, this excavation material often ends up as waste in landfills or is disposed of using costly methods. On the other hand, in a closed circle this material remains within the economy as far as possible, it is recycled and reincorporated. However, only about 10% of all soil excavation material is currently recycled even though the advantages are plain to see. Recycling excavated soil conserves natural resources and cuts down on costs, since less new material is needed. This reduces landfill waste and protects the environment. In addition, fewer transports lead to reduced CO₂ emissions. So it's high time to rethink the way things are done. There is enormous potential here.

A strong partner in the circular economy

Bauer Resources lives and breathes the circular economy: that's clear from the soil treatment center in Hamburg. Since 2019, soil has been treated for reuse on the 6,000 m² premises there: First the delivered soil material is precisely analyzed on site and mechanically processed using a screening plant. The final product is an unmixed, valuable alternative construction material with the highest

THE LINEAR ECONOMY IS A THING OF THE PAST: THE FUTURE IS CIRCULAR. WE DEMONSTRATE THE POTENTIAL OF THIS PHENOMENON AND WHAT WE CONTRIBUTE.

level of quality that can be reused without any problems. And as of recently, we have certifications to prove it: In 2023, the location became the first company in the Hamburg area to obtain QUBA certificates for quality-assured soil material. The main customers for soil are primarily network operators who use the acquired material to fill in pipeline routes or as a protective layer around underground electrical cables. It's that easy, it's that sustainable.

A driving force for change

Bauer Resources already has a capacity of roughly 50,000 t of soil in northern Germany for ecofriendly recycling. In order to advance this topic, this capacity will be expanded in southern Germany as well. "Our soil treatment centers have been ready for the circular

economy for some time now," says Ulrich Morgenstern, Head of Disposal at BAUER Resources GmbH. The German Alternative Construction Material Ordinance has been in force since August 1, 2023 along with clearly formulated political targets regarding the use of excavated soil material. As a result, clients are now being asked to assist with managing this radical transformation. Until that time, we are setting innovative trends and driving the circular economy forward. This is the only way to achieve a successful shift away from a single-use mentality towards intelligent material flow management.



The processed soil material is certified in accordance with QUBA.



Tobias Rager



Jean-Baptiste Le Gall

Farewells & New beginnings

WITH SEVERAL CHANGES TO THE MANAGEMENT, THE BAUER GROUP IS POSITIONING ITSELF FOR THE CHALLENGES OF THE FUTURE.

After many years of service on the Supervisory Board, Prof. Thomas Bauer resigned from his position at the end of 2023 and withdrew from the Group. Subsequently, Prof. Dr. Bastian Fuchs was appointed to the Supervisory Board and took on the role of Chairman. Also at the end of 2023, Florian Bauer left the Executive Board of BAUER AG at his own request and since then dedicates his full energy to his responsibilities on the management team of BAUER Spezialtiefbau GmbH. In order to manage the transitional phase, Hartmut Beutler returned on January 1, 2024 as interim Executive Board member until an additional member of the Executive Board specializing in equipment manufacturing has been found.

At the end of May 2024, Managing Director Prof. Sebastian Bauer also left BAUER Maschinen GmbH and thus withdrew from the BAUER Group. His successor is Tobias Rager, who is responsible as COO/CTO since June 1st for the areas of production, research and development, quality management, digital, product management and materials manage-

ment. The industrial engineer draws on extensive experience from his time with Audi and the Bosch Group, where he occupied various management roles that thoroughly addressed overarching operative and strategic matters in the operational division. The segment management of the Equipment segment is now composed of Wulf Flos and Tobias Rager after Dr. Ruediger Kaub withdrew from BAUER Maschinen GmbH in June.

There was also a personnel change at Bauer Spezialtiefbau: Since July 1, Jean-Baptiste Le Gall has joined the management of the Geotechnical Solutions segment. The civil engineer has many years of experience with a focus on specialist foundation engineering solutions. In areas ranging from business development, sales, pricing or project management, he has held various positions over the course of his career at Spie Batignolles Fondations, Intrafor and most recently at Franki Foundation, where he was the General Manager. In summary, the management of the Geotechnical Solutions segment is now composed of Frank Haehnig, Harald Heinzelmann, Alexander Hofer and Jean-Baptiste Le Gall. Jean-Baptiste Le Gall is responsible for the regions of South Asia and Asia-Pacific. Together with Harald Heinzelmann, he manages the Major Project team, where he is responsible for Business Management, Tender Management and Strategic Development.

We like it!

ARE YOU ON SOCIAL MEDIA? WE HAVE A TIP FOR YOU...

The BAUER Group now has over 11,000 subscribers on YouTube. On Facebook, we even have more than 27,000 followers. And on the LinkedIn platform, we have hit the 82,000 mark. But is this a reason to rest on our laurels? Definitely not! In 2024, Bauer didn't just add one, but two channels.

Listening to Bauer

Whether major projects, depth records or top achievements in environmental services or the Geotechnical Solutions and Equipment segment, it's often the big projects and successes that get the limelight. But what about the people behind it all, who make everything possible? Who make up the heart and core of a company like Bauer? Worldwide, there are currently around 12,000 employees in the Bauer family – with just as many different stories that are worth hearing.



The new Bauer podcast "Echt, wild & bodenständig" is available on all the usual platforms and on www.youtube.com/@BAUERGruppe/podcasts.

says the podcaster and content producer from the Group Communications & Marketing Department. "I'm always amazed at the diverse experiences they have had. Every one of them thinks differently, talks differently, everyone has their own philosophy. I love listening to people. A podcast is the ideal format to let others share in these fascinating encounters." Sounds interesting? The podcast is available on the usual podcast platforms (Spotify, Amazon Music, Apple Podcasts) as well as on the Bauer YouTube channel. Subscribe now and make sure you don't miss any episodes!

#weareoninstagram

Another highlight this year was undoubtedly the launch of the new Instagram channel of the BAUER Group. What can followers expect here? It's very simple: A colorful mix that inspires! This includes outstanding projects and innovations from the Geotechnical Solutions, Equipment and Resources segments. Plus inspiring career stories, some glimpses behind the scenes and a whole lot of more from the world of Bauer.



In the new Bauer podcast "Echt, wild & bodenständig", host Lisa Moosheimer (pictured at top) tracks down these stories. She meets a wide variety of people in the company and gives them space to share their personal stories. "I'm interested in what moves our colleagues, why they work at Bauer, why they enjoy their work – and especially, what they find fascinating about our spirit, which we all feel in the company",



Become a follower now!



Link to the Bauer YouTube channel



Link to the Bauer Instagram channel



Schrobenhausener Tage

New horizons in specialist foundation engineering

APRIL 23

For more than 35 years, BAUER Spezialtiefbau GmbH has been hosting the "Schrobenhausener Tage" lecture series. This year's motto: "Putting the site in focus – stay tuned in specialist foundation engineering." A total of roughly 300 guests attended from Germany and abroad. They were treated to a successful blend of presentations about spectacular construction projects in Germany, challenging international projects and innovations in specialist foundation engineering. Artificial intelligence was also on the agenda. Frank Haehnig, CEO of BAUER Spezialtiefbau GmbH, greeted the guests and then handed over the floor to Managing Director and moderator Florian Bauer. "It's not just our innovations and methods, but also the use of artificial intelligence that opens up countless opportunities and prospects for our sites," remarked Florian Bauer.

The event kicked off with a lecture block addressing spectacular projects in Germany. During the lunch break, participants were able to explore innovations in specialist foundation engineering at the stands for the Technical Services, Design and Digitalization departments. Refreshed from their lunch break, the guests returned for the second lecture block. This was entirely dedicated to international projects. The last thematic section took a look at the future and digital challenges. The final panel session also involved a thorough discussion of the opportunities and prospects for artificial intelligence in specialist foundation engineering. "In specialist foundation engineering, the use of AI opens up excellent opportunities for us that we are developing together," emphasized Florian Bauer.



Dates & Events

APRIL 25-27

In-house exhibition

1,900 Guests from 72 countries

Once a year, the "who is who" of the specialist foundation engineering industry comes together in Schrobenhausen: when BAUER Maschinen GmbH opens its doors for the in-house exhibition. On April 25, it was time again. Peter Hingott, Executive Board member of BAUER AG, officially kicked off this traditional event at 11 a.m. together with the management of BAUER Maschinen GmbH in the presence of numerous invitees from Germany and abroad. "We are committed to being a leading innovator, a premium supplier and a reliable long-term partner who is able to provide its customers with solutions as well as products," remarked Peter Hingott in his opening speech.

"We consider the entire site as a whole, not just one small part of a drilling rig or cutter. It is important for us to give our customers comprehensive support during project implementation."

True to this year's event motto "360 degrees of special foundation", guests were again presented with an impressive demonstration of equipment for specialist foundation engineering. Visitors were able to take a closer look at 28 exhibits in total and experience specialist foundation engineering in all its variety. A BG 23 H with SPEX-4 equipment attracted a great deal of attention.



MAY 3

Bauer employee afternoon

Celebrating with colleagues

The annual Bauer employee afternoon in Schrobenhausen is always a great opportunity for entertainment, conversation and spending time together outside of the everyday work routine. This year, the organizers put together another varied program: Young guests entertained themselves with a goal

shooting contest, jumping in the bouncy castle or riding around the carousel. A highlight for all ages was the drilling equipment exhibited on the rotunda from the preceding in-house exhibition. The beer garden area provided a space for stimulating conversations and relaxed moments.



Furthermore, the innovative Smart Grab Control assistant was demonstrated on an MC 76. This is considered a real game-changer in the industry, since it makes working with diaphragm wall grabs considerably safer and easier. Another highlight was the brand-new eRG 21 T hybrid. Compared with purely diesel-operated equipment, it consumes up to 50% less fuel and fits seamlessly into the RTG portfolio, which now offers a

hybrid version for all telescopic leader masts. The “Old Welding Shop” housed the stands for the business divisions of Energy Mining, Parts & Service and Maritime Technologies, the companies Spantec and Eurodrill as well as the BAUER Training Center. Guests were also regaled with an extensive supporting program including factory tours, equipment demonstrations and traditional Bavarian evening.



The best moments from our 2024 in-house exhibition



Go to video

MAY 13 – 17

IFAT

World's leading trade fair for environmental technologies

Around 3,200 exhibitors and 142,000 visitors from 170 countries – these are the impressive figures from this year's IFAT in Munich. The world's leading trade fair for water, wastewater, waste and raw material management thus achieved the same level as in 2018. Also participating: Bauer Umwelt at the shared "Bayern Innovativ" stand. The company presented new projects and technologies under the slogan "With love for the environment". Furthermore, Carbo-FORCE GmbH was represented at the fair with its own stand for the first time, featuring a brand-new design.

Visitors to the stand were introduced to the company's ground-breaking pyrolysis plants and experienced their versatility first-hand. This practical plant solution makes it possible to transform all kinds of organic residues into high-quality biochar. The range of viable waste materials extends from waste wood to horse manure all the way to sewage sludge. But that's far from all: The plants also generate energy and reduce CO₂ emissions. As a result, this holistic solution addresses global residue problems and effectively counteracts climate change, two central topics of this year's IFAT.

Dates & Events

SEPTEMBER 5

"Treffpunkt SBN"

Well-attended Schachtbau customer day

After a hiatus of five years, the Schachtbau customer day was held again in Nordhausen at the beginning of September. Numerous customers and partners were in attendance. Visitors enjoyed a successful mix of different specialist lectures from the areas of steel construction, plant engineering, equipment manufacturing and mining. To celebrate the 70-year anniversary of the training workshop, Training Manager Thomas Gottwald

took time after his presentation to thank current and former colleagues from the Schachtbau training department for their service. After the presentations, management consultant Dr. Werner Beiweis gave a guest lecture on the topic of "Current challenges for management". Guests were then treated to a Thuringian grill buffet, and had the chance to participate in factory tours during the afternoon.



Since May, Carbo-FORCE's innovative solution is also optimally highlighted through the revised image brochure and redesigned website.



**Carbo-FORCE –
Ready for change**



Go to website

SEPTEMBER 19

General Meeting

Broad approval of shareholders

Roughly 250 shareholders, guests and press representatives attended the General Meeting in September. "2023 was an eventful but successful year for us, and we have gotten a good start to 2024," stated Executive Board member Peter Hingott. He also provided information about current and planned investments in the main plant in Aresing, but also in subsidiaries such as Klemm in Drolshagen. During the vote, the proposal to elect Sebastian Sennebogen and Florian Tucher Freiherr von Simmelsdorf to the Supervisory Board as new members of the shareholder side also met with broad approval. In return, long-standing members Elisabeth Teschemacher and Gerardus N. G. Wirken left the Supervisory Board. "Both have accompanied the company for many years. You deserve our deepest thanks for your work and support," said Hingott.



News

125 Years of Schachtbau Nordhausen

At the end of 2023, the Schachtbau team had every reason to celebrate: In November 1898, Louis Gebhard laid the foundation stone for 125 years of company history, some of which would be highly eventful. Today, Schachtbau Nordhausen operates successfully not only in mining, but also in the areas of plant engineering and steel construction, as well as equipment manufacturing. Hall 5 was specially cleared and arranged for the company's anniversary celebration, welcoming around 800 guests including many active Schachtbau employees along with former members of the team, representatives from the management and Group executives as well as customers. Together, they looked back on many years of tradition and danced to live music until late in the night – an evening for Schachtbau to commemorate its own achievements.



GWE Technology Forum "Water Well Construction and Geothermal Heat"

A lecture series with a practical focus: For the eighth time now, the sector met up to engage in professional dialog during the GWE Technology Forum on January 25 and 26. After events in Stuttgart and Braunlage, GWE invited attendees back to the headquarters in Peine this year. 100 Participants from around Germany as well as Poland, Austria and the Netherlands accepted the invitation. The water well construction and geothermal heat experts had the opportunity to hear 14 specialist presentations. In particular, the practical focus and open discussion after each presentation gave the event a special touch. A factory visit to the nearby GWE location was also on the agenda, among other activities.





One year, many milestones

Joining forces to address climate change. With this goal in mind, Carbo-FORCE and Bauer Resources became partners in early 2023. The results are already plain to see: After projects in Osterrade and Grosssolt, groundbreaking equipment for the carbonization of biomass also traveled to Dubai. A CF-250 unit is in use there on a dairy farm with 8,500 camels. "By carrying out this practical test with our partner, we wanted to obtain important findings about the use of camel dung as an input material and optimize equipment handling," explained Kai Alberding, Managing Director of Carbo-FORCE, in early 2024. By the way: Since May of this year, both the Carbo-FORCE website and the image brochure have been overhauled with a fresh new look. The brand-new exhibition stand was presented at the IFAT in Munich. Learn more at www.carbo-force.de

Together at Geotherm

Geotherm, Europe's largest geothermal heat trade fair, was held in Offenburg from February 29 to March 1. GWE, KLEMM and Bauer MAT presented their latest product developments at a shared stand. Thanks to an open stand concept designed to encourage communication, our colleagues were able to engage in dialog with lots of visitors. In total, the trade fair reported 6,500 professional visitors and 240 exhibitors from more than 40 countries. Two congresses with more than 50 lectures informed visitors about current developments and offered practical progress reports from the field.



Spring concert

How many companies can boast that they have their own rock band? Visitors to Schrobenhausen who attended the spring rock concert in March featuring Hydraulica & Friends were treated to an exciting evening.





Girls' Day

On Girls' Day this year, traditionally held in April, 20 young women were once again invited to the Schrobenhausen training center of BAUER AG to learn about industrial and technical professions. The students particularly enjoyed the chance to actively participate at multiple stations under the guidance of



apprentices – for example in the area of electronics: Diodes had to be soldered onto a circuit board for an electronic cube. At Schachtbau Nordhausen as well, the motto was: Girls, time to get working with machines! Technically oriented female students were able to get a taste of the professional fields of construction, electronics and metalwork as well as mining. The campaign was very popular: A week before Girls' Day (and the Boys' Day held at the same time), the applications received already outnumbered the available slots.



GWE filter systems to safeguard Dubai's water supply

The Dubai Electricity and Water Authority (DEWA) is implementing one of the largest future-oriented infrastructure projects in the Emirates. The goal is to store roughly 26 million m³ of water from seawater desalination plants in a natural underground reservoir. In the event of a disruption, this should safeguard Dubai's water supply for 90 days. GWE GmbH delivered the screen systems used to build the necessary specialist wells. In total, 542 wells of varying depths were constructed during the project. Roughly 108 of these were ASR wells (artificial storage and recovery wells), representing the largest share: they were also the deepest wells at 70 m. These are the centerpiece of the project for which GWE delivered 960 prefabricated double-walled PVC screens filled with glass beads, ready for installation.

Award for voluntary environmental management

In June, Neuburg-Schrobenhausen's District Administrator Peter von der Grün presented BAUER AG with three certificates of participation in the Bavarian Environment and Climate Pact on behalf of Thorsten Glauber, Bavaria's Minister of the Environment. By advancing the environmental management system in accordance with EMAS, Bauer is making a particular contribution toward sustainable economic growth: Along with technological developments in the area of battery-powered drive technology for drilling rigs, for example, the drive technology in Aresing was converted from diesel to hydrotreated vegetable oil. The locations in Schrobenhausen switched over to LED lighting technology. Moreover, a reduction in solvents was achieved by using innovative plant technology, and continuous expansion of the photovoltaic systems is now able to cover a large portion of the base load.



1,000 School bags for Indian students

Since 1994, Bauer Maschinen has operated in the Indian market with its subsidiary Bauer Equipment India. Such a long shared history gives rise to a deep feeling of connection with the country and its people. That's why the German and Indian colleagues on site felt the need to give something back to society. 1,000 School bags were purchased and distributed to secondary school students in poorer rural regions. Wladislaw Kiselev and Robert Hipper from the sales team had the opportunity to participate when handing over the bags at a small village school in the state of Maharashtra, western India.



500 km by bike

This year, a group of committed cyclists did it again: The team pedaled 500 km from Nordhausen to Schrobenhausen in five days. An impressive achievement! With tireless endurance, the cyclists made the journey which led from Nordhausen and first passed through Bad Koesen, then Probstzella, Bamberg and Weissenburg until they reached their destination, the Bauer head office in Schrobenhausen. When they arrived there, they were greeted by colleagues and friends and treated to cool drinks.

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