BAUER REVIEW

For **Employees** and **Friends** of the **BAUER Group** Companies

Nº 52 | 2022

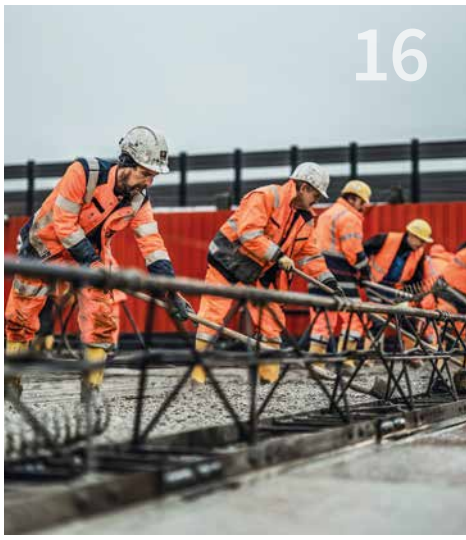
CONSTRUCTION WITHOUT LIMITS

- **Construction: How extreme conditions inspire us**
- **Equipment: What makes our service unique**
- **Resources: What real heroes can accomplish**

BAUER

BAUER Review N° 52

Our employees are decisive for Bauer' success. Many of them – like our former CFO Hartmut Beutler – remain loyal to us over many decades. We are proud of this.



Whether innovative technology, resource-efficient construction methods or solutions in the field of geothermal energy, our concept of sustainability concerns across all divisions of our company.

Dear readers,

I hope you are looking forward to the latest issue of BAUER Review as much as I am – now with a totally new look. As part of the new interpretation of our corporate design, which we are in the process of implementing over a total period of roughly two years, we also gave our annual magazine a significant facelift. For the historians among you: The last change to the title page was made in 1989. In addition to the completely fresh design style, we have also revised the stucture of the magazine and its content. We hope you will like the results!

Foreword

The focus of the current issue is the topic "Construction without limits". For our Construction segment, that means executing construction projects even in extreme geographical locations – be it at the Himalayas, the Arctic Circle or the Dead Sea. With exemplary teamwork and many years of experience, we bring these extraordinary projects to a successful completion.

"Unlimited service" is the motto for our Equipment segment. After all, our customer equipment is also used at all sorts of locations around the world. And whenever our customers need assistance or spare parts, our experienced specialists are available everywhere around the world, even in the remotest places on the planet.

Our Resources segments deals with extreme dimensions: Whether massive quantities of stone in mining, thousands of cubic meters of soil to clean in the environmental division or the rehabilitation of unique structures – our colleagues cope with impressive challenges. The current trend topic in this year's issue of the BAUER Review is sustainability, a term that has become an established element of modern society and concerns nearly all areas of life. We are engaged in finding tangible and practical solutions for ourselves and our customers. Whether the development of sustainable construction methods and the corresponding equipment or new solutions in the field of geothermal heat, we want to be at the forefront of our industry when it comes to careful handling of resources.

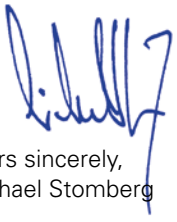
Bauma, the world's leading trade fair for construction equipment in Munich, is back on the horizon this year. In this issue, you can also read about the latest developments in equipment technology, particularly in the area of alternative drives. And of course you will find lots of stories that you will hopefully enjoy about the people who make us so successful: our employees.

So far, 2022 has shown how difficult operating a globally successful business continues to be. The economic upheaval after the COVID-19 pandemic and due to the war in Ukraine is extensive. Many political consequences resulting from these circumstances are still impossible to predict ultimately. Production materials and energy have become scarce and very expensive, inflation is climbing to record highs. And climate change is a huge driving force behind the necessary transformation of the economy.

The consequences of the COVID-19 pandemic also significantly shaped our 2021 financial year. In particular, the lockdowns in Asia considerably influenced our Construction segment and our equipment sales in this region. In contrast, 2021 was very successful for our Resources segment after years of restructuring. This underscores its strategic importance for the future.

The times remain challenging, which makes it all the more important to find the right solutions. With our power of innovation and our dedicated employees, we will succeed. Hopefully we can offer you a good impression of this with our new issue of the BAUER Review.

I hope you enjoy reading!



Yours sincerely,
Michael Stomberg

Facts & Figures

SOME HIGHLIGHTS FROM THE BAUER WORLD

€ 100,000

were collected in March during the employee fundraising campaign "BAUER Group for Ukraine" in collaboration with Aktion Deutschland hilft.

500,000 m³ of water

In the German city of Düsseldorf, the Bauer Umwelt Division of BAUER Resources GmbH is significantly involved in the rehabilitation of a former railway vehicle manufacturing site where railway vehicles were formerly manufactured. A groundwater treatment plant cleans 12.5 m³ of polluted water per hour – by the end of operations in 2025, **500,000 m³** of water will be cleaned in total.

Noise emissions -50 %

During a test operation of the eBG 33 – the first electric drilling rig from Bauer – for the HS2 project in the United Kingdom, the results were convincing: Compared with a conventional drilling rig, the electric model can accomplish the same tasks. At the same time, the daily CO_2 emissions are reduced by **1,292 kg** and the noise emissions are reduced by up to **50%**.

49

An encouraging ranking, especially in difficult times: The Stiftung Familienunternehmen (Foundation for Family Businesses) published a new list with the 50 longest-established family businesses in Germany – the BAUER Group, founded in 1790, ranks **49th**.

In the town of Singtam at the Teesta River, BAUER Engineering India Private Limited is carrying out the specialist foundation engineering works for the Teesta VI hydropower project. Together with representatives from the client Lanco Teesta Hydro Power Limited (LTHPL) as well as from the customer Jai Prakash Associates (JAL), the Bauer team planted **34 saplings** in June to celebrate World Environment Day.

61 m

For the expansion of the U2xU5 underground line crossing in Vienna, the Austrian company BAUER Spezialtiefbau Ges.m.b.H. carried out extensive specialist foundation engineering works. The highlight is the construction of the deepest bored piles ever installed in Vienna on the "Schottentor" connecting structure with a depth of **61 m**.

14 km

In spring, the subsidiary of Schachtbau Nordhausen in Kazakhstan obtained a subsequent order with a volume of more than 40 million euros: In the chrome ore mine of Khromtau, another section of **5 km** is planned to be excavated in addition to the **9 km** section excavated since 2013.

25 years

From vibrating and impact driving to drilling, the equipment of RTG Rammtechnik GmbH is used at many sites around the world. The company of the BAUER Maschinen Group now looks back proudly on more than **25 years** during which it has grown steadily and ultimately become one of the market leaders in the field of pile driving equipment.

19,959 m

of soil injection was carried out by the Bauer team between 2020 and 2023 to stabilize a cavern during the Punatsangchhu-II project in Bhutan.

During the Entrepreneurs' Day of the Association of the Construction Industry in April, the 2022 Innovation Award from the Bavarian Construction Industry was presented. The **first prize** went to BAUER Spezialtiefbau GmbH – for the second time in a row – for its comprehensive digital tool set.

In just 16 months, around 112,000 m² of cut-off wall were constructed over a distance of 4.2 km for the rehabilitation of a dike at the Dead Sea.

Realizing projects in the remotest places of the world

EXTREME CONDITIONS REQUIRE A GREAT DEAL OF EXPERTISE, EXPERIENCE AND TEAM SPIRIT ABOVE ALL.

The climatic and geological conditions could not be more different: From the Dead Sea to the Arctic Circle and the Himalayas, our specialists execute demanding construction projects even in extreme geographical locations. In the process, they overcome the roughest conditions and set new technical standards across all borders. How do they manage? With exemplary teamwork and many years of experience.

In the Middle East at the Dead Sea
Hot temperatures, high salinity levels and surrounded by desert: The Dead Sea lies 400 m below sea level on the border between Israel and Jordan. In the brine basins, carnallite from the brine of the Dead Sea is deposited and subsequently processed into potash fertilizer. The dikes surrounding the basins have become permeable over time and therefore needed to be refurbished.

In 2019, BAUER International FZE began with the construction of roughly 112,000 m² of cut-off wall over a distance of 4.2 km at one of the main dikes. This was not an easy task. In the preparation phase, Managing Director Georges Abdo established a complete construction site organization in the Jordanian desert – from the scratch. He recalls: "Our team had to have strong nerves. On the one hand, the cut-off wall works had to be executed in just 16 months. On the other hand, work was made difficult by the complicated logistics, the mobilization of specialists, rough weather conditions, and an extremely saline environment."

Another particular challenge was the subsoil: Due to the hard crystalline salt layers, two cutters had to be used for the construction of the cut-off wall. "The high salinity level also had a negative impact on the stabilizing slurry and the setting properties of the soil concrete," stresses Georges Abdo. But the Bauer experts were able to solve this problem as well and developed

stabilizing slurries for the two-phase system based on salt-resistant clay minerals and polymers. Various global bentonite deposits were tested until the appropriate composition was developed. An innovative, inclinometer-guided sheet pile wall installation concept was successfully applied for the first time. "Ultimately, despite the COVID-19 pandemic and with fantastic support from the owner, we were able to complete the project before the planned deadline in October 2020 – what a success," Georges Abdo remarks.

Far to the north near the Arctic Circle

Sub-zero temperatures, extreme Arctic weather and permafrost: Red Dog Mine, one of the largest zinc mines in the world, is located in the north-west of Alaska, around 170 km north of the Arctic Circle and nearly 1,000 km to the north-west of Anchorage. Due to its location in the Arctic Circle region, the entire mine is situated in a geological permafrost area where the ground is permanently and completely frozen. The only exception is an active zone near the surface that melts in summer and freezes again in winter. To counteract the negative impacts of melting permafrost, appropriate soil improvement measures were identified.

Around 170 km north of the Arctic Circle, Bauer carried out field tests using the jet grouting and cutter soil mixing methods.

To this end, BAUER Foundation Corp., the US subsidiary of BAUER Spezialtiefbau GmbH, was tasked with carrying out field tests using the jet grouting and cutter soil mixing (CSM) methods. In addition, a secant pile wall was constructed to extend an existing diaphragm wall. "One the biggest challenges was the mobilization of the equipment within the strict schedule," explains Alejandro de la Rosa, Project Manager at Bauer Foundation. However, the required special equipment was mobilized in record time. Some of the equipment was transported by plane and then by ship from Seattle Harbor across the Bering Strait to a dock 80 km from the mine. Other pieces of equipment were transported by plane from Anchorage to the airport on the mine premises. This logistical success was enabled by close collaboration with various Bauer subsidiaries and the owner Teck. "The remote and isolated location, the long idle times and accommodation in camps posed additional challenges," says the Project Manager. As if that were not enough: Extreme Arctic weather conditions, hygiene measures due to the COVID-19 pandemic and the specific safety requirements of the mining industry made work even more difficult. "Despite all these challenges which the Bauer team had to tackle, the work was completed successfully in June 2021," Alejandro de la Rosa proudly reports.

Even under the hugely complicated conditions of recent years, Bauer employees around the world performed at the top of their game to complete their projects successfully.

It makes me proud to be part of a team like this."

Arnulf Christa · CEO of
BAUER Spezialtiefbau GmbH

A Himalayan kingdom

Slightly smaller than Switzerland, surrounded by tall mountains and shaped by the Himalayan range: The Kingdom of Bhutan, north of India, is known for its spectacular landscapes. More than 80% of the surface area is more than 2,000 m above sea level. Mountains up to a height of 7,500 m mark the highest points in the country. In their course from north to south, many rivers cover a difference of thousands of meters in altitude, creating ideal prerequisites for the generation of electricity from hydropower.

Bhutan pursues ambitious and above all sustainable goals in energy policy. The kingdom already obtains nearly all of its electricity from water power. In the past, BAUER Spezialtiefbau GmbH was already involved in the construction of the hydropower plants Punatsangchhu-I, Mangdechu and Punatsangchhu-II. In 2011 and 2014, Bauer executed cutter-excavated diaphragm walls up to a depth of around 100 m for Punatsangchhu-I and Mangdechu for the upstream cofferdam on each site, and returned several years later. After a massive landslide, slope stabilization was required on the right shore of the Punatsang River.

"The Punatsangchhu-II project encompasses the construction of a 90 m tall dam, a pressure tunnel with a length of 8.5 km and multiple caverns in the power plant complex," reports Veronica Stetter, Project Manager with Bauer Spezialtiefbau. Due to a collapse in the underground cavern, Bauer was tasked again with specialist foundation engineering works in late 2019: 19,959 m of drilling with soil and rock grouting for stabilization of the subsoil as well as 18,908 m of ground anchors as tie-back. In addition to various equipment for the injection work, up to five drilling rigs were in use simultaneously – a real feat of strength. "The special challenge in this project was the confined working conditions in the cavern. With a width of roughly 18 m and a height of 8 m, very little space was available, which placed the highest demands on the equipment as well as on the team," Veronica Stetter continues. "Furthermore we were in the Himalayas, which required extreme foresight in terms of logistics above all." The work was successfully completed in mid-2022.

These three projects are examples representing many other projects that the Bauer experts implement worldwide each year, sometimes under extremely difficult conditions concerning geology and weather. With their commitment, expertise and team spirit, they continually redefine the limits of what is technically feasible.

For the hydroelectric power plant Punatsangchhu-II in Bhutan, Bauer executed 19,959 m of drilling with soil and rock grouting for stabilization of the subsoil as well as 18,908 m of ground anchor as tie-back.

Using data glasses, technicians are able to provide support to customers in real time for troubleshooting, as well as equipment design, quality acceptance, and many other service tasks.

Troubleshooters with a talent for improvisation

UNLIMITED SERVICE MAKES BAUER UNIQUE.

Bauer equipment is used in the most varied locations around the world and in all climate zones to construct foundation elements, stabilize soils, secure dams or install anchors. But what happens if the technology doesn't work perfectly or a customer on the other side of the world requires assistance? That's where the service specialists from BAUER Maschinen GmbH come into play.

Customers as partners

Whether service technicians, fitters or schedule planners, in order processing or administration – in Schrobenhausen, Germany alone, there are around 130 employees working in the Parts & Service division of BAUER Maschinen GmbH. And that's not all: Bauer has a worldwide network of more than 50 certified service partners, the majority of them being Bauer subsidiaries. Here as well there are experienced service specialists who can reach customers quickly on site, whether by plane or by car. "Like a well-oiled machine, all the elements are interlinked," says Walter Fröhlich, Head of the Parts & Service division. And it wouldn't work any other way. "Everyone is equally important here, whether they are responsible for keeping the premises clean or whether they occupy a management role. This perfect collaboration is the only way we can offer excellent service to our customers around the globe."

The entire approach is based on a simple philosophy: "We see our customers as partners and provide them with reliable assistance for the entire life of the machine," summarizes Andreas Zeitlmair, Head of Service Operation within the Parts & Service division. "Our goal is to ensure that our customers are satisfied." After his training in industrial mechanics, Andreas Zeitlmair worked at Bauer in the equipment assembly and on job sites worldwide. He then completed a degree and is now responsible for the entire service division. "In particular, my experiences as a fitter continue to influence me today. That's why I have the greatest respect for what my colleagues accomplish every day, both in the office and in the field."

Thanks to a worldwide network of more than 50 certified service partners, Bauer's service specialists reach the customer's site in a minimum of time.

First point of contact

And what happens in the event of an emergency, that is, if equipment doesn't operate the way the customer expects? Then the first point of contact is generally the 24/7 hotline of the Parts & Service division. Depending on the time of day, employees from Germany, the USA or Asia attend to the caller. "We try to find a solution as quickly as possible working together with our customers," explains Norbert Wiedholz, Head of the office team for Technical Support in Customer Service. The first step is to gather information as detailed as possible and, if necessary, to consult the colleagues in the specialist departments. The experienced office employees are often able to resolve many problems over the phone. "If it doesn't work out during the first contact, the search for a solution continues," says Florian Förster. The trained construction equipment operator, who worked in assembly and as a service mechanic internationally after his training at Bauer, has been working with the support office since 2012. His enthusiasm has not diminished after ten years. "The work is really varied and our sense of team spirit is amazingly strong. Together in the team, and across the specialist departments, we try to find a solution in a quick and straightforward manner," says the Section Head of the Customer Service team.

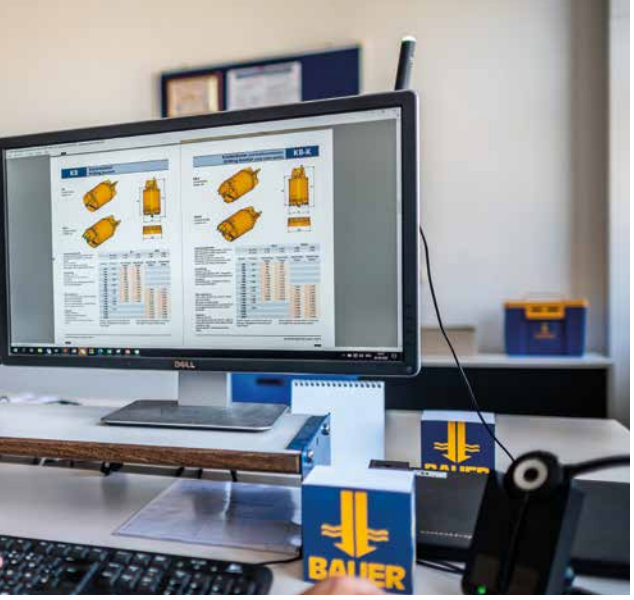
Florian Förster's job is sure to remain varied, even just considering the increasing complexities of equipment technology and the large number of product enhancements. But digitalization as well, which has gained additional momentum last but not least due to the COVID-19 pandemic over the last few years, has vastly expanded the possibilities for remote service in recent years. For example, using data glasses, technicians on site can be supported in real time during troubleshooting, as well as equipment design, quality acceptance, and many other service tasks. Additionally, various digital applications are available to choose from on the BAUER tablet, ranging from remote access via B-Tronic to connection with the Bauer Customer Center and equipment documentation all the way to the creation of images and diagrams. Furthermore, using special software, the service specialists in the office can easily access the customer's mobile device to record important data.

The time factor

If the problem cannot be solved remotely, then field service employees must be involved. Herbert Schweiger and his team in Schrobenhausen schedule the deployment of the experienced and well-trained field employees within customer service. What equipment is affected? What is the specific problem? Is there a visa required in the destination country and is a vaccine certificate required? Which parts need to be brought and what are the customs conditions? All this and many other factors play an important role in the scheduling of deployments.

The 18-person order processing team finally takes care of spare parts procurement, along with material shipping for the sales team, liability for defects, drilling tool rental and many more. "Whether during regular working hours, on the weekend or on holidays, we set everything in motion to get the required parts to the site as quickly as possible. Time is always an important factor," says Marco Berger. He is also a truly "home-grown" Bauer employee,

Employees in the field need to have not only the "service gene" but also a great deal of flexibility and a solid talent for improvisation.



Whether during regular working hours, on the weekend or on holidays, the order processing team sets everything in motion to get the required parts to the site as quickly as possible.

and has been working at the company since starting his apprenticeship 25 years ago. During this time, the trained industrial mechanic carried out the assembly of new equipment, spent a year abroad as a service mechanic in the Middle East, joined the order processing team in mid-2008 as an expediter and then worked in spare parts sales before taking over as Group Leader in order processing this year. "We see ourselves as an interface between the service technicians and customers on the one hand and the warehouse, purchasing and logistics departments on the other," explains Marco Berger. Daily business also includes checking parts availability together with the purchasing department. "Particularly at the present moment, where material bottlenecks and supply chain problems are the order of the day, it can be quite tricky to keep all parts in stock. Then we have to get creative and look for alternatives together with our colleagues."

Far from routine

The goal of scheduling and order processing is to equip service employees with all parts they need for their deployment and to bring them to their place of deployment as quickly and safely as possible. The fact that most deployments occur at short notice is a matter of course. "Sometimes the employees don't know in the morning where they're going to be that evening. A lot of flexibility is demanded of them. This does not necessarily make the job easier, but it certainly makes it always exciting and never boring," says Herbert Schweiger.

Every deployment is different, which is why the employees in the field need to have not only the "service gene" but also a great deal of flexibility and a solid talent for improvisation. "A bit of a MacGyver mentality is necessary as well," remarks Schweiger with a grin. Whether in the Australian bush, the African steppe or the high mountains of Nepal, the task is to manage with what is available on site or even improvise, under time pressure and sometimes after a journey of many hours. "Regardless of where our employees are deployed, they always find a way to make it work," says Herbert Schweiger proudly.

> *"This perfect collaboration is the only way we can offer excellent service to our customers around the globe."*
>
> Walter Fröhlich · Head of the Parts & Service Division
> BAUER Maschinen GmbH

The fact that employees in the field need a certain talent for improvisation is also confirmed by Florian Hicker and Benedikt Kneißl. They both completed their apprenticeships at Bauer, but pursued different specializations afterwards: After his training as an industrial mechanic, Benedikt Kneißl began as a Service Mechanic in the repairs department at the Schrobenhausen plant in 2018. At the plant as well as on customer sites both in Germany and abroad, he takes care of the repair and maintenance of drilling rigs as well as customer services and rental recovery. Florian Hicker, who completed his training in 2007 and has worked in the field service since 2008 after a foray in installation, provides assistance for Klemm equipment in southern Germany, Austria and Italy. His tasks include repairs and service work along with briefing, equipment acceptance or the preparation of status reports. They both know: When it's urgent, that means packing up immediately and setting off.

But what would be stressful for other people doesn't fluster these two – on the contrary: "The variety and independence I have in my work makes it really special. When I'm out there, I'm responsible for making sure that the site is up and running again as quickly as possible. And then when the customer is satisfied at the end of the day, I'm also satisfied," says Florian Hicker. And Benedikt Kneißl adds: "Of course there are some days where you're glad in the evening that it's over. But the next day things look entirely different again. And in the end there are more good days." Can they imagine sitting in an office for eight hours each day? "No way," remark the two full-fledged service fitters in unison.

"I have to praise the entire team. The experience of our employees, their commitment and their strong dedication make our service unique," says Walter Fröhlich. "And our customers value this as well."

Working in two shifts, 70 workers tirelessly moved approximately 100 m³ of concrete every hour on the Innerstetal bridge.

What real heroes can accomplish

They move massive volumes: whether of stone, concrete, or soil. And they are true masters of their craft. Professionals who are not easily fazed: our heroes on the construction site. Under extreme conditions, they implement major projects as if they were nothing. The spatial conditions they have to deal with require manual dexterity and courage. Not to mention strong nerves. Our teams have demonstrated these qualities time and time again. At a depth of 1.000 m, the Schachtbau team excavated a section of approximately 9,000 m in a chrome ore mine in Kazakhstan. On the A7 federal highway near Hildesheim, tons of concrete were installed during the rehabilitation of the Innerstetal bridge against a breathtaking backdrop. And in the Bavarian capital, our professionals manage the disposal of polluted ground on an enormous site. Working with unusual dimensions has long been a matter of routine.

9,000 m drive

There are many figures that could demonstrate the dimensions of the project in the chrome ore mine of Khromtau in northwestern Kazakhstan. The most impressive is probably the fact that you would have to walk approximately two and a half hours to visit the site area.

WHEN EXTREME SPATIAL CONDITIONS ON SITE BECOME A CHALLENGE, SPECIALIST KNOWLEDGE IS REQUIRED.

This is because the Schachtbau team has excavated sections here since 2013 with a total length of more than 9 km. "The breakthrough on December 25, 2021 with the tunneling work at the base -480 m of the mine was a particular milestone and a reason for all of us to celebrate. Especially for our colleagues who were involved from the very beginning," proudly reports Project Manager Olaf Schmidt, then General Director of TOO SCHACHTBAU Kazakhstan. This means that nearly 100 m of drive progress was made per month on average – a true peak performance. And this was achieved despite the particularly great depths involved here: The sections are approximately 1,000 m below ground, the natural rock pressure here is enormous. In addition, the rock types are highly varied and require a wide range of blasting and drilling methods. For example, in order to minimize movements of the rick after drilling, blasting and removing the material, Schachtbau Nordhausen relies on initial safeguarding immediately after the work with steel fiber-reinforced shotcrete. Then the sections are expanded with steel beams and other beams and permanently safeguarded.

Working with unusual dimensions has long been a matter of routine for our specialists. How do they manage? With manual dexterity, courage and strong nerves.

"The smallest error can be devastating. But thanks to our experienced team, including roughly 138 miners, that's not a problem," says Site Manager Iurii Senchurov. This current adventure in the chrome ore mine has not yet finished. Until the completion of work in late 2025, another section of 5 km will be excavated: so the pros still have a few things left to do.

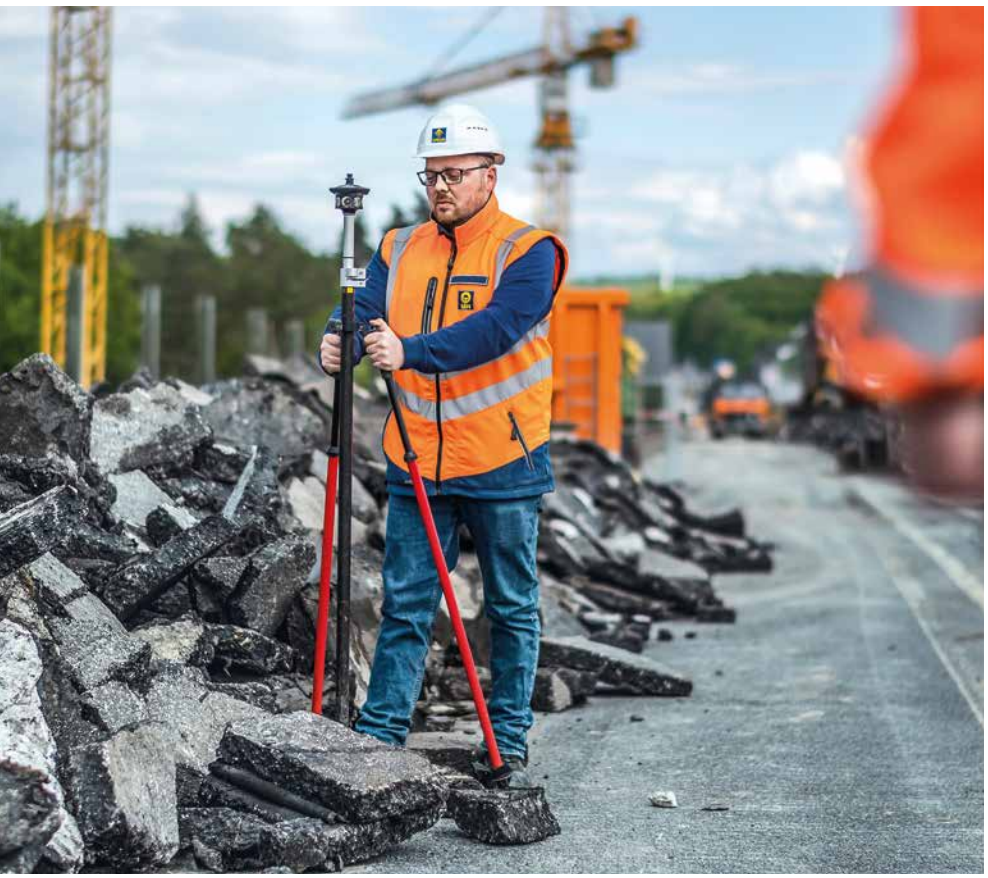
13,000 t of concrete

The rehabilitation of the Innerstetal bridge on the A7 federal highway near Holle broke all sorts of records in terms of volume: Within approximately three years, SPESA Spezialbau und Sanierung GmbH installed roughly 5,000 m³ of concrete for two construction sections which makes this site unique. Extensive preparations were required in order to execute the concreting work non-stop interruptions. "The scale of this project meant that coordination was far from easy. We needed to ensure that all equipment, materials and people arrived at the right place at the right time without any idle time," emphasizes Authorized Representative Björn Gorsboth. Before the concreting work, for example, the number of concrete pumps and their installation had to be specified precisely in order to supply them with material on time and smoothly. Then the necessary personnel was divided into two working shifts. On December 6, 2021 the go-ahead was finally given for work on the second construction section. From then on, 23 concrete mixers and four enormous concrete pumps ran at full speed without interruption. Working tirelessly, 70 workers moved approximately 100 m³ of concrete per hour over a distance of 150 m. In this process, the team worked from the central span of the bridge with the load-bearing elements of the structure up to the outer base of the roadway slab. A total of 300 loads were required for the 2,625 m³ of concrete. In just 24 hours, the roadway slab was complete and the majority of the work was accomplished – a real feat of strength. Björn Gorsboth remembers this moment with evident enthusiasm: "The completion of the first construction section in August 2020 was already a very special moment. But the conclusion of the concreting work for the second construction section topped it all." The surrounding nature reserve was not an easy undertaking either: Not only was there limited space available for the extensive work, but extreme caution was also necessary. Nevertheless, these challenges were not a problem for Björn Gorsboth and his team. On the contrary: "Thanks to perfect planning and exemplary teamwork, we actually shortened the main works by three months," he proudly reports.

More than 9,000 m of tunneling work has been executed so far in the chrome ore mine in Kazakhstan.

400,000 t of soil

The volumes moved for a disposal project in Munich are also impressive: Approximately 300,500 t of soil and construction debris were disposed of at a 45 ha barracks site by the Bauer



Around 5.000 m³ of concrete were installed during the rehabilitation of the Innerstetal bridge in just 48 hours.

More than 400,000 t of excavated soil were transported during a disposal project in Munich.

Umwelt Division of BAUER Resources GmbH. The recipe for success with such large quantities: "Planning with foresight and keeping a cool head," emphasizes Ulrich Morgenstern, Head of Disposal. But what if prior military use occurred on the site? "Then all excavation materials need to be sifted under the supervision of weapons experts, which is a laborious process," continues Ulrich Morgenstern. In addition, the soil is polluted with the contaminant DDT, a pest control spray. As there are no official limit values for DDT, close coordination with the responsible authorities was required. The site logistics are also complex: When such a large site is involved, it is important to retain an overview of all excavated material. Ultimately it must be ensured that always the right material is loaded. To keep from disrupting the construction progress of the overall project, the continuous removal of at least 1,000 t per working day is required. Especially for this reason, teamwork is the main focus on this project. "For a smooth process, you need collaboration between all capabilities – and in particular a spirit of partnership," explains Project Manager Uwe Dinter. Compared to these challenges, the actual disposal is a cinch: Due to the low degree of contamination, the majority of the waste can be used for fill material in gravel and clay pits or reused for landfill construction. The disposal of the remaining volume of approximately 100,000 t is still pending and is expected to last until the second half of 2022.

> *"For a smooth process, it takes collaboration between all capabilities – and in particular a spirit of partnership."*
>
> Uwe Dinter · Project Manager in the Bauer Umwelt Division BAUER Resources GmbH

Construction projects around the globe

Egypt The expansion of the metro in Cairo is advancing in great strides. For the museum station on Line 4 in Giza, Bauer Egypt injected 50,000 m³ of softgel.

Saudi Arabia A new, sustainable recreation area is being built by the Red Sea. Multiple bridges are being constructed as well. For this project, Bauer installed a total of 124 piles in addition to three test piles.

Worldwide


1


2


3


4


5


6

1 | **Panama** Using three drilling rigs, Bauer installed mono piles with a diameter of 2.5 m on a 75,000 m² large area for metro line 3.

2 | **Ghana** For the upper section of a mine shaft with a total depth of 450 m, Bauer constructed a 42-m-deep secant pile wall with a diameter of 6.1 m.

3 | **Qatar** For the construction of two interchanges in Doha, Bauer drilled piles with diameters of between 1,200 mm and 2,000 mm using different BG types. Some of the piles had to be constructed under an existing bridge.

4 | **India** Electricity from hydropower: For the project Teesta HEP VI in the state of Sikkim, Bauer constructed 4,600 m² cut-off wall. The scope of work also included drilling, grouting and anchor works.

5 | **Indonesia** For the expansion of the Suralaya power plant, 2,558 piles were installed with lengths between 17 m and 43 m. Two BG 28 and two BG 30 drilling rigs were deployed here.

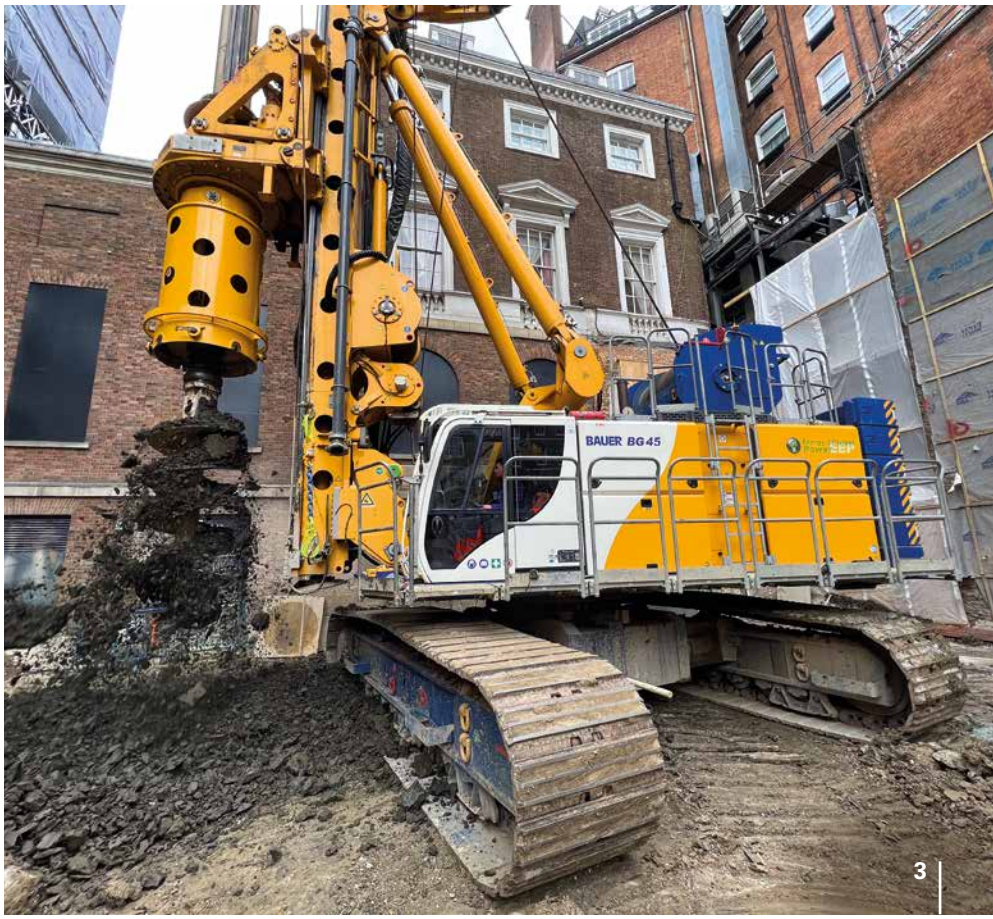
6 | **Malaysia** Under an existing highway, Bauer Malaysia constructed 10 foundation piles with rock socketing and a diameter of 880 mm.

7 | **Thailand** In the course of the construction work for the Nakorn Ratchasima high-speed railway, Thai Bauer is drilling a total of 2,375 piles with rock socketing up to a depth of 20 m.

8 | **Philippines** For the construction of a new railway line in the province of Pampanga, Bauer was commissioned with the necessary piling works. The pile diameters vary between 1,200 mm and 1,800 mm.

9 | **Australia** Roughly 900 km north of Brisbane, Bauer carried out drilling work in rock with a strength of up to 80 MPa for two mine ventilations shafts. The drilling depth was 85 m, the drilling diameter was 2,800 mm.

Europe



1 | **Denmark** For the prestigious "Operaparken" project – a parking garage directly adjacent to the Royal Opera in Copenhagen – Bauer carried out not only extensive diaphragm wall work, but also anchor drilling work.

2 | **Netherlands** In Groningen, a bicycle crossing and parking lot are being constructed underneath a train station. For this project, Bauer drilled 2,000 GEWI piles from a pontoon using three Klemm rigs.

3 | **United Kingdom** In London, Bauer constructed 126 linear meters of secant pile wall along with 48 structural piles with some primary supports for the expansion of the Ritz Hotel using a BG 45 drilling rig.

4 | **Austria** In Seekirchen am Wallersee, a transformer station is being constructed. Using a BG 20 H in a low-head variant, Bauer constructed roughly 1,700 bored piles for the project.

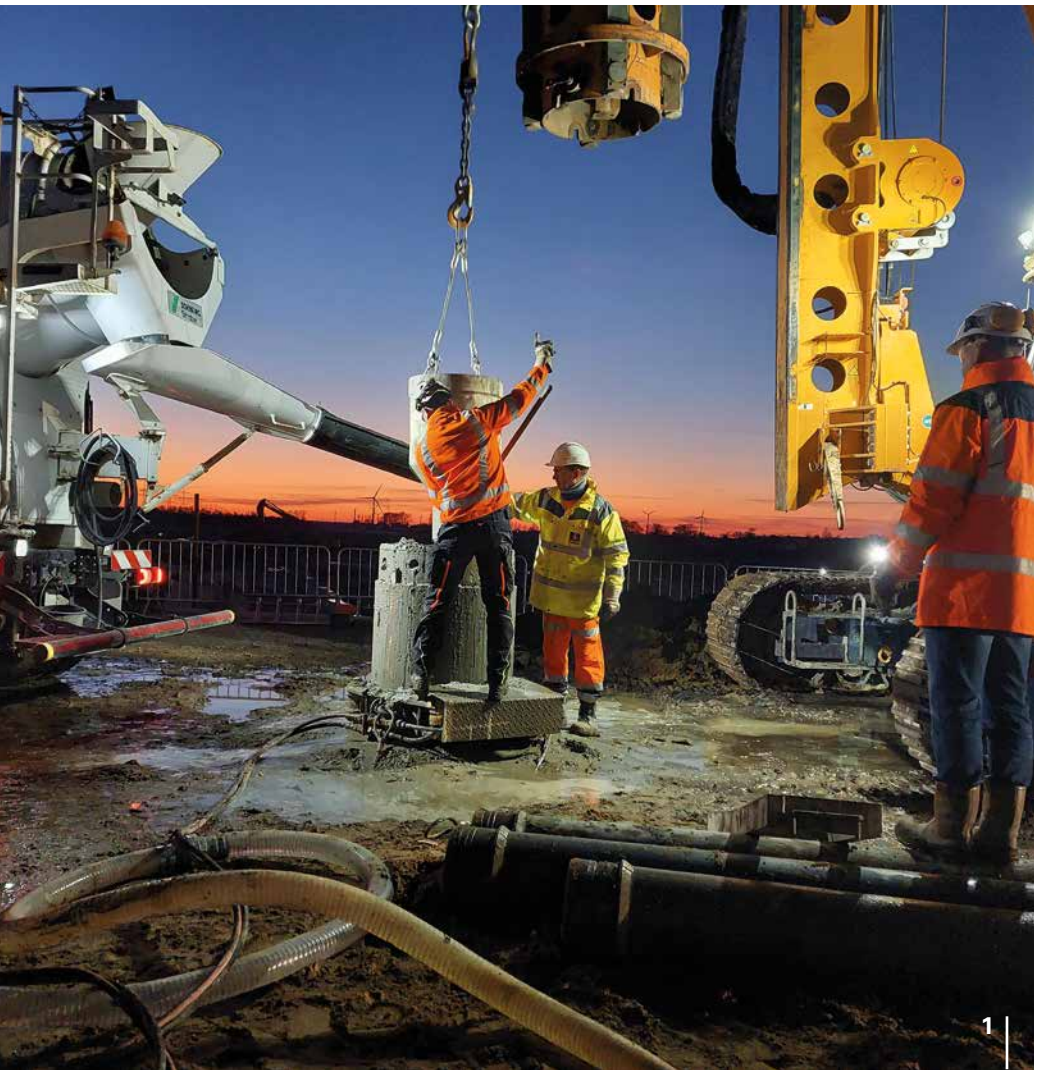
5 | **Switzerland** To strengthen the existing foundations of an 80-year-old residential building in Zurich, 77 high-pressure injection columns were installed with a diameter of 1,200 mm and an average length of 3 m.

6 | **Georgia** During the execution of the major project "Alliance Centropolis", more than 1,000 slurry-stabilized foundation piles were installed up to a maximum depth of 65 m, which corresponds to a total drilling length of more than 61,000 m.

7 | **Slovakia** The Mill is the name of an office complex in Bratislava that is currently under construction. Bauer was tasked with the necessary anchor work and dewatering borehole in the course of the excavation pit construction.

8 | **Hungary** For a new battery factory in the Hungarian village of Iváncsa, 5,160 CFA piles were executed in just 2.5 months with a total length of more than 76,270 m. Six drilling rigs were used simultaneously for this work.

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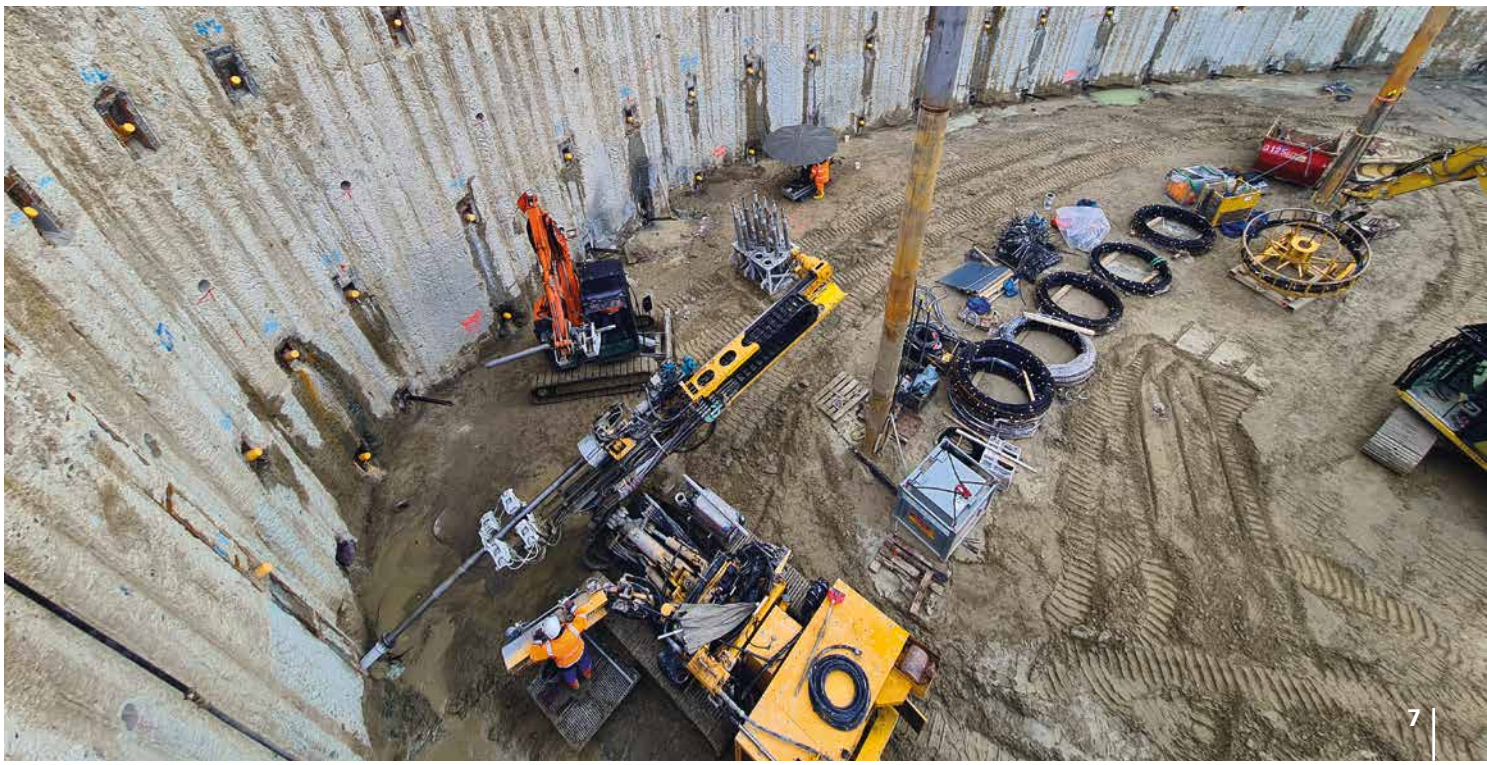
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1 | **Hamburg** As part of the expansion of the A26 federal highway, Bauer is executed extensive works, including 3,000 m² of secant pile wall, 16,200 linear meters of ground anchor and 12,100 m² of soil improvement using geotextile-encased sand columns.

2 | **Berlin** A new residential and commercial building is being erected directly at the Spree river, for which Bauer constructed an excavation pit with sheet pile walls and bored piles. Roughly 60 anchors and 100 GEWI piles for uplift prevention were installed.

3 | **Heppenheim** For the underpinning of historical buildings, Bauer constructed 26 High Pressure Injection (HPI) columns. The scope of works also included the excavation pit construction for an elevator shaft in an existing building using jet-grouted columns.

4 | **Münster** In the south-east of the city, the B51 national highway is being expanded. For the construction of a trough structure, Bauer was commissioned with the construction of a retaining structure comprising 20,000 m² secant pile wall with five different diameters, amongst others.

5 | **Rosenheim** Bauer installed piles with a diameter of 1,200 mm in extremely challenging marine clay for the foundation of a bridge belonging to the Rosenheim west bypass.

6 | **Feldolling** For a flood control reservoir in the district of Rosenheim, Bauer constructed 7,000 m² single-phase cut-off wall, 20,000 m² MIP wall, 1,700 m² pile wall and 2,500 m² sheet pile wall.

7 | **Lindau** At Lake Constance, a commercial building is being constructed with a four-story underground garage. For this project, Bauer constructed a geothermically activated MIP wall (roughly 3,850 m²) with a thickness of 55 cm.

The CSM method used at the Herbert Hoover Dike in the USA

Sustainable soil mixing techniques

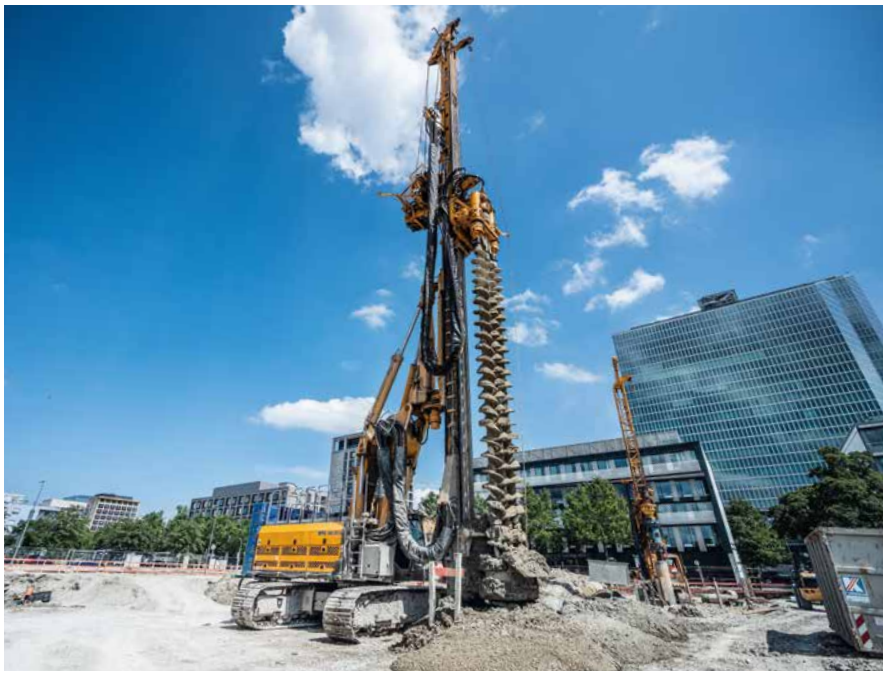
WHY REMOVE EXCAVATED SOIL AND BRING IN CONCRETE IF THE EXISTING SOIL CAN BE USED?

The mixed-in-place (MIP) and cutter soil mixing (CSM) methods developed by Bauer eliminate laborious transport coordination, reduce costs, lower emissions and thereby benefit the adjacent owners and the environment. In suitable soils, both methods have proven to be efficient, economical and environmentally friendly alternatives when compared to other specialist foundation engineering methods.

The mixed-in-place method (MIP) patented by Bauer, has being used successfully for more than 25 years. Thanks to decades of experience and continuous enhancements, it can be executed in many soil types. Due to the unique mixing technology of the counter-rotating triple auger, which involves mixing together all soil strata over the entire drilling depth, the homogeneity of the MIP construction material generated is considerably higher than with other soil mixing techniques. The MIP method is used to construct cut-off walls as a groundwater barrier or for the encompassment of contaminated sites, for the reinforcement of dikes and dams or as a structurally functional retaining wall for embankments and excavation pits.

However, the MIP method is not just an efficient soil mixing technique: it is also particularly sustainable, as demonstrated by calculating the Product Carbon Footprint (PCF) of an example site in Berlin using the CO_2e calculator of the European Federation of Foundation Contractors (EFFC). CO_2e is a measuring unit used to compare the effect of all different greenhouse gases on climate. This CO_2e footprint takes into account all emission factors on the site; from the production of construction materials to the construction equipment used, fuel and power consumption, all the way to the required transport routes for construction materials, equipment and personnel, as well as production waste that is generated. The construction of a typical excavated diaphragm wall was used as a reference for calculation. The impressive result: The PCF for the MIP method is equivalent to CO_2 emissions of approximately 800 t of CO_2e, while the PCF of the excavated diaphragm wall is approximately 1,130 t of CO_2e. This corresponds to total savings of 30% in CO_2e emissions!

If particularly large wall or element depths are required, the CSM method is used instead of MIP. This method combines features of diaphragm wall and soil mixing technology and significantly extends the limits of application: Soil mixing is possible even at very great depths and with very densely bedded or rocky soils thanks to the use of modified, high-performance cutters. In addition, even greater thicknesses can be achieved, and thus higher levels of reinforcement content and wall rigidity. As a result, the CSM method is especially suited for safeguarding particularly deep excavation pits or for reinforcement of high dams and dikes.



Excavation pit construction using the mixed-in-place method for the Parkstadt Schwabing project in Munich

Learn more about the MIP and CSM methods in our videos!

mixed-in-place

cutter soil mixing

Equipment
in customer operations

Belgium With a brand-new RG 22 S including corresponding equipment, De Waal Solid Foundations NV carried out cutter soil mixing work in Nieuwpoort.

Austria In South Tyrol, Keller Grundbau Ges.mbH sealed an existing dam on the Etsch river. The work was executed with an RG 18 S from RTG Rammtechnik GmbH.

1 | **United Kingdom** In the course of work for the prestigious HS2 infrastructure project, our customer Bachy Soletanche is using a CMS 45 unit from BAUER MAT Slurry Handling Systems, among other equipment.

2 | **Belgium** In Blankenberge, our customer 2FUND BV relies on the performance power of an RG 27 S with BCM 5 equipment.

3 | **Germany** Drilling with a beach vibe: To tie back a waterfront wall with 130 GEWI thread bar piles on the island of Sylt, Neidhardt Grundbau GmbH relied on a KR 805-3G.

4 | **Germany** In Hagenbach, Bauer Spezialtiefbau constructed stone columns for soil improvement using a BF15 including TR 17 K deep vibrator.

5 | **Italy** For a project in Lucca, our customer Romana Costruzioni S.p.a relied on a BE 300-C plant from BAUER MAT Slurry Handling Systems.

6 | **Czech Republic** With a BG 23 H, Menard Zakladani carried out pre-drilling work in Cerhenice for gravel columns for ground stabilization.

7 | **Czech Republic** Our Polish customer Tolos constructed foundation piles for a highway bridge in the Czech town of Sumperka with a BAUER BG 33 H.

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8 | **Poland** A highway is being constructed in Górka Węgireska. To secure the slope, Keller Polska Sp. z o.o. is using a KR 806-5G drilling rig from KLEMM Bohrtechnik GmbH.

9 | **Turkey** In Izmir, our customer Barankaya Zemin used a BAUER GB 50 for grab work.

10 | **China** In Shiyan, the company Wuhan Zhuangting Construction Engineering Co., Ltd is using a BG 38 and a BG 42 for an infrastructure project.

11 | **China** As part of the project Nanjing Jianning West Road Tunnel D/W, a BAUER MC 128 duty-cycle crane with BC 50 cutter is being used.

12 | **Malaysia** In Kelantan, specialist foundation engineering work is being carried out with a BG 36 for the sixth section of the project Kelantan ECRL.

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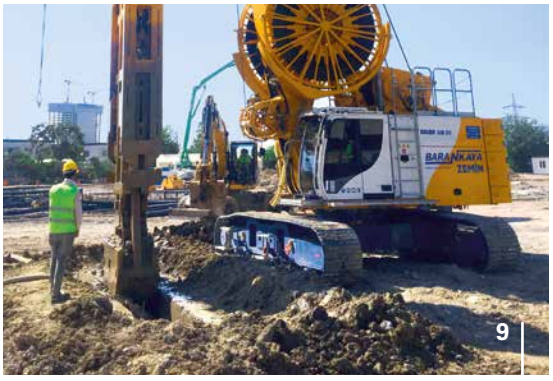
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The eBG 33 is Bauer's first electrified drilling rig. A battery-powered drilling rig is going to be presented at this year's Bauma.

Innovative technologies for the challenges of the future

Social, ecological and economic sustainability are not just platitudes for a family-owned business like Bauer with a history reaching back more than 230 years. For decades now, we have been addressing topics such as noise reduction, energy-efficient and material-efficient methods, occupational safety or emissions from consumption. Sustainability is a key topic of our times, which has now taken on increasing importance in the broader public perception. Across all industries, companies are making efforts to reduce their footprints and consumers also are searching for ways to optimize their behavior. Of course, this also relates to the construction industry, as numerous climate initiatives have led to construction projects, that need to be implemented with zero emissions. National climate targets have a strong impact particularly on the construction industry. In the Netherlands, for example, the CO_2 footprint of entire regions is recorded. This includes the emissions on construction sites. "Based on our company culture, sustainability for us also means focusing on people," says Dr. Rüdiger Kaub, CEO of BAUER Maschinen GmbH. "The dedication of employees makes all the difference in how companies overcome a wide range of challenges."

SUSTAINABILITY. A BIG WORD. BUT WHAT DOES IT MEAN FOR SPECIALIST FOUNDATION ENGINEERING?

Electrification as part of the sustainability strategy

Visitors to Bauer Maschinen Group's trade fair booth at Bauma 2022 will be able to experience first-hand what sustainability means specifically when it comes to specialist foundation engineering equipment, including the presentation of several world firsts. Last year, Bauer brought not only the electrically powered BAUER Cube System onto the market, but also its first electrically powered drilling rig, the BAUER eBG 33. It is connected to the power supply via cable. The next innovation from Bauer now operates with a battery. In addition, an RTG pile driver will be presented at Bauma that gains considerable extra power with an "electric booster". The exhibited equipment also will also includes an electrically powered anchor drilling rig. "This year, sustainability is one of the core topics of our exhibition trade fair booth, which by the way is entirely CO_2 neutral," Kaub continues.

Long service life conserves resources

Bauer has always been very proactive when it comes to sustainable equipment. One example is the question of fuel savings. "This was and is a top-priority goal when we develop new equipment or methods and optimize our existing equipment and methods," explains Prof. Dr. Sebastian Bauer. On the Management Board of BAUER Maschinen GmbH, he is responsible for the Research and Development division. But sustainability also means that Bauer equipment has an extremely long service life, which contributes to the circular economy as expected nowadays. After all, energy and other resources are already consumed during production. "The long service life of our equipment also results in high value retention, which has always been our objective along with comprehensive customer service, good availability of spare parts and minimal wear," says Sebastian Bauer.

The BAUER Cube System also has an electric drive.

Learn more about the eBG and the BAUER Cube System in our videos!

BAUER eBG 33

BAUER Cube System

Rethinking drive technology

In this interview, Dr. Rüdiger Kaub, CEO of BAUER Maschinen GmbH, and Prof. Dr. Sebastian Bauer, who is responsible for the Research and Development division on the Management Board of BAUER Maschinen GmbH, explain the opportunities offered by alternative drive systems and talk about the questions that still need to be resolved.

"Everything we are doing today is an investment in the future."

Dr. Rüdiger Kaub · CEO of BAUER Maschinen GmbH

What sustainable drive systems will play the most important role for construction equipment in the future?

Rüdiger Kaub: Even the experts haven't reached an agreement about this yet. In any case, the answer depends significantly on the nature and conditions of use for the equipment in question.

Sebastian Bauer: The political world is currently promoting the topic of electrification very heavily. But this is not so easy even when it comes to cars, since this requires a sufficient number of properly distributed charging stations as well as the production of enough green energy. It doesn't make any sense if the electricity used to power electric cars is produced in a coal or gas power plant. For trucks, which generally travel long distances and have a high consumption, you have the added difficulty of storing a sufficient quantity of electrical energy in the vehicle. The situation is even more problematic for construction equipment, since you need the power dispenser to be practically on site with the equipment. So it's not just up to us to outfit equipment with new drive concepts: the corresponding infrastructure has to be in place.

Which specific challenges need to be overcome?

Sebastian Bauer: Our machines require a capacity of 200 kW or more. On sites, what you reasonably have available is one, at most two 88 kW connections. Any higher capacity requires additional planning, and in many cases months of preparation time, since you are not typically lucky enough to happen to have a high voltage line and suitable transformer in the vicinity.

„We now offer almost the entire range of specialist foundation engineering technology with electric drives as well."

Prof. Dr. Sebastian Bauer · Managing Director
BAUER Maschinen GmbH

Apart from fully cabled operation, batteries are always an option, of course, even just to reduce the power supply by cushioning power peaks. But batteries for large equipment are still very expensive at the moment. This is particularly true for larger – that is, more powerful – equipment, all-day use from the battery and especially for methods with high continuous loads such as the single-pass method.

Rüdiger Kaub: We prepare various solutions, that is, apart from hybrid drives, we also offer our products with or without cables and batteries. In this way, we give customers the greatest possible flexibility for their site!

What are the alternatives to electrification?

Sebastian Bauer: The alternatives are climate-neutral fuels that can be brought to the equipment, so you don't have to rely on an existing infrastructure and you can also deliver energy to the equipment quickly. The easiest way would be to produce synthetic diesel using green electricity. However, the efficiency from power generation to the drilling tool is very poor here. Energy could also be temporarily stored using hydrogen. But compared to power supply via cable, the efficiency here is not particularly good either. And as this is the lightest of all gases, an enormously large volume is needed for storage. There are also alternatives to hydrogen, for example ammonia, methane or methanol, each with its advantages – e.g. considerably easier transport and storage on the equipment – but also with specific disadvantages. It's not yet clear which option will emerge as the leading contender. Yet in my view, in the long term hydrogen has a good chance of becoming an energy carrier for very large mobile equipment on construction sites. We are currently researching what is most practical for use on site and how that can be realized in practice.

What has Bauer already achieved when it comes to alternative drives?

Sebastian Bauer: Apart from the fact that the first UBW 01 equipment manufactured by Bauer was already powered electrically in the late 1960s, strictly speaking, we have always had equipment with electric drives in our portfolio, generally for specific projects. In the last ten years, this topic has gained increasing momentum. For instance, we developed special underwater drilling rigs for deep sea exploration drilling that operate electrically. Deep drilling rigs for oil, gas and geothermal heat with electrical drives have been developed. For raw material exploration on the ocean floor, a collaborative research project is currently underway under our direction concerning the use of electric cutters and separation plants in the deep sea. At the last Bauma in 2019, for the first time we presented an electric cutting system based on an MC duty-cycle crane, equipped with a 500 kW electric motor. Our highly innovative BAUER Cube System for minimally invasive construction of underground structures, which we brought on the market last year at the same time as our eBG 33, is also powered only by electricity.

In addition, our subsidiaries also have electrically powered devices and equipment in their portfolios. If you add up all this, we now offer almost the entire range of specialist foundation engineering technology with electric drives as well.

Rüdiger Kaub: But it is also clear that there is still a long way to go before mass availability is achieved. In general, a lot of research and development work needs to be conducted on the topic of alternative drives, not just by us, but also by manufacturers of motors, batteries, fuel cells, hydrogen storage systems or concerning the relevant site logistics. Everything we are doing today is an investment in the future.

Germany

Resources
on site

Backnang Under extreme weather conditions, the Bauer Umwelt Division constructed the excavation pit for a care home on the grounds of a former tannery in Backnang. With an excavator weighing 30 t, roughly 26,000 m³ of polluted soil were excavated up to a depth of 4 m.

Düsseldorf A lot of power was required for the demolition of two large halls on the former DUEWAG factory grounds in Düsseldorf. Using a long reach excavator, the Bauer Umwelt Division generated around 54,000 m^3 of demolition material in 10 weeks.

1 | **Salzgitter** Tunnel vision: Since May 2021, a 30 cm thick shotcrete inner shell, reinforced in two layers, is being installed at the Konrad shaft. The construction of the shotcrete inner shell comprises the last section of the expansion work on the pit areas carried out by Schachtbau Nordhausen.

2 | **Hildesheim** Good planning and organization were demonstrated during the rehabilitation of the Innerstetal bridge on the A7 federal highway. Roughly 5,000 m³ of concrete were installed by Spesa in just 48 hours – a real feat of strength.

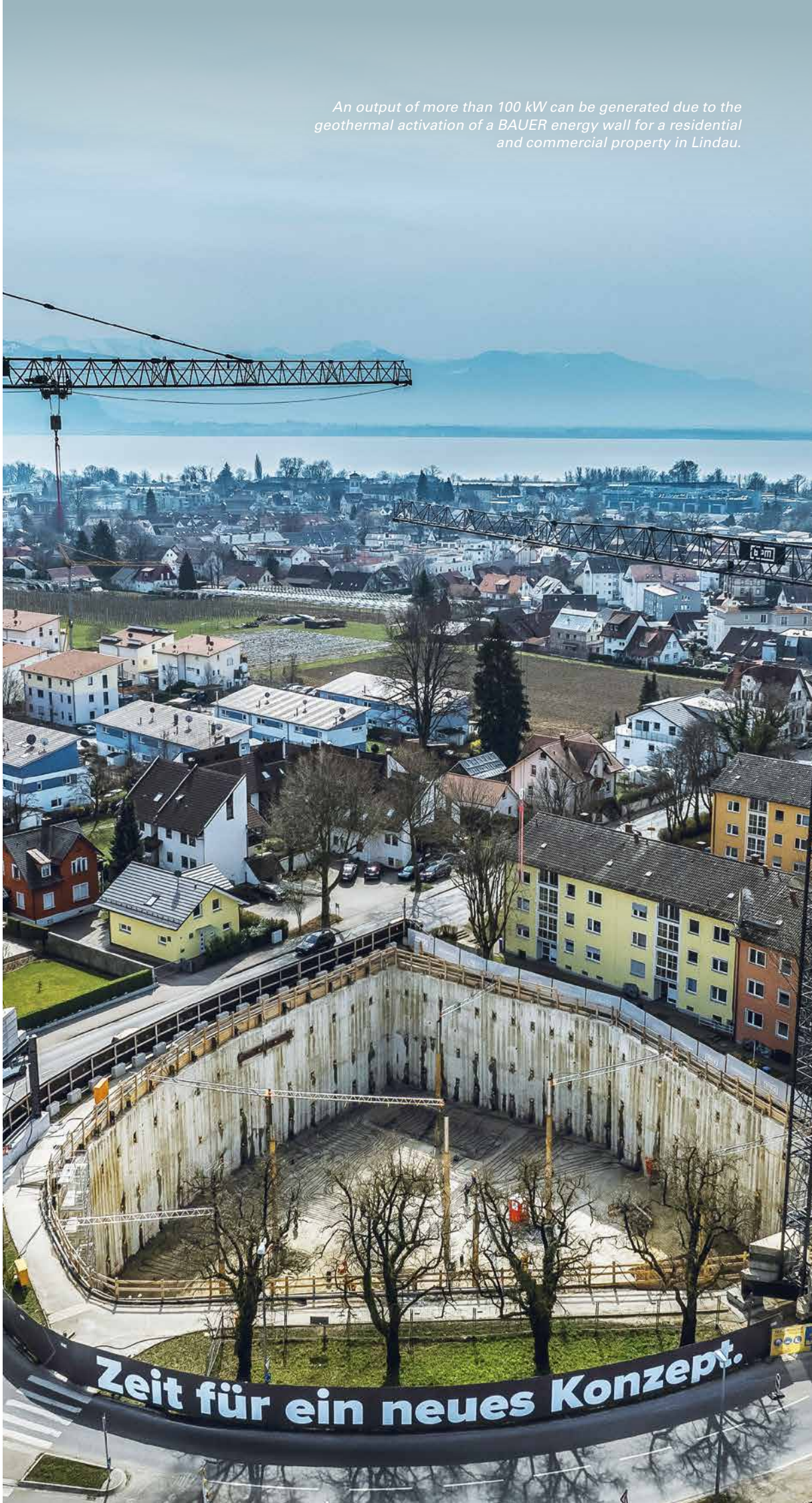
3 | **Eschborn** For the energy-efficient rehabilitation of an existing building in Eschborn, Bauer Resources constructed a geothermal energy system. In the process, roughly 44 geothermal probes were constructed up to a depth of 110 m and the pipelines were installed.

4 | **Solingen** After more than six years, Schachtbau Nordhausen is concluding the steel structure restoration of the Müngstener Brücke – the highest railway bridge in Germany. The narrow, long transport routes and strict structural requirements proved to be challenging.

5 | **Frankfurt am Main** For the new residential quarter franky, an active ingredient solution was injected using high pressure up to a depth of 27 m on former industrial grounds in Frankfurt's Gallus district to breakdown the contaminants in the soil – considerably more than 10 bars of pressure at that.

6 | **Kirchheim bei München** The meaning of sustainability was clearly demonstrated during the construction of an excavation pit for a new residential quarter in Kirchheim bei München. Roughly 33,000 m³ of gravel were excavated by the Bauer Umwelt Division, which is now being reused for the production of concrete.

Trend Resources



An output of more than 100 kW can be generated due to the geothermal activation of a BAUER energy wall for a residential and commercial property in Lindau.

Approximately 10 km of pipelines were installed for the geothermal activation of an energy wall.

An underground treasure

GEOTHERMAL ENERGY IS A GREEN ALTERNATIVE TO NATURAL GAS AND CRUDE OIL – AND HAS BEEN BEING ON THE AGENDA AT BAUER RESOURCES FOR SOME TIME NOW.

The ground is vibrating. Meter by meter, the drilling rig works down into the depths. The target lies 200 m below the surface. Here there is a hidden treasure, a nearly untapped source of renewable energy: Geothermal heat. This treasure is extracted using probes, piles or walls. The heat is then stored in the adjacent soil using a closed circuit, or drawn out of the soil. In winter, the temperature of the soil is harnessed using a heat pump in order to heat the building. In summer, the process is then reversed in order to cool the building. So far, so easy.

A sustainable miraculous resource

Geothermal energy is not only comparatively easy to extract, it is also particularly sustainable. The long-lasting geothermal heat systems generate next to no emissions in operation. Above all, this is good for the environment. Approximately 75% of the total energy delivered by the system comes from the soil. Around one quarter is electrical energy that is used for the operation of the system. If green power is used, geothermal heating is practically climate-neutral. With passive cooling, up to 100% of the energy actually comes from the soil. When replacing a conventional heating oil boiler with an average heat pump, up to 80% of the previous CO_2 emissions can be saved. The result are potential CO_2 savings in Germany of approximately 25 million t in 2030 and 58 million t in 2050. This makes geothermal energy practically a miraculous sustainable resource.

Geothermal heat pays off

Also in terms of pure economic efficiency, it is clear: Investments in geothermal heat are significantly more beneficial than investments in fossil fuels. After all, geothermal heat is nearly inexhaustible and free of charge – ongoing operating costs are almost entirely eliminated for the operator. The price for the systems mainly comprises the costs for drilling, technology and installation. And these can be subsidized in places through state programs (e.g. BEG or KfW). At the same time, this valuable underground energy is also independent of the uncontrollable price increases that occur with natural gas and oil, for example in spring 2022: It is currently possible to save approximately 20% to 40% in heating costs compared to conventional systems. This makes geothermal heat pump systems particularly attractive at the moment.

A strong partner in the heating revolution

Bauer Resources has been being engaged with the topic of geothermal heat for a long time now. Every day, the company makes an important contribution to the heating revolution. That's easier said than done. After all, today more than 90% of residential buildings are still heated using natural gas or crude oil. But the first steps have already been taken: Bauer Resources has already completed more than 50 projects, including an enormous geothermal probe system for a modern administrative building in Karlsruhe; more than 300 drillings were carried out for the project. Another project was executed at the Zurich Airport: Here, Bauer Resources collaborated with Bauer Spezialtiefbau to construct an energy pile plant with 1,150 activated piles for the district "The Circle" – unique in Europe with a total thermal output of approximately 1,800 kW. Such projects require profound of experience, which the specialists at Bauer Resources bring to the table. And they use their experience to expand the company's Energy division step by step. Because one thing is clear: The heating revolution is inevitable. There is no better alternative.

To supply heating and cooling to the district "The Circle", an energy pile plant with a total output of approximately 1.8 MW was installed at the Zurich Airport.

Farewell after nearly four decades

AT THE END OF LAST YEAR, HARTMUT BEUTLER ENTERED RETIREMENT.

He worked at Bauer for almost 39 years, 20 of them on the Executive Board of BAUER AG. In early 1983, when there were just over 1,000 employees at Bauer, started at BAUER Spezialtiefbau GmbH as a trainee after completing his studies in Construction Business Management in Biberach near Ulm. After several years in Accounting (including a period serving as Deputy Head), in 1987 Hartmut Beutler became the assistant to the Executive Director at the time, Prof. Thomas Bauer. In this role, he was responsible for business administration tasks and took care of financing matters, lease agreements and the like. Later, he also led the company divisions of Facility Management, IT, Legal and Insurance. Then in 2001, with spin-off of the Equipment segment into an independent GmbH and the establishment of BAUER AG as a holding with service departments, he was appointed to the Executive Board of BAUER AG. One major step for the company in which the CFO played a key role was its initial public offering in 2006.

“My time at Bauer was incredibly exciting and full of changes that I was able not only to experience but also to actively shape – starting with the first steps in the area of electronic data processing to the progressing internationalization of the Group and all the way to digitalization, which has really picked up speed recently, especially in the last few years,” says Hartmut Beutler. “I am very thankful for that, and for the many friendships that have developed over the years. I am sure that the current leadership team at Bauer, consisting of the Managing Directors of the Group companies and the remaining three Executive Board Members, will set the right course for the future.”

“I have come to know and appreciate Hartmut Beutler as an experienced, skilled and extremely friendly colleague. I would like to wish him all the best for his future,” says CEO Michael Stomberg. Prof. Thomas Bauer, Chairman of the Supervisory Board of BAUER AG, who worked alongside him for many years, agrees: “I would like to extend my special thanks to Hartmut Beutler, who has played a significant role in shaping the development of the company during his nearly 40 years with us. With him, we are saying goodbye to someone who has campaigned not only for our company but also our entire region. We would like to wish him the very best for this next phase of his life.”

Rocking out for colleagues and friends

To witness an Executive Board Member onstage behind a microphone is not actually an unusual sight. But if he has a guitar around his neck and his companions are musicians rather than Managing Directors, that's a bit more out of the ordinary. We are talking about Hydraulica, the Bauer band.

In 2015, the four rockers Florian Bauer, Jürgen Kukol, Stefan Schnitzler and Christoph Soier joined forces – all of them long-term Bauer employees. Their repertoire ranges from Elvis to AC/DC, from Robbie Williams to the Foo Fighters. Hydraulica's first performances in front of an official audience took place in 2017 during the in-house exhibition of the BAUER Maschinen Group and at the employee afternoon.

For the in-house exhibition in 2018, the four guys had another inspired idea: They brought even more Bauer employees onto the stage – the new edition was called Hydraulica & Friends, with seven additional musicians supporting the band on different songs with vocals, trumpet, trombone or accordion, among others. Shortly afterwards, they performed again in the same configuration at the employee afternoon. This gave rise to a series of spontaneous concerts, some of them with an alternating line-up, for example at the 2018 construction soil conference in Stuttgart or the 2019 VÖBU in Vienna. There, Rainer Burg joined the line-up – an employee at Bauer Spezialtiefbau and experienced musician with a mastery of multiple instruments.

As it did for many other people, the COVID-19 lockdown also upset the plans of the Bauer musicians. But Hydraulica did not remain entirely inactive: In early summer 2020, the four members got together to record a video. On the roof of the head office, they performed the song "Times Like These" by the Foo Fighters. The band also wrote a new song and recorded it in the studio as soon as it was possible. Until then, their only original song was the Bauer hit "Standing as One," written by Florian Bauer.

The band has their rehearsal room under the Old Welding Shop. Over the years, the space became more and more of a social meeting point – last summer, a group of Swiss customers even ended up in the rehearsal room spontaneously. "They were just arriving from BAU ERLEBEN," reports Florian Bauer. In the parking lot, they crossed paths and started talking. They quickly found a common wavelength. "At that point, we just invited them over."

The band members value this spontaneous, relaxed approach: "Above all, we want to make music for our colleagues and friends." That's why performances are often arranged on short notice, and of course are free of charge. Usually their pay is a case of beer. Just like a concert in the assembly hall in Aresing at the end of 2017, a highlight in the band's history.

The largest concert so far was held in September 2021: When contact restrictions were lifted, the members of Hydraulica wanted to treat their colleagues to an event under the motto "Come together". Another spontaneous initiative where a stage was organized within two days on the rotunda of the head office, along with drinks and barbecue. They even had an opening act play before them: the newly formed Wolpertinger – also including a number of Bauer employees. And once again, the concert was a great success. The band played right where they want to be and where they belong: in the center of Schrobenhausen, surrounded by people from Bauer.

News

First trained apprentices at Bauer Equipment Malaysia

The dual study program, traditional to Germany, is eagerly adopted in many parts of the world. BAUER Equipment Malaysia Sdn Bhd, a subsidiary of BAUER Maschinen GmbH near Kuala Lumpur, first hired three apprentices in 2018. Last spring, after three and a half years, they successfully completed their training as mechatronics engineers.

"The apprenticeship here in Malaysia is identical to the apprenticeship in Germany, it is divided into theory and practical application," reports Arnold Nestler. The trained mechatronics engineer for motor vehicles has been with Bauer Equipment Malaysia for more than 10 years and became the Training Manager there in 2018. While the practical training was conducted on the company's premises, lessons were held at the German Malaysia Institute (GMI). There, lessons strictly followed the curriculum of the German vocational school. After passing the Chamber of Industry and Commerce (IHK) exam, the Malaysian colleagues received their apprenticeship diplomas.

"Schrobenhausener Tage" symposium

For more than 30 years, BAUER Spezialtiefbau GmbH has been hosting the "Schrobenhausener Tage" event, which was themed by the slogan "B.sustainable: Sustainability in specialist foundation engineering" in 2022. "Sustainability requires assuming responsibility. Accordingly, the development of resource-efficient, environmentally compatible innovations and technologies has for years now been a clear focus," Arnulf Christa, CEO of BAUER Spezialtiefbau GmbH, remarks in his introductory speech.

In the exhibition area, participants were then able to visit various booths for the Design Department, Technical Services, and Digitalization as well as BAUER Maschinen GmbH. The main series of presentations was then held as a hybrid event, with national guests participating on site and international guests participating via webinar. Hans-Joachim Bliss, former Executive Director of Bauer Spezialtiefbau, led the guests through the program.

Florian Bauer, member of the Executive Board of BAUER AG and Member of BAUER Spezialtiefbau GmbH's Management Board, opened the series with his presentation on the topic of digitalization at Bauer. "Apart from the use of digital tools such as data management software, databases or artificial intelligence, it is the people who are responsible for the success of our sites. Without them nothing would be possible."

This was followed by the first live transmission with Mohamed Sherif, Project Manager at Bauer Egypt, from the Cairo metro site. Next came another live report from a site in Munich given by Jee-Sun Rössler and Stefan Jäger, tender Engineers for southern Germany. Dr. Karsten Beckhaus, Head of the Technical Services department at Bauer Spezialtiefbau, dedicated his presentation entirely to the central slogan of the event: "Our top sustainability goal is to be climate-neutral by 2050."

The series of presentations concluded with a live transmission from Alaska: Bruno Luz, Project Manager at the US subsidiary BAUER Foundation Corp., reported on the challenges involved with reinforcing a dam in the northern Arctic Circle. Overall the event was a resounding success, with approx. 150 guests on site and 300 online viewers.

Site visit in Riad
During his experts trip to Saudi Arabia in spring, State Secretary in the Bavarian Ministry of Economic Affairs Roland Weigert visited a construction project of Saudi BAUER Foundation Contractors Ltd. near Riad. The subsidiary of BAUER Spezialtiefbau GmbH is involved in the construction of the leisure and entertainment city of Qiddiya, extending over more than 360 km². Since January, Bauer has been carrying out the foundation work for the world-record roller coaster "Falcon's Flight," one of more than 300 attractions in this significant tourism project. "What I was able to see here made an impression on me. Another world record construction project based on the know-how and products from Schrobenhausen," Weigert says.

Award and end of association activities
During this year's congress of the "Hafentechnische Gesellschaft e.V." (German Port Technology Association) in Düsseldorf, Prof. Thomas Bauer received the Werner Möbius Foundation Award for his life's work (image). The award is granted every two years to outstanding individuals whose work has considerably influenced and shaped the field of hydraulic engineering. A few weeks earlier, the General Assembly of the European Construction Industry Federation (FIEC) was held in Cyprus. Here, Prof. Thomas Bauer passed the baton as President to Irish contractor Philip Crampton. With his departure from the European federation, he is now also ending all activities in the German construction associations – in May, he also left the board of the Bavarian Construction Industry Association. His son Florian was elected to the board to replace him.

Hand pumps for Ukraine
In April, a fully loaded truck with 50 hand pumps including risers and assembly accessories from GWE GmbH with a total product value of roughly 100,000 euros set off from Peine on the way to Ukraine. The hand pumps have now been strategically distributed in order to repair destroyed wells quickly and easily.

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