

Specialist Press Release

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45 geothermal probes for "MERGENTHALER": Bauer Resources is building a geothermal heating system

Eschborn, Germany – Wherever you look, construction space is scarce in city centers. Sooner rather than later, cities will have to react to the situation. Unused buildings can offer a real opportunity here. So how about an abandoned factory? Or an old office complex? Sounds unrealistic, but it's not. The key word is revitalization. One classic example of this is the "MERGENTHALER" project in Eschborn, Germany: A vacant office building from the 1980s is to be revitalized by 2024 using resource-efficient and CO₂-reducing methods on behalf of the Munich-based real estate company WÖHR + BAUER. The core element of this project is a sustainable energy concept – which is exactly why BAUER Resources GmbH is building a geothermal heating system.

Meter by meter into the depths

Preparations began in spring 2022. The geothermal probe field was planned precisely in advance to avoid damaging any underground pipelines during drilling. "This is a crucial step, especially with existing buildings," remarks Marcel Moesslang, Project Manager at BAUER Resources GmbH. Once planning was finished, he and his team produced the geothermal probes using the flush drilling method. The principle: A drilling rig drills hole after hole and injects a special drilling mud slurry into the subsoil at high pressure. This extracts the slurry as well as the drilling debris so that the probes can be installed afterwards. In this way, holes deeper than 100 m were drilled for 45 geothermal probes.

Piece by piece with great accuracy

As with many inner-city projects, the limited space for construction sites was a major challenge, the Project Manager emphasizes: "Working with the large machines in narrow spaces was challenging. With a distance of less than 2 m from the building, our drilling work had to maintain the specified distances from the property line. Every move has to be spot on." In addition, there was a lot of activity around the construction site: a kindergarten and numerous commercial units, for example the headquarters of Deutsche Börse – all located in the immediate vicinity. Specially insulated equipment was therefore used to reduce noise. "Precautions to protect residents are always our top priority," says Marcel Moesslang.

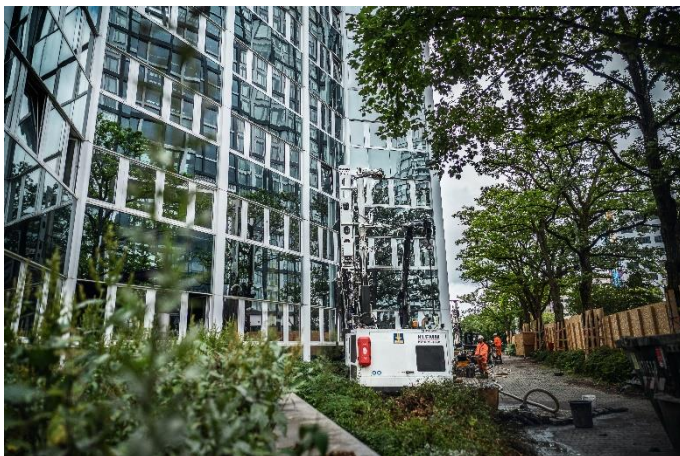
Full speed ahead with geothermal heat

Even after the main work was completed, there was still plenty for the specialists from Bauer Resources to do, such as installing the connection lines: More than 2,200 linear meters of lines were laid in four weeks and connected to a total of four distribution shafts. The geothermal probes were then flushed and filled with a heat transfer fluid. Since then, the construction site has been on pause until the owner completes the rehabilitation work. Last but not least, hydraulic balancing is then carried out and assistance is provided with

commissioning. After completion of the work, "MERGENTHALER" will then be supplied with heating and cooling thanks to the geothermal energy. In total, the system can generate around 200 kW of power – which is roughly equivalent to the heating energy requirements of 40 modern single-family homes.

In addition to the green energy supply, many other sustainability components are implemented in "MERGENTHALER": a thermally insulating facade with floor-to-ceiling glazing and external sun protection, a sky garden of around 1,000 m² and 50 e-charging stations. With the slogan: Preserve existing buildings and revitalize them using green methods. "MERGENTHALER is really close to our hearts," adds Dr. Tim Malonn, Head of the Value-Add business unit at the owner WÖHR + BAUER. "Together with many partners, we are creating a real showcase project here using innovative methods and a resource-efficient approach to construction. Demolition is avoided and we save around 42% in CO₂ emissions during construction alone compared to an equivalent new building."

Photos: 2023-03-bauer-resources-mergenthaler-eschborn-erdwaermesonden-geothermie...



(1) Bauer Resources is building a geothermal heating system in Eschborn, Germany, for the energy-efficient rehabilitation of an office building.



(2) In total, the system can generate more than 200 kW of power.



(3) The Bauer team installed 45 geothermal probes down to a depth of 100 m using the flush drilling method.

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About BAUER Resources Group

The regionally organized BAUER Resources GmbH is aligned to projects around the world with its subsidiaries in Germany, Africa, the Middle East and South America and has extensive expertise in the areas of drilling services and water wells, environmental services, constructed wetlands, mining and rehabilitation. With more than 30 years of experience, BAUER Resources GmbH's Bauer Umwelt business division is one of the leading specialists in site remediation, soil remediation and waste disposal, both in the domestic market and internationally. As an expert in pollution reduction, Bauer Umwelt offers a diverse range of services for all environmental issues. Other companies of the BAUER Resources Group are GERMAN WATER and ENERGY GROUP (GWE), SCHACHTBAU NORDHAUSEN GmbH and SPESA Spezialbau und Sanierung GmbH. More at bre.bauer.de

About Bauer

The BAUER Group is a leading provider of services, equipment and products dealing with ground and groundwater. The Group can rely on a worldwide network on all continents. The Group's operations are divided into three forward-looking segments with high synergy potential: Construction, Equipment and Resources. Bauer profits enormously from the collaboration of its three business segments, enabling the Group to position itself as an innovative, highly specialized provider of products and services for demanding projects in specialist foundation engineering and related markets. Bauer therefore offers suitable solutions to the world's greatest challenges, such as urbanization, the growing infrastructure needs, the environment, as well as water. The BAUER Group was founded in 1790 and is based in Schrobenhausen, Bavaria. In 2021, it employed about 12,000 people and achieved total Group revenues of EUR 1.5 billion worldwide. BAUER Aktiengesellschaft is listed in the Prime Standard of the German Stock Exchange. More information can be found at www.bauer.de. Follow us on [Facebook](#), [LinkedIn](#) and [YouTube](#)!