

## Specialist Press Release

March 30, 2021

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### **Digitalization on the site: Drone and GPS for more efficiency in excavation pit construction**

**Munich, Germany** – On an area where gravel was formerly excavated the construction project PANDION VERDE is currently being realized: At the former “Piederstorf” site in Munich’s Neuperlach District, three building complexes comprising a total of six houses and 256 apartments are being built on an area of around 20,000 m<sup>2</sup> to harmoniously integrate into the 12.8 ha Alexis Quartier. Ideally located in the southeast of Munich, right beside the Trudering Forest and close to the city of Munich and the major employers in the north and east of the state capital, the future urban district will create the perfect connection between home, work and lifestyle.

To make all of this possible, Bauer Umwelt, the environmental division of BAUER Resources GmbH, was tasked with the construction of an excavation pit. A total of 25,000 m<sup>3</sup> of material – of which around 5,000 m<sup>3</sup> consisted of concrete demolition – was excavated to a depth of 4 m and disposed of. In addition, a 60 cm thick filter layer was installed to allow rain water to be discharged into the construction soil and the natural aquifer.

“A comparatively simple pit construction,” says Jan Uhlig, Operations Manager at the Bauer Umwelt Division. “But still a true highlight in terms of digitalization.” The secret “star” was a drone – or rather the footage material and data generated by it. This drone was used for surveying the excavation pit and the masses that needed to be moved. “It had a real advantage in terms of speed. Manual surveying methods often take up several days while a drone flight takes just a few minutes and the processing of the data just a few hours,” explains Jan Uhlig. And that’s not all: The amount of detail in the images revealed a discrepancy of a few centimeters between the excavation pit and the design – an immensely valuable information for the execution of the work itself.

But the drone was not the only “star” on the site – it was aided by a GPS-controlled excavator to create the shaping of the excavation base by means of a generated 3D model. “Using the base grade as the foundation level for the actual foundation of a building requires precision,” stresses Erwin Resch, Senior Foreman at the Bauer Umwelt Division. “Every centimeter is precision work to keep tolerances as low as possible.” Once the rough work had been completed with a 35 t excavator, the GPS-controlled excavator was used to work on the finishing touches. Thomas Erwert had to adhere to a positional accuracy of +/- 2 cm in accordance with the terrain model – no problem for the experienced excavator driver from the Bauer Umwelt Division. Moreover, the GPS control also had a decisive edge in terms of time and cost savings: The excavator driver was able to work self-sufficiently without needing to rely on additional support staff at the site, such as a surveyor for allocating the stake-offs at specified heights of the excavation pit. Disruptions

were also avoided as the excavator driver could continually monitor the work progress on the integrated display in real time.

The work was mostly completed on schedule in March. Once the shell for the basement is finished, Bauer will install an infiltration chamber over the course of the year.

**Images: 2021-03\_BAUER\_PANDION VERDE ...**



(1) For the PANDION VERDE construction project, the Bauer environment division of BAUER Resources GmbH constructed an excavation pit. 25,000 m<sup>3</sup> of material were excavated and disposed of for this purpose.



(2) In addition to a drone, a GPS-controlled excavator was used.



(3) The project team on site: (from left to right) excavator driver Thomas Erwert, site manager Rosa Arystanbaeva, senior foreman Erwin Resch and operations manager Jan Uhlig.

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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 remediation. 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 the GERMAN WATER and ENERGY GROUP (GWE) – manufacturers of pioneering products and developers of integrated applications for well-drilling and geothermal – as well the Site Group for Services and Well Drilling Ltd. in Jordan. More at [bre.bauer.de](http://bre.bauer.de)

### **About Bauer**

The BAUER Group is a leading provider of services, equipment and products dealing with ground and groundwater. With over 110 subsidiaries, Bauer 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, oil and gas. The BAUER Group was founded in 1790 and is based in Schrobenhausen, Bavaria. In 2019, it employed about 12,000 people in around 70 countries and achieved total Group revenues of EUR 1.6 billion. BAUER Aktiengesellschaft is listed in the Prime Standard of the German Stock Exchange. More information can be found at [www.bauer.de](http://www.bauer.de). Follow us on [Facebook](#), [LinkedIn](#) and [YouTube](#)!