

## Specialist Press Release

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### **Below ground: Diaphragm wall works for metro expansion in Indian metropolis**

**Chennai, India** – A pulsating metropolis with millions of inhabitants, a port city and capital of the Indian state of Tamil Nadu – that's Chennai. As with many large cities in India, the city has experienced rapid population growth in recent years. The need for infrastructure is correspondingly high as a result. One solution to deal with the high traffic volume in the heavily built-up city is to move it underground. The Chennai Metro was opened in 2015 and so far has two lines with a total length of approx. 46 km. Now the network is to be expanded. Phase 2 of the extension includes the Chetpet Metro Station, a major project, what started in April of this year. As part of this project, BAUER Engineering India Pvt. Ltd., a subsidiary of BAUER Spezialtiefbau GmbH, was tasked with execution of the required diaphragm wall work.

In total, Bauer constructs more than 15,100 m<sup>2</sup> of diaphragm wall up to a depth of 35m. When constructing a panel, the work is divided into three steps: excavation of the trench using bentonite as the stabilizing slurry, installation of the steel reinforcement cages, and concreting work. "The steel reinforcement cages are each around 33 m long and weigh 35 t," explains Hassan Farhat, Project Manager at Bauer India. In total, 286 m<sup>3</sup> of concrete is filled in for each diaphragm wall panel in just six hours, with 30 secondary panels produced by the beginning of November.

What's special about this project: There is zero tolerance for the trench excavation. However, this isn't the only challenge, as the site is in an area with significant rainfall in the monsoon season, i.e. during the construction phase. The ground composition of sand, silt, stiff clay and rock is also very demanding. "Another challenge is logistics. Since the new metro station is located directly in the urban area, the works need to be implemented in a very confined space. This requires extreme caution and excellent organization," continues Hassan Farhat.

A BAUER MC 96 duty-cycle crane with DHG-C hydraulic grab as well as an MC 128 duty-cycle crane with BC 40 cutter are being used for the works. In addition to this, digital tools such as the Bauer data management software b-project and the Virtual Site Installer are also being used.

"We are currently running on time and are more than satisfied," is Hassan Farhat's summary of the project so far. "If everything continues to go as planned, we expect to

successfully complete the project before the end of the year and thus a few weeks before the originally scheduled completion date at the end of January."

**Photos: 2022-11\_BAUER\_Chennai\_Metro...**



(1) Overview of the construction site in Chetpet, Chennai



(2) BAUER MC128 duty-cycle crane cutting a panel

All images: © BAUER Group

### **About BAUER Spezialtiefbau Group**

BAUER Spezialtiefbau GmbH, the original parent company of the BAUER Group, has been a major driving force in the development of specialist foundation engineering. It carries out all of the customary processes of foundation engineering, primarily for excavation pits, foundations, cut-off walls and ground improvements on a worldwide basis. In doing so, BAUER Spezialtiefbau GmbH works closely together with their over 50 subsidiaries and branches across the globe. Regional networks around the world allow for the quick and flexible application of machines, teams and expertise. Bauer Spezialtiefbau offers their customers individual, creative and economical specialist foundation engineering solutions for demanding construction projects, from planning through to execution. More at [bst.bauer.de](http://bst.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](http://www.bauer.de). Follow us on [Facebook](#), [LinkedIn](#) and [YouTube](#)!