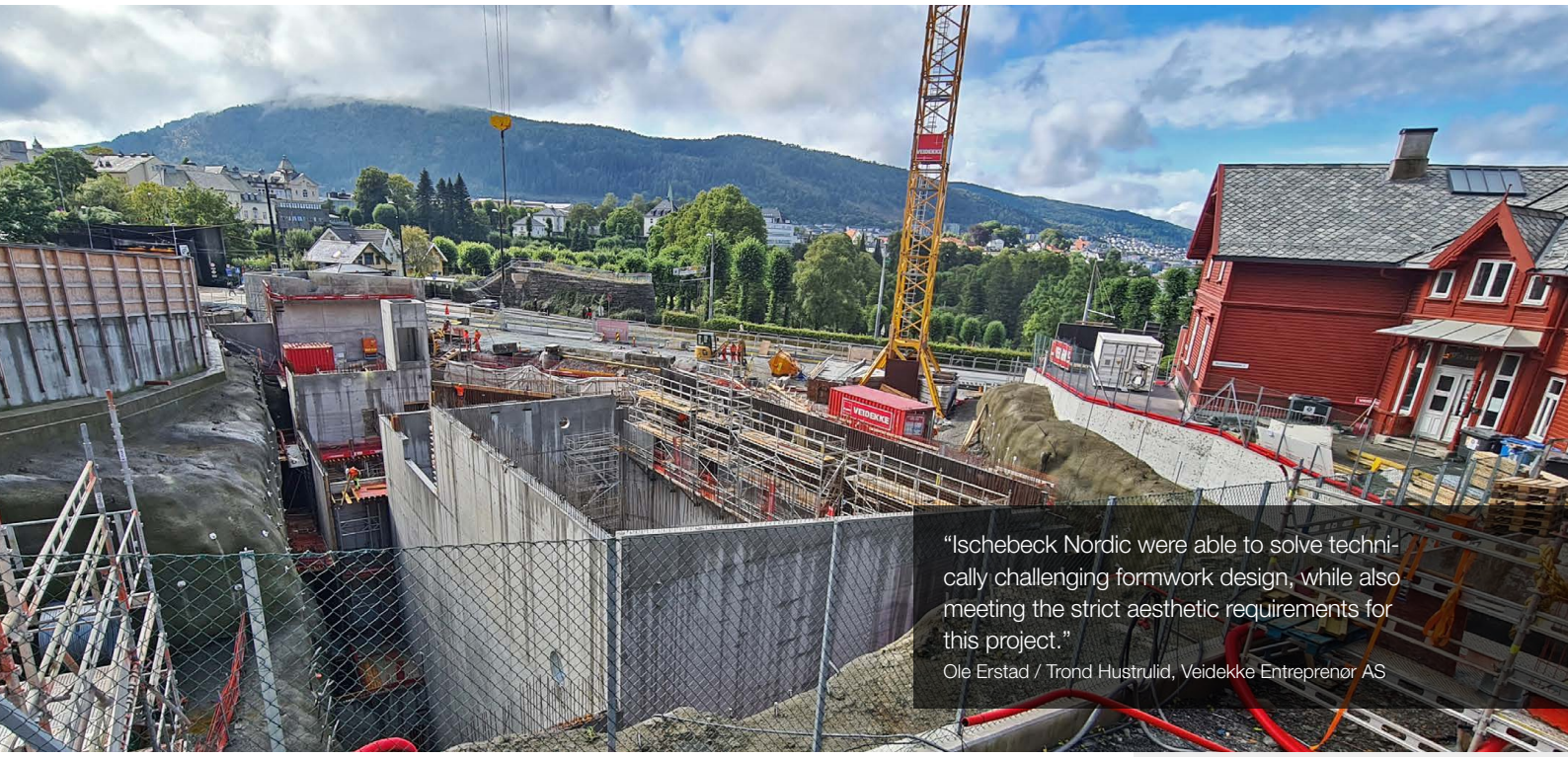
JOB REPORT

Haukeland Station: Overcoming Underground Challenges

Interior construction built with TITAN Megashore system



"Ischebeck Nordic were able to solve technically challenging formwork design, while also meeting the strict aesthetic requirements for this project."
Ole Erstad / Trond Hustrulid, Veidekke Entreprenør AS

Ischebeck Nordic AS supplied main contractor, Veidekke, with Ischebeck TITAN, NOE and Robusta-Gaukel equipment to complete the concrete interior of Bybanen's first underground station. Haukeland Station is located right next to the University Hospital and consists of two entrances, one pedestrian tunnel, one platform hall and two transportation shafts. This station was part of Bybanen's 4th construction stage and opened the way from Bergen's city centre to Haukeland University Hospital.

The challenge

This project came with several challenges, as most of the work had to be executed underground in extremely narrow and tight spaces. The constructions were tall and heavy and the concrete walls needed to be cast very close to the rock wall. Additionally, there was a massive ventilation system that had to be supported during installation, as it was installed 4-6 meters above the bottom level. These challenges forced us to think "outside the box" when using our TITAN Megashore system and the hydraulic climbing equipment from Boxer. Furthermore, we had to ensure that all workers and equipment could move between the different construction zones. Lastly, the architect's plans had highly strict aesthetic requirements since most of the concrete walls were exposed in the final design.

The solution

To address these challenges, we used a laser print of the area from above to measure all the varying distances between the rock wall and the wall formwork. We then obtained custom-build climbing consoles from NOE, making it possible to climb even in areas with minimum clearance. To support the ventilation shaft, we designed a sturdy support structure using our TITAN Megashore system. This system also allowed us to build a stair-tower, combining it with our TITAN Scaffold Stairs. The stair-tower and Robusta-Gaukel walkway enabled access to various construction zones for equipment and personnel.

We met the aesthetic requirements by using the climbing consoles in a very innovative way. This ensured that the symmetry and placement of the tie rod holes matched the plans. Additionally, we opted for new plywood when casting the exposed walls to achieve a smooth finish.

Project:
D13 Bybanen, Haukeland Stasjon, Bergen, Norway

Construction period:
2020 – 2022

Client:
Bybanen Utbygging AS, Kokstad

Architect
3RW Arkitekter AS, Bergen

Principal Contractor:
Veidekke Entreprenør AS, Oslo

Products used:

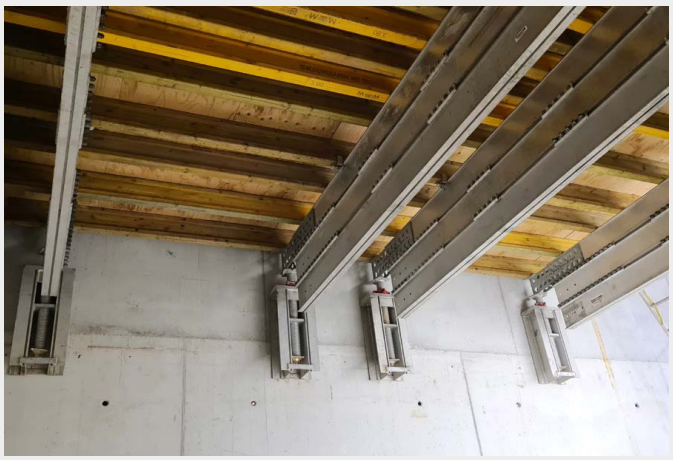
- TITAN Megashore system
- TITAN Scaffold Stairs
- TITAN Steel Props
- TITAN WK1000
- TITAN Coulmn Form SF 100/137

Products from NOE, Robusta-Gaukel and Boxer distributed by Ischebeck only in selected locations.

TITAN Megashore used to support the air ventilation shafts

TITAN Megashore stair tower with Robusta-Gaukel Multi-Footbridge as a building site access

Boxer Climbtrac Auto, Hydraulic self-climbing system for high walls.



Use of WK1000 and bridging beam as a formwork and working platform.

Would you like to find out more about TITAN formwork systems?
We would be happy to advise you about your project. Simply get in touch with us. We look forward to hearing from you.

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