

Follobanen Railway and Tunnel RingBit System

Oslo, Norway

In the project Keller installed around 1.500 pcs steel core piles Over 60 000m, Ø273mm piles with Ø150mm and Ø180mm steel core Keller executed this project with up to 4 rigs simultaneously using several state of the art drilling techniques



The project

The Follobanen project is currently the largest infrastructure project in Norway. The project includes 22 km of new high speed railway from Oslo to Ski. The main part of the project consists of a 20 km long tunnel representing the longest railway tunnel in Norway. On the project, Keller has mainly performed DDSM, Steel Core Piles, Jet Grouting and Rock Grouting for stabilizing the present sensitive clay and quick clay.

The challenge

The tight time schedule for the foundation works in combination with the difficult soil were the main challenges at site. The soil in the area mainly consists of clay. In some parts the clay is soft and quick, but in other parts the clay is medium stiff and low to medium sensitivity. Above the clay there is a layer of dry crust and fill that mostly varies between 1 and 5m in thickness. Beneath the clay there is a moraine layer with a thickness that varies between 1 and 20m, the moraine layer is thickest in areas with largest depth to rock. Due to changing soil conditions at site Keller developed a drilling technique where the drilling fluid is reused and the ground is treated in the most sensitive way, possible.

The solution

With its large foundation portfolio, Keller assisted the client with several different technologies. Moreover Keller executed several static- and dynamic load tests at site to verify the bearing capacity of the piles. Keller also provides a large machine park, consisting of over 130 drilling machines which created flexibility and security for the client.

Project facts

Owner(s)

Bane NOR

Keller business unit(s)

Keller Grundläggning AB
Keller KFS (Finland)
Keller Grundbau

Main contractor(s)

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Solutions

Bearing capacity / settlement control

Markets

Infrastructure

Techniques

Micropiles

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