

## KS-2 Tangenvika bru

Tangen

Keller performed soil investigations from a barge with water depths up to 50m. CPTu with predrilling in stages were performed through very heterogeneous lake sediments. In total, 65 investigation points were performed including total soundings, CPT/ CPTu with pre-drilling and sonic sampling up to 90m depth in less than 3 months.



### The project

Keller was contracted by Implenia to perform foundation works for the newly designed train bridge "Tangenvika bru" in the lake of Mjøsa. The 1070m long bridge will consist of 16 axis, whereas 14 axis will be installed in the water. To get a better understanding of the soil conditions and supplement existing ground information, Keller was appointed to perform additional soil investigations from a barge.

## The challenge

The main challenge in the project was to perform the investigation works and secure the barge in the deep-water areas with depths up to 50m. These water depths required the need of outer and inner casings for all different investigation types. In addition, total drilling lengths of up to 90m were carried out.

## The solution

To be able to perform all different types of investigation types (Sampling, CPTu and total sounding), two different rigs were used on the barge during the whole project period. To carry out CPTu through the complete length of different soil layers, a staged pre-drilling technique was used, ensuring the penetration to final depth above bedrock level. Positioning and securing the barge was necessary due to heavy wind and waves. 8 winches were installed on deck and different type of anchors were used to avoid sliding of the anchors on the lakebed surface.

## Project facts

### Owner(s)

Bane NOR

### Keller business unit(s)

Keller Geoteknikk

### Main contractor(s)

Implenia Norge AS

### Engineer(s)

Contracting project manager  
Sven Gäbel  
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### Solutions

Heavy foundations

### Markets

Infrastructure

### Techniques

Bored piles / drilled shafts

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