

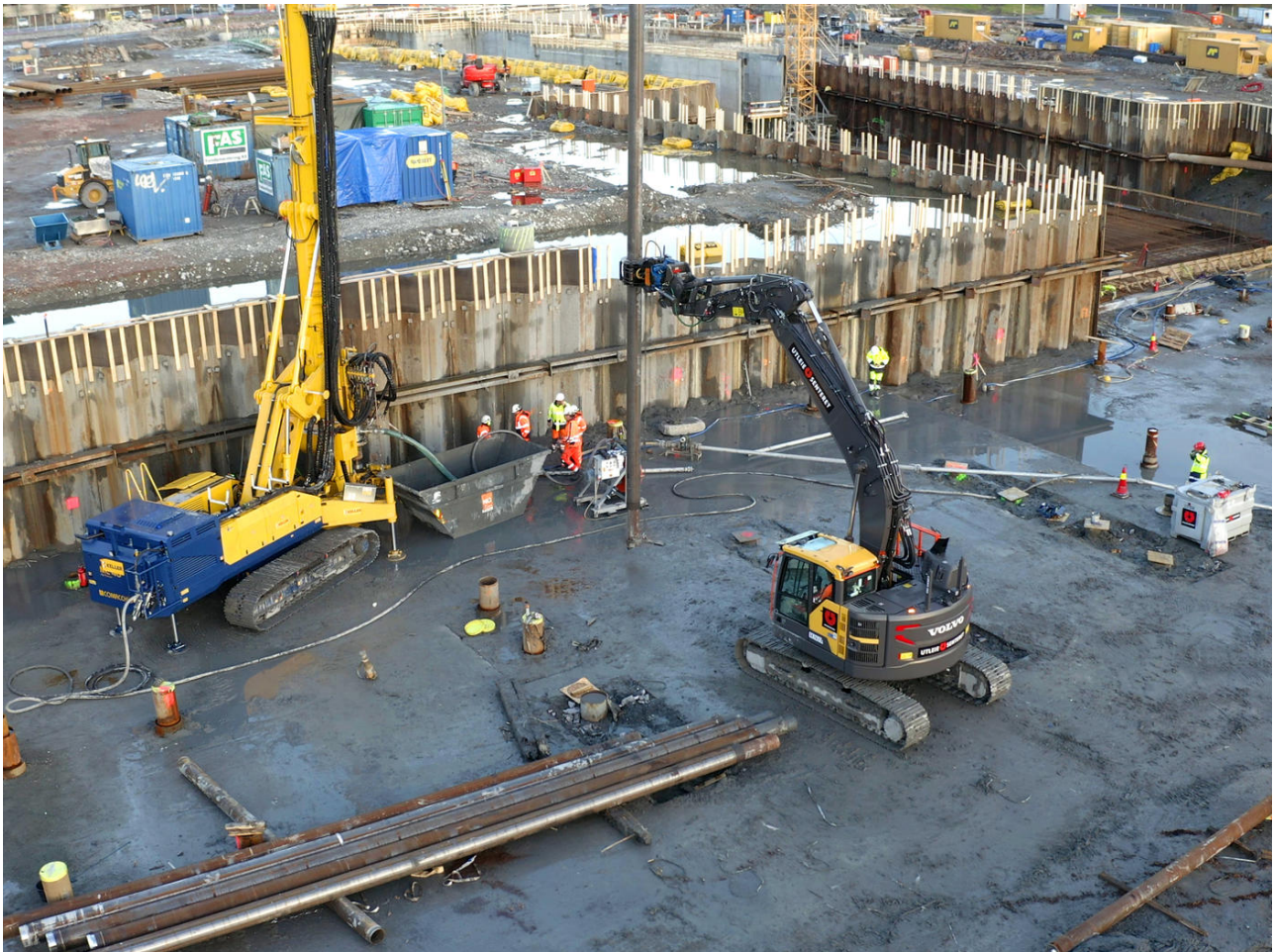
## Nytt Sykehus i Drammen

Drammen, Norway

Keller installed 125 pcs, Ø273, Ø323 and Ø406 casings for steel core piles with a total length of about 8600 m and average pile lengths of about 70 m.

All casings were installed with Kellers own double rotary head system with water driven DTH hammer to avoid disturbance in the surrounding soil.

Ø406 casings installed with a 12" water hammer with consumption of 1200l/m



## The project

A new hospital, which will be the future hospital for the municipalities Drammen, Lier and Sande in the county Viken, was under construction in Drammen.

The site consists of difficult ground conditions, with approximately 70 meters to bedrock and mainly clay over a moraine layer with high water flow.

To reduce the impact on the pore pressures in the ground it was necessary to use the drilling system developed and used by Keller over the last years for sensitive ground conditions using a double rotary head and water driven DTH hammer.

## The challenge

The main challenge in this project was the ground conditions with 70 meters to bedrock and the moraine layer over bedrock.

The moraine layer had a high waterflow which made drilling with normal air driven DTH hammers difficult.

## The solution

The drilling was mainly executed with casing dimensions of Ø273 and Ø323, but also some test piles with Ø406 and a

special 12" water hammer with water consumption of 1200 l/min. To Keller's knowledge, this is the first time a water driven hammer have been used to drill Ø406 casings to depths of 70 m in Norway. All piles were successfully installed min. 1 meter down in bedrock with minimal impact on the pore pressures in the ground and settlements in the building pit.

A backflow treatment plant were used to separate soils and water and to reuse the water in the drilling process.

## Project facts

### Owner(s)

Helse Sør-Øst

### Keller business unit(s)

Keller Geoteknikk AS  
Keller Grundbau GesmbH

### Main contractor(s)

Keller Geoteknikk AS

### Engineer(s)

Magnar Hartz  
magnar.hartz@sykehusbygg.no

### Solutions

Heavy foundations

### Markets

Institutional / public

### Techniques

Bored piles / drilled shafts

### Email address

[info.no@keller.com](mailto:info.no@keller.com)

### Phone number

+47 239 67120