

## Cleveland Convention Center and Hotel

Cleveland, Ohio

Keller experimented and succeeded in using a large-scale European hydraulic drill rig to install deep rock socketed caissons with heavy, full-length permanent steel casings.



### The project

The Cleveland Convention Center & Hotel was planned to be the latest addition to the Cleveland Skyline. The foundation is supported on 29 drilled shafts socketed into the Devonian shale formation, which was encountered about 175 feet below grade.

## The challenge

Keller used specialized drilling equipment to install extremely heavy and oversized permanent steel casing, in sections, into the top of shale. This equipment excavated deep rock sockets in hard shale with compressive strengths up to 5,000 psi.

## The solution

A Bauer BG40 and crane-mounted large drill attachment were used to install the permanent casings and reach the 190-foot shaft depths. The full-length permanent casings were up to 8.5 feet in diameter and seated into shale. Shaft diameters ranged from 3 feet to 7 feet and 6 inches. The design rock sockets were as much as 16 feet in depth. Crews placed over 150 tons of reinforcing steel and 5,000 cubic yards of concrete over a span of 2 months to complete this project on schedule.

## Project facts

### Owner(s)

City of Cleveland

### Keller business unit(s)

Keller

### Main contractor(s)

Turner Ozanne VAA JV

### Engineer(s)

Baber & Hoffman, Inc.

### Solutions

Deep foundations

### Markets

Commercial

### Techniques

Drilled shafts

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