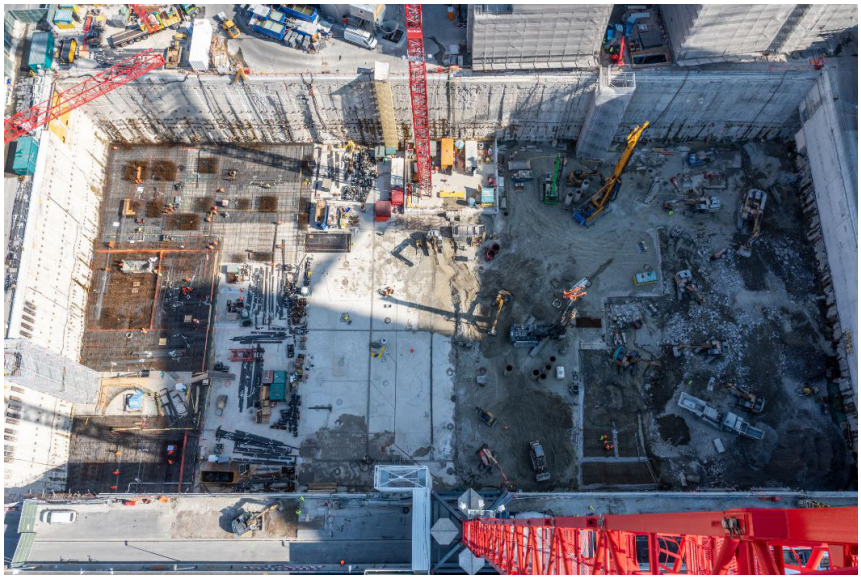
pRED Center, Basel

Geotechnical monitoring with chain inclinometers and anchor forces



- Basel, Switzerland
- Roche
- 2018 - 2020

Leistungen

- Delivery, installation and commissioning of geotechnical sensors
- Automatic monitoring including alarm at 1-hour intervals
- Online access to current measured values via a web-based customer portal

Technologien

- 11 chain inclinometer systems (34 m long)
- 4 chain inclinometer systems (12 m long)
- 80 anchor force sensors
- 17 data loggers
- Web-based, password-protected customer portal with 24/7 access

The excavation pit was located in an extremely sensitive area in the centre of Basel, next to the tallest building in Switzerland (Roche Tower).

As an integral part of the safety concept for deep excavations in geotechnical category 3 (the most difficult category), the excavation was monitored throughout the entire process of dismantling the existing building (6 underground levels) and constructing the new pRED centre by monitoring the load-bearing and deformation behaviour using instrumentation.

To this end, 15 boreholes were drilled outside the existing diaphragm wall and 15 inclinometer chains with up to 17 biaxial sensors each were installed. A measuring centre communicated with 17 data loggers every hour and stored the measured data on the customer's server.

The tension force of the strand anchors was monitored using 80 measuring anchors in order to detect any changes (increase or decrease).