

## Natural History Museum, Basel

Automatic & manual excavation, track and building monitoring with geodetic & geotechnical sensors



📍 Basel, Switzerland  
👤 Implenia Schweiz AG  
🕒 2021 - 2024

### Services

- ◆ Installation of a complex geodetic and geotechnical measuring system
- ◆ Automatic monitoring of the SBB track system, excavation pit and surroundings with total stations, load cells, vibration sensors & piezometers
- ◆ Manual monitoring of BVB track system, excavation pit and surroundings with inclinometers and geodetic 3D deformation measurements
- ◆ Visualisation on web portal including automatic alerting

### Technologies

- ◆ 3 precision total stations with approx. 500 measuring points
- ◆ 15 anchor force sensors
- ◆ 10 vibration sensors
- ◆ 6 piezometers
- ◆ TEDAMOS Web, password-protected customer portal with 24/7 access

In order to remedy the lack of space for the Basel Natural History Museum and the Basel-Stadt State Archives, a new building almost 200 metres long is being constructed at Basel St. Johann railway station.

The location in the city centre between the SBB and BVB railway tracks and the construction process place high demands on the monitoring of the surrounding buildings and infrastructure. The 19 metre deep excavation pit is being constructed in a two-stage process. Firstly, there is a bored pile wall, which is anchored back with three prestressed anchor layers. Secondly, due to the groundwater, a sheet pile wall will be vibrated into the deep area of the pile wall.