

# Monitoring new building Inselspital BB12, Bern

## Automatic excavation pit and building monitoring with geodetic and geotechnical sensors



- 📍 Bern, Switzerland
- 👤 Inselspital, Infrastructure Directorate
- 🕒 2017 - 2020

### Expertise

TEDAMOS

### Automatic systems

- ◆ 2 Leica precision total stations with approx. 100 measuring points
- ◆ 21 liquid levelling sensors
- ◆ 7 vibration sensors
- ◆ 58 anchor load sensors
- ◆ 45 strain gauge sensors
- ◆ 19 pore water pressure and groundwater level sensors
- ◆ Web-based, password-protected customer portal with 24/7 access

Further information on the **TEDAMOS** solution can be found at <http://en.tedamos.ch>

The building BB12 will be the new main building of the Inselspital in Bern and replace in future the current high-rise bed building. It will house the Swiss Heart and Vascular Centre and various specialist clinics. The new building started in 2017 and was monitored for deformations and other changes due to construction progress from the outset with various automatic measuring systems. The commissioning of the CHF 550 million building is scheduled for 2023.

The automatic measurements are used on the one hand to monitor the surroundings and buildings adjacent to the excavation pit and on the other to permanently monitor the stability of the excavation pit. For building monitoring purposes, 3D deformation measurements using total stations, settlement measurements using liquid levelling sensors and vibration measurements are carried out in several rooms of the hospital. 3D deformation measurements using total stations are also used to check the deformations of the excavation pit. In addition, automatic anchor and strain gauges as well as groundwater level measurements are carried out in the excavation pit.

These measuring systems are operated together with our local partner, bbp geomatik ag. In addition, bbp geomatik carries out manual deformation measurements with total stations, levelling and inclinometers.

### Our services

- ◆ Installation of a complex geodetic and geotechnical measuring system.
- ◆ System operation during the shell construction phase (approx. 3 years).
- ◆ Automatic measurements in minute to hour intervals (depending on measuring system)
- ◆ Alarming when limit values are exceeded