

Winterthur main station, Monitoring construction of pedestrian underpass

Automatic excavation pit, track and building monitoring with geodetic and geotechnical sensors



📍 Winterthur, Switzerland
👤 STRABAG AG, Schlieren
🕒 2018 - 2022

Expertise

TEDAMOS

Automatic systems

- ◆ 7 precision total stations with approx. 400 measuring points
- ◆ 18 liquid levelling sensors
- ◆ 2 vibration sensors
- ◆ 14 high pressure press sensors
- ◆ 16 inclination sensors
- ◆ 40 displacement sensors (crackmeter)
- ◆ Web-based, password-protected customer portal with 24/7 access

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

A new pedestrian underpass with a bicycle tunnel is being built at Winterthur railway station. This construction project is intended to cover the 4th largest station in Switzerland in response to the increasing flow of commuters and the additional demand for shopping facilities and bicycle parking spaces in the immediate vicinity of the station. The multi-year construction project will be carried out under full operation of the station.

Since the pedestrian underpass and the bicycle tunnel will be built under highly frequented tracks, they will be permanently monitored by our monitoring system. Additionally endangered structures such as the temporarily erected pedestrian passages, the parking deck support and the surrounding buildings, some of which are listed buildings, are also monitored for 3D deformations, impermissible vibrations and high-pressure presses at 20-minute intervals to detect any pressure fluctuations.

The test engineers, site managers and foremen are immediately alerted via SMS and e-mail if a limit value is exceeded. This timely and detailed information via a web portal allows them to quickly take appropriate countermeasures in the event of critical events.

Our services

- ◆ Installation of a complex geodetic and geotechnical measuring system
- ◆ System operation during the entire construction phase (approx. 4 years)
- ◆ Automatic measurements at 20-minute intervals
- ◆ Automatic alarming when limit values are exceeded
- ◆ Weekly manual 3D deformation measurements