

New underpass, Winterthur railway station

Automatic monitoring of excavation pits, railway tracks and buildings with geodetic and geotechnical sensors



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

Leistungen

- ◆ Installation of a complex geodetic and geotechnical measurement system
- ◆ Operation of the system during the 4-year construction phase
- ◆ Automatic measurements at 20-minute intervals
- ◆ Automatic alarm when limit values are exceeded
- ◆ Weekly manual 3D deformation measurements

Technologien

- ◆ 7 precision tachymeters with approx. 400 measuring points
- ◆ 18 liquid levelling sensors
- ◆ 2 vibration sensors
- ◆ 14 high-pressure sensors
- ◆ 16 inclination sensors
- ◆ 40 displacement transducers (crackmeters)
- ◆ TEDAMOS Web, password-protected customer portal with 24/7 access

A new pedestrian underpass with a cycle tunnel is being built at Winterthur railway station. This construction project is intended to meet the needs of Switzerland's fourth-largest railway station in terms of the increasing commuter flows and the additional demand for shopping facilities and cycle parking spaces in the immediate vicinity of the station. The construction project, which will take several years, is being carried out while the station remains fully operational.

Since the pedestrian underpass and the cycle tunnel are being built under heavily used railway lines, they will be permanently monitored using our monitoring system. In addition, other structures at risk, such as the temporary pedestrian walkway, the parking deck support and the surrounding buildings, some of which are listed, are also monitored at 20-minute intervals for 3D deformations, impermissible vibrations and high-pressure presses for any pressure fluctuations.

The test engineers, site managers and foremen are immediately alerted by text message and e-mail if the limit values are exceeded. This real-time information, which is also available in detail via a web portal, allows them to take appropriate countermeasures quickly in the event of critical incidents.