

Track disentanglement Bern Wylerfeld

Monitoring during construction with geodetic and environmental sensors



In the Wylerfeld district of Bern, the eastern approach to Bern railway station, the busy Olten/Biel–Bern and Thun–Bern railway lines converge. The capacity is limited by the overlap of the train routes.

The project included a 300-metre-long underpass with 300-metre-long ramps on either side. The new structure will allow trains to cross at different levels at the same time. In addition, three tunnels and channels will be built under the tracks. To protect residents and sensitive infrastructure (e.g. university laboratories and schools) during the construction work, vibrations and noise emissions were permanently monitored along the 1 km long project perimeter.

During the construction of the crossing structures, cable tunnels, storage and combined sewers, the tracks under which they were built were constantly monitored for impermissible deformations.

- 📍 Bern, Switzerland
- 👤 Swiss Federal Railways SBB
- 🕒 2015 - 2021

Services

- ◆ Technical monitoring (vibration, noise) during extensive insertion tests using ramming, low- and high-pressure flushing and pressing
- ◆ Consultancy for noise protection concept
- ◆ Instrumentation and operation of 11 permanent vibration and 3 permanent sound level meters for 5 years
- ◆ Automatic track and overhead line monitoring during track underpass works with tachymeter
- ◆ Automatic monitoring of the excavation pit closure using chain inclinometers

Technologies

- ◆ 11 vibration sensors
- ◆ 3 noise sensors
- ◆ 1 total station with approx. 100 measuring points
- ◆ 2 chain inclinometers with 36 biaxial sensors
- ◆ TEDAMOS Web, password-protected customer portal with 24/7 access