

Mositunnel, N04 Axenstrasse

Brunnen, Switzerland (2013 – 2014)



Geotechnical measurements

Object

The existing Mositunnel (National Road N4, Detour of Brunnen) gets seawards supplemented by a 1100 m long parallel safety tunnel including three crossways. Simultaneously a new tunnel operating and ventilation control centre will be built.

Project Description

To ensure safety during the construction, the existing tunnel facilities and the adjacent building are monitored automatically by geodetic deformation and vibration measurements. Therefore an automated surveillance systems (Amberg GeoMonitoring) was installed over the intermediate ceiling in the existing Mositunnel, in SBB railway tunnel Morschach, in the inoperative Wasiwand tunnel of the old Morschach railway and on several buildings. A state assessment for a preservation of evidence was carried out in advance of the construction work.

Instruments

- Amberg GeoMonitoring System
- 3 Data logger with automatic data analysis and alerting
- 7 Leica Total Stations and approx. 100 control points
- 3 vibration measurement systems and approx. 30 geophones
- GRP 5000 / Laser scanning system for state assessment

Evaluation

All acquired data get evaluated automatically and managed in a database. Results, tables and graphs are provided and visualized immediately on the internet platform GEOvis. The customer gains online access around the clock to all results. In case of exceeding the limit values, an alarm will be sent, according to the previously defined alarming concept, directly via SMS or email to a defined group of people and must be confirmed by the addressee.

Customer Value

- Safety 24/7 due to automated alarm
- Quick and easy complement of additional sensors due to an innovative and modular concept of the Amberg GeoMonitoring system
- 24-hour availability of results at the GEOvis Internet platform
- Guaranteed reliability of the measuring system due to redundant design and bypassing of power failures

Client

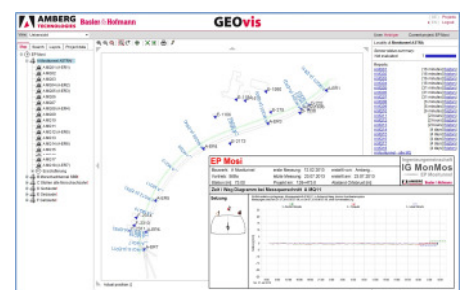
Federal Roads Office, FEDRO, Branch Zofingen

Contact

Amberg Technologies AG
Trockenloostrasse 21
CH-8105 Regensdorf
Telefon +41 44 870 92 22
Telefax +41 44 870 06 18
geoengineering@amberg.ch
www.amberg.ch/at



Mositunnel with intermediate ceiling



Internet-Platform GEOvis with settlement diagram