AVL - L191 CITYTUNNEL FELDKIRCH

3G Gruppe Geotechnik Graz ZT GmbH

PROJECT DESCRIPTION

In the course of traffic planning and management, the Provincial Government of Vorarlberg plans a subsurface by-pass in Feldkirch, Austria. The project is located in the West of Vorarlberg and borders to Liechtenstein.

Several parts of the city of Feldkirch will be connected by the traffic planning process “Feldkirch South“.

Main part of the project is a conventionally mined roundabout tunnel under the area of “Letze“. It will connect four tunnels at a depth of approximately 100 m below surface.

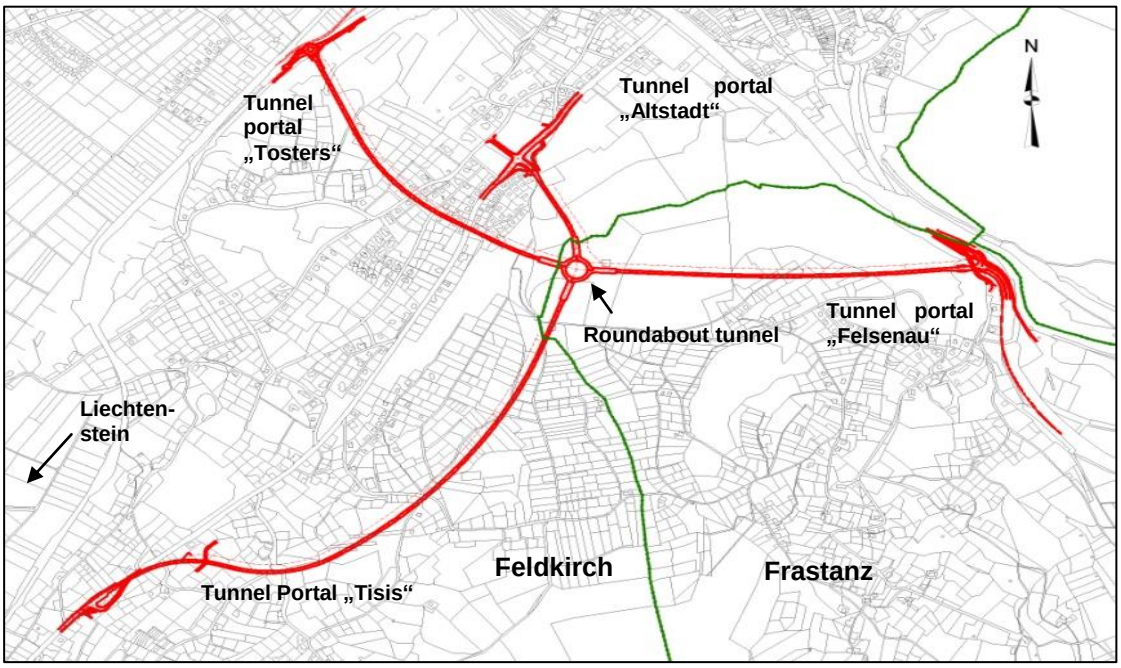
The eastern tunnel, which is a traffic connection to Walgau, leads under Maria Grün to Felsenau to the road L190. The northern tunnel links the southern inner city and the western tunnel underpasses the Blasenberg and ends in the Kapfweg in Tosters. The southern part of this project is the connection to Liechtenstein. The tunnel portal is located in Tisis, which is next to the border to Liechtenstein.

Outcrop of limestone bedrock at the Blasenberg

The tunnel construction will be 3.95 kilometres long (including cut-and-cover sections and roundabout tunnel). Furthermore, four emergency tunnels with a whole length of 2.7 km will be built.

Project Timetable:

- 2014: Environmental Impact Assessment (EIA)
- 2018: planned start of construction works
- 2025: tunnel's release for traffic



Project layout (status April 2014)

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3G TASKS

- Design and execution of engineering geological – hydrogeological - geotechnical investigations:
  - Engineering geological field mapping
  - Core logging (borehole depth: 15 - 110 m)
  - Evaluation of geophysical borehole logging (Hybrid-seismic, OBI, ABI, Caliber-Log, Gamma-Log)
  - Evaluation of hydro-geological borehole tests (Slug-test and WAP-Test)
  - Evaluation and interpretation of mineralogical, soil- and rock-mechanical laboratory tests
- Preparation of engineering geological and hydro-geological report for the Environmental Impact Assessment
- Design and execution of hydrogeological preservation of evidence program: since November 2009 insitu parameter are measured once a month (discharge and depth to water, temperature and electrical conductivity) at 62 test points (springs, water gauge and surface cannels).
  Since May 2012 every six months water samples are taken at 16 test points for testing chemical/physical parameters, microbiological indicators and isotopical analysis
- Preparation and interpretation of measured data for annual and final reports

Hydrogeological measurement at the gauge KB04/09

LOCATION:
Feldkirch/Frastanz, Vorarlberg, Austria

PERIOD OF 3G TASKS:
Since 2008

CLIENT:
Provincial Government of Vorarlberg – Vllb Department for Road Construction
Widnau 12
6800 Feldkirch - Austria

Tunnel portal area Tosters (north-eastern project area)