

## VIENNA - SALZBURG HIGH PERFORMANCE RAILWAY LINE, FREIGHT TRAIN BY-PASS ST. PÖLTEN, WEST SECTOR

Client: Austrian Railways Infrastructure AG  
Development Period: 1992 to 2017

### THE PROJECT

The freight train by-pass St. Pölten comprises a 25 km long, double-track new railway line. It was built to relieve the Western Railway Line at the highly frequented urban area of St. Pölten of the freight and through traffic.

The line runs first along the S 33 motorway and then parallel to the A 1 Western Motorway. Only shortly before joining the existing line, the route turns away to the north.

The project included, besides the tracks of the open sections, the 3.5 km long Tunnel Pummersdorf (mining method), two tunnels established by the cut-and-cover method (lengths 390 m and 820 m, partly two tubes), the 880 m long Radlleiten trough structure as well as 23 bridges.

Within the 7.3 km long West Sector, the trough structure and the cut-and-cover tunnels were situated.

### OUR FUNCTION

BGG Consult attended to the project since the beginning of the environmental impact assessment (EIA) in all matters of geotechnics and hydrogeology.

In the run-up of the EIA and the building permission proceeding, subsoil investigation campaigns were planned as well as technically and commercially supervised. The campaigns were adjusted to the respective problem definition and the required levels of detail. Based on the results, Geotechnical and Hydrogeological Expert's Reports were compiled for the permission documents.

In the western sector, the services during construction included, besides the expert supervision of the construction, the design and dimensioning of the extensive slope protection measures, the supervision of the geotechnical monitoring and the hydrogeological preservation of evidence.

#### *Construction Pit Tunnel Bründlkappelle:*

In the junction area to the existing Western Railway, building pits with depths of up to 14 m were necessary, partly located in the vicinity of the tracks under operation. In addition, a part of the building pit was located within a geological fault line of oligocene clay marl, which is completely fractured and therefore had to be classified as highly susceptible to slide.

The slope protection was carried out by means of an anchored shotcrete wall. For the anchoring, SN-bolts, injection bolts and in the highly sensitive areas also prestressed anchors were used. Based on the geotechnical monitoring, adaptations of the protection measures were necessary and optimizations were possible respectively. Consequently, the detailed geotechnical planning, supervision and monitoring ensured an economic and safe construction.



*Construction Pit  
Tunnel Bründlkappelle*