

HIGH PERFORMANCE RAILWAY LINE VIENNA AIRPORT - EASTERN RAILWAY LINE

Client: Austrian Railways Infrastructure AG
Development Period: since 2021

THE PROJECT

In order to establish an efficient long-distance passenger transport axis for the relation Vienna Central Railway Station - Airport Vienna - Győr - Budapest as well as a functional link Vienna Airport - Bratislava, a railway connection between the Airport Rapid Train Line and the Eastern Railway Line is being developed east of the airport Vienna Schwechat.

At the same time, the extension of the railway station Bruck a.d. Leitha to a regional traffic hub is planned.

In addition to the new double-track link with a length of 25 km, the project also includes supplemental rails and reconstructions at the existing connecting lines as well as amendments and new constructions of railway stations.

In the area of the crossing of the rivers *Fischa* and *Reisenbach*, the track is led below surface for a length of 1.8 km by means of cut-and-cover tunnels and water-tight trough structures. In this section, the new railway station Enzersdorf a.d. Fischa is situated. The project also comprises several level-free railway crossings, 30 crossing structures as well as numerous retaining walls.

OUR FUNCTION

For this project, BGG Consult is commissioned with the expertise in the fields of geology, geotechnics and hydrogeology during the Environmental Impact Assessment procedure, which also includes the permission procedure pertaining railway law.

With consideration of numerous subsoil investigation campaigns already carried out within the project area, additional 104 core drillings, 36 pumping tests, 106 dynamic probings and 66 exploratory pits were planned, supervised and evaluated for the actual project. Furthermore, the hydrogeologic situation and especially existing wells were extensively explored. Based on the acquired data, the expert's report for geology, geotechnics and hydrogeology was elaborated.

Construction in Groundwater:

For reasons of nature conservation, the rivers *Fischa* and *Reisenbach* and also the adjacent Natura 2000 nature reserve are to be crossed by cut-and-cover tunnels.

Because of the immersion in the ground water body, water-tight building pit support systems are necessary for the construction of the tunnels and troughs. In order to keep up the existing flow conditions, comprehensive groundwater communication measures have to be installed in the final state. Based on model calculations, filter layers above or below the structures as well as pipe conducts have been devised.

Furthermore, a great part of the crossing structures (railway/road underpasses, bridges) immerse in the groundwater. Therefore, numerous measures regarding dewatering during construction as well as waterproofing of the construction pits had to be considered.

Cross section, area Enzersdorf a.d.
Fischa station with groundwater
communication measures

