

BLEIBURG - INNICHEN RAILWAY LINE / STATE ROAD B83, UNDERPASS AT LEVEL CROSSING LEONSTEIN

Client: Austrian Railways Infrastructure AG
Development Period: 2020 to 2023

THE PROJECT

Within the scope of this project, the level crossing of the railway line with the state road B83 in Pörschach at the *Wörthersee* was replaced by an underpass.

Also, a new bicycle underpass was built. The road underpass with a clearance of 19 m and a width of 12 m, crosses the railway track with an angle of 53°. The road ramps adjacent to the bridge structure had to be designed as watertight troughs (lengths 56 m and 65 m). For the support of the ground surface gaps beside the roads, cantilever retaining walls and bored pile walls continue at the ends of the underpass structures.

Due to the location at the foot of the slope, the underground situation varies very intensely. In addition to rock in form of quartzitic phyllites with a distinct relief, quaternary gravel and sand as well as floodplain sediments exist in the project area.

The construction was carried out without interruption of the railway operation below temporary auxiliary bridges.

OUR FUNCTION

For this project, BGG Consult has been commissioned with geotechnical consulting during all planning and building phases.

This first included the planning, supervision and evaluation of underground investigations. Based on these, a geotechnical expert's report for the permission procedure pertaining to railway law was worked out.

In the phase of the construction tender, the geotechnical expert's report was specified and adapted to the actual design.

During construction, BGG Consult supervised and controlled the special heavy construction works from a geotechnical point of view.

Numerous Special Heavy Construction Techniques:

Because of the heterogeneous built-up of the subsoil and the requirements of the railway operation, the geotechnical planning and supervision of the project was of major importance. The construction and foundation demanded a great variety of special heavy construction measures, which had to be continuously adjusted to the actual underground situation:

- Shotcrete support systems with grouted self-drilling anchors;
- Concrete bored piles;
- Jet grouting;
- Prestressed anchors (anchorage of bored piles and jet grouted bodies);
- Micro piles at the bottom of the trough for buoyancy control.

For the auxiliary bridges, the longest prefabricated model of the Austrian Railways was used. However, because of the required space of the angular crossing, vertical building pit slopes, directly attached to the auxiliary foundations had to be carried out and protected.



*Road underpass,
Rock excavation below auxiliary bridges*