LEVEL-FREE RAILWAY CROSSING RETZ (LOWER AUSTRIA)

Client: Austrian Railways Infrastructure AG
Development Period: 2011 to 2014

THE PROJECT

For the improvement of the traffic flow and the increase of traffic safety, the crossing of the railway line Vienna-Floridsdorf - Unterretzbach with the state road L1026 has been replaced by an underpass.
Due to the high ground water level, the underpass had to be built as an impermeable trough structure.
The length of the trough is 175 m and the inner width 11 m.

OUR FUNCTION

BGG Consult has been commissioned for this project with the geotechnical and hydrogeological consulting during all planning and building phases.
Based on the results of core drillings and dynamic probings, geotechnical and hydrogeological expert's reports were prepared for the submission documents with regard to the railway law as well as for the tendering documents.
During construction, the works were supervised with regard to geotechnics und hydrogeology.

High Ground Water Pressure Level:
At the foundation level of the trough structure, the underground consists mostly of quaternary gravel, and at the lowest section also of miocene sand. Despite this well bearing material, special attention had to be given to the planning and execution of the special heavy construction works. Because of the highly permeable underground together with the high ground water pressure level, a watertight construction pit support system on the one hand and a buoyancy control on the other hand were necessary.
The construction pit support system and vertical sealing has been accomplished by means of sheet pile walls. Due to the densely sedimented Miocene, overlapping, cased relief boreholes were required before the sheet piles could be driven to the planned depth. For the buoyancy control, pressure grouted micro bored piles were used (see photograph).

Building pit after construction of the micro bored piles for buoyancy control