VIENNA - SALZBURG HIGH-PERFORMANCE RAILWAY LINE, ROHR JUNCTION

Client: Eisenbahn-Hochleistungsstrecken AG (High-Performance Railways AG)
Development Period: since 1995

THE PROJECT

The "Rohr Junction" is part of the high-performance railway track Vienna - Salzburg and represents the western connection between the St. Pölten freight train by-pass (GZU) and the existing Western Railway Line in Austria. The demand of level-free rail crossings required two underpasses. In order to integrate the construction without a major change of the characteristic landscape, the rails had to be lowered deep into the ground. Because of the high groundwater level, numerous tunnels and troughs had to be constructed.
The walls were designed mostly as a combination of bored pile (building pit wall) and cast-in-place concrete walls.

OUR FUNCTION

In this project, the geotechnical and hydrogeological consulting work was carried out by BGG during all the design and construction phases. Several subsoil exploration campaigns were planned and supervised in order to gather the necessary data about the underground. Based on these, geotechnical and geo-hydrological expert's reports, required for the application of a construction permit, were compiled. In this context, extensive ground water communication measures have been designed.
During construction, BGG was responsible for the following: The geotechnical and hydrogeological supervision on the site; The evaluation of the project details from a geotechnical perspective; The dimensioning of retaining structures; And lastly, the geological documentation during the excavation.
Furthermore, numerous geodetic and 33 inclinometer measuring points (predominantly inclinometers in bored piles) were supervised.

Tunnels and trough structures:
Special attention had to be given to the design of the tunnels and the trough structures due to their considerable heights and the high groundwater level. In some area, tension piles had to be placed for uplift control.
Along the trough structures, where bored piles were used for construction, large zones of weathered oligocene deposits were found. This constituted a critical situation due to the high slide susceptibility. Through a continuous comparison of the predicted displacements with those recorded by the bored pile inclinometers, the actual stability of the structure could be assessed correctly.
On this basis, the construction progress was managed in an ideal way, critical situations were avoided and an optimally economic solution was achieved.

Retaining structure made of bored piles, with temporary bracing