

D1 MOTORWAY, HRICOVSKE PODHRADIE - DUBNA SKALA SECTION (SLOVAKIA)

Client: Alpine Bau GmbH / Hochtief Construction AG

Development Period: since 10/2008

THE PROJECT

The objective motorway section with a length of 25 km is part of the east-west motorway connection of Slovakia planned already since 1930. The project, which is conducted as a PPP (Public-Private-Partnership) undertaking, extends over topographically demanding terrain. For this reason, 10.6 kilometres of the section run in tunnels and 7.6 kilometres over bridges. In February 2010, the contracted "Early Works" have been resumed. These comprise, among others, a part of the project design, the clearing of the building area, the establishment of access roads to bridges and tunnels and the construction of three tunnel portals.

OUR PROJECT

BGG Consult has been commissioned by the successful consortium during tendering and execution of the "Early Works" with the geotechnical and hydrogeological consulting.

In this connection, subsoil explorations in form of core drillings, dynamic probings and cone penetration tests have been conducted initially. Based on the results, the foundations of the structures and the securing measures at the three portal cuts were optimised.

Additionally, the geotechnical monitoring has been planned and supervised, and inclinometer measurements were carried out.

Optimising of building pit securing at the portal cuts:

For two tunnel portals, multiple-anchored bored pile walls were planned as securing measures during tendering. Furthermore, a drainage shaft with a diameter of several metres (by means of bored piles) was allowed for at one location.

In the process of the work of BGG Consult, the securing concepts could be changed to anchored shotcrete walls. Additionally, the anchoring and dewatering measures were reduced. This optimisation was possible because of the continuing adjustment of the securing and dewatering elements based on the results of the geotechnical monitoring (observational method) by means of inclinometers, anchor load cells and geodetic measuring points. In this way, a cost reduction as well as a reduction of the construction period were achieved.

View of the retaining structure at the portal Višňové West

