

## PARKHOTEL & PARKAPARTMENTS NEAR BELVEDERE, 1100 VIENNA

Client: SEESTE Bau AG / Project Companies of SIGNA Holding GmbH

Development Period: since 8/2013

### THE PROJECT

On the grounds of the former Vienna East Railway Station, the project Parkhotel & Parkapartments near Belvedere, designed by the architect Renzo Piano, is currently under construction.

On a trapeziform ground-plan area with side lengths between 22 m and 170 m, three residential towers and two hotel towers are planned. The buildings reach heights of up to 60 m. Across almost the whole building area, one basement floor, and locally also two basement floors, are to be built.

The construction is located close to an existing retaining wall with a shallow foundation, which was realised in the course of the project Vienna Central Railway Station.

### OUR FUNCTION

BGG Consult has been commissioned in the system design phase with the subsoil exploration and the geotechnical development. For this, core drillings and dynamic probings were planned, supervised and evaluated. Based on these investigations and the existing documents from the project Vienna Central Railway Station (also overseen by BGG Consult), an expert report regarding the building ground was developed.

Additionally, BGG Consult prepared, by order of the project companies, the documents for the approval procedure pertaining to water rights for the infiltration of surface water and also conducted geotechnical analyses regarding the stability and serviceability of the mentioned retaining wall.

During construction, the work is accompanied from a geotechnical point of view.

#### *Numerical Analyses:*

In order to estimate the possible deformations of the railway track (roadbed track and retaining wall), caused by the construction work and the additional load on the underground, analyses by method of finite elements were conducted. These also served as basis for the safety management plan in the context of the working agreement between the project companies and the Austrian Railways.

Based on a monitoring program, the deformations are continuously recorded and compared with the predicted values. Because of the consistent geotechnical attendance, an economic and technically correct project process can be ensured in the field of soil engineering.

*View into the building pit with uncovered foundation piles; In the background the retaining wall towards the railway station*

