



## THE METROPOLITAN, 1100 VIENNA

Client: BH-02 GmbH

Development Period: 2018 to 2020

### THE PROJECT

The building project "The Metropolitan" borders at its southern side directly to the elevated tracks of the Vienna Main Railway Station. It is divided into a hotel and a residential complex.

The 20-storeyed, 62 m high tower of the residential complex at Building Plot A holds a surface area of 3100 m<sup>2</sup>. The two underground levels reach down to 7.4 m below ground surface.

### OUR FUNCTION

First of all, BGG Consult handled for this project the concerns in the field of geotechnics during the planning phase of the residential complex. For this, underground investigations were planned, supervised and evaluated. Based on the results, a Geotechnical Expert's Report was prepared. Subsequently, the ongoing design process was accompanied in the respective field. This included the verification of the building pit protection system and the compilation of a safety management plan with regard to a possible impact on the railway operation. Furthermore, numerical model calculations (2-dimensional and 3-dimensional) were run in order to examine the settlement behaviour of the project and in the area of the adjacent retaining wall towards the railway tracks respectively. During construction, BGG Consult attended to the agenda of the geotechnical supervisor appointed by the building authorities.

#### *Superstructure at the Sealing Wall of a Tar Pit Remediation:*

At the southeastern corner of Building Plot A, a sealing wall (jet grouted sectors) of a tar pit remediation is located. The upper edge of the pit is situated only slightly below the foundation level of the new building. A damage of the sealing wall by the load of the structure had to be avoided.

Possible impacts of the construction on the sealing wall were examined by means of 3-dimensional finite element settlement analyses. Based on the results, the building foundations were optimised and special measures defined.



*View into the construction pit; At the left edge of the picture excavation area of the sealing wall for the tar pit remediation*