

## REFURBISHMENT OF THE MUNICIPAL RAILWAY TRUNK ROUTE, VIENNA

Client: Austrian Railways Infrastructure AG

Development Period: since 2021

### THE PROJECT

The 13 km long municipal railway trunk route crosses the city of Vienna from southwest to northeast in densely built-up urban area. With 700 trains and 250,000 passengers per weekday, it is the busiest local transport route of the Austrian Federal Railways. In order to increase the capacity and maintain the railway line, which has existed since 1962, extensive expansion and renovation are required.

The works include platform extensions, turning facilities, new station access points, the renewal or refurbishment of numerous bridges, viaducts and retaining walls, as well as the optimization of track systems.

### OUR FUNCTION

BGG Consult is commissioned to provide geotechnical and hydrogeological consulting services for the project during all planning and construction phases. Initially, geotechnical-hydrogeological reports for the permission procedure pertaining railway law (sections South, Central and North) were prepared, based on the numerous existing underground investigations (managed by BGG Consult or from the Vienna city soil register). For the subsequent tender projects, supplementary subsoil investigations were planned, supervised and evaluated. Based on this, 16 geotechnical reports were prepared for the tender planning, and technical support for the detailed planning was provided. Finally, the phased implementation of the measures is continuously monitored from a geotechnical and hydrogeological point of view.

#### *Test field for bored piles:*

One of the most geotechnically relevant construction measures is the widening of the cutting trough between the Vienna Rennweg stop and the Vienna Central station. This is necessary to create the clearance profile according to the actual technical state of the art.

For this purpose, parallel pile walls are constructed behind the existing retaining walls. To determine the most economical construction method, a bored pile test field with ten piles was carried out in the tender planning phase. During these pile drillings, various chisel and drilling systems were examined for their suitability. Additionally, different sheathings on reinforcement cages were tried out to ensure a safe concreting process in the immediate vicinity of existing walls (possible drainage openings). Based on the results of the test field, a technically and operationally sound tender for the special heavy construction measures could be prepared.



*Construction of bored piles between Rennweg stop and Vienna Central station (four drilling rigs simultaneously)*