

PANORAMA HOUSE DORNBIRN/VORARLBERG

Client: JDL Leasinggesellschaft mbH, Dornbirn/Vorarlberg

Development Period: 2002 to 2005

THE PROJECT

In the town of Dornbirn, a hotel and wellness complex near the Messepark shopping center was built. The lower three floors comprise a parking garage with a surface area of 110 m x 85 m, and reach 12 m below ground level. The hotel and wellness area was planned with an elliptic floor layout with diameters that measure 64 m x 29 m. In addition to the parking levels, the building features twelve floors, which brings the total height of the building to 50 m. Due to the exceptional use and the architectural design (including bathing facilities, seminar rooms and event halls), high and concentrated loads have to be transferred into the underground.

OUR FUNCTION

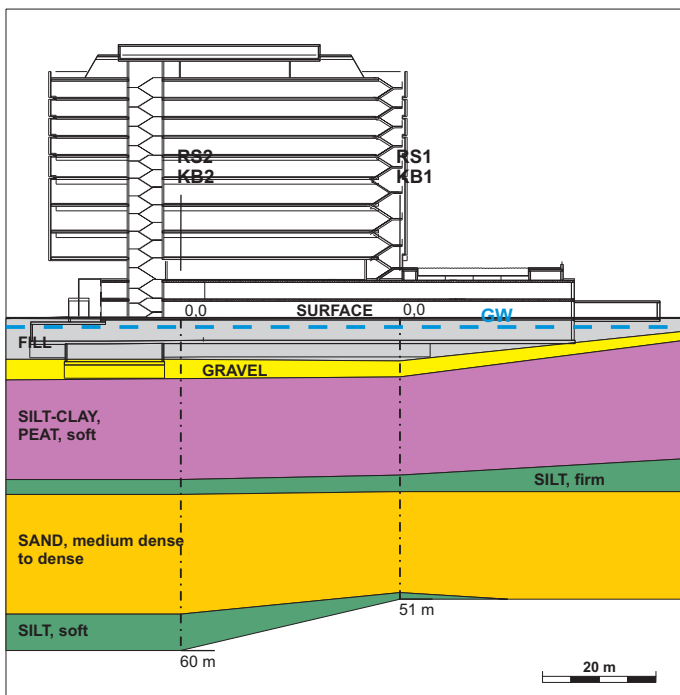
BGG was commissioned to supervise the geotechnics and hydrogeology of the project from the time of the first draft until the completion of the construction. In order to expand the existing information about the subsoil in the vicinity of the building, two subsoil exploration campaigns were conducted. These surveys entailed core drillings (depth up to 60 m), dynamic probing, and laboratory tests with regard to soil mechanics. In addition to this, a pumping test was conducted. In the process of applying for the building permit, the project was examined from a geotechnical and hydrogeological point of view. During construction, BGG was commissioned with the geotechnical and hydrogeological supervision of the building pit and the deep foundation works.

Foundation:

Due to the extremely disadvantageous subsoil and groundwater conditions, the securing of the building pit and the foundation of the Panorama House, posed a special challenge. Up to a depth of 30 m below surface, the mostly organic layers hold a high compressibility and a low bearing capacity. The load can only be discharged into a sand layer with a limited thickness. Under this sand layer, highly compressible layers exist and extend up to a very great depth. This complicated the dimensioning of the deep foundation.

Ground water modelling:

Since the site was previously used as a petrol station, numeric groundwater model calculations had to be performed concerning the pollutant dispersal and surge/retention effects.



A cross section of the subsoil under the Panorama House Dornbirn