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Project report

GERO^{therm}® DUPLEX geothermal probes

New building extension at FH Campus Wien
Favoritenstrasse, 1100 Vienna, Austria



Image source: PORR Bau GmbH – Special Civil Engineering department

The steady growth of FH Campus Wien (University of Applied Sciences Campus Vienna) over recent years has resulted in the need for more space. Expressed in figures: Within just 15 years, FH Campus Wien has developed from one of Austria's smallest further education institutions to its largest and most diverse university of applied sciences, with 8,000 students and 20,000 graduates (as of academic year 2021/22). As a

result, the main site of FH Campus Wien, which opened in 2009, has been too small to meet its needs for some time now. FH Campus Wien is therefore expanding to create "Science City". The second expansion phase began in February 2023, with a gross area of around 42,000 m². This building will house part of the study and further education programmes, as well as the research activities of the Department of Applied Nursing

Science and the Department of Health Sciences. It is scheduled to open in autumn 2024.

During several weeks of drilling work that required the involvement of specialist companies, a total of 141 geothermal probes were installed, with a combined length of 27 km. These probes are sufficient to meet 85% of the heating demand and 75% of the cooling requirements in the new building.





A total of 141 GEROtherm® DUPLEX geothermal probes, with a length of 190 metres each, were sunk into the borehole field. The complex construction pit base with a large number of different excavation levels meant that the geothermal probes had to be shortened in several steps. The Specialised Civil Engineering department of PORR Bau GmbH, a company that specialises in the

drilling of geothermal probes, was on site and completed the drilling to a professional standard. Since the test probe including a thermal response test, the dimensioning of the system and the deep drilling had already been carried out by a single provider, it was possible to complete the project on time. In addition to the need for deep boreholes, the excavation and special civil engineering activities

being conducted in parallel presented an additional challenge. Once the probes had been installed, the boreholes were backfilled with a special mortar. Each geothermal probe was tested, and the results were logged using a digital measuring device for pressure and flow-through testing that was specially developed for geothermal probe systems.

1. Construction site overview with drilling rig
2. Final excavation with probes that have already been installed
3. Excavation and special civil engineering work between the completed probes
4. Geothermal drilling rig during the installation of the 190 m deep probes



Project details

Construction site

New construction
FH Campus Wien
House of Health Sciences GmbH
Favoritenstrasse 223
A-1100 Vienna, Austria
www.fh-campuswien.ac.at

Architect

F+P ARCHITEKTEN ZT GMBH
Barnabitengasse 8/Stg.2/1
A-1060 Vienna, Austria
www.fp-arch.at

Drilling company

PORR Bau GmbH – Special Civil Engineering
department
Absberggasse 47
A-1100 Vienna, Austria
www.porr.at

Products used

- 141 GEROtherm® DUPLEX geothermal probes
PN16 made from PE 100 RC, da 40 mm, length
190 metres
- 141 grouting tubes PE-HD de 25



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