PROJECT REPORT

The Marks

Data and facts

Company	PORR Verkehrstechnik GmbH
Type	Special civil engineering
Runtime	07.2021 - 04.2020
Principal	Tower 1: Neues Leben, Tower 2: ÖSW, Tower 3: BUWOG

Project report online

www.porr-group.com

Three towers on a stable foundation

This creates a water-permeable recess in the diaphragm wall.

Parallel work for greater efficiency. At the same time as the diaphragm wall construction, 18 extraction wells, six monitoring wells and eleven infiltration wells were constructed from the top edge of the ground and an advance excavation level of around -4.5m. Infiltration of the drainage and residual water was carried out on the site itself via infiltration wells. Anchoring the diaphragm wall with 239 bar and strand anchors posed a particular challenge for the construction process and the specialised trades working in parallel. In areas of the crane foundations located on the outside, the construction pit shoring was reinforced by placing a second layer of anchors. This meant that cost-efficient special solutions could be offered, planned and implemented for the client at short notice.

Load test successfully completed. The deep foundations of the three high-rise buildings and the base building were laid on 634 auger cast concrete piles with a diameter of 90cm. The basis for the pile design was the realisation of five pile test loads (up to 9MN individual load) including the production of the required test piles. A tangential bored pile wall was constructed to ensure the planned level jumps of the floor slab. This meant that space-consuming embankments in the base area of the excavation pit could be avoided.

The economically and technically best solution. The decision in favour of a diaphragm wall instead of the originally planned sheet pile wall was exactly right for several reasons: whether it was the obstacles encountered, from brickwork to solid reinforced concrete obstacles, which would have meant the end for a sheet pile wall, the increase in the impermeability of the excavation pit or the vertical loads that could be transferred via the outer shell produced in this way. The overall package of the turnkey construction pit decoupled the interface between civil engineering and structural engineering. This synergy is reflected in the execution between the two major contracts for building construction and civil engineering. It enabled the clients to plan in detail and optimise the awarding of the master builder work. The successful work created a strong foundation for three new towers on the Vienna skyline.

Impressions

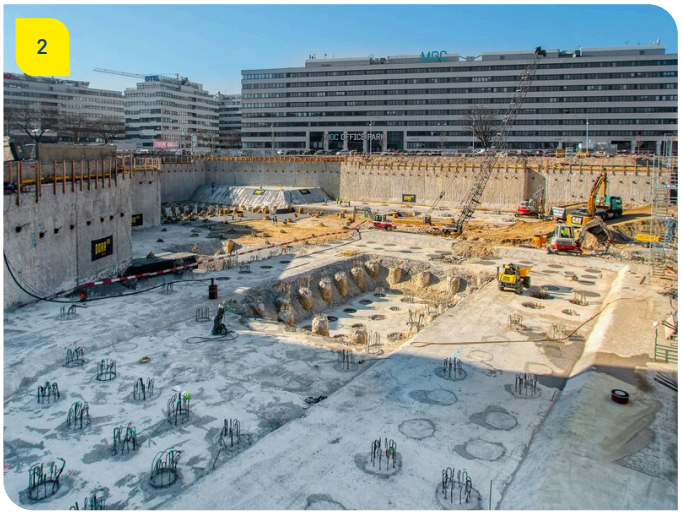

Image notes

1 Monitoring the excavation pit.

2 The base of the three towers.

Even after handover to the building construction general contractor, PORR's Specialised Civil Engineering department is monitoring the dewatering and excavation anchors in particular.

Over 8,600m2 of diaphragm wall surface were tied back with 239 bar and strand anchors.

Do you have questions about the project or would you like to learn more? Feel free to contact us for further information.

PORR AG Group Communications

Absberggasse 47

1100 Wien

T +43 50 626-0

E-Mail: comms@porr-group.com