The Oberursel Gymnasium was to be extended and fitted out with new classrooms and special-subject classrooms, a new canteen and a three-field sports hall by 2011. The required excavation pit was built on an area of approx. 7,200 m² with a depth of up to 11 m. For the retaining walls anchored soldier pile walls were used in combination with bored pile walls with timber and shotcrete lagging.

The work involved a total of 620 drilled metres of bored piles D = 88 cm with individual lengths of up to 17.50 m. The back-anchoring used approx. 1,900 metres of 4-strand pressure-grouted anchors with individual lengths of up to 24.50 m and was a temporary design.

The adjacent buildings were secured using jet-grouted underpinning elements having a volume of approx. 500 m³. The underpinning simultaneously served as a retaining wall. It was also tied back with three layers of anchors.

The total excavated volume was approx. 70,000 m³.

The scope of foundation engineering work also included dewatering by means of deep wells.

The foundation engineering work for the excavation pit was carried out by Bilfinger Spezialtiefbau GmbH in cooperation with the company Kolb Erdbau GmbH.

**Main quantities:**

- Construction pit area approx. 7,200 m², max. 11 m deep
- Back-anchored soldier pile wall
- Bored pile wall with timber and shotcrete lagging
- Bored piles, D = 88 cm, 620 m
- approx. 1,900 m temporary anchors
- 70,000 cbm excavated material