Wärmespeicher Rostock



SHORT DESCRIPTION

Between February 2020 and October 2020, Implenia Spezialtiefbau GmbH constructed the pile foundation with pile cap for Stadtwerke Rostock's new heat storage facility. The project is located in Rostock's Schmarl industrial estate in the immediate vicinity of the Warnow river and the Rostock overseas port.
The 55 m high heat storage facility has a diameter of 35 m and stands on 151 DU 900 mm large-diameter drilled piles with an average pile length of 37 m.

THE PROJECT

A new 55 m high hot water reservoir (DU 35m) is being built on the premises of the Rostock public utility company. For the load transfer of the reservoir, with a volume for 45 million litres of water, 151 DU 900 mm reinforced bored piles and a reinforced pile head plate were constructed.

This was preceded by a public invitation to tender with extensive prequalification for performance in the special boundary conditions of construction time, subsoil, cased bored piles and geometry and quality of pile head slab. Implenia Spezialtiefbau GmbH was awarded the contract.

The subsoil is divided into fill and alternating layers of boulder clay and sand. The groundwater level was approx. 1.50 m below the working level. First, an excavation pit with closed groundwater drainage was constructed for the installation of the base course as working level for 2 large drilling rigs and one lifting rig.

Prior to the construction of the bored pile foundation, a static and a dynamic pile test load and later on 3 further dynamic pile test loads were to be carried out on structural piles. The bored piles were fully cased to a maximum depth of 38 m with

two reinforcement joints each.

Subsequently, the reinforced pile head slab with a diameter of 37 m and a thickness of 1.35 m, raised 17 cm in the middle, was produced by our subsidiary Implenia Regiobau GmbH. Afterwards, 4 to 5 cm of mastic asphalt was applied as a damping and levelling layer and the edge areas of the excavation pit were backfilled.

SERVICES IN DETAIL

Main masses

- 1 piece static pile test load with foot pressure load cell and 6 measuring horizons for deformation measurement
- 4 dynamic pile test loads
- 151 reinforced bored piles, DU 900 mm, 5,700 m
- 7,100 m^3 excavation and disposal of drilling material
- 10 wells with closed dewatering
- 1,700 m^3 base course installation
- 1,400 m^3 reinforced pile head DU 37 m and height 1.35 m
- 950 m^2 mastic asphalt thickness 4 - 5 cm

FACTS

Location	Schmarler Damm 5, Rostock , Germany
Status	completed
Construction volume (value of our services)	3.424 M EUR
Start of construction	February 2020
Completion	October 2020
Contracting entity	Stadtwerke Rostock AG

SERVICES

Special Foundations