

Construction pit at Port of Aarhus

Mediaspace, new waterfront area and new quay



AARSLEFF

In 2011, Aarsleff signed a contract for the construction pit for the Mediaspace at Port of Aarhus as part of a large-scale municipal construction project. In addition to the construction pit, we constructed a new quay. Our work included driving of piles and sheet piles, demolition of existing quay structures, groundwater lowering and earthwork.

Two football fields eight metres beneath the surface

We started the construction work in the summer of 2011, and we completed the project in 2017. We established an 8-metre-deep construction pit of 100 × 100 metres corresponding to two football fields. In the process, we demolished the old quays, delivered earthwork and pile driving for the construction pit and installed ground anchors. We executed the construction pit by vibro-driving and re-driving around 18,000 square metres of sheet piles in lengths ranging from 5 to 25 metres and fitted with watertight interlocks.

We drove a total of 42,000 running metres of reinforced concrete piles of lengths up to 36 metres and in dimensions of 30 × 30 and 35 × 35 centimetres.

800 anchors drilled and 250,000 cubic metres of sand and soil

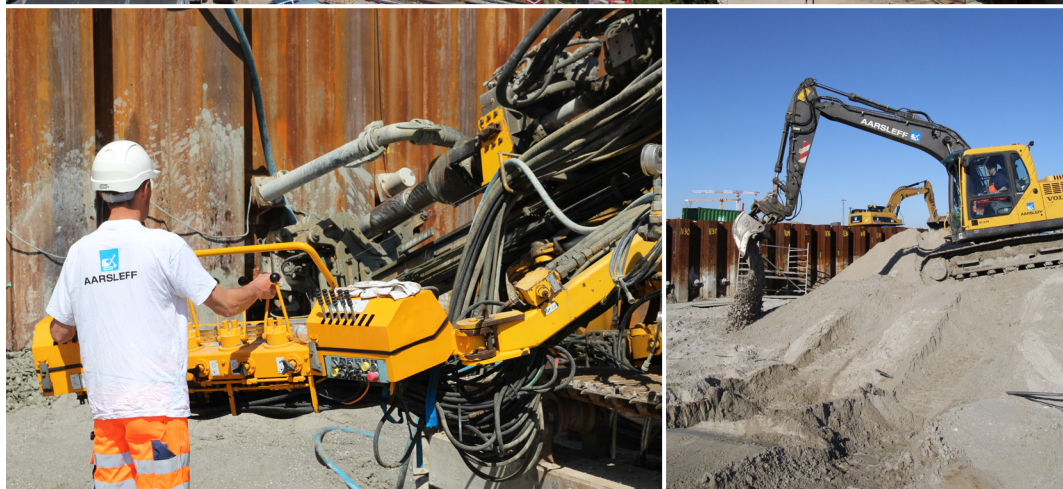
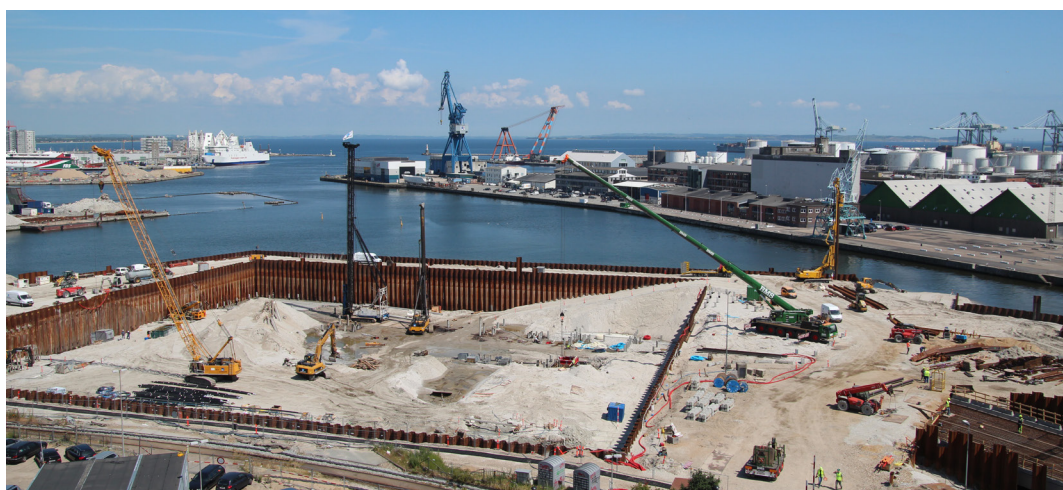
We used three anchor drilling rigs to install almost 800 DN36 millimetres drilled ground anchors in lengths up to 34 metres. The ground anchors were installed in several levels, and several of these were installed directly against water pressure. Whilst drilling the anchors, we also excavated about 250,000 cubic metres of sand and earth. So we constantly focused on maintaining the stability of the construction pit. The new quay is 900 running metres long inclusive of anchoring.

Safety – the railway as neighbour

Throughout the piling work, we never lost sight of the extensive safety measures involved, especially as we worked close to the railway line Grenaabanen. Consequently, we frequently carried out measurements to prevent settling of the tracks.

Mediaspace is a part of the project Urban Mediaspace Aarhus, comprising a new waterfront area, and is also a part of the development of the Aarhus Docklands. The building now houses the main library, citizens services and underground parking facilities.

Aarsleff's core expertise was involved in the project. We carried out sheet piling and earthwork, drove piles, installed ground anchors, demolished the existing quay structures and carried out groundwater lowering. The name Mediaspace was the project's working title. Now, the building is called Dokk1.



We used three anchor drilling rigs to install 773 drilled ground anchors in four levels. Many of the ground anchors were installed directly against water pressure.

Data

- 250,000 m³ of earthwork
- 773 drilled anchors
- Driving of 42,000 m of reinforced concrete piles
- 3,700 tons of sheet piles

Client

Aarhus Municipality

Type of contract

Main contract

Contractor

Aarsleff, Construction and Piling

Construction period

June 2011-May 2017

Contract value

DKK 180.2 million

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