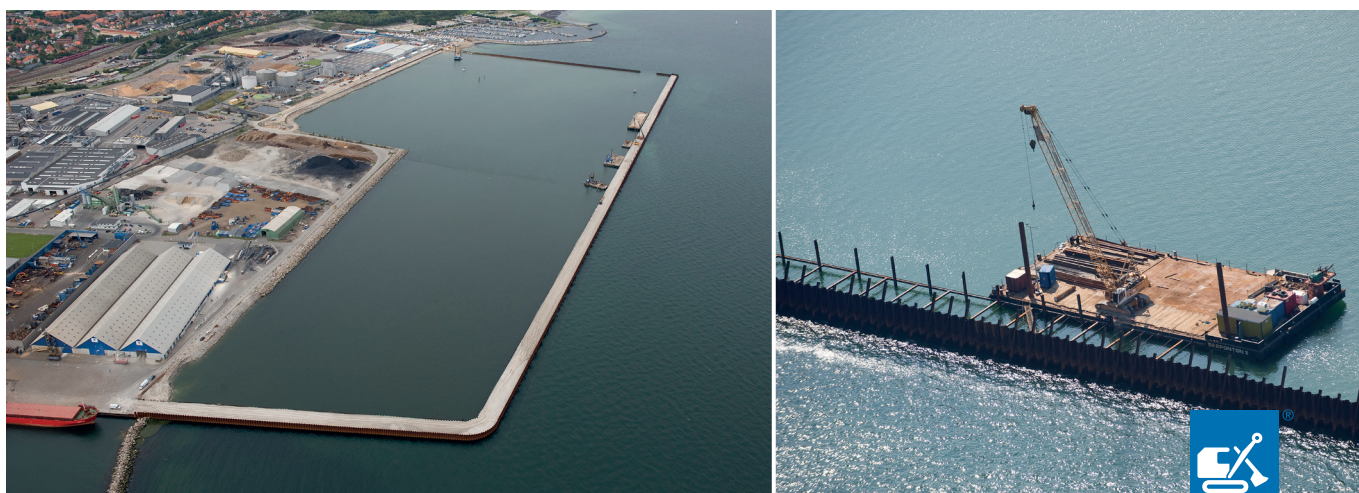


Køge Soil Deposit – preliminary works

New access road, cofferdam and outfalls



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In 2007, Køge Soil Deposit, Køge Municipality, Grontmij | Carl Bro and Aarsleff entered into a partnering agreement on construction and running of a 40-hectare soil deposit east of Køge Harbour. The completion period of the project is ten years.

New access roads and new paths

One of the total 23 sub-projects was to establish a new access road to Køge Soil Deposit and the areas around the harbour and to establish a new path for walkers and cyclists from the road Tangmosevej to Køge Marina that crosses the road Værftsvej via a new foot bridge. In addition, along the road Værftsvej we have constructed a 600-metre-long noise screen which is made of galvanized steel sections filled with silencing materials.

Sheet pile wall for soil deposit

One of the major sub-projects was to execute the cofferdam encircling the future soil deposit. We carried out the work by letting three production barges work with different assignments in a staggered assembly line environment in the sheet pile alignment. As a minimum, all sheet piles have been driven two metres into the underlying seabed clay to avoid that contaminated substances from the deposit are seeping into the surrounding environment. We used a total of 5,600 tons of steel for the sheet pile wall.

A total of 130,000 cubic metres of sand have been pumped into the cofferdam without exposing it to unintentional dynamic or hydraulic impacts. Afterwards, the sand has been levelled by a dozer.

Outfall

A third sub-project was to lead the pipes with surface water, cooling water from Dong's heating and power plant and cleaned wastewater primarily from Junckers into Køge Bay. We built a concrete structure in the dimension 4.2 x 5.8 metres and 6 metres deep. In the structure, we have coupled concrete, glass fibre and plastic pipelines together with the outfalls that are made in PE pipes. The structure has a built-in bulkhead for operation and maintenance of the outfall system.

The outfalls – DN1100 mm for cooling water, DN1100 mm for surface water and DN280 mm for wastewater – have been welded together to pieces of 300 metres in length for the big pipelines and 600 metres for the small pipelines. During the execution, we sealed off the pieces of pipes so that the pipes including ballast were able to float. The pipes were towed to their permanent position in Køge Bay. In a controlled process, we let the air out of the pipes and sank them into place in the excavated pipeline alignment at the seabed.



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DN 1100 mm pipeline with ballast.

The new intersection with the circular bridge and bicycle path at the access road to Køge Soil Deposit.

Data

3 out of 23 subprojects include sheet pile wall, stone work, access road, bridges, outfalls, beaches, dredging of the harbour basin, quay equipment, reception facilities and operation of the deposit.

Selected main amounts

- 40 hectares of land reclamation for industrial purposes
- 30 hectares for recreational purposes
- 4.5 million tons of contaminated soil, class 2-3
- 2 million tons of unpolluted soil
- 1,200 metres of cofferdam for the future quay

- 470 metres of single sheet piles, installed with inclined piles
- 650 metres of sheet pile wall tied back with strand anchors
- 100 metres of sealed cut-off wall
- 400 metres of stone break-water.

Client

Køge Municipality

Type of cooperation

Partnering agreement between Køge Municipality, Køge Soil Deposit, Grontmij | Carl Bro and Per Aarsleff A/S

Contractor

Aarsleff,
Construction and
Ground Engineering

Construction period

April 2007 – November 2008

Contract sum

DKK 203 million

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