

# PROJECT SHEET

**FELIXSTOWE, UNITED KINGDOM**  
PORT OF FELIXSTOWE SOUTH RECONFIGURATION

## PROJECT DESCRIPTION

Capital dredging and filling works for new quay development (previously known as Landguard Redevelopment).

Phase 1 of the reconfiguration programme consists of: 730 m new deep water quay and 200,000 m<sup>2</sup> container handling area achieved by installing new quay in front of old Landguard port structures and redevelopment of the old Landguard terminal. Work for WDC included dredging approximately 6.1 million m<sup>3</sup> consisting of:

- Dredging of silts and soft clays within reclamation terminal footprint (approx. 750,000 m<sup>3</sup>)
- Reclamation works to fill the area between the pre-sent quay and future quay wall including former Felixstowe Dock Basin (approx. 3,000,000m<sup>3</sup> including 500,000 m<sup>3</sup> re-use material from channel widening).
- Dredging/widening of western section of the approach channel (2,000,000 m<sup>3</sup> including 500,000 m<sup>3</sup> re-use material).
- Dredging of deep water berth pocket in front of the new quay wall (3,000,000 m<sup>3</sup>).
- Dredging of future tug berth pockets (50,000 m<sup>3</sup>).

## REMOVAL OF UNSUITABLE MATERIALS

For stability reasons it was decided that all unsuitable materials had to be removed from the entire reclamation footprint prior to placement of any fill material. This activity was undertaken by small to medium size trailer dredgers including the Sospan, Medway II, Cornelia and Barent Zanen. After the bulk of the material had been dredged, the purpose built water injection vessel Norma came into operation to remove the final layer of

## FEATURES

Client	Felixstowe Dock & Railway Co.
Period	May 2008 – Ongoing
Location	Felixstowe, Essex, U.K.
Main Contractor	Costain Ltd.
Dredging Contractor	Westminster Dredging Co



- A** Location map
- B** Maiden project for the new TSHD Crestway taken in 2008
- C** Aerial view of works in progress



unsuitable material and to maintain the reclamation footprint clear of silts until the first layer of material placement had been completed.

### RECLAMATION WORKS

After removal of all unsuitable material the reclamation works started. The reclamation was built up in various stages from a seabed level of approx. -12m CD to a nominal level of + 6.0m CD. In the early stages of bund construction around the reclamation perimeter, material was placed by a medium trailer dredger, using the bottom dumping method, however the majority of the bunds were placed by the trailer dredgers discharging material through a spreader pontoon. In this way material was placed in thin layers to an accurate design profile. The vessels Crestway and Barent Zanen were involved in this operation. All sand for this operation was imported from Offshore licensed dredging areas. As soon as the reclamation level reached the Low water tide level,

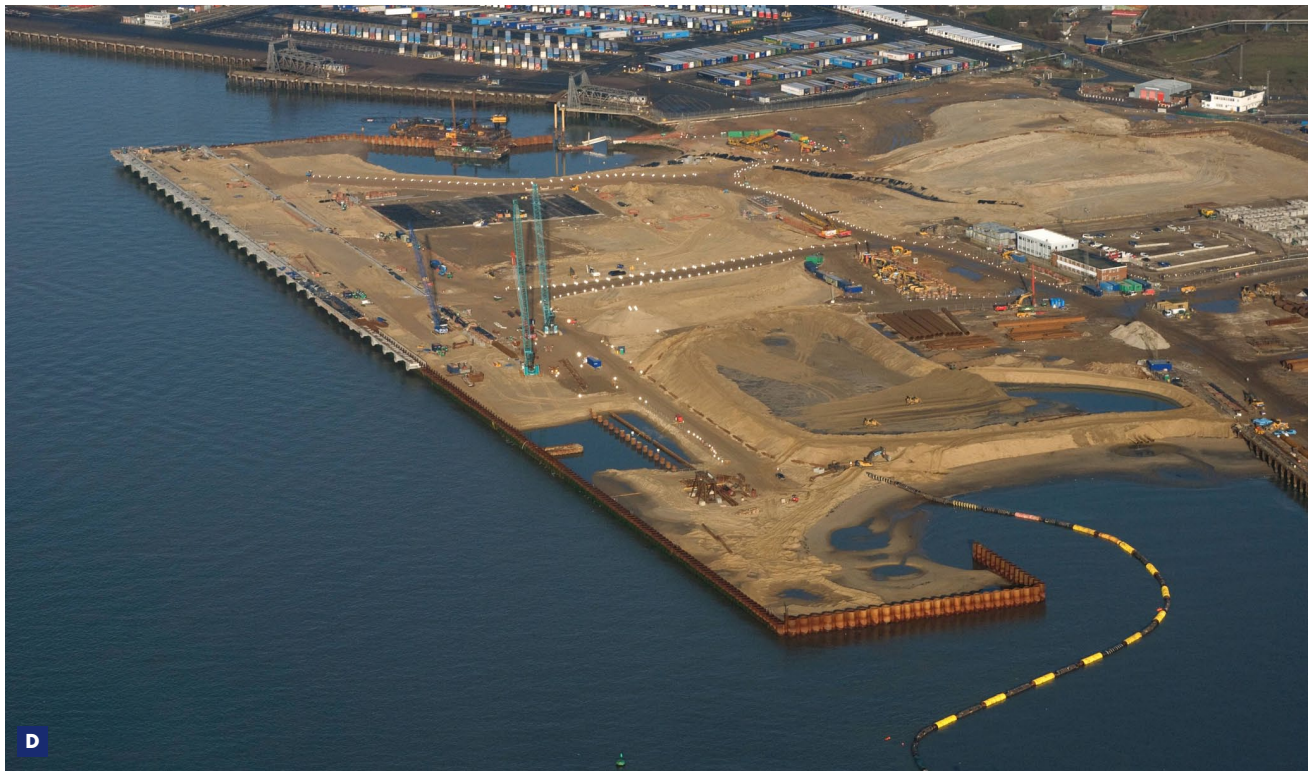
the spreader pontoon was replaced by shore pipelines and dry plant to continue the reclamation process.

### MATERIAL QUALITY ASSESSMENTS

For the onshore reclamation it was the aim to re-use part (500,000 m<sup>3</sup>) of the material that had to be dredged from the Channel Widening. Each load dredged from the channel widening was sampled and the quality of the dredge material assessed before it was accepted for reclamation. If the material was rejected for reclamation it was dumped at offshore disposal grounds. For this operation, medium size trailer dredgers Shoreway, Crestway, and Barent Zanen were deployed. Apart from sand, the widening material consisted of stiff clay, rock slabs and boulders. Part of this material could still be dredged by trailer dredgers with special dragheads engineered for the project, but the majority of material had to be removed by backhoe dredgers. The same applied to the berth pockets.

### CONCLUSION

The design of the project, including various stages of the dredging and reclamation works as well as the sequencing of the quay wall installation, ensured stability and a secure work area throughout the project and resulted in a successful product for the end users delivered on time.



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- D Aerial view of works near completion
- E W.D. Medway II alongside Cornelia

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