



## Lauenburg Lock

The waterway junction near Lauenburg, where today's Elbe-Lübeck Canal connects the Elbe river with the Baltic Sea, has been in existence since the 14th century. In 2002, the Lauenburg Lock—one of seven locks on the Elbe-Lübeck Canal—had been in operation for more than 100 years, and the structure's state did not permit any further refurbishment. A replacement lock had to be constructed without disrupting shipping on the canal.

As technical leader of a joint venture, HOCHTIEF Construction Civil Engineering and Marine Works completed the first section of the engineering structure in 2005.

The new and third Lauenburg Lock was built near the former lock, on the town-side embankment. With its length of 115 meters, a width of 12.50 meters and a maximum water depth of 9.80 meters, it is designed to handle traffic on the canal both

today and in the future. During the construction phase, fenders were provided to enable shipping traffic to safely pass the construction site. The project's logistics were improved by an innovative proposal, namely to supply the concrete from the mixing plant via a 650 meter long conveyor since transport on the nearby national roads was not permitted.



### Project data

#### Construction:

Arbeitsgemeinschaft Ersatzneubau  
Schleuse Lauenburg – Los 1  
HOCHTIEF Construction AG  
Civil Engineering and Marine Works  
Mölders Baugesellschaft mbH  
Bauer Spezialtiefbau GmbH

#### Client:

Water and Shipping Authority  
Lauenburg

#### Technical data:

Replacement structure  
Lauenburg lock – lot 1

#### Excavation:

Concrete diaphragm wall	5,800 m <sup>3</sup>
Reinforcing steel	380 t
Anchors	360
Sheet piles	1,200 t
Earthworks	40,000 m <sup>3</sup>
Tension piles	828

#### Concrete structure:

Underwater concrete	5,300 m <sup>3</sup>
Concrete	22,400 m <sup>3</sup>
Reinforcing steel	2,535 t

#### Construction period

July 2003 – July 2005

## Competence in lock construction

Solid foundation: In a cofferdam, a concrete structure on a shallow foundation was built, in the following work sequences:

- Grouting of the sheet-pile walls
- Construction of anchored diaphragm walls
- Excavation of pit using underwater construction techniques
- Foundation slab anchoring and installation of the underwater concrete foundation slab
- Installation of bracing at the entrances
- Pumping the water out and cleaning the foundations
- Construction, in one operation, of the reinforced concrete founda-

tion slabs and walls which are up to 3.1 m thick and 10.5 m high respectively

- Installation of the build-in steel elements as part of the second concrete pour

The very limited space conditions on the construction site were a particular challenge.

With our competence in lock construction we also secured the contract for an additional lot of the Lauenburg Lock. Under this contract, we demolish the old lock, convert the cofferdam into a longitudinal embankment and provide outer basins.

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