



## Lock Kaiserschleuse Bremerhaven

The old Kaiserschleuse lock in Bremerhaven was once the world's largest lock. Completed in 1897, it is one of two access routes to the side of the international seaport not affected by the tide. With the modern demand from shipping, however, it has become too small for modern automobile carriers and has therefore reached the end of its service life both technically and economically. In consideration of the continuously increasing demand for access to the international seaport, expansion and reconstruction of the old lock was therefore essential.

With experience, innovative energy and flexibility HOCHTIEF Construction has a proven history in difficult construction projects in the world of harbour, marine and tidal projects. With this portfolio of experience our Civil Engineering and Marine Works business unit successfully obtained the contract. In a cooperative project we are now building the new Kaiserschleuse lock at the Bremer-

haven International Seaport as one of the new largest lock systems in Europe. We were granted the contract in a new bidding process known as "Competitive Dialog", which was used for the first time in Germany for this project. With our technical recommendations we have helped to reduce the construction and ongoing maintenance costs.

## Project data

### Client:

City of Bremen (Urban municipality – in BgA Hafенbetrieb Bremen)  
Special Harbor Assets  
represented by bremernports GmbH & Co. KG

### Technical data:

Lock chamber in sheet pile wall design

Length 305 meters, width 55 meters with floor 13 meters above sea level

Inner and outer check gates each with gate chamber, innovative sliding/vertical lift gate

Vertical lift bridge

Control building

Outer harbour with new sheet pile walls on both sides

Tugboat harbour with sheet pile wall design

Flood protection by construction of connecting dike and flood protection walls

### Construction period:

April 2007 to December 2010

# Competency for hydraulic engineering

HOCHTIEF Civil Engineering and Marine Works is completely rebuilding the Kaiserschleuse lock to accommodate the latest generation of ship designs and ensure that it is able to cover the future requirements. Our service includes the turnkey construction of the sea lock ready for operation, which includes delivery and installation of the lock gates, the associated drives, power supply and control equipment. The contract also includes the new construction of a tugboat harbour.

This project demonstrates the multi skilled ability of HOCHTIEF to deal with a variety of challenges. For example, the new Kaiserschleuse lock is to be built at the same location as the old structure. This means that the work on this comprehensive and complex construction project must be performed with the minimum of land take and full consideration of the existing old structure. Optimi-

sation of the position of the lock as well as the programme that the lock system was closed for marine operations has made it possible for use to reduce the construction period and costs, while simultaneously increasing the safe working position. The lock system cuts through the line of Bremerhaven flood prevention dikes, and this protection must be maintained throughout in the area of the construction site during all construction phases. The influence of the tides makes all work on the outer harbour and tugboat harbour more challenging.

HOCHTIEF Construction, with its high skill level and understanding of maritime construction sequences, for major seaport and harbour projects such as the world's longest container terminal quay, the Stromkaje, in Bremerhaven and offshore foundations, is also excellently prepared for this challenging project.

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