

# Brygge Bridge

## swing bridge in the harbour of Copenhagen

The new bridge for pedestrians and cyclists between Islands Brygge and Kalvebod Brygge is the first new bridge connection in the harbour since 1952.

It is a swing bridge connecting the Islands Brygge with Kalvebod Brygge.

The slender bridge structure with its illumination gives a special signature day and night.

The bridge steel structure is approximately 190 m including a swing bridge of 67 m and six approach spans of approximate 25 m each. The swing bridge has two asymmetric spans of 25 m, including the counterweight and a 44 m navigation span.

The bridge is operated by two hydraulic cylinders placed in the pivot pier also housing the complete operating devices and installations. The maneuvering board is placed on the Eastern quay.

Ship impact on the structures along the navigation span is omitted by protection dolphins of concrete disks placed on steel piles in the limestone.

The bridge superstructure has a central, torsion stiff box girder, with cantilevered decks on both sides dividing cyclists and pedestrians.

The piers of hollow steel pipes are supported on prefabricated pile caps in concrete under water. The piles are bored 800 mm steel piles drilled into the limestone.

The bid and detailed design was optimized buy alternatives for the:



- Structures for ship impact based on simple robust concrete disks on steel piles bent in the limestone.
- Locking devices of the swing span to the approached spans by special developed coned dowels forcing the swing span into alignment with the approach spans independent of the elastic deformations from temperature in the swing span.
- Hydraulic devices instead of tooth rack system.

These modifications of optimizing provided a better and more competitive solution.

Project period: 2005-2006

Employer: Municipality of Copenhagen

Client: Pihl Contractor

Construction cost: DKK. 45 mill.

### Services

- Bid design
- Detailed design in a Design & Built contract including mechanical and steering installations
- Technical follow-up during construction

