

Dintel Harbour East Bridge (Netherlands)



Project description

The Dintel Harbour East Bridge, which opened in 2001, is located in the port of Rotterdam, one of the world's busiest ports. Together with the adjacent cable-supported West Bridge, it spans the waterway that leads to Dintel Harbour. It is a pre-stressed reinforced concrete structure, with a main span of 185m and side spans of 86.5m, and thus a total length of 358m.

In 2010, the bridge owner decided to undertake a very detailed assessment of the bridge's condition, and to closely monitor its condition on an ongoing basis. It was decided that a structural health monitoring (SHM) system should be used, to optimise both processes.

mageba scope

mageba supplied and installed a ROBO®CONTROL SHM system to support the bridge's short-term assessment and long-term monitoring needs. A permanent "Advanced" system was designed to monitor the structure's condition and performance, with a particular focus on weather conditions, traffic loading and the bridge's structural response to these influences. In doing this it uses a range of sensors to measure displacement, inclination, strain, acceleration, traffic loading, solar radiation and structural temperature. After installation, the system was calibrated by measuring the structure's response to loading, both static and dynamic, from a heavy truck of known weight.

Highlights & facts

mageba products:

Product: ROBO®CONTROL SHM system
Type: Permanent "Advanced"
Installation: 2005

Structure:

City: Rotterdam
Country: the Netherlands
Completed: 2001
Type: Reinforced concrete road bridge
Length: 358 m
Owner: Rijkswaterstaat

The bridge is located in Europoort, part of the port of the city of Rotterdam.



Installation and calibration of the ROBO®CONTROL SHM system.



A solar radiation sensor, as installed on the bridge.

