



## **BRIDGE ACROSS THE SVINDERSVIKEN BAY**



Floating

The new arch bridge across the Svindersviken Bay with a length of 145 m is the first part of an infrastructure improvement project to access the Kvarnholmen peninsula south of Stockholm and offers a direct connection to central Nacka.

The bridge arch was designed so as to blend in perfectly with the surrounding environment and avoid construction work at the southern slope to the largest possible extent. Since the southern abutment was only accessible via the adjacent tunnel through Ryssbergen, the great advantage in this design was the fact that a monolithic connection between the arch bridge abutment and the abutment foundations was possible and comprehensive foundation work near the water level could be avoided.

At the northern side of the arched bridge, the bridge deck is integral part of the double-span foreshore structure made of prestressed concrete. One of the two supports of the prestressed concrete structure is inclined in such a way that it can also be used as abutment support for the steel arch. The arch span is 145 m and the rise of the arch 19.2 m. The composite superstructure consists



Lowering to its final position

of a trapezoid steel cross section with a concrete road deck and has a length of 136.5 m. The total length of the superstructure including the pre-stressed concrete structure is 185.1 m.

The bridge has two lanes for road traffic and one bicycle lane. The total width of the bridge between the railings is 11.7 m.

The transportable parts of the steel structure were manufactured at MCE Slany and transported to the construction site. At the preassembly location behind the northern abutment on Kvarnholmen the 10 bridge deck lengths and the 10 steel arc lengths were preassembled with the round steel hangers. In order to move the bridge, arc and bridge deck were connected via auxiliary structures in order for the steel structure to function as a tied-arch bridge during transportation. The entire bridge construction with a total weight of 1,540 t was moved along the foreshore structure using SPMTs, followed by floating it across the Svindersviken Bay on pontoons and lowered in place at the final location.

#### Facts & Figures:

Steel weight:	1,254 t	Construction:	Arch bridge with composite superstructure
Length:	185 m	Customer:	Nack Kommun, Stora Infrastrukturprojekt
Width:	11.70 m	Construction period:	2013 - 2016
Steel quality:	S355, S460		