Slussen – the lock of Stockholm

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Abstract

Slussen is situated in the inner city of Stockholm just south of the world heritage site Gamla Stan and the royal castle. This historical site and also second biggest traffic and transportation hub in Stockholm is at the moment undergoing a complete refurbishment due to new demands and requirements and due to the fact that the former traffic plant was in a very bad shape with severe settlements and outworn concrete structures. The old traffic structure from the 1930´s is replaced by a modern urban space and transportation node designed by Foster + Partner and Berg arkitekter, adopted to demands and requirements of the future i.e. increased capacity for pedestrians and cyclists, heavily increased discharge capacity for Lake Mälaren, attractive areas for the public close to the water and several restaurants and cafés.

This mega project (€ 1.4 Billion) cannot be described completely in a single paper so therefore two objects of special technical interest have been chosen and are described below: the water regulation system as well as the unique 3.400 Tons steel bridge, transported in one piece from China.

Keywords: Large infrastructure projects, lock canal, steel bridge, orthotropic deck & sea transport

1 The discharge and regulation of Lake Mälaren

In the late Autumn of 2000 what many feared could happen all too frequently in the future did, in fact, happen. Despite the maximum discharge, the levels in Lake Mälaren rose over the highest anticipated level after an autumn of perpetual rain. Higher levels had not been recorded since the Mälaren was fully regulated in 1941.
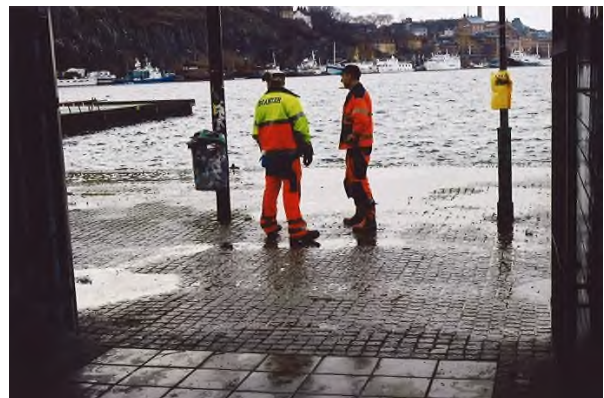

Figure 1. Inspection of the sea level at the harbour in Lake Mälaren, photo: Stockholm stad.

To reduce the level and thus avoid a flooding situation, the County Administration was compelled to take quite unique measures and