Planning and Construction of the new Lauenburg Lock

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Summary

The construction of the new lock in Lauenburg at the Elbe-Luebeck-Canal (ELK) including the most important constructional components of the lock and of the deep excavation is described. The preservation of evidences and the monitoring system practised during all construction works are main important aspects in this article. Design modifications, which became necessary during the construction, are described.

Keywords: inland waterway, lock, construction components, planning, excavation, preservation for evidences, monitoring system, construction method

1. Introduction

The Lauenburg lock is situated at the entrance of the Elbe-Luebeck-Canal (ELK), an artificial waterway that connects the river Elbe with the Baltic Sea with a length of about 62 km. The ELK is the direct connection between the Luebeck ports and the German inland waterway system. Passing Lauenburg it is possible to reach the West German canal system, the Hamburg ports, the river Rhine and the waterways in Eastern Germany and in the Czech Republic.

The ELK were put into operation in the presence of the German emperor in 1900. The canal planning was very future-oriented. This is shown by the dimensions of the canal bed and the locks being big enough for the inland navigation until the end of the 20th Century. Six of the seven locks along the ELK are after several repairs and basic restorations almost unmodified still in operation. The size of locks, usable for the navigation amounts to 80 m in length and to 12 m in width. Between 2001 and 2006 the seventh lock, the Lauenburg lock, was rebuilt. The new construction has been necessary, since the old lock could not be repaired any more due to the very bad building conditions. Therefore the further long term serviceability could not be guaranteed any longer.

Fig.1 *The Lauenburg lock in 2000*

The dimensions of the new lock are chosen for the contemporary inland navigation but they are also future-oriented. Therefore the usable dimensions are 115 m in length and 12.50 m in width. The depth above the sill amounts to 4 m.

2. Planning of the construction project

2.1 Planning procedure

In 1992 the Bundesministerium für Verkehr decided on the construction of the new Lauenburg lock. Immediately after it the lock planning began, performed in several steps. Apart from technical planning a plan-approval procedure was required. The approval of the plans was given by the Wasser- und Schifffahrtsdirektion Ost in June 2000.

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