Summary

The transfer of the canal Mittellandkanal across the river Elbe was the core of project 17 in the course of the transport project Deutsche Einheit (Reunification).

The structure consists of two parts: the foreshore bridge with two eight-field continuous beams and the main bridge with one three-field continuous beam. The total length is 918 m with a maximum span of 106 m and a total weight of 24 900 t of steel. The shipping trough is 34 m wide and the overall height of the superstructure is 8.15 m.

The solution of a waterway junction had to compete with the idea of a barrage in the river Elbe but was selected because of economical reasons and a minor intervention in the area of unspoiled nature.

Keywords: waterway, canal, canal bridge; bridge; flood protection

1. Preliminary investigations and draft

1.1 Initial situation

Ships coming from the west had to be lifted down in Rothensee from the canal towards the port of Magdeburg, had to go downstream the Elbe to Niegripp and turn again into the Elbe-Havel-canal. The unloading of the ships depended strongly on the respective water level of the Elbe.

Fig. 1 Perspective projection, planning of 1935

First plans for the transfer of the canal across the Elbe exist already since the 1930s (fig. 1). The crossing concept consisted of the main bridge across the Elbe with three spans, whose large central opening should have 106.0 m bearing distance. The foreshore bridge should consist of 3-pinned arched girders with a length of 20.0 - 34.0 m. When the construction work was stopped in 1942 the two abutments, all column foundations and 1/5 of the reinforced concrete superstructure for the foreshore bridge were finished.

1.2 Crossing possibilities

Variants for the traverse were an open bridge or a barrage solution. For the barrage solution the following construction works had to be considered: