



Bascule Bridges, Ennerdale Link Road, Hull

Owner: Kingston upon Hull City Council

Architect: Kingston upon Hull City Council - Technical Services Department

Structural Engineer: Rendel Palmer & Tritton

Steelwork Contractor: Rowecord Engineering Ltd

Main Contractor: Birse Construction

In order to complete the new Ennerdale Link Road across the River Hull, a pair of lifting road bridges were required, similar in design to those a few miles downstream at Stoneferry.

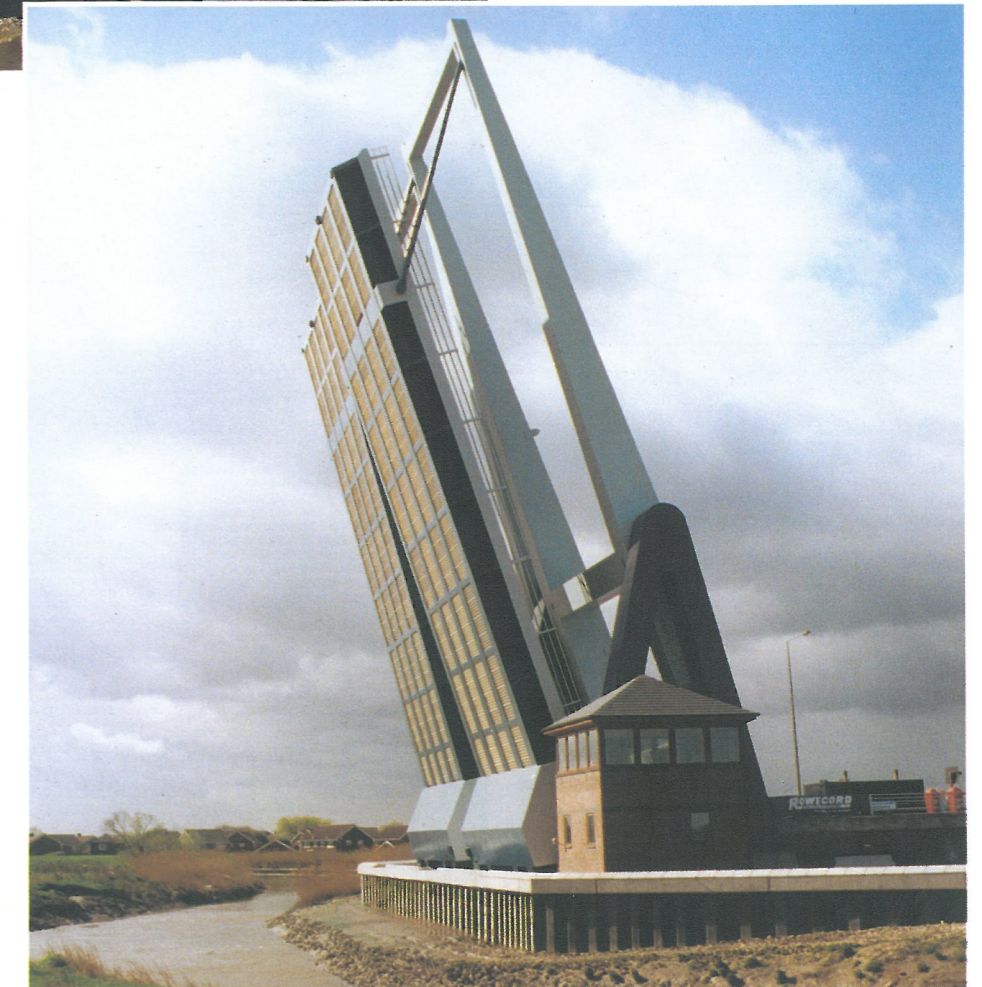
However, the depth and width of river at the bridges' location was insufficient to allow a craft of sufficient size and draft to reach the job-site. Careful planning and an intensive method sequence was therefore required before any detailed design and fabrication took place.

A detailed time plan was produced by the chief engineer, erection manager and design engineers, which was carefully scheduled and sequenced to eliminate any lost time on site. All site work was to be carried out within close proximity to a large 1200 tonne erection crane (of which there are only two in the UK) positioned by the river on the elevated overburden of the unfinished bridge approach road.

Manageable shop fabricated sub components were fully welded into the main bridge modules and transported to site by road from Newport. The trunnion bores were site-machined, trunnion shaftings and bearings fitted, and finally given a full paint treatment.

Extensive temporary site works were required, including module assembly trestles erected on specially designed foundations and made ready to receive the module sub components for accurate alignment and subsequent welding together and site machining.

The bridge decks, weighing 270 tonnes each and



measuring 13m wide by 33m long by 3.5m high, were assembled on the opposite bank and erected by mobile telescopic cranes. The deck and counter arm modules were then lifted into position by the crane using specialised lifting gear.

The three counterarm 'A' frame supports (60 tonnes

each) were assembled on the opposite bank and erected by mobile telescopic cranes. The deck and counter arm modules were then lifted into position by the crane using specialised lifting gear.

The total fabricated weight was 800 tonnes, together with the supply and installation of all main bearings and 600 tonnes of counterbalance.

These two steel bridges are excellent examples of this class of bridge in terms of both engineering design and aesthetic appearance.