



Goole Swing Bridge – the challenge ahead

Swinging into action

When the facilities on Goole Swing Bridge required updating, **Clancy Docwra** provided a high-tech solution

Goole Swing Bridge is a six-span bridge, situated between Goole and Saltmarsh carrying two tracks of the Gilberdyke to Goole line over the River Ouse.

At the time of its construction in 1869 it was thought to be the second largest railway swing bridge in the world, it remains today fully operational, and a fine examples of Victorian bridge building excellence.

However regardless of Victorian engineering excellence the facilities for staff operating the railway in Queen Victoria's era were far less of a priority than today, with the bridge-mounted signalling accommodation having no mains water provision, requiring weekly supplies of bottled water to be delivered to current-day signalling staff.

Following a robust prequalification and tender exercise in June 2009, Clancy Docwra Rail were awarded a Services Upgrade Contract valued at £630,000. This required the design and construction of ducting and catch pit arrangements to facilitate the provision of services to the accommodation and signalling equipment on the central pier of the bridge, and connection to both banks of the River Ouse.

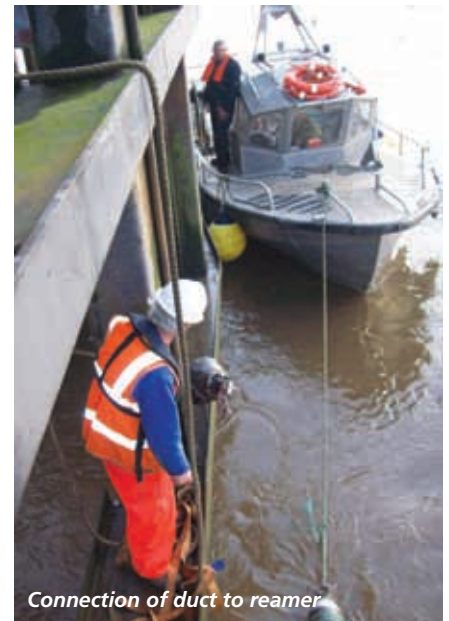
This award presented the contractor with some exacting and interesting challenges.



The directional drill

Works included:

- 2 no ducts from the eastern bank to the central pier
- 1 no duct from bank to bank
- A temporary platform on the south side of the central pier for storage of coiled services from connection by others
- Catch pit and apron arrangement on eastern embankment



Connection of duct to reamer



The start of the directional drilling process

Infrastructure



The duct is on its way to the pier prior to pull back

- Catch pit and apron arrangement on western embankment
- Provision of clean and wastewater services.
- New main water supply to be connected to existing services, routed via a booster pump station
- Installation of a septic tank for macerated effluent
- New external Yorkshire Electricity Distribution Ltd (YEDL) power supply.

The bank-to-bank connection presented little difficulty, however the construction of the connection to the signalling control tower at a point in the centre of the river presented a greater problem. Contractors had offered a number of solutions at tender stage – many requiring the construction of a coffer dam, but given the sensitive environmental issues these were quickly discounted.

Clancy Docwra offered a directional drilling solution, which presented few complications on the bank-to-bank crossing. However, given the radius involved, greater thought



Cables being installed

and innovation was needed for the mid-river connection to the bridge.

Project manager Chris Morton explained, "The Clancy Docwra team utilised a U.S. GPS system that gave extremely accurate coordinates, enabling the drilling equipment to surface at the exact location required from the drive shaft on the east bank, a distance of 136 metres."

The achievement was exceptional given that drilling had to be undertaken at a depth of 19 metres at the point where the peat ground conditions, which were unsuited to directional drilling, changed to rocky shale.

Clancy Docwra contract manager Paul Eadington said, "This was a difficult site in a sensitive location where Network Rail and Clancy Docwra teams worked well together and should be congratulated for a job well done." ■



New tray work to termination

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The company is recognised for its outstanding client service, innovative approach to delivery, quality of work and commitment to health, safety and the environment.

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