

Ham Island Bridge Refurbishment

Client: eight20 (CABV JV)

Location: Ham Island, Old Windsor

Value: £455k

Duration: 3 Months

In Brief...

This project involved the refurbishment and strengthening of an existing vehicular access bridge, which was displaying signs of severe corrosion. The bridge spans a spur section of the River Thames; connecting the “mainland” of Old Windsor to Ham Island. To enable the works to take place under the bridge Barhale secured a permit with the Environment Agency (EA) to block the river from early November 2016 until late January 2017, with a temporary pontoon system. The majority of work was then permitted to take place from on top of this pontoon.

Technical Features...

The scope of works included:

- Removal of rust and exposure of all corroded steel. This was carried out using hand tools. All corroded areas had to be prepared to minimum ST2/ST3 standard of EN ISO 8501-1:1998 or equivalent
- Waterproofing and re-surfacing the bridge deck
- Welded installation of steel plates in the bottom flanges of the main edge girders as part of the structural strengthening steelworks
- De-salt washing of the existing bridge surface to reach a soluble salt content of below 4.0ug/cm²
- Application of a waterproof paint system to future proof bridge this included; two coats of rust stabilising glass flake reinforced epoxy primer, followed by two full coats of glass flake reinforced polyurethane finish

Changing Methodology...

Several amendments to the temporary works design for the pontoon were requested. Whilst these changes had a programme impact of 5 weeks, Barhale’s team still had to work to the original deadline. The team had originally planned to encapsulate and heat the bridge during the coating works, as this would mitigate any adverse effect the weather may have on the application of the paint. New constraints within the programme however, meant that this approach had to be abandoned, with a more open face methodology being utilised instead. As a result, the team were obligated to undertake the re-coating works whilst exposed to the elements.

This required the development of an Inspection and Test Plan, which was suitable for these conditions. Strong collaboration from the site teams was also imperative to ensure condition checks were carried out regularly; allowing coating works to be performed at every available weather-permitting window.

In order to meet this constricted programme, Barhale increased labour resource; including the supply from specialist sub-contractors. The site working days were also extended from five to seven per week.





Underside deck conditions pre-work



Underside deck conditions post-work

06/02/2017



Exposed steel work after cleaning operation

20/12/2016
09:02

Customer Benefits...

All works were completed with the pontoon removed, two days in advance of the EA deadline. This was a challenging and new type of project for both Barhale and the client, which involved developing successful new relationships with several specialist subcontractors. The success of this project was only possible as a result of focused collaboration and commitment between all parties on site.

Tom Grant (CAB JV Project Manager) commented:

'eight20, delivery partner to Thames Water, required Ham Island Bridge to be refurbished within a very tight programme as stipulated by the Environment Agency. Barhale worked flexibly throughout the programme meaning the project was delivered on time and with minimal disruption to the local residents and river users. A fantastic result given some very challenging interfaces.'