NOTTINGHAM TRENT BRIDGE REFURBISHMENT

PROJECT
Nottingham Trent Bridge Refurbishment

CLIENT
Nottingham City Council and Nottinghamshire County Council

MAIN CONTRACTOR
Cleveland Bridge
In the tender process, Cleveland Bridge achieved the highest quality score of all bidders and was appointed to deliver the high-profile seven-month maintenance programme. The works were carried out during the period of Covid-19 lockdown restrictions, which meant careful planning was required to maintain social distancing and associated safety measures.

Through close collaboration between the Client and project team, Cleveland Bridge was able to adjust the works programme to allow simultaneous working on two bridge spans, rather than working on them sequentially. This enabled social distancing to be maintained, while keeping the works within the planned programme time.

The Grade 2 listed Trent Bridge is a steel, cast-iron and stone road bridge across the River Trent in Nottingham. It is one of the principal river crossings into the city from the south. Nottingham City Council and Nottinghamshire County Council needed to find an experienced bridge rehabilitation specialist to carry out ongoing corrosion-resistance work to prevent degradation of the historic structure, and to secure its long-term load-carrying capacity.

In the tender process, Cleveland Bridge took on the role of Principal Contractor for the rehabilitation works. The project involved painting all steel and cast-iron elements on the bridge, encompassing a total area of more than 11,000m². To maintain the historic appearance of the bridge, Cleveland Bridge needed to find an exact colour match for all painted areas, as well as the artwork on more than 400 intricately decorated cast rosettes.

In addition, 120m² of gold leaf had to be applied to the bridge fascias to restore them to their former glory. Cleveland Bridge worked with a specialist partner to complete this delicate work.

Cleveland Bridge also needed to replace damaged cast-iron parapet components, and repair others in-situ. To recreate the precise design of these historic elements, Cleveland Bridge took moulds of existing intact decorations and used them to cast brand new sections. Repairs also had to be made to the heritage stonework on the piers and abutments.

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Challenges

In addition to rearranging the works programme to mitigate the risk Covid-19 related delays, Cleveland Bridge had to manage the work around a three-week closure of the site at the height of the pandemic. On top of this, storm conditions and high river levels further inhibited the project.

Further complications were added as unscheduled emergency works were ongoing on the adjacent Clifton Bridge, which meant the Client required Trent Bridge to remain open at all times. Cleveland Bridge quickly had to problem solve and devise a way to deliver the full programme of rehabilitation works safely, without the need to close any of the traffic lanes. The solution involved a number of creative methods, including transferring all scaffold material by river-going pontoon, instead of lifting it over the bridge parapet from a delivery vehicle.

Outcomes

Despite the unexpected delays, closures and restrictions imposed by external factors, Cleveland Bridge managed to keep the programme within the original timeframe, with no detriment to the quality or safety of the works completed.

The bridge remained open to traffic and the public throughout, which meant this essential bridge rehabilitation was completed with no disruption to bridge users. Cleveland Bridge was able to achieve the exemplary standards of workmanship and aesthetics required by the council for this Grade 2 heritage structure.

“Cleveland Bridge were a pleasure to work with. Whatever delays or obstructions were thrown at them, they managed to find effective ways to complete the extensive repairs and repainting works on time and to an extremely high standard. Their efforts mean this much-loved structure will retain its heritage appeal for many more generations, while providing the structural strength needed for modern-day traffic.”

Chris Capewell CEng MICE
Highway Engineering
Technical Lead
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