

CASTLE BRIDGE, FINZELS REACH, BRISTOL

Finzels Reach footbridge is a new £2.7m footbridge across Bristol's floating harbour, which allows pedestrians and cyclists a route to the new Finzels Reach development in the city.

91m (5 span) x 4m wide bespoke footbridge curved in plan and elevation, Finzels Reach, Bristol

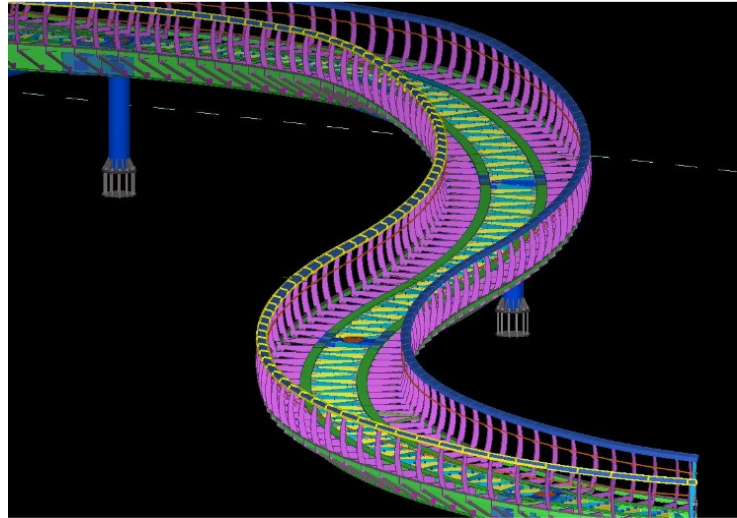


The 92m long x 4m wide bridge adds a new dimension to the Finzels Reach project. It twists its way gracefully across the Avon waterway linking the Finzels reach development with Castle Park.

The bridge has an unusual sinuous shape and was designed to maximise the length of the structure to allow the minimum gradient on the bridge from either side while maintaining the necessary clearance over the navigable section of the watercourse.

The architect, Bush Consultancy, and client approached CTS directly to create a structural solution from their architectural aspirations, which gave earlier budget confidence and identified critical structural constraints at the outset. From the initial meeting, the client and Architect committed to work with CTS, confident in our abilities to develop a scheme which would offer them their desired vision and meet their budget.

The rising S shape of the bridge brought about challenges during the design, modelling and cladding process of the project. Modelling the double curvature of each of the beam sections of the bridge as a whole presented a challenge due to the spiralling effect that can be realised in manufacture but cannot be realised fully in the model. Therefore careful detailing and consideration of each of the subsequent elements had to accommodate increased tolerance to account for and manage unknown offsets and interfaces for all parties.



The complex geometry posed challenges for design with regards to both analysis and concept. The plan curvature generated a low natural frequency structure easily excited by joggers. CTS's early involvement meant that vibration was identified at concept as being a critical design parameter. As such, CTS employed a vibration specialist Full Scale Dynamics whom we partnered with to design, manufacture, install and commission a bespoke tuned mass damper to position in the longest most eccentric span to ensure comfort parameters were met for walkers, joggers and crowds alike.

The bridge combined painted steelwork, hardwood decking with anti slip inserts (Hi-Grip Excel by CTS Bridges), hardwood handrail with stainless steel parapet infill; lighting and cladding encompassed the structure delivering a strikingly prestigious scheme.



The completed superstructure was installed in time for the official bridge opening on 6th April.

The eye-catching structure will be a lasting legacy of the Finzels Reach development – a unique footbridge enjoyed by many users for years to come.

Registered in England No. 2241698

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CTS Bridges employ both skilled joiners and fabricators and can therefore provide an extensive range of bridges in a variety of materials including steel and FRP or using a combination of steel, timber or FRP materials.

Please contact us for more details on our design, build and installation service for bridges and structures on 01484 606416 or visit our website at www.ctsbridges.co.uk or by email enquiries@ctsbridges.co.uk



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