GRAHAM

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Chelmer Waterside Bridge

Iconic Bowstring Bridge Creates Gateway to Urban Regeneration

£16m
/ Project value

2024
/ The project commenced

2025
/ The project was completed

GRAHAM successfully delivered the iconic £16m Chelmer Waterside Bridge (known as "Bow Bridge Road") in Chelmsford, featuring distinctive twin bowstring arches made from weathering steel. The 50-metre pedestrian and road bridge provides essential access from Parkway to Chelmer Waterside, the city's largest brownfield site, whilst allowing for future boat navigation on the River Chelmer and supporting the area's regeneration plans, serving as a gateway to the Waterside neighbourhood.

The brief

To design and construct a vital infrastructure link that enhances connectivity and supports regeneration in Chelmsford city centre, providing essential access to Chelmer Waterside and creating a gateway to this developing neighbourhood.

"Investment in infrastructure of this kind – in advance of development – supports the long-term growth and sustainability of new neighbourhoods like Chelmer Waterside and I want to thank the whole project team for helping us to accomplish this remarkable achievement."

Councillor Stephen Robinson
Leader of Chelmsford City Council

The challenges

The project presented several complex technical challenges, including flood risk management requirements and extensive utility diversions around the River Chelmer. The location at Chelmsford's largest brownfield site required careful consideration of existing infrastructure and environmental constraints, whilst ensuring the bridge would serve as an appropriate gateway to complement the area's industrial heritage.

The solution

GRAHAM employed Early Contractor Involvement to develop innovative solutions to the technical challenges faced. Working collaboratively with client Chelmsford City Council, design partner Buro Happold, and the supply chain, the team created an integral bridge design featuring distinctive twin bowstring arches made from weathering steel.

The bridge's bowstring arches were manufactured off-site in eight separate pieces, welded on location and fitted with stainless steel tensioning bars to allow them to maintain their shape.

The solution incorporated weathering steel screening that addresses flood risk whilst providing aesthetic appeal that complements the area's industrial heritage. Parametric modelling was utilised to optimise the design, reducing both carbon emissions and costs. The integral bridge design eliminates the need for bearings, reducing future maintenance requirements.

Sustainable construction methods were employed, including cement replacement to reduce embodied carbon. The design ensures safe access for vehicles, cyclists, and pedestrians to unlock the next phase of development at Chelmer Waterside.

Outputs & Benefits

- **Gateway infrastructure –** Creates new access route to city's largest brownfield regeneration site
- **Multi-modal connectivity –** Provides safe passage for vehicles, cyclists and pedestrians
- **Sustainable design –** Reduced carbon emissions through optimised design and cement replacement
- **Reduced maintenance –** Integral design eliminates need for bearings and reduces long-term costs
- **Industrial heritage –** Weathering steel design reflects area's industrial character

For more information on how we're delivering lasting impact:

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