

## Details –Job 3998

**Client:** G B Building Solutions for Manchester City Council

**Location:** New Islington, Manchester

**Length:** 36m

**Width:** 2.5m—3.0m varied width

**Form:** Triangular steel truss supporting cantilevered deck

## Project Description

A boomerang shaped bridge concept was the successful solution submitted by Gollifer Langston Architects and Michael Hadi Associates Consulting Engineers for a RIBA competition run by Urban Splash in 2008. The brief was to connect three footpaths coming in from different directions and at differing levels and this was achieved by utilising a curved boomerang shape to connect the three access points.

CTS Bridges were approached to design, build and install a replacement structure as the first fabricated bridge was never opened to the public due to health and safety concerns raised by Manchester City Council. CTS's brief was to ensure the new structure fit within the existing architectural envelope and re-use the existing steel cladding panels which incorporate a laser cut motif to represent woven fabric.

As well as fulfilling the aesthetic brief, buildability and safe installation were critical to the new design strategy. Attention to detail, during both design and fabrication was important to ensure a successful structure; the anticipated rotation of the torsion space truss was carefully analysed to enable factory preset of cantilevering deck elements and every cladding panel was match fitted in our factory onto the fully assembled structure to ensure the best possible fit with the constraints of the existing panels.

The large boomerang shape of the bridge meant it had to be transported to site in three sections and welded adjacent to the final bridge setting. Adjacent access roads limited crane size to a 500t capacity crane. The combination of a large, heavy structure and restricted lifting capability created a challenging installation as such, careful sequential activities were planned to ensure a safe, smooth installation. A high level of prefabrication was needed both prior to delivery and the final lift to avoid temporary works and working over water.

A precision planned night time lift which utilised the structures centre of gravity, which fell outside the footprint of the deck, located all three landing points simultaneously with ease. The entire night lift was complete in under two hours by CTS's own on-site team. CTS were pleased that the new replacement bridge structure has been complimented by Manchester City Council.

Top photo—Bridge slung over canal with lyrics underneath.

Second Photo—Landed bridge that allows access in three places

Third Photo—Bridge at Murrays Mill, Ancoats, New Islington, Manchester

Fourth Photo—3D Tekla model of bridge.

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