

Paddington Bridge Project



Client

Hochtief UK Construction Ltd for Westminster City Council

Project Description

This project involved the replacement and widening of a section of Bishop's Bridge Road to improve vehicular access to Paddington Station. The most prominent features of the project were replacement bridges that cross fourteen Network Rail operated railway lines, LUL's Hammersmith and City Line, a development site and the Grand Union Canal. Four separate structures were replaced using two new replacement bridges - the 'Canal Bridge' and the 'Railway Bridge' - in steel girder composite construction. Cass Hayward's design was for a lift and launch scheme to minimise critical path activities over the railway and the dependence on possessions. The construction method eliminated the need for temporary works between individual tracks, reduced the risks associated with signal sighting and maximised the amount of off-site work that could be undertaken prior to closing the old bridge.

Cass Hayward Role(s)

- Design for tender
- Detailed design of superstructure for construction including for verification of effects of the installation sequence especially during launching
- Temporary works design for bridge construction and for careful removal of Brunel's cast iron arch bridge under the supervision of English Heritage

Project Statistics

- Completed June 2006
- Bridge value 24.6m, project value £63m
- Canal bridge – 2 continuous spans each 35.3m long
- Railway Bridge – 2 continuous spans 61.4 and 44.0m long

Special Features

- Access from the north allowed the canal and goods yard spans to be erected by crane to form the 2-span 'Canal Bridge'
- The 'Railway Bridge' was constructed on top of the 'Canal Bridge' ready to be launched over the tracks.
- To enable its removal the 62m long existing bowstring bridge was raised up and suspended from temporary towers 10m above its original position. It remained elevated throughout the launch ready to be lowered later onto the new road deck for demolition and removal
- The 2500 tonne 'Railway Bridge' bridge was launched using an unprecedented method with the entire deck slab cast in advance
- The launch across the railway was undertaken during a series of normal midweek (typically) 4-hour possessions at night.
- Bridge cantilevered out unsupported for a maximum length of over 60 metres above live tracks.

- Precast concrete high containment parapets with architectural stainless steel facing panels and copings

Awards

- I Struct E Awards 2006 – Transportation Structures (Commendation)
- ICE/CSS Historic Bridge Awards 2005 for Salvage of Brunel's Canal Bridge
- British Construction Industry Awards 2006 – Civil Engineering Award
- ICE London Awards 2005 - Merit Award
- National Rail Awards 2005 – Civil Engineering Achievement of the Year



british construction
industry awards 2006

W I N N E R