

Reconstruction of Black Rabbit & Peppering Underbridges, Arundel



Client

Bam Nuttall for Network Rail

Project Description

This project was for the superstructure reconstruction of adjacent railway bridges crossing the two ends of a loop in the River Arun, 1.5 km north of Arundel Station. The twin-track bridges were similar in structure, each being of three spans with intermediate piers and brick abutments. Ten years earlier the central 'six-foot' girders of the original 3-girder riveted spans had been replaced to an intricate design by Cass Hayward as a short-term measure. The new bridges were reconstructed using Network Rail's standard (SDD) single track U-deck design which had been developed from Cass Hayward's original idea. This application to a pair of 3 span bridges may be unprecedented and all 12 U-decks were installed in the same 74 hour track possession.

Cass Hayward Role(s)

- Designer of 1999 scheme for replacement of six-foot girders
- Detailed design for the superstructure reconstructions
- Assessment of capability of existing foundations for re-use
- Temporary works design

Project Statistics

- Completed October 2009
- Contract Value £6.2m
- Six spans 12 to 13m in length

Special Features

- Difficult access - located within low-lying, flood-vulnerable, farmland bordering two areas of SSSI.
- Haul road constructed for deliveries and mobilisation/siting of two of the UK's largest cranes - 1200T & 800T
- Existing historical foundations comprising timber and cast iron piled structures requiring detailed study to justify suitability for re-use
- Bridge arrangement for 3 span continuous to 3 span simply supported spans
- Method led reconstruction solution

Awards

- ICE South East England 2010 multiple awards - Engineering Excellence Award, Majors Projects Winner and Community Award