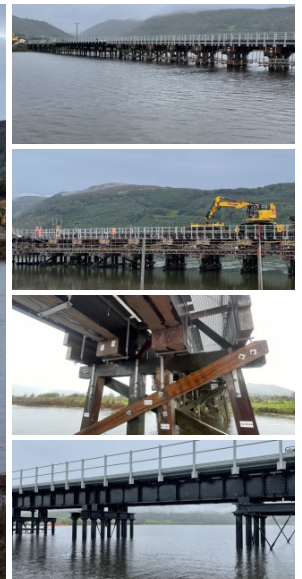


Dovey Junction Viaduct Refurbishment – Phase 2 (2022 to 2023)



Client

Network Rail / Amco Giffen

Project Description

Network Rail's bridge stock in Mid Wales includes 9 remaining under-line bridges which were constructed in timber over rivers and estuaries on the Shrewsbury to Aberystwyth and Machynlleth to Pwllheli Coast routes.

The largest bridge is [Barmouth Viaduct](#) with 113 spans with Dovey Junction Viaduct being the second longest. Cass Hayward has been regularly engaged in consultancy commissions supporting the maintenance of these unique assets since 1995.

The viaduct comprises 17 timber spans and 4 metallic spans that replaced a former under drawbridge. In 2018 Cass Hayward authored an options study that addressed the major maintenance interventions that would be required to both the timber spans and metallic spans that together comprise the complete viaduct. Since August 2018 there have been five significant maintenance interventions. In 2022 we developed the AFC design which has been implemented in two phases, 2A and 2B, twelve months apart. Phase 2A during September 2022 incorporated a 25 day possession and Phase 2B in autumn 2023 which included a 2 month blockade.

Cass Hayward Role(s)

- Site examination, inspection, sampling.
- Strength assessment
- Design for maintenance interventions typically involving replacement of timbers and metallic straps and bolting
- Temporary works and stability checks to support Contractor's method of works including use of RRVs on part complete structure
- Development of a structure stability decision 'matrix' that enabled the Contractor to manage the works around tides and high winds when the viaduct had spans removed.
- Design Supervision on site during the blockade.

Project Statistics

- Contract Value for timber and metallic span works circa £6.9M.
- Approximately 77Tc of timber replaced.
- Metallic repairs and re-painting of the former drawbridge

Special Features

- Consideration of stability of the viaduct due to construction method operating on two fronts working out from the centre of the viaduct towards the ends.