

# Ouseburn Viaduct Strengthening, Newcastle



## Client

Carillion for Network Rail

## Project Description

This project was for major strengthening works to the 1869, Grade II listed, wrought iron viaduct on the East Coast Main Line which - due to an assessment of diminished strength - had been subjected to a 20mph speed limit. Cass Hayward's earlier independent check of the structural assessment provided useful background knowledge for a value engineering exercise to target a reduction in the scale of strengthening necessary. This enabled the development of an optimised and more economical solution for the site works and, importantly, helped to satisfy the aspirations for minimal change of appearance held by the Heritage Authority.

## Cass Hayward Role(s)

- Independent check of Structural Assessment (for Network Rail)
- Design for tender stage including value engineering
- Detailed design for construction

## Project Statistics

- Completed 2013
- Contract value £10m
- Five spandrel arch spans each of 35m length with two masonry end spans each 12m
- Railway 33m high above the burn

## Special Features and Awards

- Detailing of metalwork repairs agreed in advance with English Heritage and Newcastle City Council's conservation officer
- Strengthening by over-plating arch ribs curtailed to under-strength areas only to reduce site works activities
- Loading on spandrels removed by additional and strengthened load transfer frames and deck support beams
- Site metalwork performed in a carefully sequenced operation to avoid temporary overloading

## Awards

- Winner of the Ian Allen Publishing Award by National Railway Heritage Awards