



Reconstruction of Arnside Viaduct



Project

Reconstruction of Arnside Viaduct

Client

UK Department for Transport

Location

Cumbria, North West England, UK

Start Date

2010

End Date

2011

Duration

12 months

Contract Value

£11m

Services Provided

Structures (bridges, tunnels and earthworks), programme management, feasibility design

Background

Arnside Viaduct is a 51 span structure carrying the Carnforth and Whitehaven Line over the estuary of the River Kent immediately to the west of Arnside Station.

Originally constructed in 1856 as a single line viaduct, the structure was extended to twin track in 1863. After 150 years of service, it was in need of renewal. Over the years the viaduct had deteriorated, resulting in the bridge's load capacity being reduced and a speed restriction being enforced.

The viaduct is located in a site of Special Scientific Interest within a Protected National Park, which is also an area of outstanding natural beauty. This challenging project has completed on time and on budget.



Scope of Works

The works comprised the renewal of the entire 51 span superstructure with prefabricated deck girder units (each averaging 24 tonnes in weight), together with the replacement of the jointed track with continuous rails directly fastened to the deck and refurbishment of the abutments.

Working on one line at a time, the railway tracks were removed to expose the viaduct decks, which were cut into sections, lifted out by special road/rail machines and taken away. Gantry cranes were then erected which moved along the viaduct lifting the new decks into position, before base plates were bolted in place to take the new continuously welded track.

Key Project Outputs

The main works were successfully delivered within a 16 week line closure.

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The upgrade has delivered major structural improvements to the viaduct and benefits to passengers by way of a smoother, quieter and faster ride across the Estuary. Line speeds over the viaduct will be substantially increased delivering passenger time savings.