

The Newton Cap Railway Viaduct Conversion

Newton Cap Railway Viaduct is a fine example of Victorian engineering and carried the railway high over the River Wear at Bishop Auckland from 1857 to the closure of the railway line in 1968.

It was subsequently incorporated into Durham County Council's network of country walks, but reassumed its importance as a key transport link in 1995 when converted to carry the A689 over the river, replacing the nearby narrow 14th century Bishop Skirlaw Bridge. It is thought to be the first such conversion scheme in the UK.



History

Newton Cap Railway Viaduct was built between 1854 and 1857 to carry the North Eastern Railway's branch line linking Darlington, Bishop Auckland and Durham over the River Wear, just north of Bishop Auckland. It was one of three almost identical viaducts on the 15 mile long line. It was designed under the auspices of the chief engineer of the North Eastern Railway, Thomas Elliot Harrison, who had been a pupil of Robert Stephenson and with whom he worked and shared credit for the High Level Bridge in Newcastle. The contractor was R. Cail.

The line was formally opened on the 1st April 1857 by a special train of 22 carriages, drawn by one of George Stephenson's patent engines (No.55). A supplement to the Durham Chronicle on the 3rd April 1857 concluded by reflecting that the Engineer and Contractor of the Bishop Auckland Branch as having erected "viaducts which will endure for ages, and carry down the fame of the designer and builder to the remotest time". This epitaph seems just as appropriate over 150 years later.

The viaduct is constructed in stone and brick and is 828ft long with 11 arches each spanning 60ft. The elevation is 100ft above the river. Its original use continued until 1968 when the railway line was closed. In 1972 Durham County Council acquired the Grade II listed structure and converted it into a footpath, as part of the County's network of country walks.

In the shadow of the railway viaduct is the narrow Bishop Skirlaw Bridge which was the only road crossing (A689) of the River Wear in the vicinity since it was built in the 14th century. The Grade I listed structure has two arches of unequal lengths.



Conversion of the Railway Viaduct to a Road Bridge

In the early 1980s it was evident the narrow Bishop Skirlaw Bridge was showing signs of distress from modern day traffic. Durham County Council determined an alternative river crossing was required to relieve the bottlenecks on the old bridge, and to cater for future, traffic growth on the A689. A number of route options were identified which would also provide a bypass to the nearby village of Toronto.

Durham County Council chose to make use of the Newton Cap Railway Viaduct, shown to be structurally sound, and convert it to a road bridge to carry a realigned A689 to the north of Toronto. It is believed this conversion of a railway viaduct to road use was the first of its kind in the country.

Work included the provision of a new concrete deck which was 13ft wider than the viaduct and included footways on either side. It increased the weight of the structure by some 2%, to 48,000 tonnes. The total cost of conversion was £4.25m, with the Toronto Bypass adding a further £1.6m.





Conversion work on the viaduct began in September 1993, with road realignment starting in March 1994. The scheme was completed in July 1995. It has given this fine Victorian structure a new lease of life and restored its rightful importance as a key communications link, carrying the busy A689 over the River Wear at Bishop Auckland.

The scheme was warmly welcomed by both English Heritage and the Royal Fine Art Commission, who congratulated Durham County Council for “achieving the use of the existing viaduct and securing its wellbeing for the future”. At the time it was hoped the conversion could be “made an exemplar for other similar situations”. The Bishop Skirlaw Bridge was retained for vehicle use but with vastly reduced traffic volumes.