The bridge over the River Bann at Coleraine in Northern Ireland forms part of the rail route between Belfast and Londonderry. The route to Londonderry has been described among the most scenic railway journeys in the UK, ranking alongside Fort William to Mallaig, and Settle to Carlisle.

The refurbishment of the Bann Bridge, a well-known landmark and lifting bridge, is a key part of the upgrade for the Belfast to Londonderry route, in order to increase line speed over the bridge, as part of the route improvements prior to the appointment of Londonderry as the ‘European City of Culture for 2013.’

The current activity, the first of three phases, includes bridge works, track refurbishment and a total renewal of the two end sections of line. The Coleraine to Londonderry section of track dates back to the 1970s and its condition had deteriorated significantly due to age and other factors.

The purpose of these works was to carry out a renewal of the track to ensure that services can continue to operate for the next 30 years.

The bridge is a multi-span steel structure with a central bascule lifting span to permit access of river traffic into Coleraine.

The track on the fixed spans comprises shallow ballast in the trough of the bridge, which is reinforced with transverse steel ribs creating fluctuating ballast depth and irregular sleeper spacing making tamping difficult.

The lifting span is an open lattice steel structure decked with timber planks.

The increased mass of new trains and the stiffer bogies increases the impact and vibration forces. This resulted in the choice of the Pandrol VIPA-SP system to mitigate the vibrations and attenuate impact strains in the structure.

The Pandrol VIPA-SP baseplate was fitted to timber sleepers prior to delivery for the ballast sections, and fitted directly to the timber deck on the bascule lifting span.

The successful conclusion of the refurbishment has permitted the increased line speeds over the bridge, and extending the life of this 89 year old structure for another 30 years.

The route between Belfast and Londonderry has been saved for a further generation allowing the coastal route to be enjoyed through the period of the Londonderry European City of Culture, and into the future.
Route between Coleraine & Londonderry

Bridge before the refurbishment, April 2012

Fixed spans with Pandrol VIPA-SP on timber sleepers in ballast

Bridge after refurbishment, April 2013

Detail of lifting joint and receiving blocks

Train from Londonderry to Coleraine and Belfast on the lifting span

Lifting spans with Pandrol VIPA-SP fixed to the timber deck

**BANN BRIDGE FACTS**

- Opened March 1924 by LMS
- Original Design Engineer: Joseph Strauss (American Structural Engineer, who also designed the Golden Gate Bridge in San Francisco)
- Refurbished July 2012 to March 2013
- 11 Span viaduct
- Spans 1 to 5: length 77 feet (~23.5m)
- Spans 8 to 11 are curved. The centre line spans each 75 feet (~22.9m)
- Spans 6 and 7 comprise the pivoting deck, where span 7 of 85 feet (~25.9m) lifts upwards, and span 6 of 20 feet (~6.1m) houses the counterweight and drops downwards
- Contractor for the refurbishment McCann BAM Rail Joint Venture
- Civil Engineering Consultants: Mott MacDonald
- Client: Northern Ireland Railways; Translink
- Project and Cost Manager: Arup Associates

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