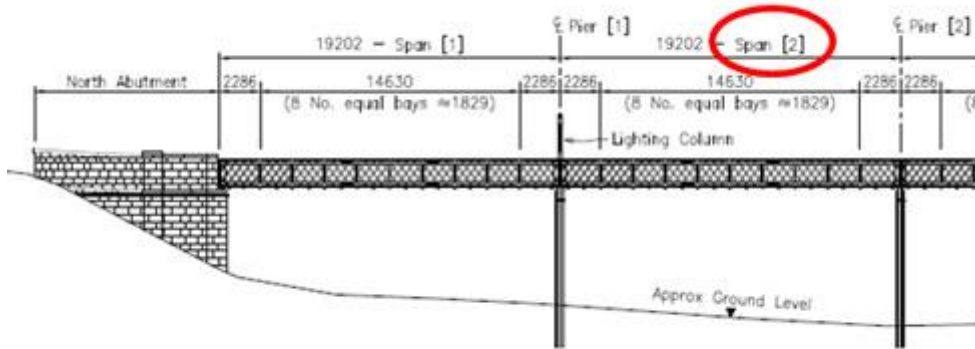


# Ovingham Bridge Blog – June-August 2014

27 August 2014

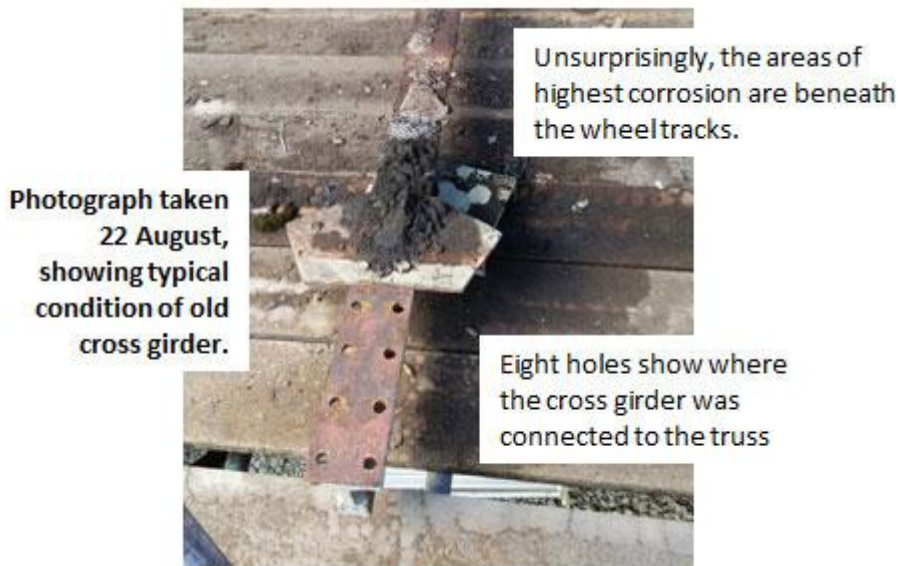
Photographs below  
were taken on span 2



Upstream elevation at Ovingham end of bridge, showing spans 1 and 2 and piers 1 and 2



Photograph taken 22 August 2014 looking towards Ovingham  
Cross girders removed from span 2



Photograph taken 22 August showing typical condition of bottom chord soffit, where cross girder was fixed to truss

Before this can receive the temporary bracing arrangement, refer to Blog 02 (8 July 2014) for the layout. It has to be prepared to remove the old lead based paint and any corrosion. The prepared plate has to be measured, compared to its original thickness and repaired as required.

Once the repair has cured the section is re-measured to ensure the minimum plate thickness has been achieved. Once the desired minimum thickness has been achieved, the section is painted. Once the paint has cured the truss is ready to receive the temporary bracing.

Although the photographs were taken in span 2, it demonstrates the typical condition of the trusses at cross girder positions.

There are twelve of these repairs to do in span 1, before the deck can be removed.

There are another seven spans to do to complete the deck removal along the whole bridge.

26 August 2014

River troubles



Photograph taken 30 July showing temporary works in the river, in order to build scaffold supports around bridge legs. River levels were low, typically around 0.4m, as measured at Bywell gauging station. River levels are available from the Environment Agency's website.



Photograph taken 11 August showing the river level covering the upstream bund



Photograph taken 18 August the river level has dropped, but not enough to assess the damage from heavy rainfall over the weekend 9/10 August



Photograph taken 22 August, inspection of the scaffold foundations demonstrated they were undamaged.

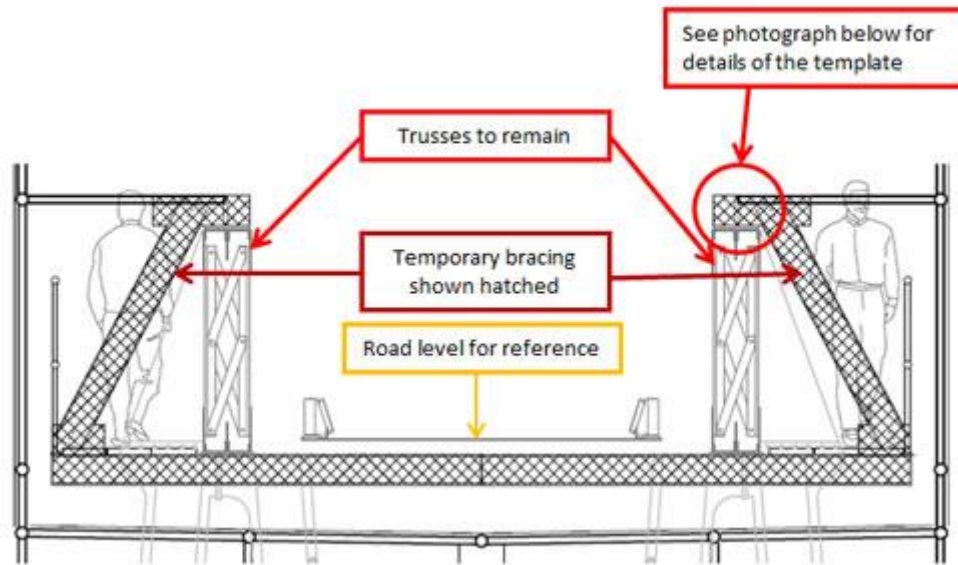
Scaffold construction recommenced 20 August.

The photograph is taken on span 4 (Ovingham side of the passing place) looking towards Prudhoe showing construction of span 5 scaffolding.

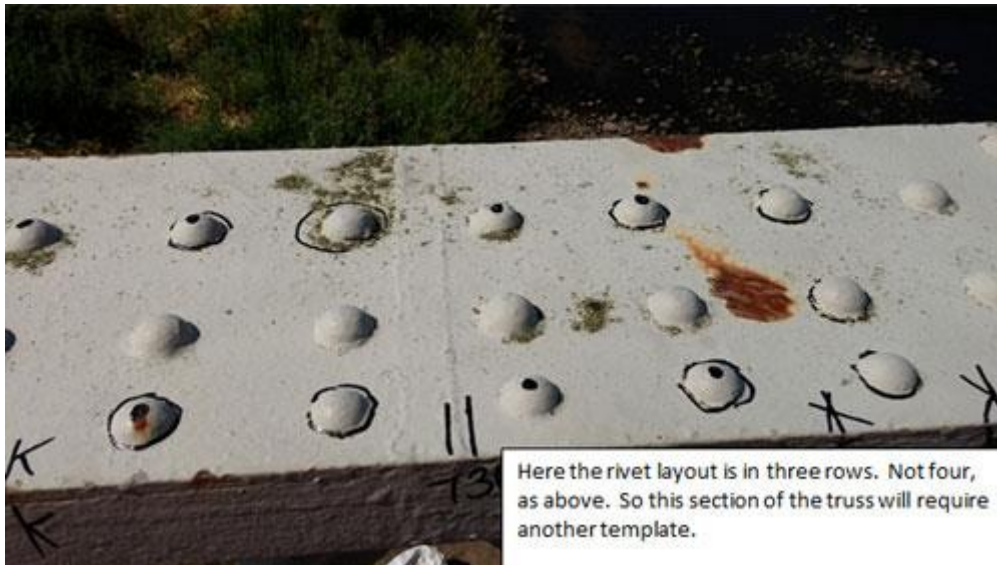
Thanks to the weather the scaffold construction was delayed by eight working days.

**25 July 2014**

Remember this diagram from Blog 02 on 2 July 2014?



The steelwork fabricator is making a template of the rivet layout to the top of the truss. This is to ensure the connection between the top of the truss and the temporary bracing will fit. See the diagram above for the temporary bracing layout. There are ninety six of these plates to be made. With specials required at the passing place (because of the change in angle) and where the rivet layout is different to that shown above, as the photograph below demonstrates.



## 24 July 2014

Following access to the scaffold over Ovingham river bank, the following photographs show the typical repairs required to the lower sections of the truss.

Corrosion is typically caused when unpainted metal is exposed to water and deicing salts. Whilst the bridge cannot be gritted due to the weight restriction. De-icing salts are carried onto the bridge by vehicles taking it from gritted sections of road.



Plate (red arrow) was originally 9.5mm (3/8") thick. It now measures approximately 5mm (1/5") thick. Extra metal will have to be added to the affected area before demolition can commence.



Typical condition of bottom of lattice truss at Ovingham end of bridge  
Note the plate above (white arrow), added in 1993, this has corroded too.

Typical condition of bottom of lattice truss showing missing rivets.

Besides the obvious loss of connection between structural elements, missing rivets allows salt laden water to penetrate the wrought iron. Corrosion then commences



Typical corrosion of the lattice truss – see photograph below

The 'walls' of the bridge are constructed from wrought iron.

Wrought iron is a laminar material, which means it is like the pages of a book. This is because it was folded in on itself and then rolled during manufacture. This process is repeated dozens of times until the desired plate width and thickness is achieved.

Once water enters the pages, the iron starts to corrode and expand. The photograph below is a typical example.

This will have to be grit blasted, to remove the lead based paint. Once blasted, the damage will be inspected and repaired prior to painting.



## 8 July 2014

What's happening in the river?

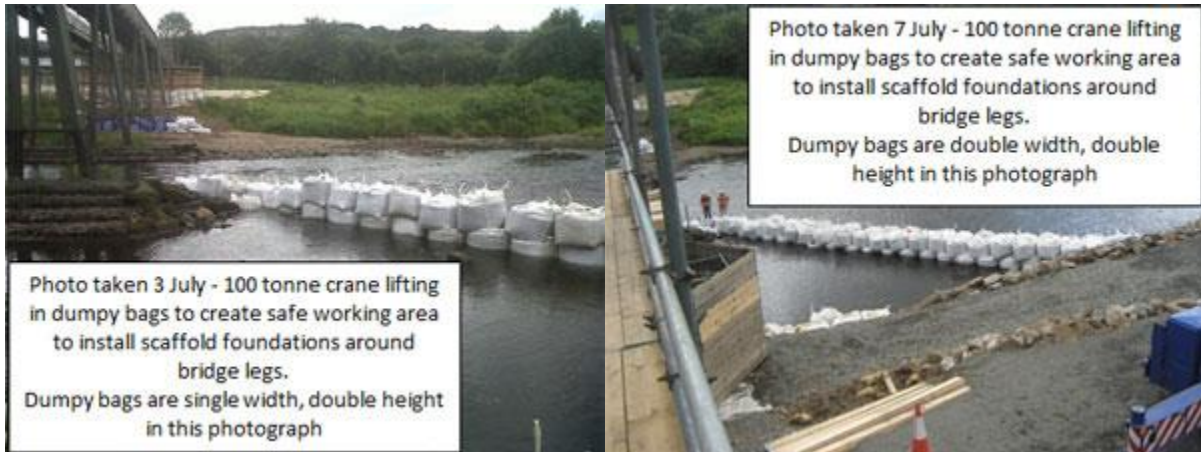
The section of bridge which is missing its scaffold requires foundations in the river.

The crane on site is placing dumpy bags within the watercourse to provide a safe working area to construct the scaffold foundations.

The scaffold above water level will be 2m (6') away from all faces of the pier. The foundations will be the same distance out from the visible scaffold.

It is expected this work will be halted today due to the weather. Depending how much damage is done to the dumpy bags in the lower photograph. This will dictate how much time is spent putting them right, before the planned work can continue.





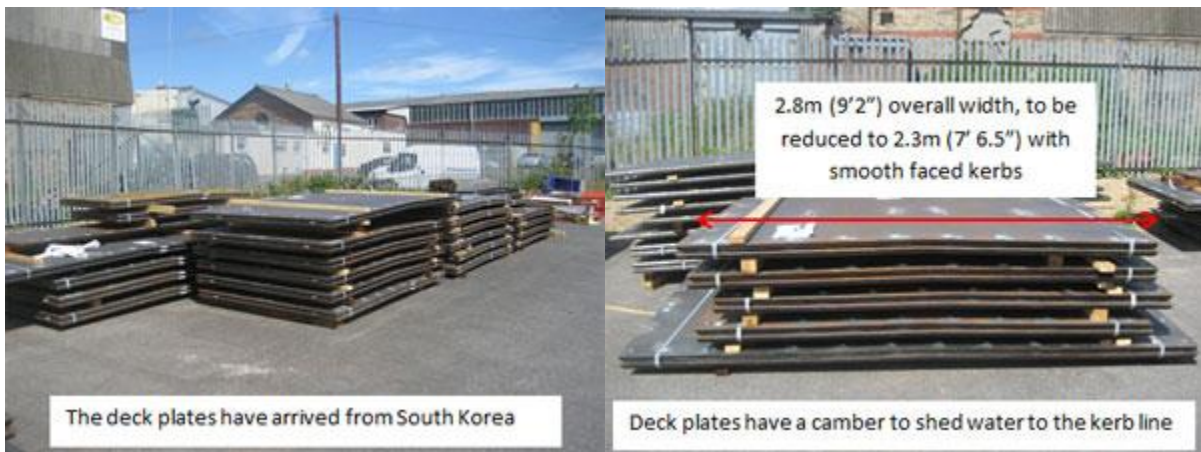
## 8 July 2014

The deck plates have landed

The deck plates are 41mm (1.6" thick), they are comprised of 8mm thick steel plates 25mm (1") apart. The 25mm (1") gap is injected with polyurethane filler.

This makes the deck plates stronger and more importantly lighter than 41mm thick steel plate.

The company where the deck plates have come from are based In Canada. Their manufacturing plant is in South Korea. See [www.ie-sps.com](http://www.ie-sps.com) for further information.



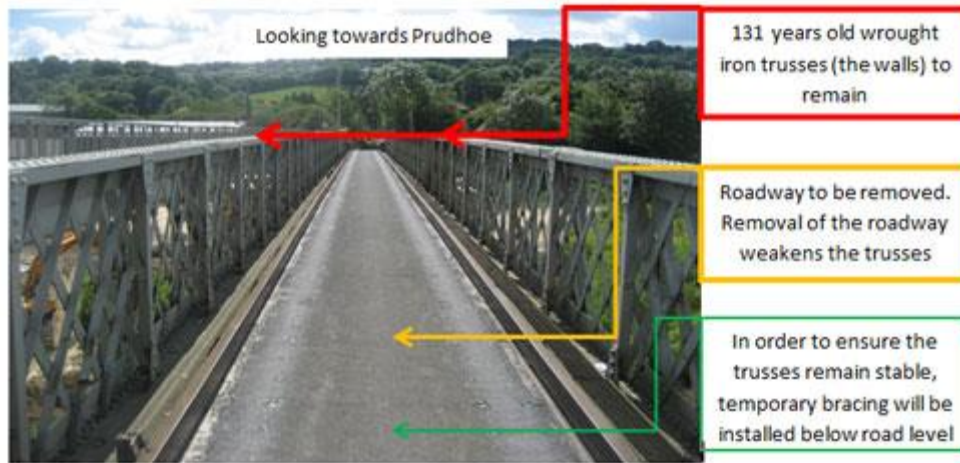
## 2 July 2014

The bridge is closed, so what happens next?

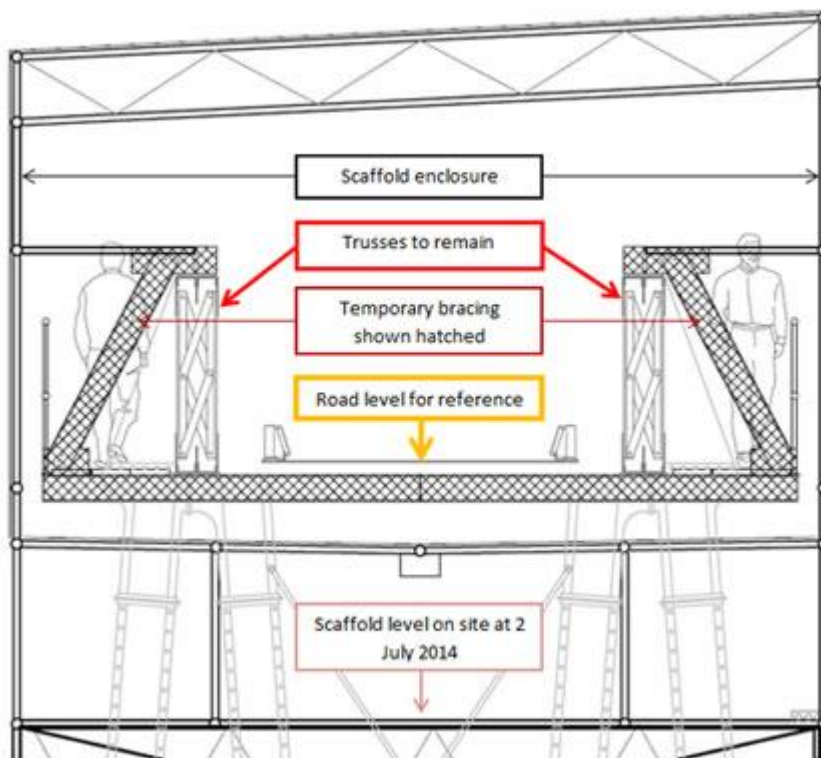
Once works to the footbridge surfacing are complete, pedestrians and dismounted cyclists will return to the footbridge.

Once the scaffold is finished, BT cables and an abandoned gas main will be removed from beneath the roadway.

What happens next:-



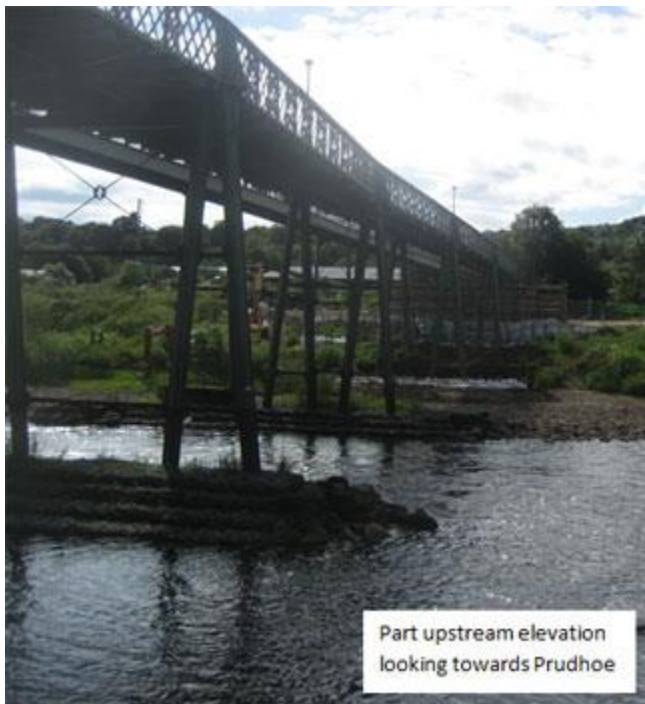
With the deck removed and temporary bracing installed, the enclosure will be erected ready to remove the paint from the walls.



Scaffold enclosure, showing temporary bracing

**30 June 2014**

Ovingham bridge is closed



Ovingham bridge closed to traffic today.

The familiar clackity-clack of vehicles has ceased.

The bridges' 131 year lifespan carrying, initially, horse and carts, followed by large vehicles and most recently lighter vehicles has come to an end.

Here begins a new chapter in its life, one that should last for a hundred and twenty years.