



Bridge of the Month No25 January 2013 Bridge 26



News and Events

Level 0 assessments

Bill and Hamish are developing tools to help with the Level 0 assessment process. If you know anyone who might be involved please ask them to email bill@obvis.com for more information.

Seminars and Lectures

26th March Belfast, Hosted By Doran Consulting

14th May, Motherwell, Hosted by Amey. Contact Philip@obvis.com

Please contact Philip@obvis.com if you are interested in attending a day seminar on Arches and Archie. The program for this year includes:

Bill's recent work (some interesting bridges!)

Skew Arches

Ring separation

Causes of live load damage

We charge £100 for the day but if you wish to host a session at your office we then wave the charge.

Recent Publications

Two papers in the ICE Bridge Engineering journal:

Stiffness and damage in masonry bridges. Proceedings of the Institution of Civil Engineers, Bridge Engineering 165 September 2012 Issue BE3 Paper 1100032 Pages 127–134 <http://dx.doi.org/10.1680/bren.11.00032>

A spatial view of the flow of force in masonry bridges, Proceedings of the Institution of Civil Engineers, Bridge Engineering 000 Month 2012 Issue BE000, Paper 1100026, Pages 1–8

<http://dx.doi.org/10.1680/bren.11.00026>

Forthcoming Lectures

28th February, Plymouth, IStructE. "*The Devil is in the Detail*", on the responsibilities of an engineer, or what I did on my holidays.

4th April, Dorchester City Club ICE. "*Arch Bridges*" more detail later.

1st May, Swindon City Club. "*The Devil is in the Detail*"

18th July Poole City Club "*The Devil is in the Detail*"

Now here is something different.

Shortly after this was published I received an email from Jose Martin Caro to say that the bridge is between Venta de Baños and Burgos in Spain.

Most of the bridges I write about are old friends. These pictures were given to me some years ago and I couldn't place them. The only reference I have is a folder name Bridge 26. However, some of the features are important and worth flagging here.



The bridge number marks this out as a railway bridge but even without that, the style is obviously of the railway era and the overhead cables are a clincher. My guess would be Austria.

The main reason for putting it here though is the clues it gives to construction.



Look underneath the arch and there are pronounced water runs from well up the curve. Notice, however, the highest one at top left which is obviously of a different set. That isn't a crack but a bit of vegetation hanging down.



A higher level photo shows that the top line of penetration is very high, perhaps only 1.5m away from the crown. All this is particularly visible because the stone is pale but even in darker stone or brick these signs are often there if you look.



A look at the spandrel wall shows a band of weathering in the brickwork. Look carefully at the bottom right and you will see that the bottom edge of this corresponds with the lower layer of water runs in the soffit. Look back to the first picture and the correspondence of the water runs and the weathering levels in the brick becomes obvious.



A closer look shows more of the nature of the weathering of the brick. It also shows clearly that the expressed ring (at least) is tapered, beautifully fitted and has tight joints.

The banding here, and in the arch ring, corresponds well with different levels of internal construction such as is shown in the part demolished bridge near St Pancras (below and BoM).



This, yet closer look is obviously a different span. The line at which the weathering starts is very clear. There appears to be a diagonal crack in the brickwork but it might just be a construction joint, perhaps where the skilled bricklayers worked away from the ring and produced an easy edge for the improvers to work from.