

Learn something new every day they say. Well, here I am, 75, 41 years working on masonry bridges, with a lesson about something I never questioned. The lesson was here:

<https://goo.gl/maps/6bP5vYGHmVGqn4RL8> but we will begin with a little railway bridge here:
<https://goo.gl/maps/HbwaZToghUtTMF5j7>



This is classic construction from the later Gt Northern lines. The road slopes steeply and the string course and parapet bedding follow closely. The arch is built with stone voussoir edges, dressed to provide a stepped base for the – horizontally bedded – spandrel wall. Underneath, the construction is different. The arch ring is of brick, toothed in to the voussoirs. The voussoirs are short and the arch is very slightly skew, though the beds are parallel to the abutments. The skewbacks also create a string course.



The black smoke on the sheltered soffit has been washed off near the arch edges, presumably because of water penetration from above.





At one edge there is a substantial crack between bricks and voussoirs. Some of the bricks here are inclined to the main beds showing differential movement between brick and stone. A common cause is bricks continuing to absorb water and swell after they have been built in.

Not much new so far, I hear you say but look at this next bridge where the arch has been taken down.



A closer look is worthwhile. The skewback is only dressed to set the first ring of brick.



Though, of course, at the edge it is dressed through to seat the first stone voussoir.



That was a surprise, but why? When building to a price, work will be minimised I have never seen any evidence that such construction damages behaviour. The revelation is pure serendipity. How many bridges have been demolished completely without this ever being noticed?

Does it matter? Probably not a lot but it is another indication of how questionable detailed analysis may be.

At the end of June I had a holiday touring the North with my daughter as driver. I was hoping to get a look at three more bridges on my home but ended rushing to hospital with a blocked bile duct. Then, for a bonus, I got covid. Will I ever get to see those three? I don't know but each would be well worth a BoM so I hope so.