

Bridge of the Month No69, September 2016 Stirling Old Bridge





The <u>Old Bridge at Stirling</u> is a wonderful thing. Only well through the 19thC was there a bridge over the Forth downstream of here. Indeed, the first of those, by Robert Stevenson, is visible in the photo. It too is a magnificent structure. For English readers, let me emphasise that I didn't spell that name wrongly. Robert Stevenson 1772-1850, was an outstanding engineer. Keeper of the Northern lights and founder of a dynasty of great engineers. His Grandson Robert Louis didn't join the business but showed his enormous respect in his "<u>Records of a family of Engineers</u>", which is an enjoyable and enlightening read.

Anyway, the old bridge. I had a collection of photos taken some years ago but they were slides and lost in a "library" of same. So the opportunity to visit in July was very welcome. It is variously dated to 15thC or 16thC, though there were a number of timber predecessors including the one where Wm Wallace beat Edward 1st in 1297. One span was demolished during the 45 to impede the progress of Bonnie Prince Charlie. I must look more closely to decide which, though since that is the better part of 300years back into a total life of possibly "only" 500, that may not be obvious.

The arches are semi-circular with spans of 11.6, 16.7, 17 and 14.6m. The piers are bulky and surrounded by substantial starlings. It is hard to imagine that isn't almost fatal in a big flood. Especially when you look at the line at which is crosses the river. Perhaps the river has re-aligned, or been realigned and trained over the centuries.



We know that one span was replaced in the 17^{th} Century. I rather feel that the row of pigeon holes on the far pier here might be a sign of that later rebuild.



The distortion apparent in the nearer arch is simply stretch from the very wide angle lens.



Once the arch is away from the edge the trueness of the shape is clear.



A similar set of corbels appears on the other side. It is understood there were once gates on the bridge. Perhaps these corbels mark the position. There are five different bands of condition in the visible half arch. Three are coloured in the view below but there is stone above and below too. The



lowest of the coloured zones is very badly weathered. Above that is a band with dark water runs and above again, one with paler runs in distinct stripes. The lower band is very badly weathered, surely indicating considerable water penetration from behind.

Note the large opening into the abutment somewhat above springing levels. Any offers on the purpose of that would be welcome.

The lowest level of stones in the ring are bedded horizontally. A sewback is introduced one course above the opening. The chamfer begins whithin the skewback and the second layer appears immediately above it.

The Lines show marked open joints (red) and a

substantial kink in construction (green). Look more closely at the coursing in the full frame and you will see that the yellow line marks a break in the coursing. All this together suggests that it was the Stirling side arch that was demolished.



Looking more closely at the parapet and below on the upstream side there is a matching open joint round the top of the ring and extending along the bottom of the parapet. There is then a vertical crack in the parapet just above the corbels. There has been some form of settlement here, whether in the substructure or just the crown of the arch requires a closer investigation than I had time for.

And now I find I have mislaid the photos I took with a longer lens so that will have to do for this month, I am afraid.