

Bridge of the Month 124. April 2021 Budleigh

The Budleigh Salterton to Exmouth line was built around 1898: really quite late for railway arches. My interest in this bridge just now was rekindled by thinking about brick quality. More about that shortly but first a general view. [It is here.](#)



By the time this was built, there was a direct line from [Rougemont brickworks](#) to Exmouth, so getting good quality bricks to site would have been easy.

The bridge is remarkably tall. It isn't uncommon for such tall abutments to need a prop lower down, or, with larger land take, to be built lower and wider with an embankment on top.



There are some elegant details in blue brick. I am not sure of the source of those, but the fine red tone of the majority is typical of Rougemont.

The arch is built with a slight skew as can be seen from the inclined beds in the ring here.

My real interest, this month, is the quality of the bricks. These were not manufactured on site from local materials and burnt under low control in a clamp kiln, they came from a well-established factory.



The point of all this, though, was the pockmarked nature of the surface. This highlights just how variable the best quality bricks might be. What is more, these are facing bricks. The engineers understood that the face issue was weathering, strength through the bulk is of negligible importance. We know that the cores were built of commons, often frog down, with poor quality and sparse mortar.



In this partly demolished view of a viaduct there is sparse mortar even between the rings and close to the edge.

The point is that no matter how much you may think you need to know the stiffness and strength of the masonry, it varies so much that there is no one value that can describe a bridge. Coring is a complete waste of time and of your client's money. It does physical damage to the bridge for no value. That's engineering, working with materials we do not, and cannot, understand. As my daughter is wont to say, just suck it up.

Condemning a bridge to intervention or demolition, on the basis of calculations when the bridge appears relatively sound is emphatically not engineering.

And that is this month's fierce lesson.