

Building Klondyke Road Bridge

On the Okehampton layout, there is a bridge under the railway which takes traffic across to the goods shed area. It's quite small, with a clearance of just 10' 3" so even in the early days of use it must have been a pain. Today with lorries the size we have now, it is pretty much useless! Just as well that goods don't come into the station any longer.

The original bridge is constructed out of local hewn stone, random in size, just like the goods shed and the large bridge over the railway at the military sidings end, Torrs Road bridge.

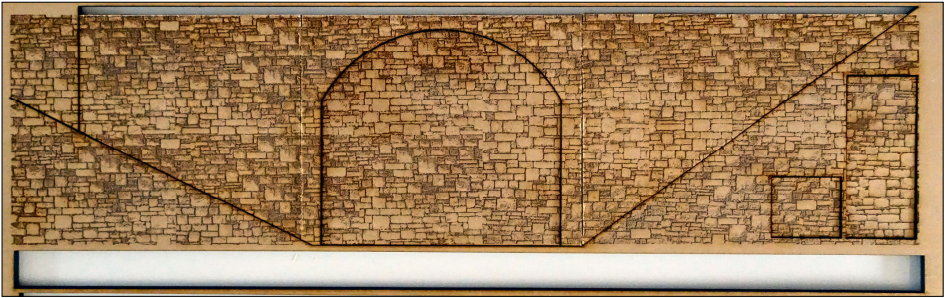
Adrian had kindly done a lot of work manipulating the photos taken of the goods shed to even up the black – white balance over the whole picture with the intention of producing laser cut goods shed sides. It occurred to me that the bridge sides could equally well use the same stone pattern and thus Adrian's photos to save time. The bridge itself is hard to photograph well. The stone is very dark, so the contrast between the mortar courses and the stone is poor.

I extracted a rectangular section of Adrian's photo of part of the goods shed, and then made the image longer and taller by simply pasting multiple sections together, taking some care to get a good join between sections. I use a software package called paint.net which can be downloaded from the internet for free. It runs on Windows 7, 8 and 10, but not on the old XP. Paint.net has lots of features including a very good resize ability to stretch or shrink an image.

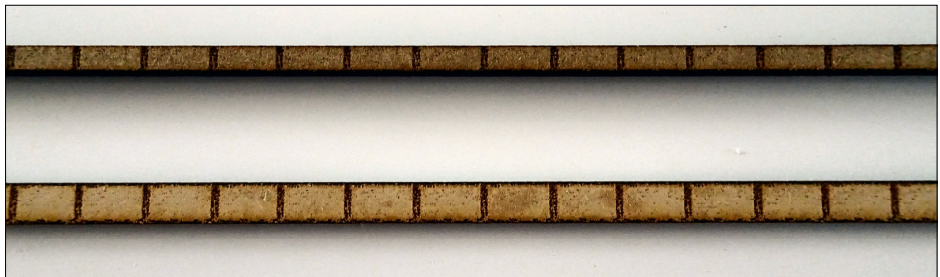
Having produced an image bigger than the size of the bridge, I used the laser cutter to burn the stonework image into MDF, 3mm thick. I then drew the outline of the bridge itself on CAD and sent this drawing to the laser cutter so that the cuts occurred on top of the image.

The laser cutter software can overlay a black and white image and a cut out plan at the same time. But if you want to do this, make sure that the colour of the lines to be cut on the CAD drawing are not black or white. Anything else will do, say red or green. This is needed because the laser cutter software separates the colours of the drawings or bitmaps you load and you can apply different laser speeds and powers to each colour. Thus with our image the black is engraved at 200mm/sec and a power of 25%, which gives a reasonable burn depth into the surface of the MDF. The cut lines (in red) are done at a speed of 10mm/sec and 60% power so that the beam cuts through the material completely.

The picture illustrates this:



The parapet of the bridge consists of a plain decorative stone strip with even blocks with a section of the random stone above. The strip was created by taking one suitable stone from Adrian's picture and repeating it along a strip, forming a long line of stones. The parapet capping stones were created the same way but needed a wider stone. This is where paint's resize ability came in useful. I simply stretched the image upwards.



The arch was different in that we needed a tapered stone in the curved section. As this was difficult to achieve using Adrian's picture, I opted to draw it using the CAD package with simple lines. I felt that once painted the blocks would look in keeping with the other parts.

The bridge was then assembled in situ by John Casson and painted to represent the dirty dark grey look of the original bridge. The whole bridge was first painted using a pale emulsion (some paint left over from decorating my house!) which gets into the mortar courses. Then when dry, dark enamels were used with a dry brushing technique to pick out the blocks and leave the pale mortar behind. I think you'll agree that the bridge looks extremely effective.

James

