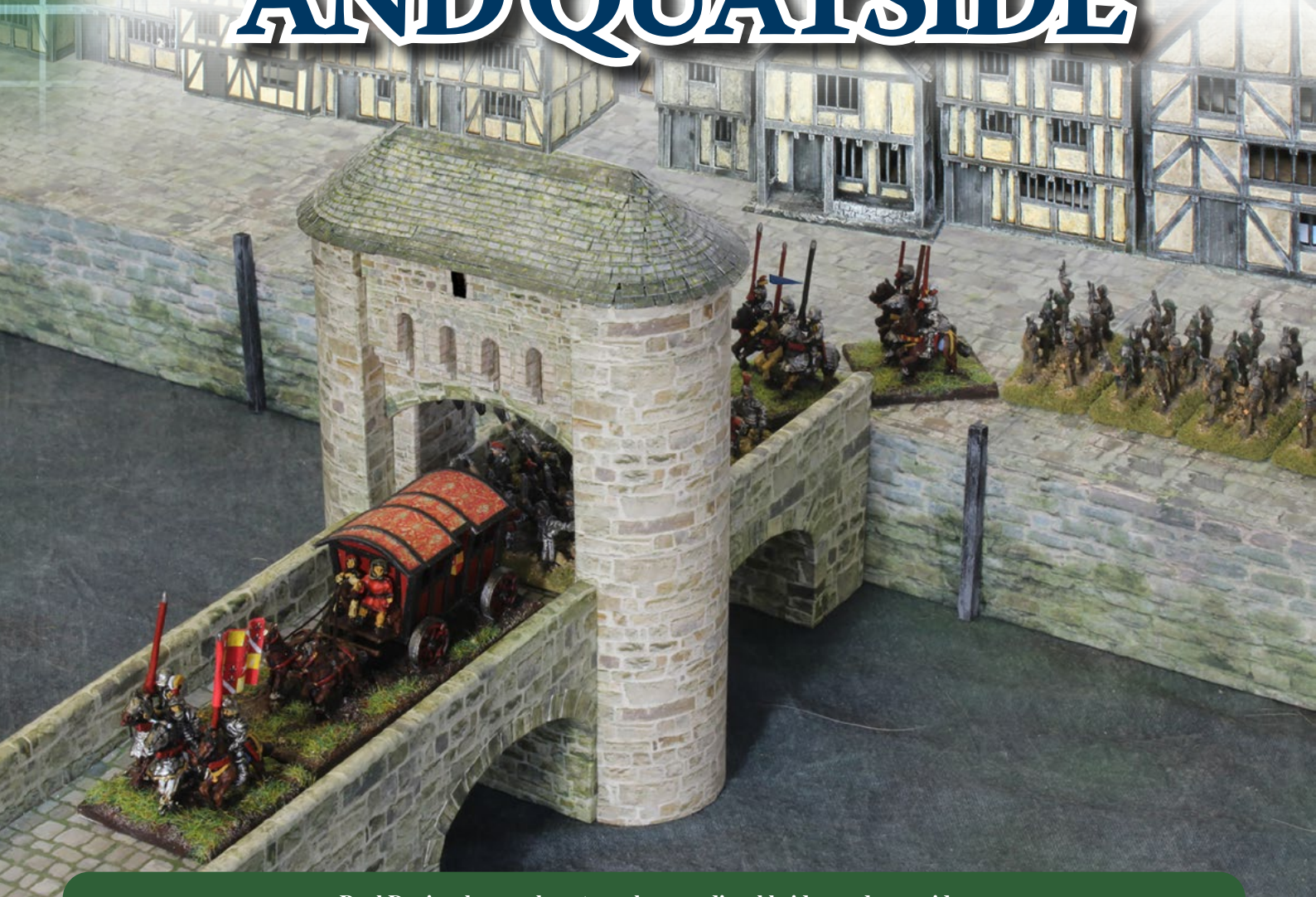


# HOW TO .. BUILD A MEDIEVAL BRIDGE AND QUAYSIDE



Paul Davies show us how to make a medieval bridge and quayside.  
Whilst he designed his to fit with 12mm figures, you can upscale to any required size.

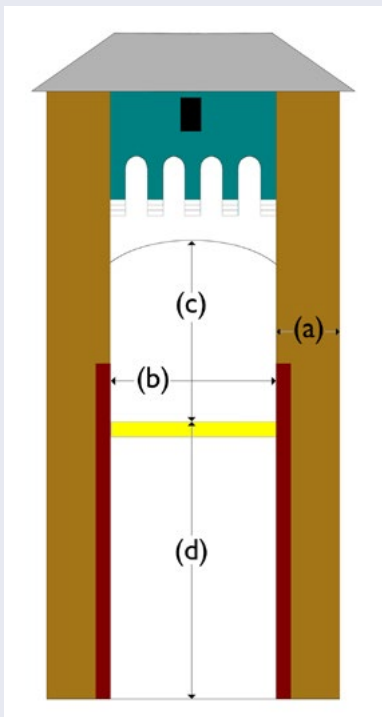
My inspiration for this model was Monnow Bridge (Pont Trefnyw) in Monmouth which is the only remaining fortified bridge in Great Britain and listed as a Grade 1 Scheduled Monument. Nowadays it only carries pedestrians, but it's not difficult to imagine medieval knights and wagons passing through the gateway.

*Right: Monnow Bridge (Pont Trefnyw) in Monmouth.*

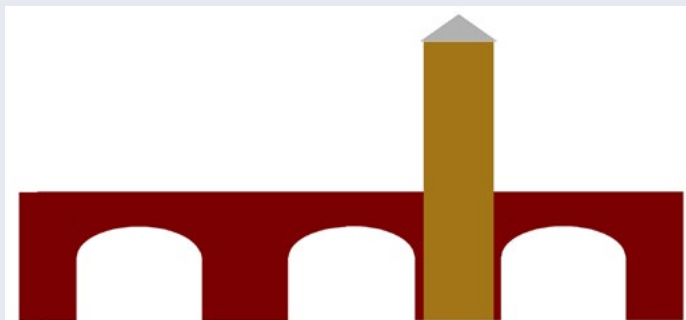


**PLANNING**

First step as usual was to collate as much reference material as possible, and determine the best approach to the construction. I separated the project into two main elements; the bridge and the fortified gateway. It was important to appreciate the relationship between these two elements. The curved towers (a) influenced the bridge proportions; the gateway width (b) had to be wide enough for a base of figures or a wagon to pass through, and high enough (c) so a mounted man-at-arms with lance held upright could ride through which impacted on the roadway width; and the road had to be the same height (d) as the adjacent terrain.



With all those considerations in mind I created a simple working drawing which inevitably, would be adapted as the build progressed. By comparison with the gateway, the bridge was a simple structure as the drawing below shows.



All plans will be available to download from our website:  
[www.wargamesillustrated.net](http://www.wargamesillustrated.net)

**MAKING THE BRIDGE**

The bridge consists of the two sides, the roadway and eight supports all of which I cut from thick card.

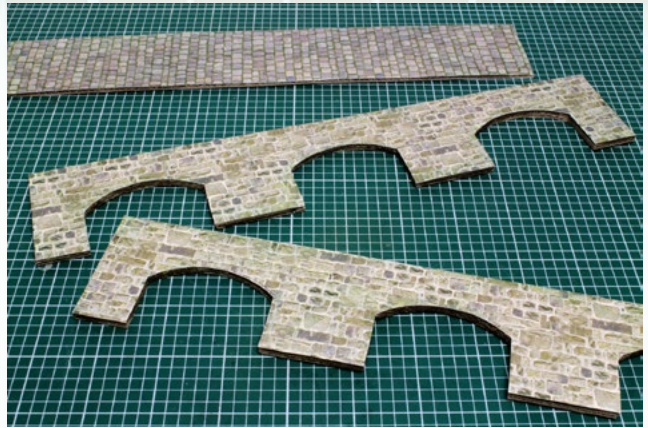
1. With surface texturing, what works well for large scale buildings doesn't necessarily work as well for smaller scale ones. My bridge was for use with 12mm Kallistra figures, and I decided to use printed texture sheets. You can buy these from various sources; for example Sarissa have a range of printed resources digital packs which although primarily compatible with their 28mm buildings can be rescaled, but I decided to create my own by adapting free textures from <https://www.textures.com/>



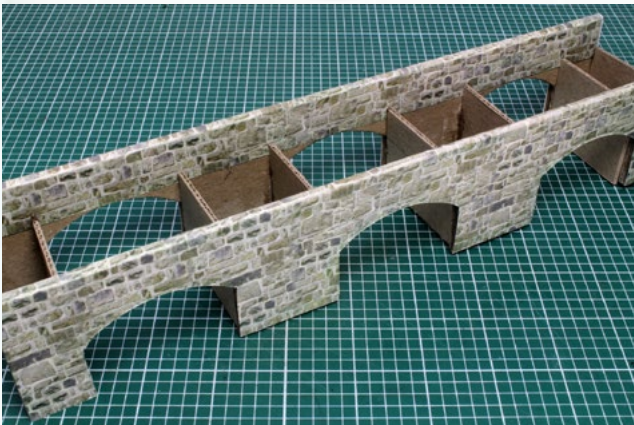
This image shows images I created for the bridge sides and the roadway.

2. A word or two of caution here. When designing buildings etc to which you intend to apply printed texture sheets, consider the maximum print image area of your printer as it can be difficult to seamlessly join sheets. In the case of my bridge, the two towers provided a convenient point where any joins would be easily hidden.

Sections of printed sheet were glued to the bridge components and the excess trimmed off once the glue was dry.



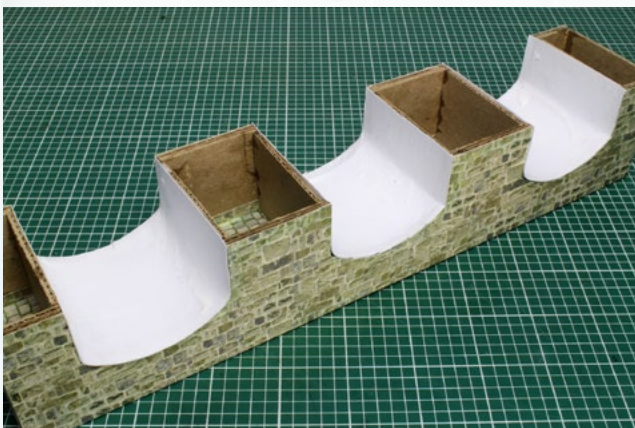
3. Next the road supports and bridge sides were glued together.



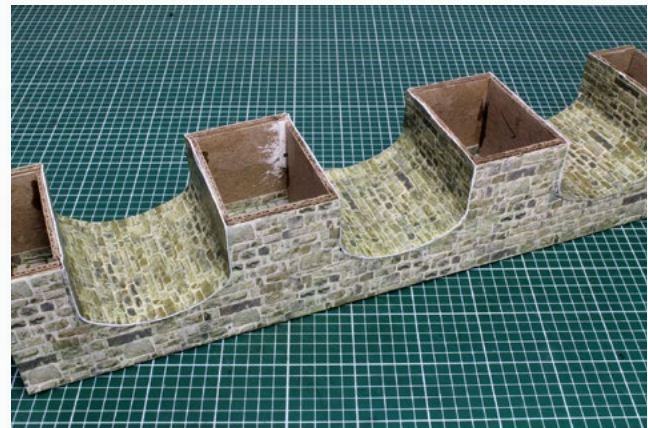
4. And the road was added.



5. Inner supporting arches were glued in place.



6. And these supporting arches were then lined with texture sheets.

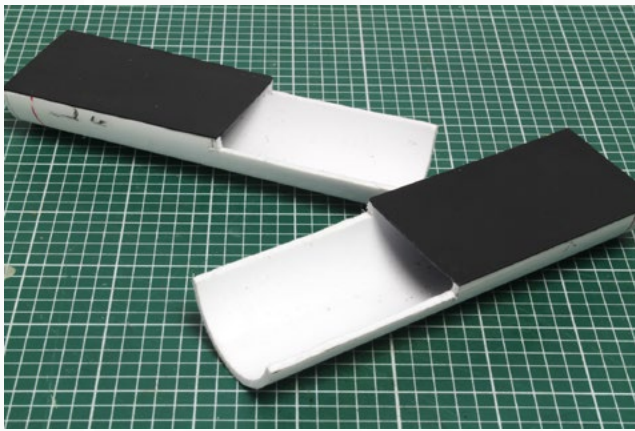
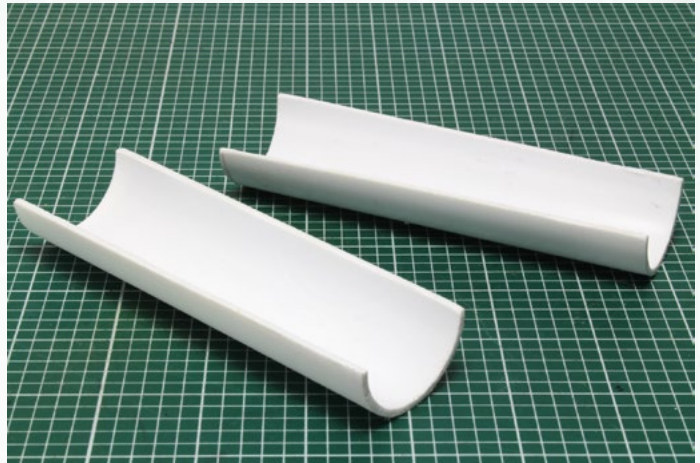


7. Strips of stone texture were wrapped around the edges of the arches to finish them off.

## MAKING THE FORTIFIED GATEWAY

The gateway comprises four elements; the two curved end towers, the section spanning between them which forms the gateway arch; the machicolations, and the roof.

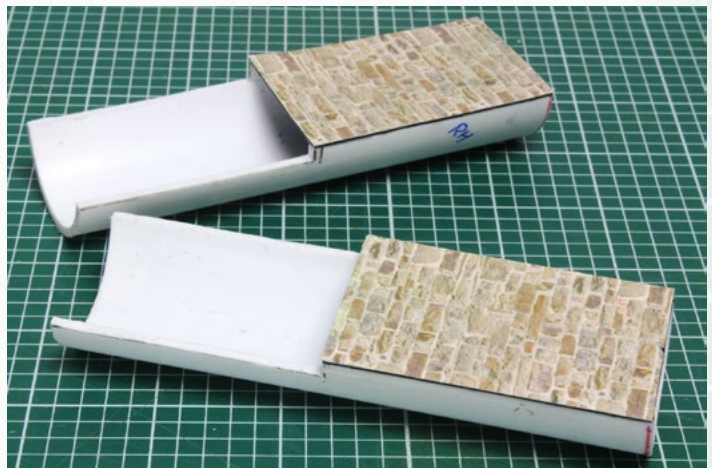
1. For my model, the end towers were made from 40mm diameter plastic piping, which I cut to the required height and then carefully cut in half longitudinally.



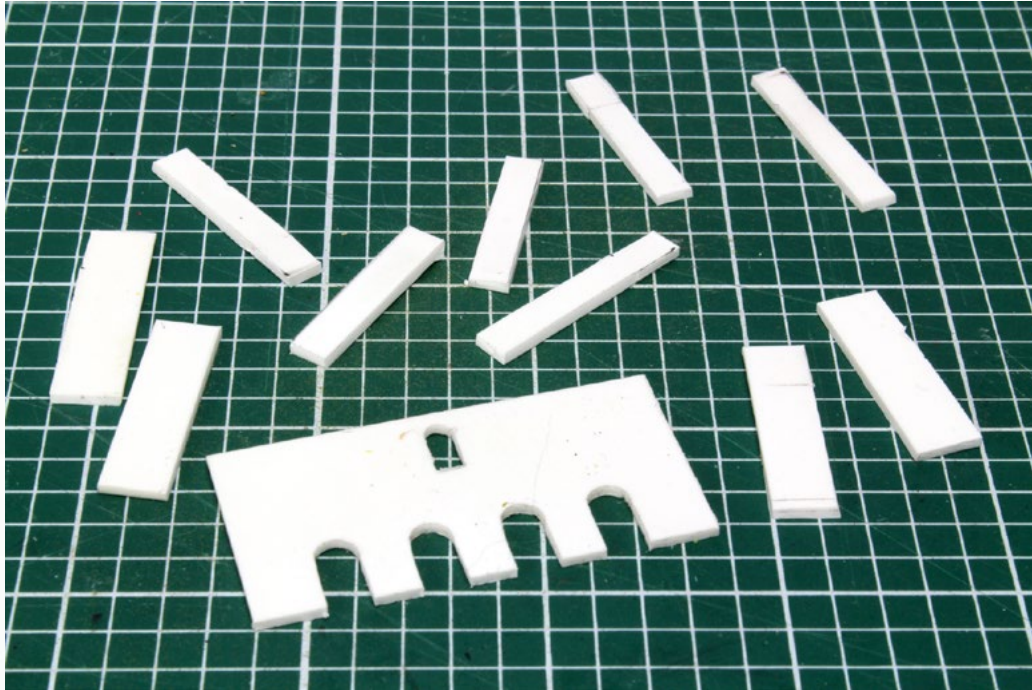
2. To give more surface area to which I would fit the central spanning section I added some plasticard. The two towers will 'sit' on the bridge parapet, so it was necessary to cut a suitably sized notch.

3. The next stage was adding the stone printed paper, which is difficult to correct, so first I carefully filed the notch to achieve the best fit.

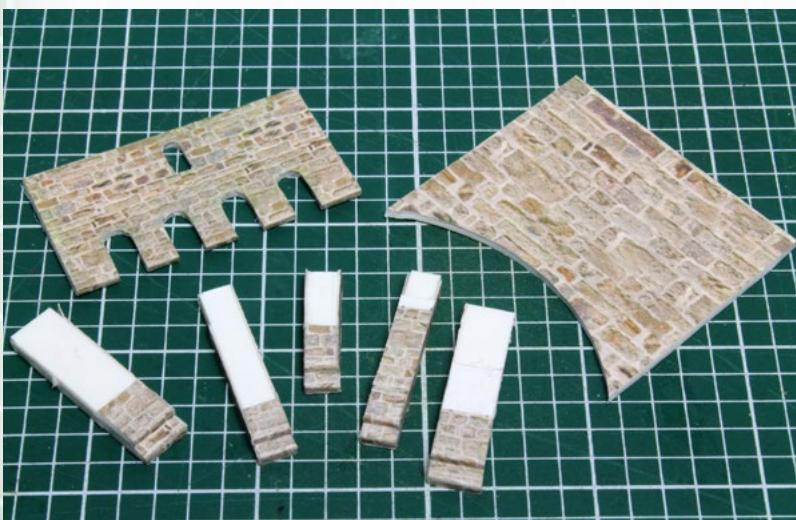
4. Although much of the inner surface of the gateway is hidden from direct view, I carefully applied suitably printed paper to the flat inner surfaces of the tower.



5. Next stage was applying textured paper to the curved surfaces of both towers. To avoid any obvious join where the curved surface met the flat inner surface I decided to wrap the paper around the curved surface with an overlap of about 10mm. To ensure a smooth covering it was necessary to be able to pull the paper around. I decided on two steps to facilitate this; first I curved the paper slightly and secondly only applied glue to the overlapping area on one edge. Once the glue had dried thoroughly I applied glue to the curved surface of the tower and the inner overlap area, and gently pulled the paper to achieve a good fit.



6. Textured paper was applied to the back gateway span, and also to the rearmost layer of the front spanning section. I also applied some strips of paper to finish off the edge of the front span. The rear arch isn't finished off in this way until the inner roof of the gateway is fitted.



7. The components that created the stepped look were papered and the edges trimmed as appropriate.

8. The stepped pieces were glued together and strips of paper wrapped around the edges to finish them off.



9. The machicolation stepped sections were glued to the rearmost panel, and paper edging applied to the arch.



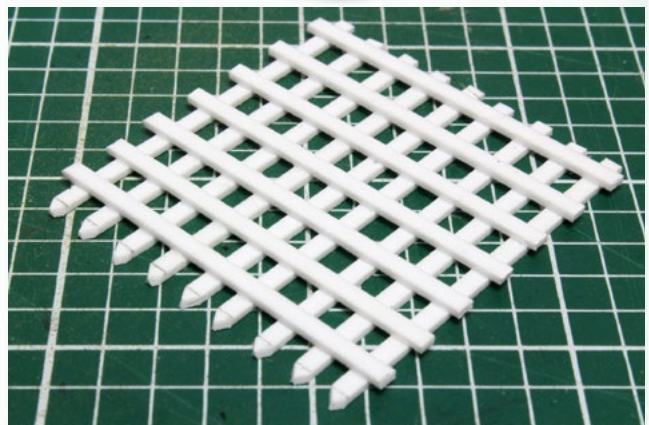
9. The towers were glued to the bridge sides and the front panel was glued between them. I deliberately set the panel back from the tower edges to provide more depth.



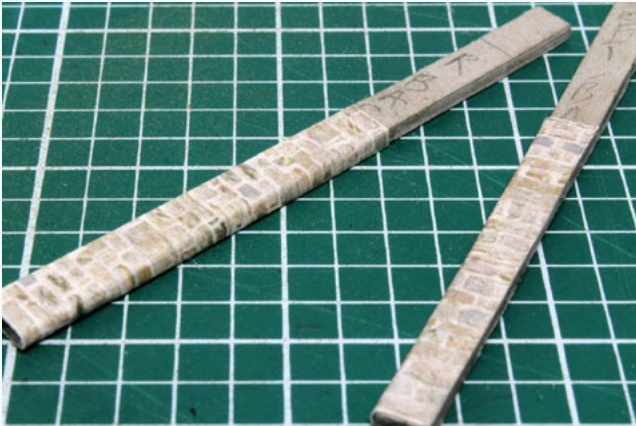
10. And the rear panel similarly glued in place.



11. A portcullis was constructed from plasticard strips.



12. I made a pair of guides for the portcullis to be positioned against made from strips of plasticard 'wrapped' with texture paper.



13. The portcullis guides were glued behind the front panel assembly.



14. To provide a rear support for the portcullis I cut a piece of card the same shape as the front or rear panel.

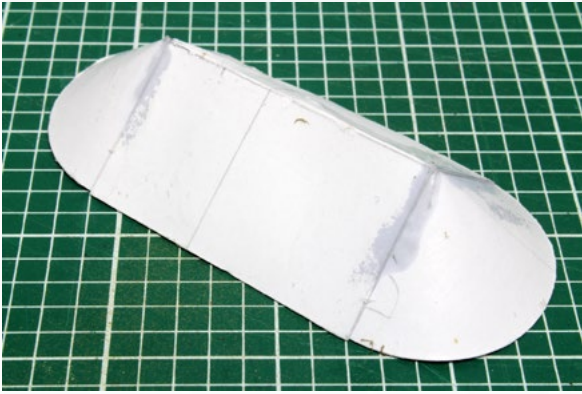


15. Texture paper was glued to it and the portcullis rear support panel was glued in place.



16. The inner roof of the gateway was made from a piece of thin card which was curved to match the profile of the arch and to which a piece of stone texture paper was then glued. With this inner roof in place, the edge of the rear archway was finished off by wrapping strips of stone paper around the edge.





17. The main roof was quite challenging because it consisted of two cones with a bridging section, so I needed to reacquire myself with trigonometry which I'd not used since I was at school - and that was a long time ago. Thankfully there was an easy-to-use website that explained the necessary procedure very clearly: <https://www.instructables.com/id/Modular-Cones-for-Crafts-and-More/>

Following this procedure, two cones were constructed and then joined with a 'v-shaped' middle section.

18. Next I glued overlapping strips of tile texture paper over this until I reached almost to the ridgeline, which was finished off with a folded tile strip.



Normally when 'tiling' a miniature roof I cut partial slits between the tiles, but at this scale, I just cut notches to ease bending the paper around the curves of the cone.

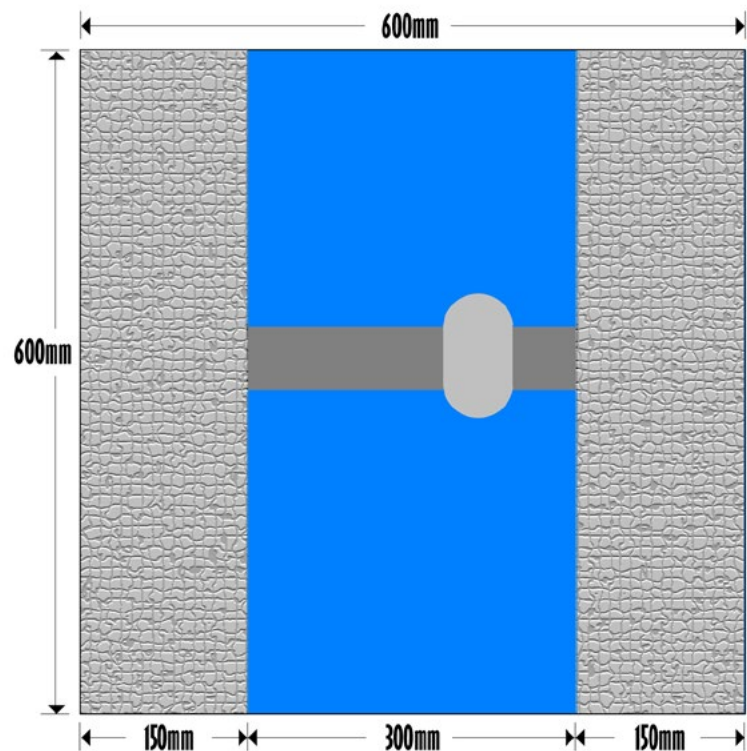
This was pretty much it apart from painting the portcullis black and drybrushing it with Coat d'arms Gunmetal. I also gave the entire model a light spray of Army Painter Anti-sheen varnish because there were some areas of the model left a bit shiny where I'd been somewhat over enthusiastic with the glue.

### BUILDING THE QUAYS

The quays were made to match the height of the road element of my bridge which in turn matched the height of my terrain panels - pretty obvious really!

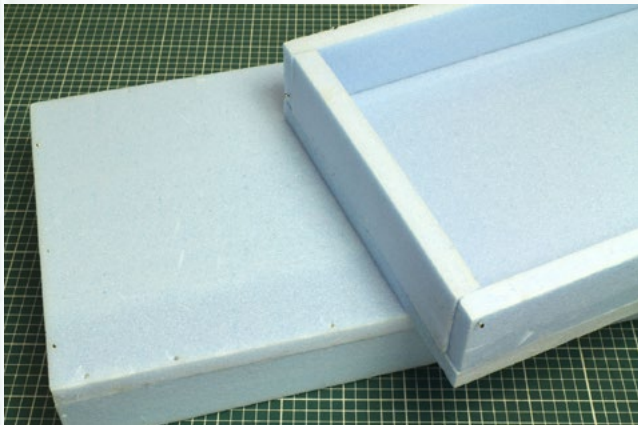
To ensure that the bridge and quays were compatible with my terrain tiles, their total area had to be the same as a terrain tile, namely 600mm x 600mm.

The drawing on the right shows the idea.





1. I constructed two 'open-top' boxes from 10mm Styrofoam to form the basis of the quay sections.



2. To create the 'stonework' I adopted the same approach as for the bridge, namely created an image for the stone wall and the 'cobble', and printed it out. You can see the difference between the stonework for the quay and for the quay wall.

Unfortunately as I only have an A4 printer and my local printshop was closed, I had to print the stonework in sections which had to match up with the ones next to them.

With the sections printed the next step was to carefully glue the sheets in position. I used PVA glue because it allows you to adjust the paper before the glue sets. Once I had the first sheet in place I left it overnight because it's important that

it was securely glued because I needed to push the adjacent section against it which wouldn't end well if the first section moved. Be particularly careful because PVA glue, thin paper and a need to reposition it increase the likelihood of the paper tearing. My inkjet printer isn't very consistent when it comes to print quality, so I printed out all the sheets I needed plus a few extras 'just in case' at the same time.

To break up the walls a bit, I decided to add some timbers to which boats might have tied up. I cut some strips of balsa, painted them black, drybrushed them grey, and glued the timbers to the quayside.

When adding the timbers remember to leave sufficient space for the bridge!

