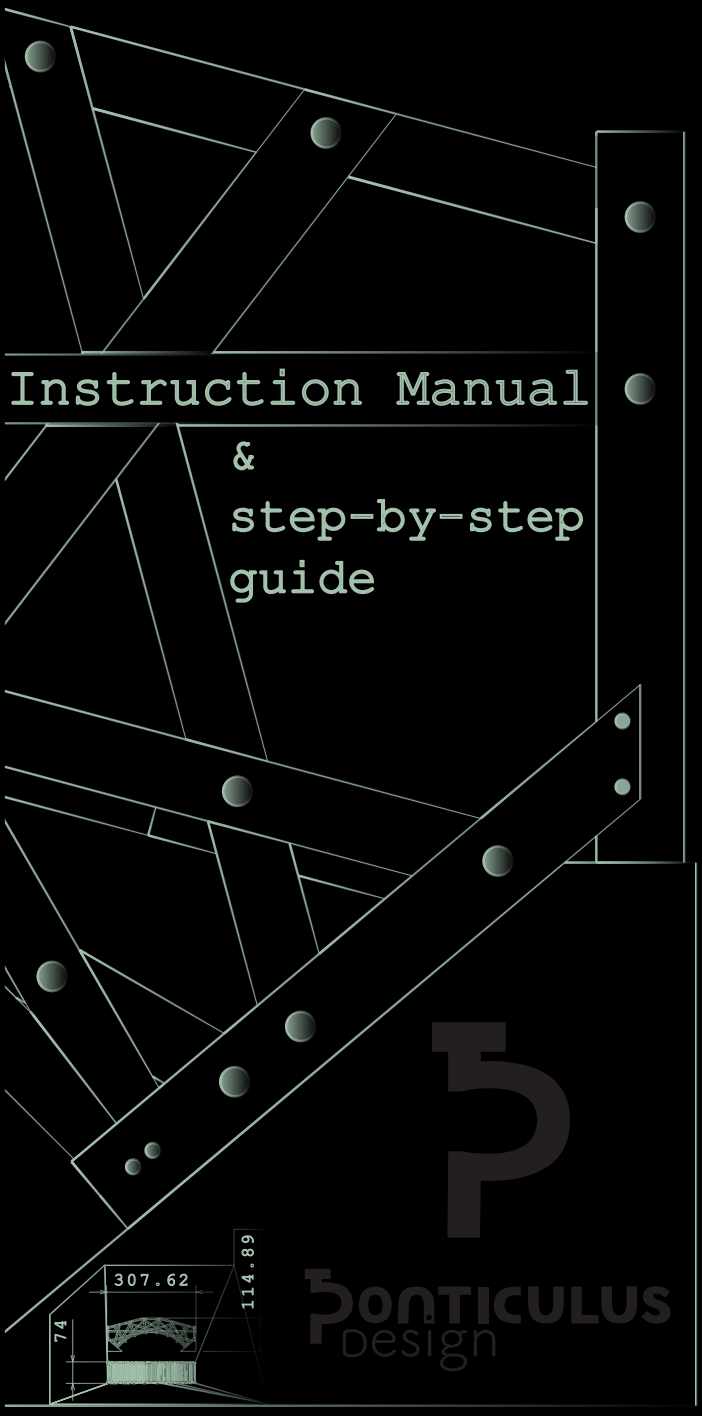
The Mathematical Bridge

Build it yourself model kit



Instruction Manual

&

step-by-step

guide

PONTICULUS Design

A brief history:

The Mathematical Bridge was first built over the river Cam in 1749 and was based on a similar bridge that passed over the Thames in the mid 18th century.

It was designed by a man named William Etheridge although Sir Isaac Newton has commonly been accredited with it's design. Newton had died around 20 years before the original was completed over the river Cam.

The original had no nuts or bolts, but in their places were wooden pegs and iron screws. These were the weight bearing elements of the bridge, and therefore when they deteriorated the bridge was deemed unsafe. It was reconstructed to the same design in 1866.

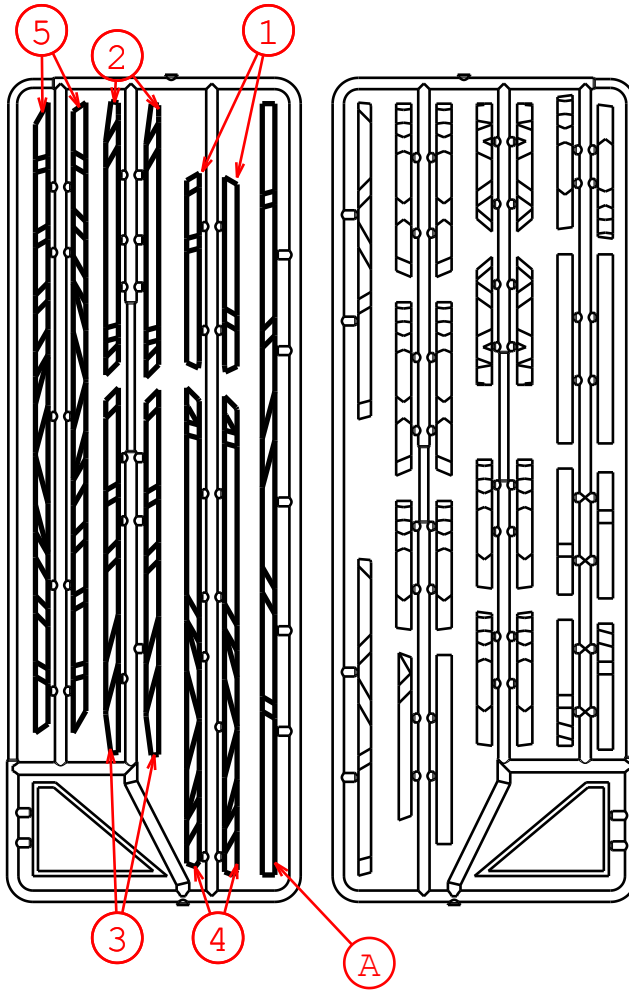
The bridge that stands today was finished in 1905 and has metal nuts and bolts in place of the wooden pegs and iron screws, therefore its lifetime should be much longer than the original.

YOU WILL NEED: - A CRAFT KNIFE
- SUPER GLUE

WARNING: PARENTAL GUIDANCE IS ADVISED WHEN USING A CRAFT KNIFE & CUTTING BOARD.

*** KEEP SMALL PARTS AWAY FROM CHILDREN ***

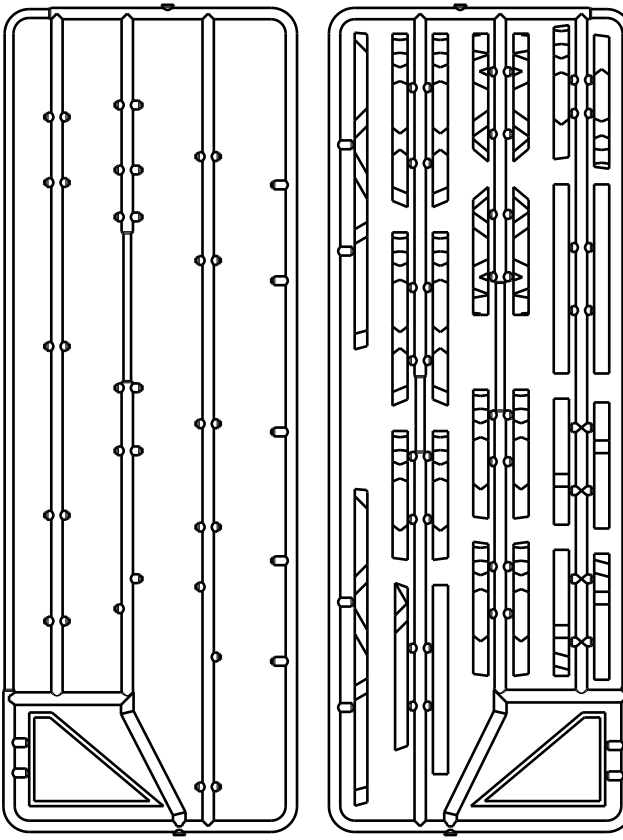
IT IS ADVISED NOT TO GLUE PARTS UNTIL YOU ARE CONFIDENT IN THEIR PLACEMENT.

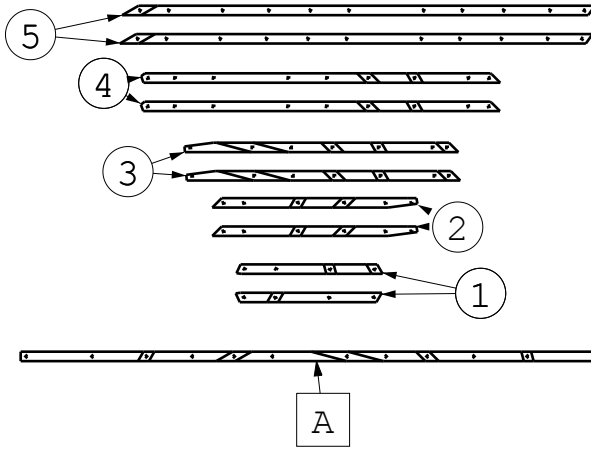


Stage 1:

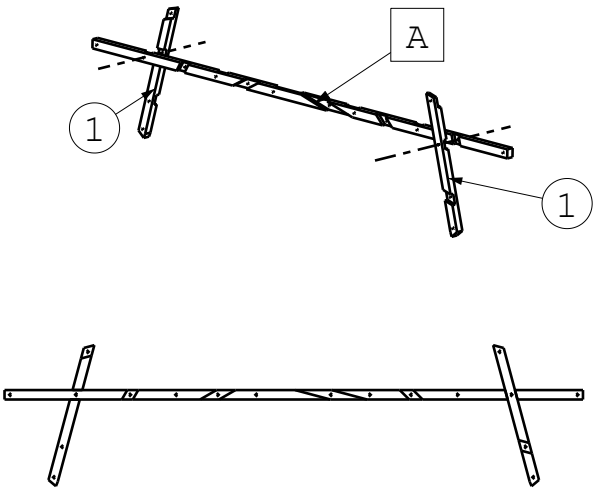
- Remove highlighted parts from the framework.

Stage one parts

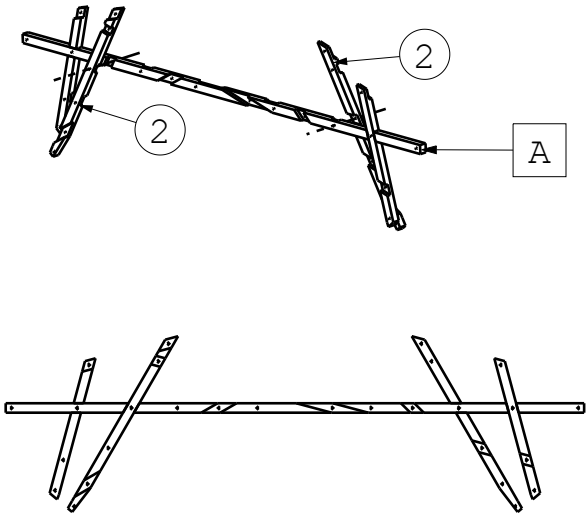




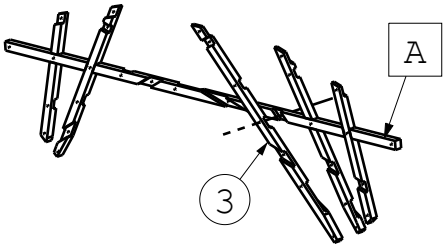
Attach part 1 (x2) to part A.

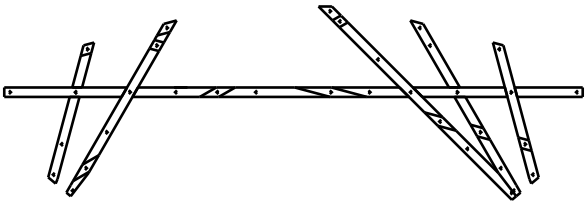


Attach part 2 (x2) to part A.

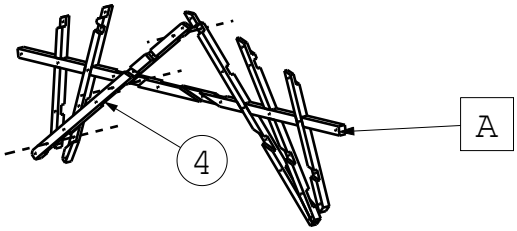


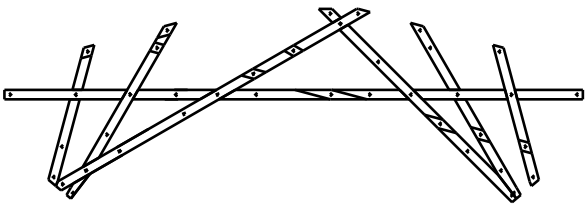
Attach part 3 to part A.



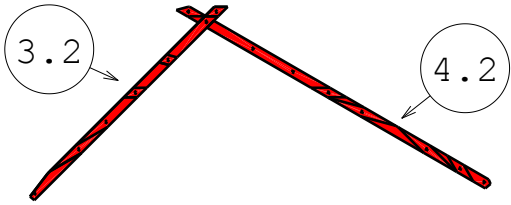


Attach part 4 to part A.

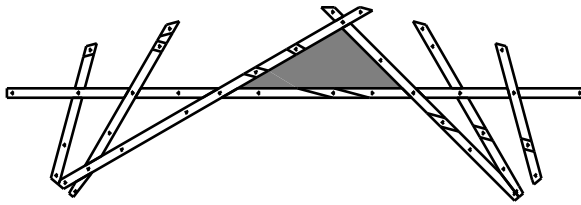




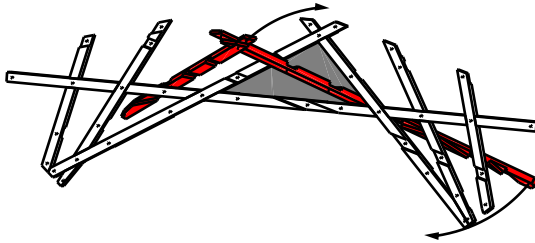
Attach part 3.2 and 4.2 separately.

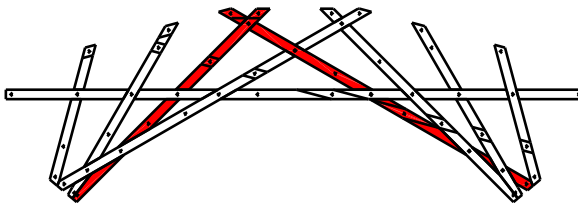


Insert part 4.2 through shaded area as shown.

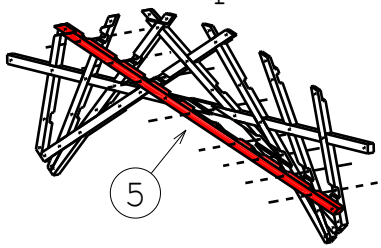


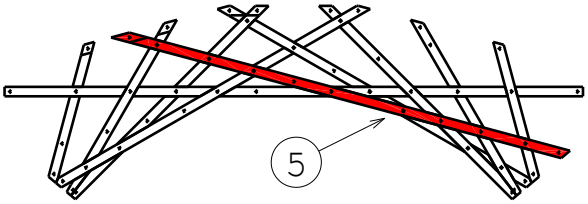
Rotate parts into place.



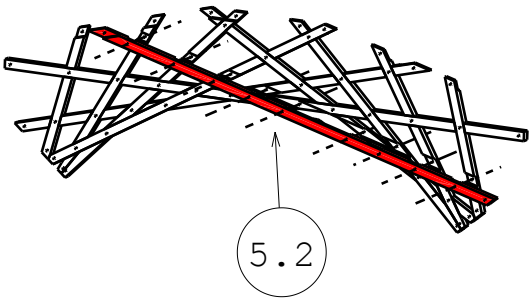


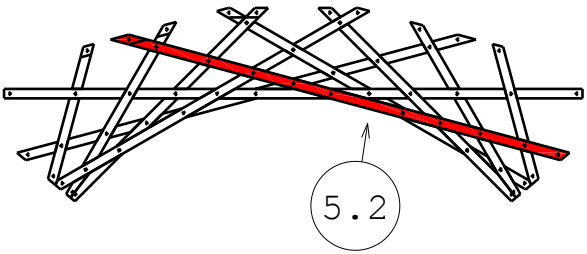
Attach part 5.



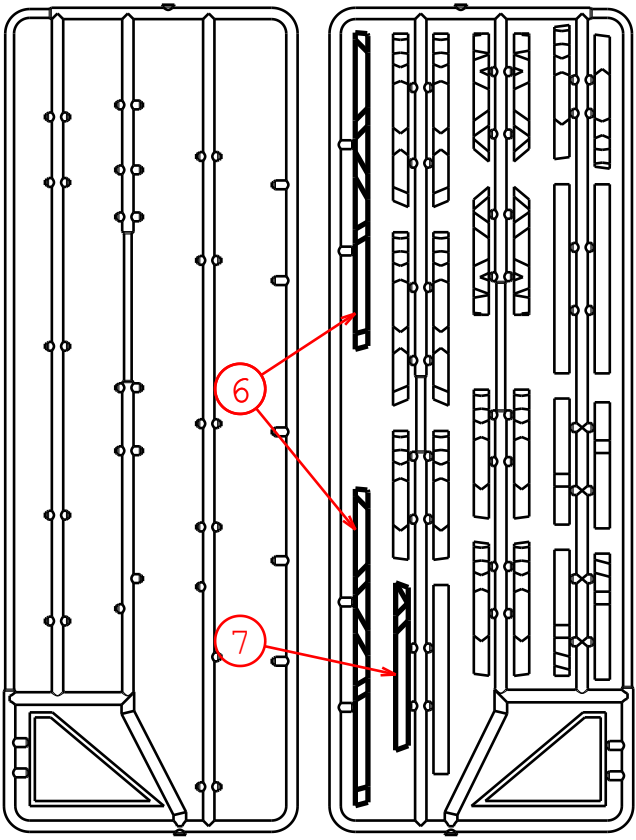


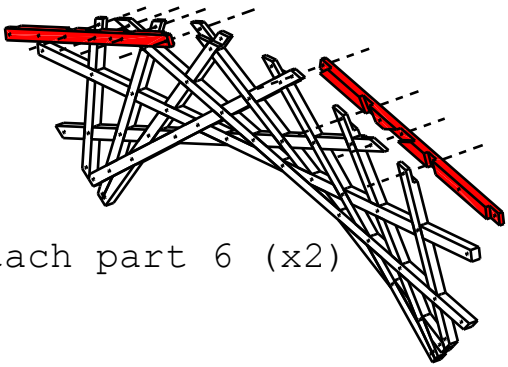
Flip over and attach part 5.2.



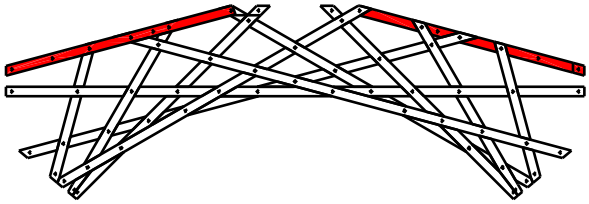


Remove the three highlighted parts.

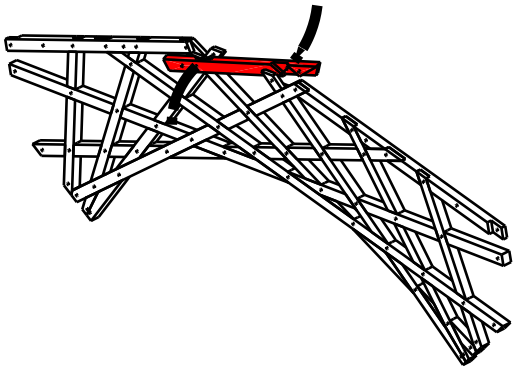


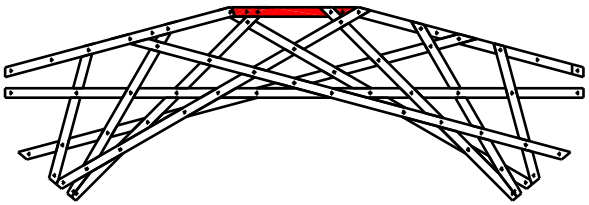


Attach part 6 (x2)



Rotate part 7 into place.





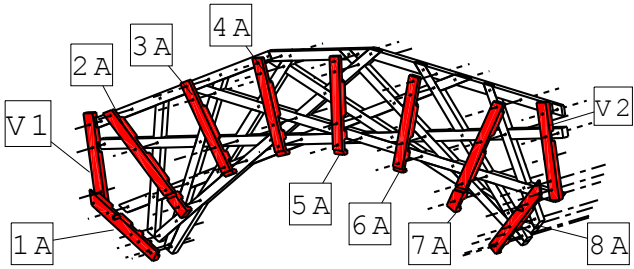
-Dismantle and glue in the same order.

-After gluing, place heavy books on top to straighten the model (leave until dry).

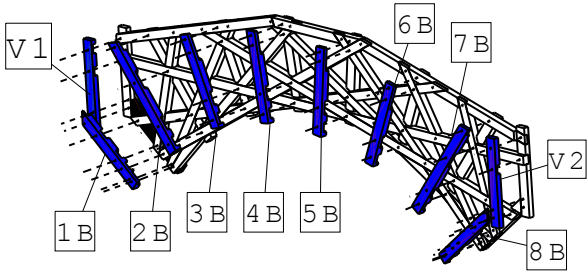
-Remove the remaining parts from the frame.

(Numbers are found on the inside of the remaining parts).

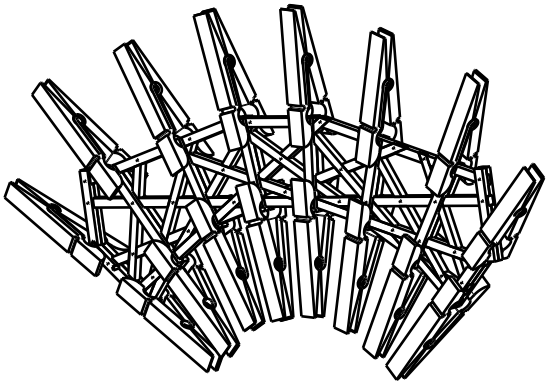
Attach the notched parts on one side.(V1 & V2 attached first)



Add non-notched parts to the other side.

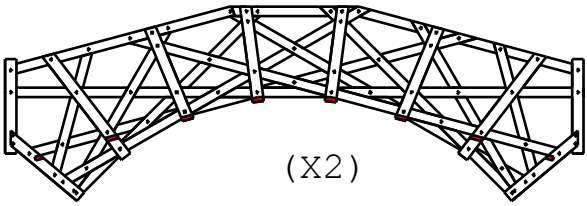


When confident in the placement of parts, glue both sides and use clothes pegs on ends as shown.



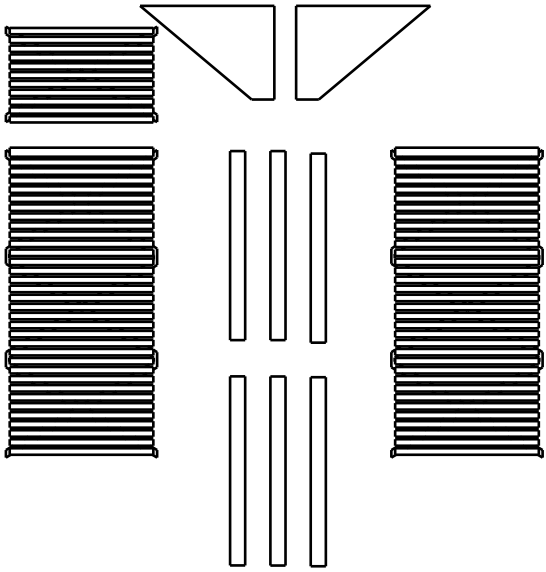
(MAKE SURE ONCE AGAIN THAT ALL THE NOTCHED PIECES ARE ON ONE SIDE)

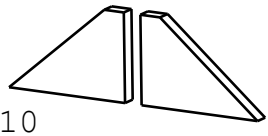
Repeat all the same steps again for the opposite side of the bridge.



(X2)

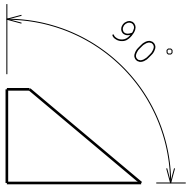
The only parts left are those shown.





NOTE: Don't glue these parts yet

The next sequence will involve care; make sure you understand the steps before gluing.

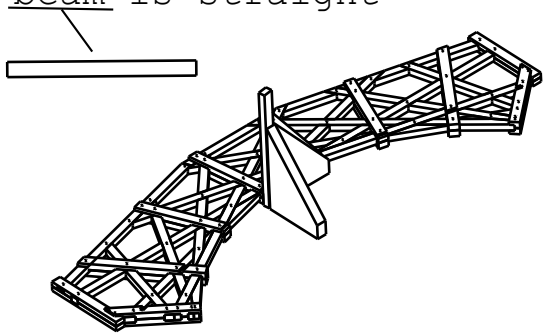


"Bank block"

This piece will be used as a square as the angle shown is a right angle.

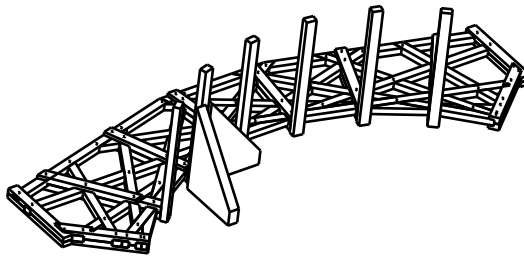
- Lay one half of the bridge on a flat surface with the NOTCHES FACING UPWARDS.

- Use the two bank blocks as squares to make sure the beam is straight



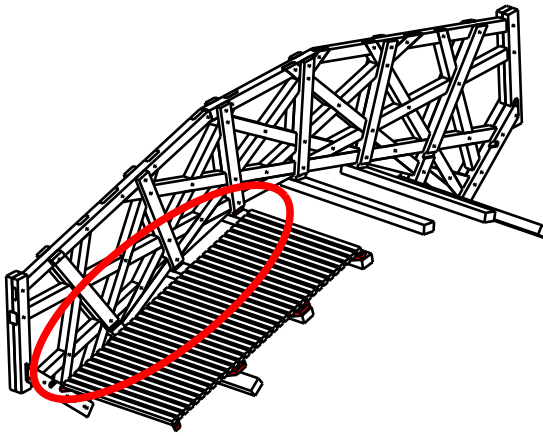
Glue when confident

Repeat the step for the remaining 5 beams.

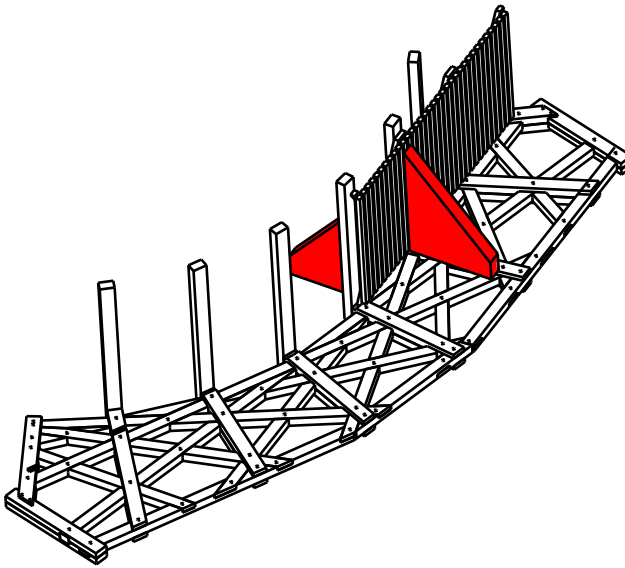


Before attaching the walkway pieces (refer to the following pages for the best results.)

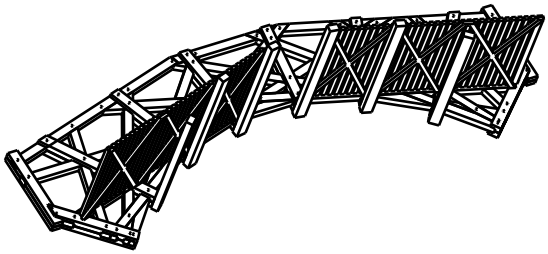
Make sure that the walkway part aligns and slots into the notches.



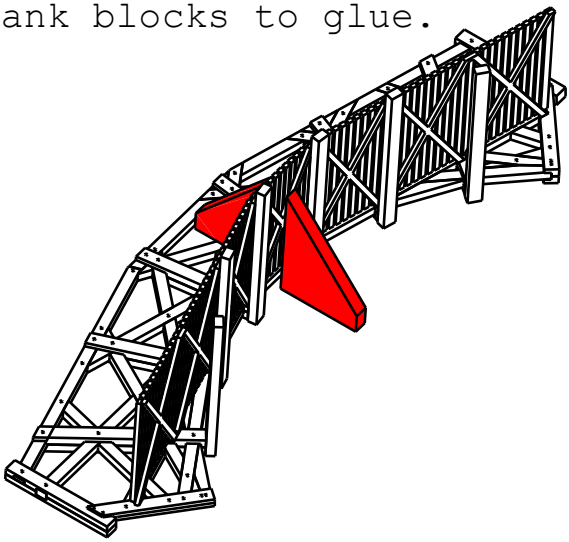
Use the two bank blocks when gluing to ensure the correct alignment.



Repeat steps for the second walkway.



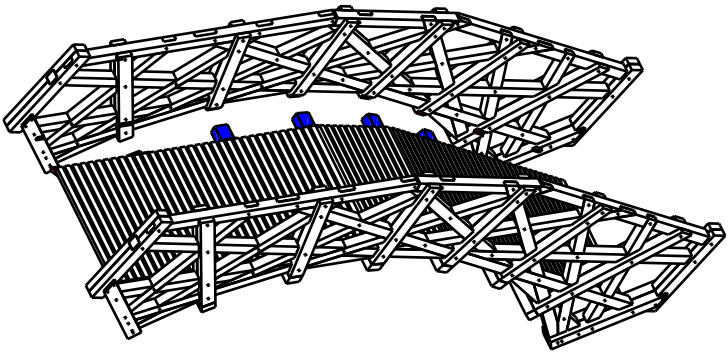
place the small walkway piece in once the glue has dried, when confident, use bank blocks to glue.



Carefully attach the second half:

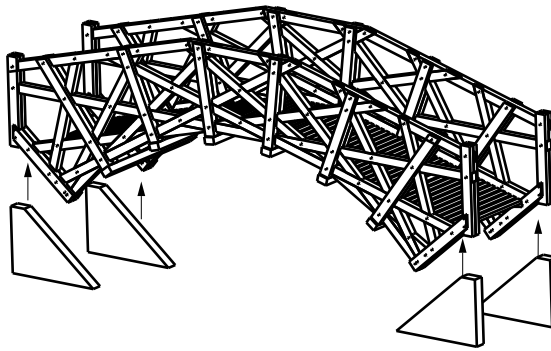
First, attach the walkway pieces to the notches.

Second, attach the understruts to the bottom.

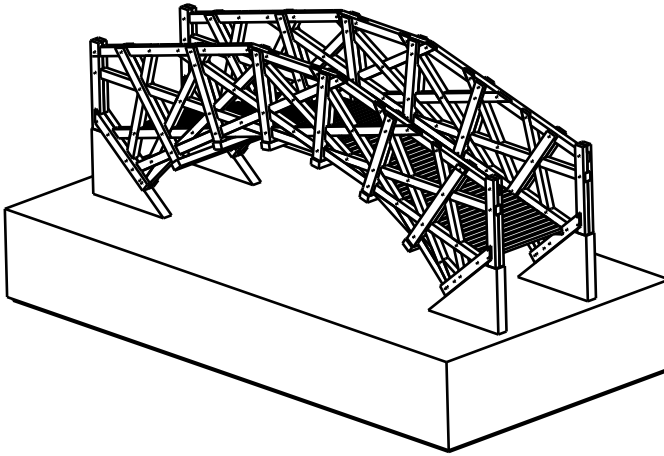


You're nearly there!
Keep it up!

Attach the four "Bank blocks".



Once finished, centre the piece on the box and affix.



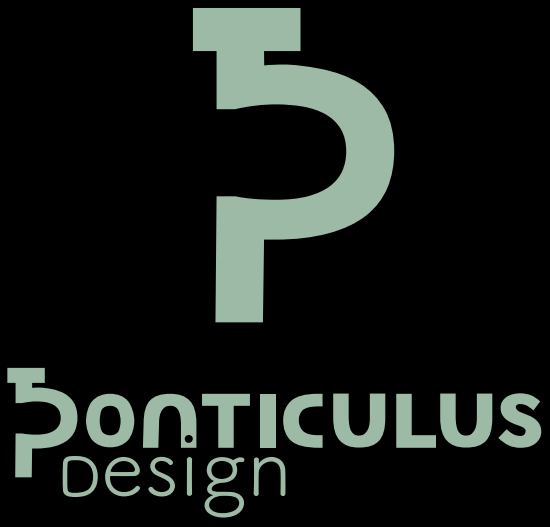
Many thanks go to everyone who invested belief, interest and finance into this project over the years of it's creation. We are very lucky at Ponticulus to be standing on the shoulders of giants.

A full list of credits can be found on the website shown below.

Many thanks,

Ponticulus Design

Ponticulusdesign.com



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