THE GROWROOM

OPEN SOURCE

MANUAL FOR ASSEMBLY

BUILD YOUR OWN GROWROOM

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It's a licence that makes it easy for anyone to build their own version of the Growroom. The key condition is that you must credit the original work to SPACE10 and architects Mads-Ulrik Husum and Sine Lindholm as well as citing the work's title (The Growroom), including a link to either SPACE10.io or our social media handle: @space10_journal, and remeber to indicate if any changes have been made.

Enjoy and please give us a nudge via email discover@space10.io and remember to tag us on Instagram @space10_journal and @husumlindholm if you build your own Growroom.

Best regards

SPACE10, Sine and Mads-Ulrik

MANUAL

This manual will guide for you through the production of the Growroom.

The use of the pavilion is up to you, and we encourage you to be creative with the use and expression of your very own Growroom.

In order for you to get going building it, there are certain elements that needs to be prepared and available.

MATERIALS

13 sheets of plywood: 2440mm x 1220mm x 18mm
4 sheets of plywood: 2440mm x 1220mm x 4mm
500 stainless pan head screws: 3.5mm x 30mm

MACHINERY

CNC machine with a cutter, 8mm in diameter
(alternatively, the pavilion can be cut out on a laser cutter)
Tablesaw

TOOLS

Screwdriver
Appropriate bit for the screws
Drill, 2mm in diameter
2 hammers

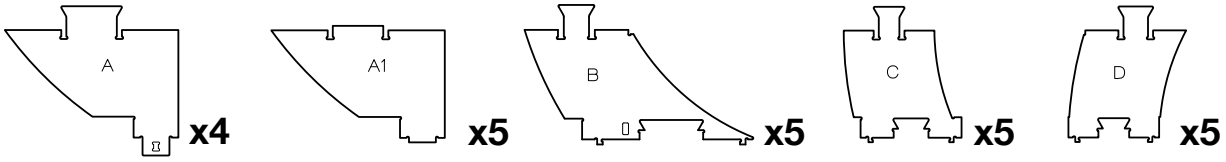
The Growroom is produced in only one material, and is put together with hammers, or whatever hard object you have lying around, that can be used for knocking the chisels in place. We'll get back to that.

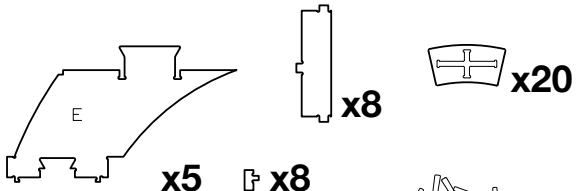
Remember if you want to put soil and plants in the pavilion the plywood should be treated. On the edge of each level, the thin plywood is mounted with the use of the screws.

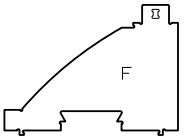
We will also get back to that.

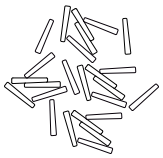
We hope you will enjoy building and using The Growroom.

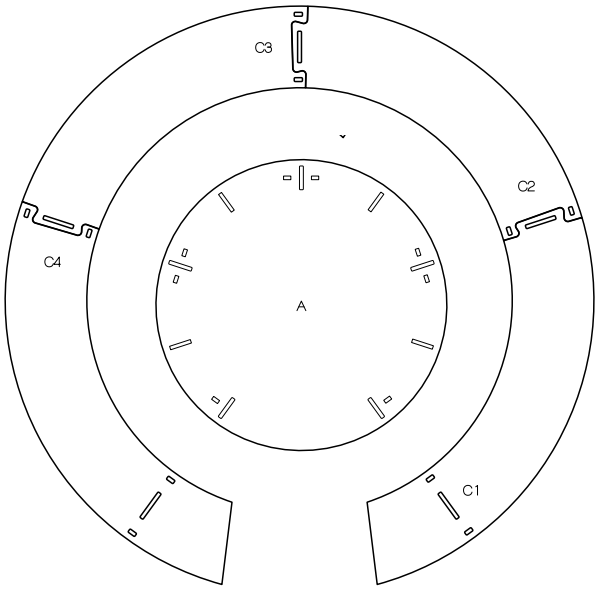
CNC-MILLED PARTS

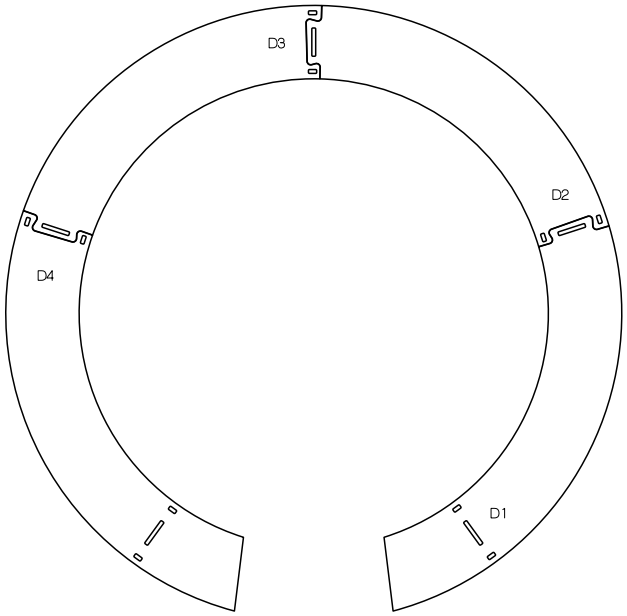


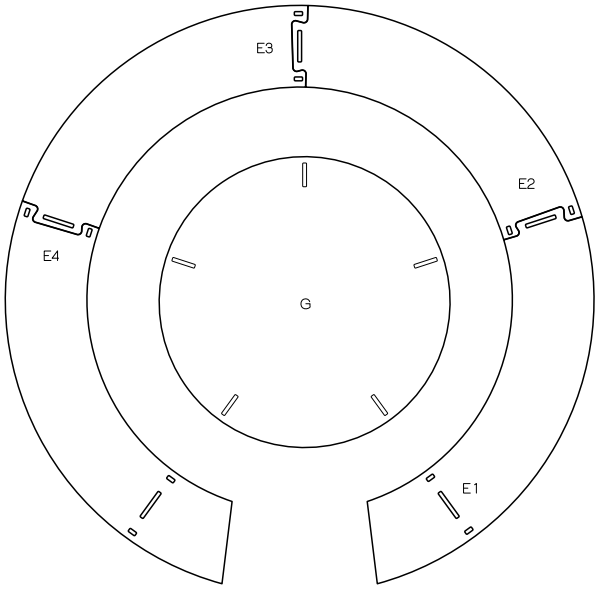


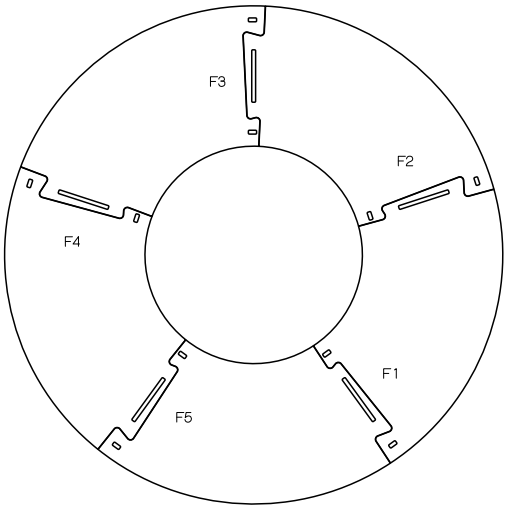


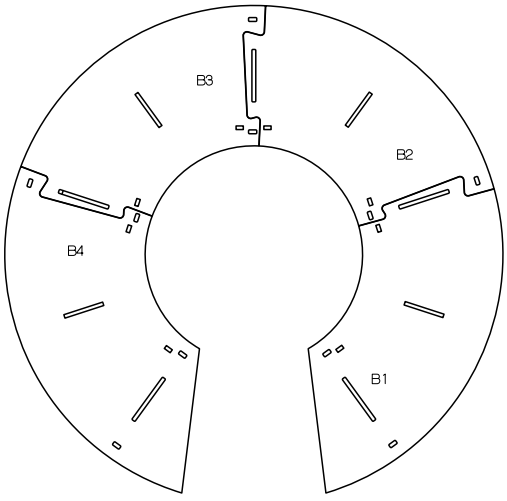






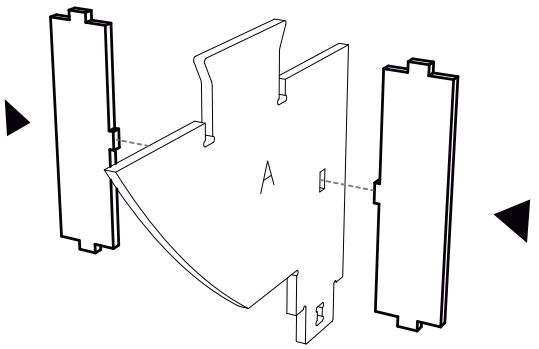




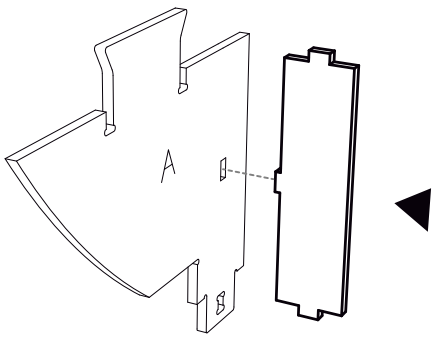


ALL PARTS

STEP 1

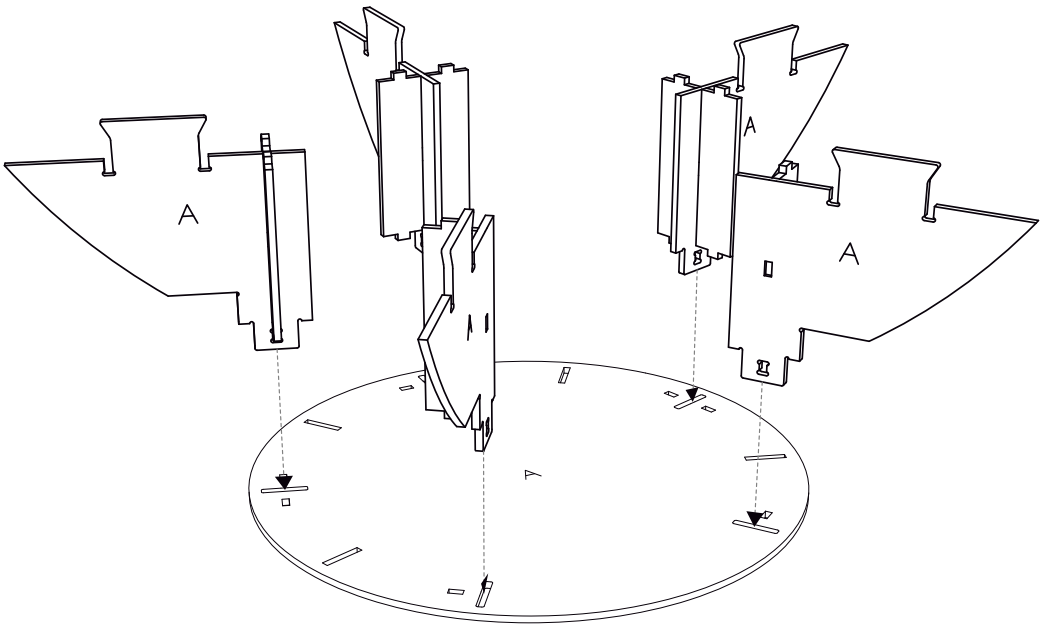


x3



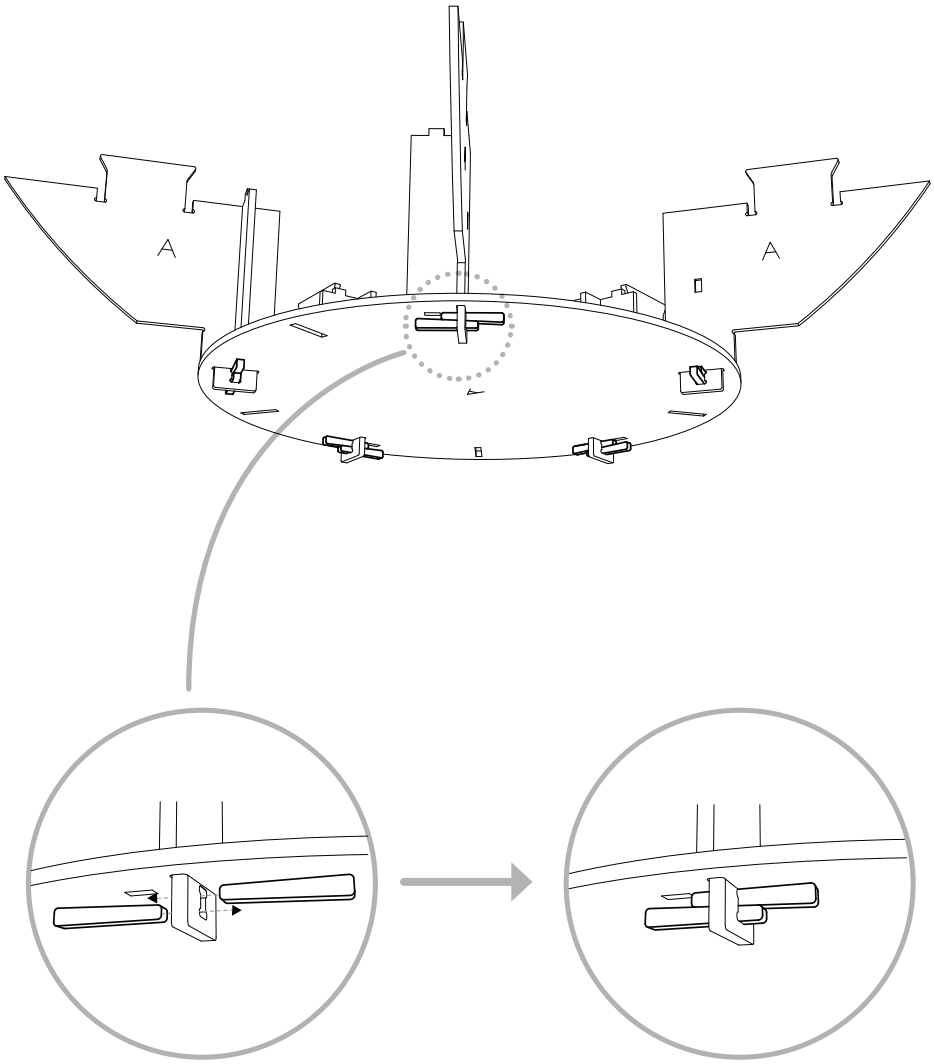
x2

STEP 2



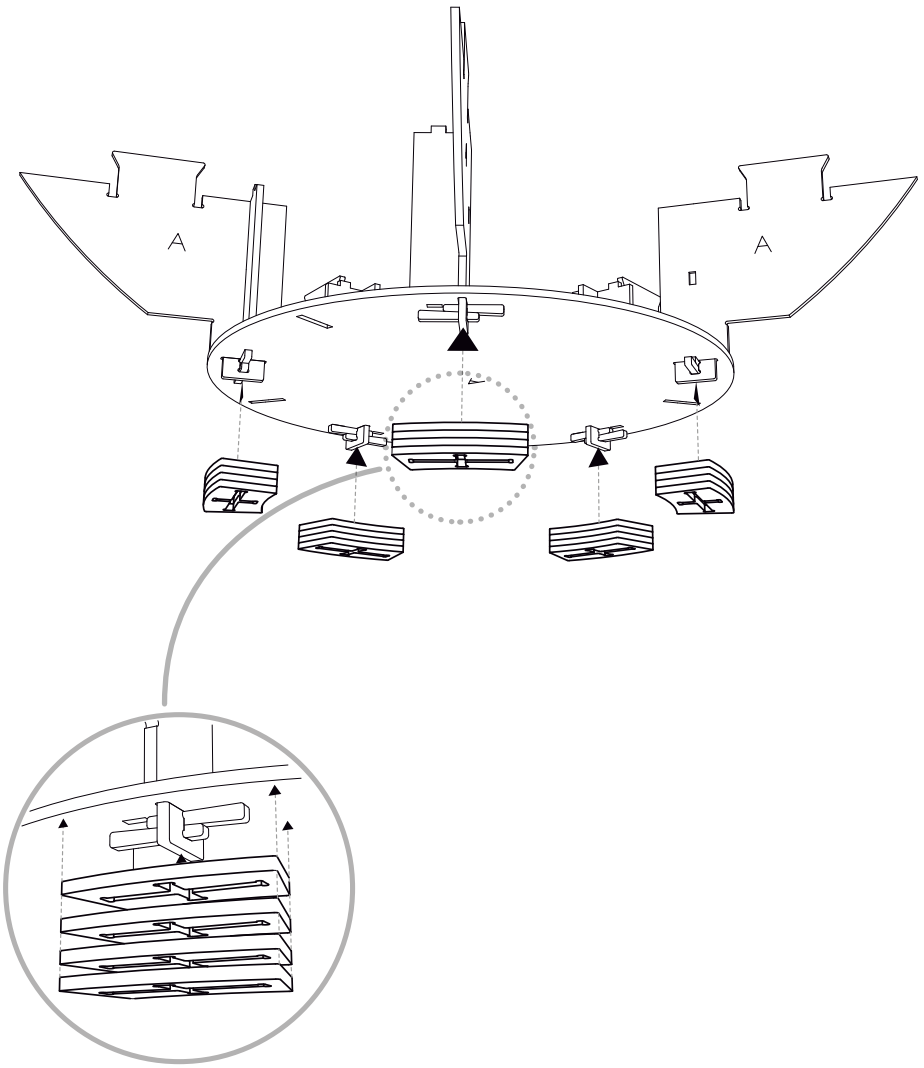
The support pieces are put in place in the vertical A bords as shown in STEP 1. The vertical A boards with the attached supported pieces, are placed into every second slot in the big A circle. Notice that the slot has small holes to one or both sides.

STEP 3

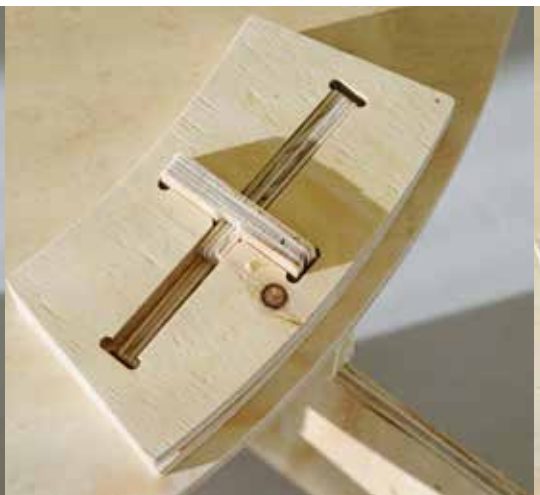


The chisels are knocked into place under the buttom as illustrated above. Keep knocking the chisels with the hammers from both sides until they are completely fastened.

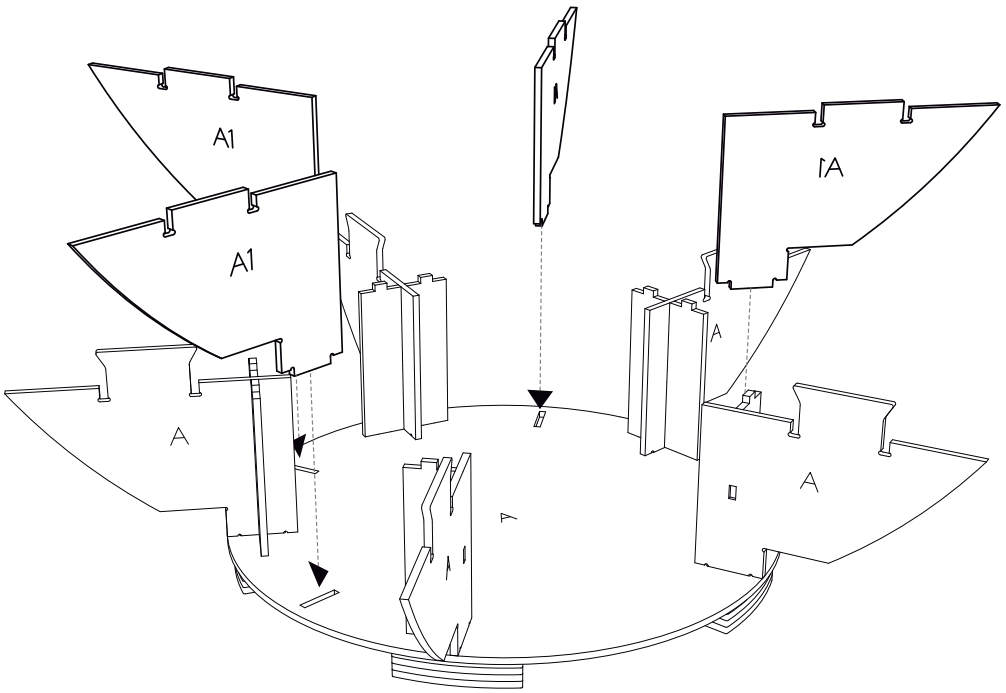
STEP 4



The shoes are placed under each vertical A board with chisels inside it.
The 4 shoes provide the foundation of the pavillon, so the pavillon won't stand grinding on the edge of the vertical A's.

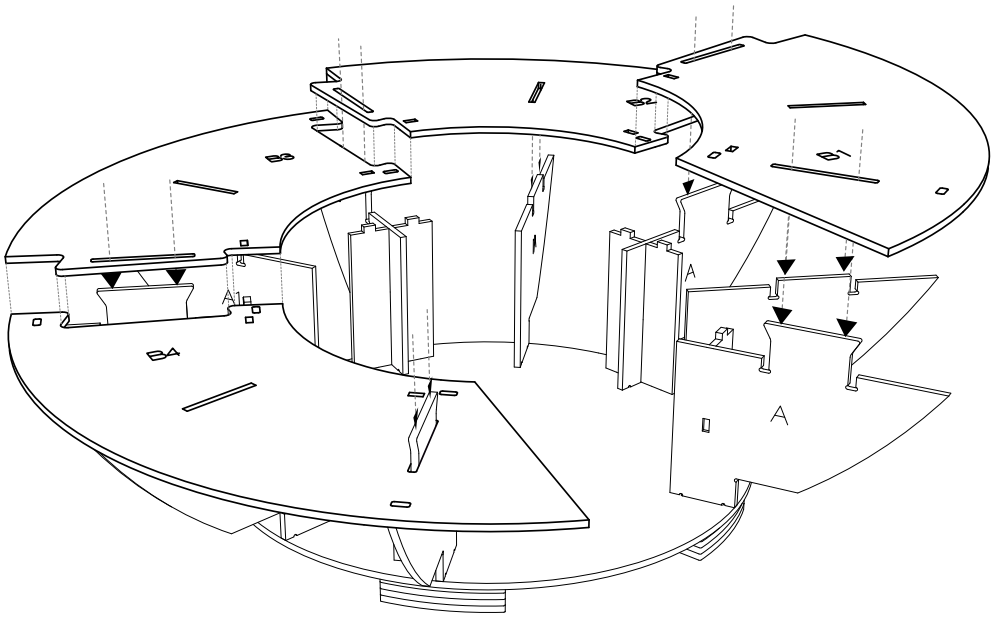


STEP 5



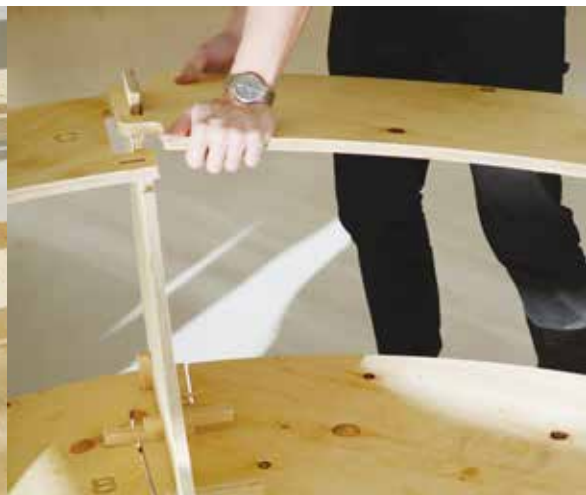
The vertical A1 boards are put into the remaining slots of the floor

STEP 6

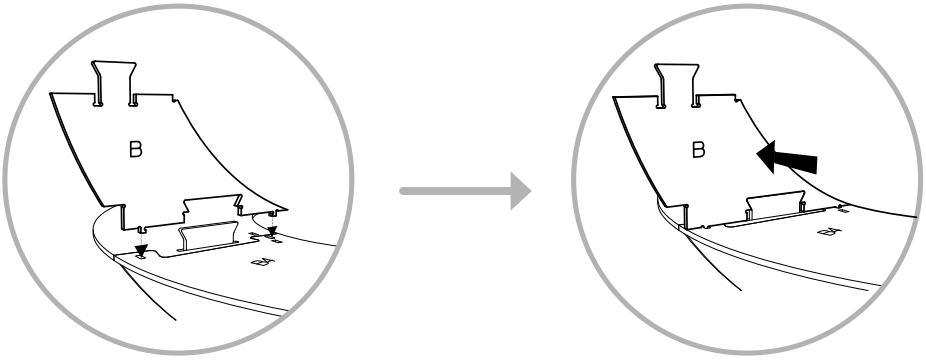


Horisontal B1-B4 are now mounted on top of the vertical A's with the attached supportbeams and the vertical A1's. Make sure that the opening is as depicted above, where there are no supportbeams.

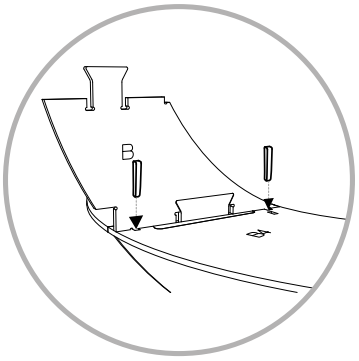


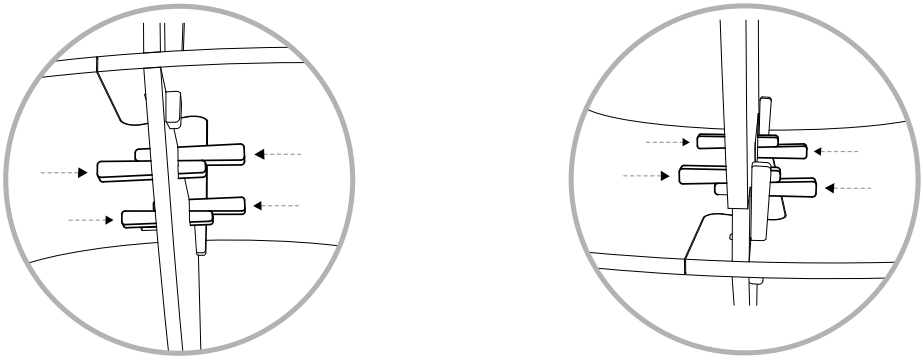
STEP 7



STEP 7.1
Vertical B is put into the slots of horisontal B1-B4 and slided to the side on to the part of the vertical A board that is sticking through.



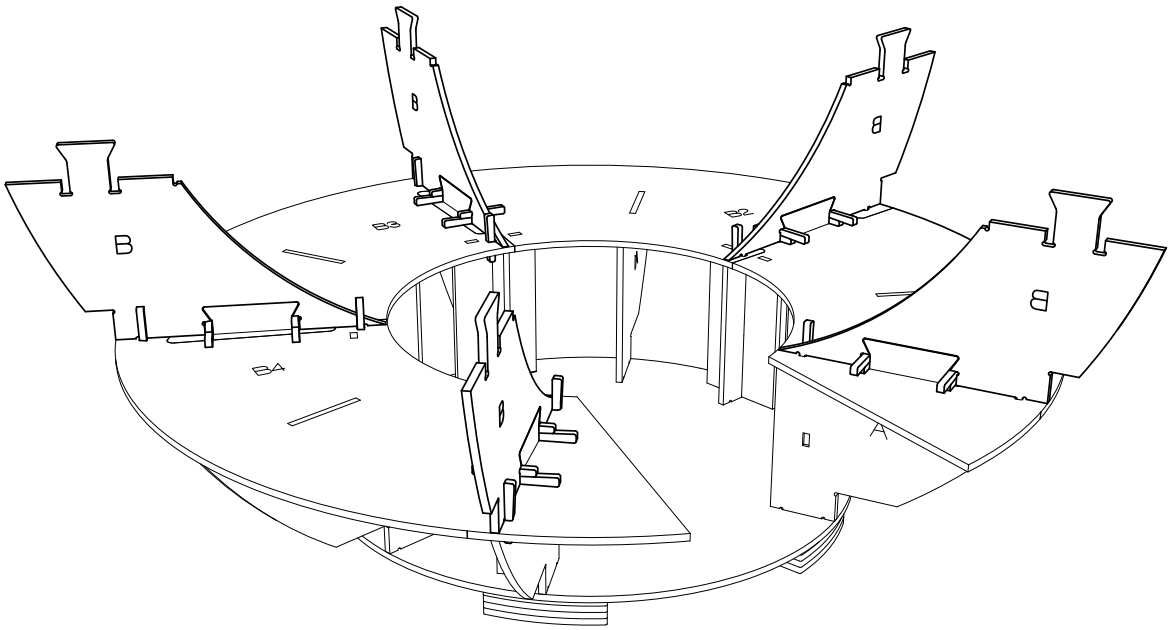
STEP 7.2
Two chisels are knocked in to the slots as depicted above, aligning the 2 vertical elements.



under above

STEP 7.3
The chisels are positioned loosely in the slots first below and then above B1-B4 as depicted above. Once the chisels are positioned as depicted, they are knocked in to place with two hammers from both sides simultaniously.

STEP 8



You should now have succesfully mounted the layer B of your pavillon as depicted above.

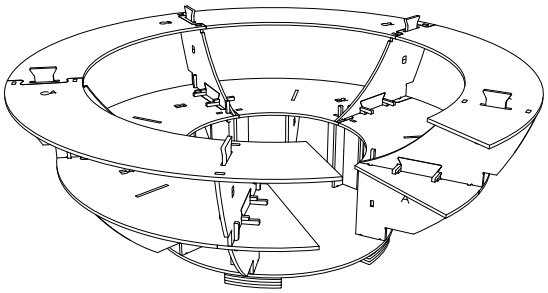
In order to finish the pavillon, repeat STEP 6-7 for the remaining layers: C,D,E,F,G



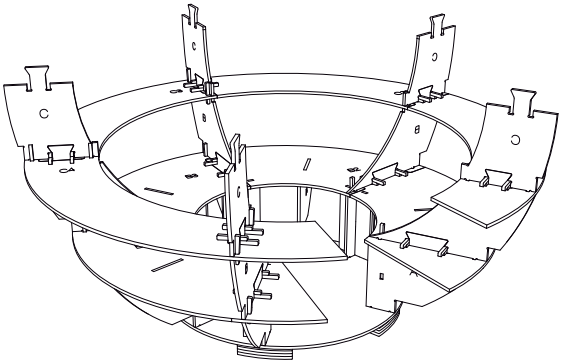




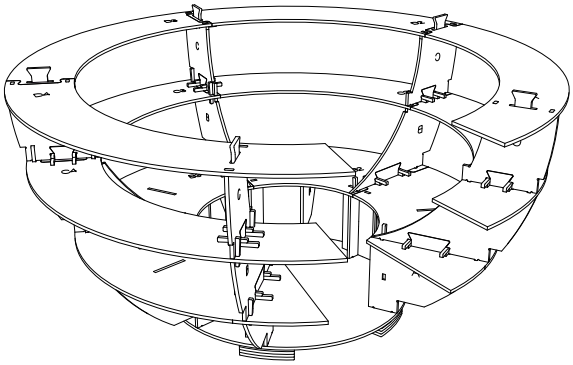
STEP 9



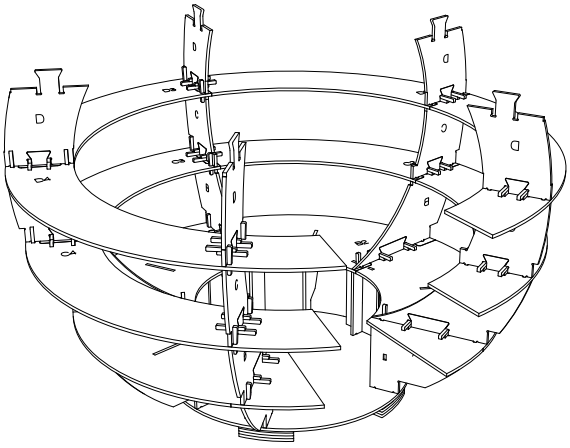
STEP 10



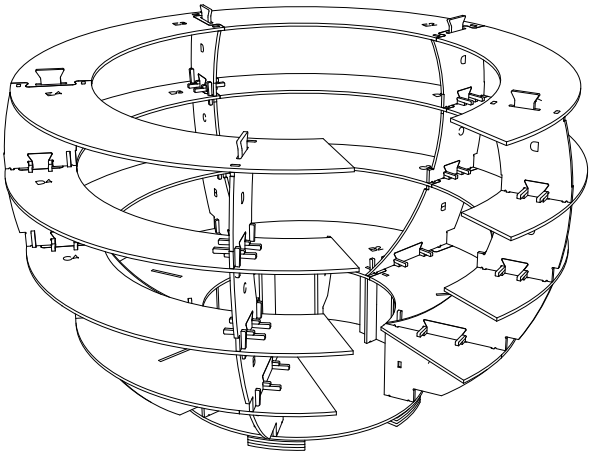
STEP 11



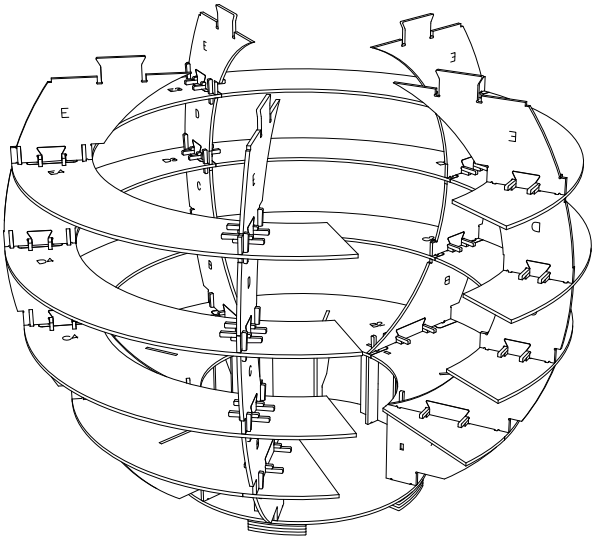
STEP 12



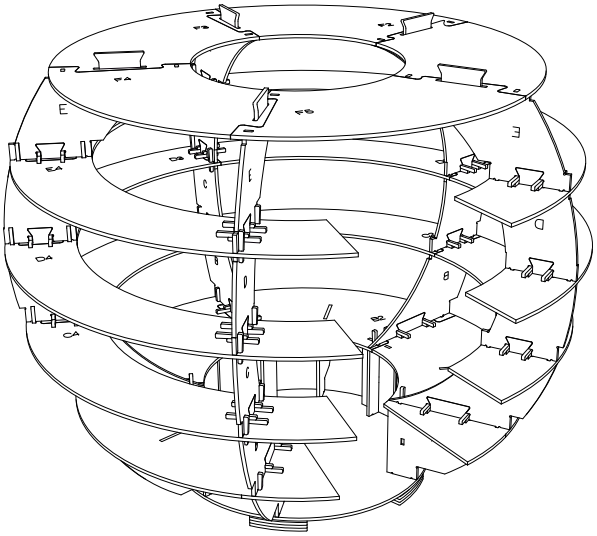
STEP 13



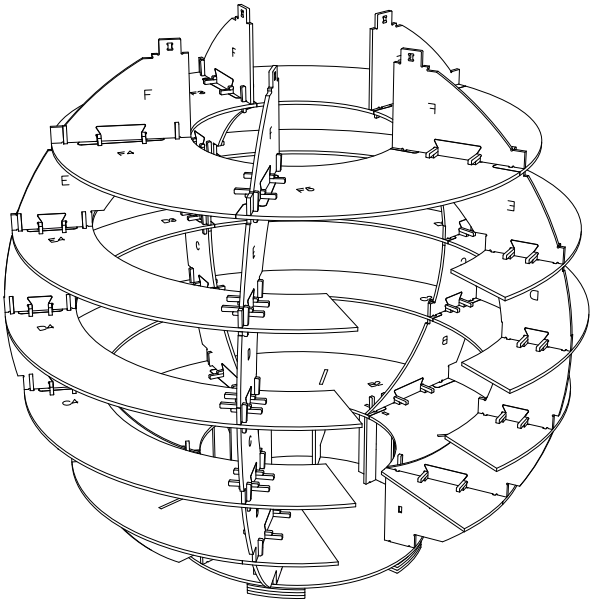
STEP 14



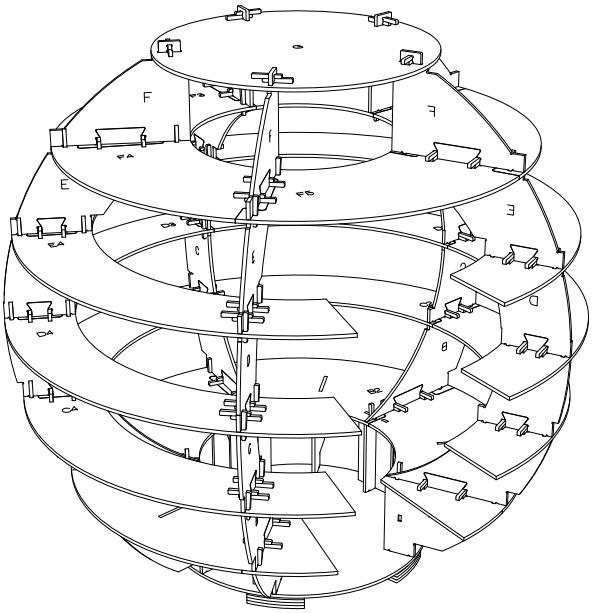
STEP 15



STEP 16

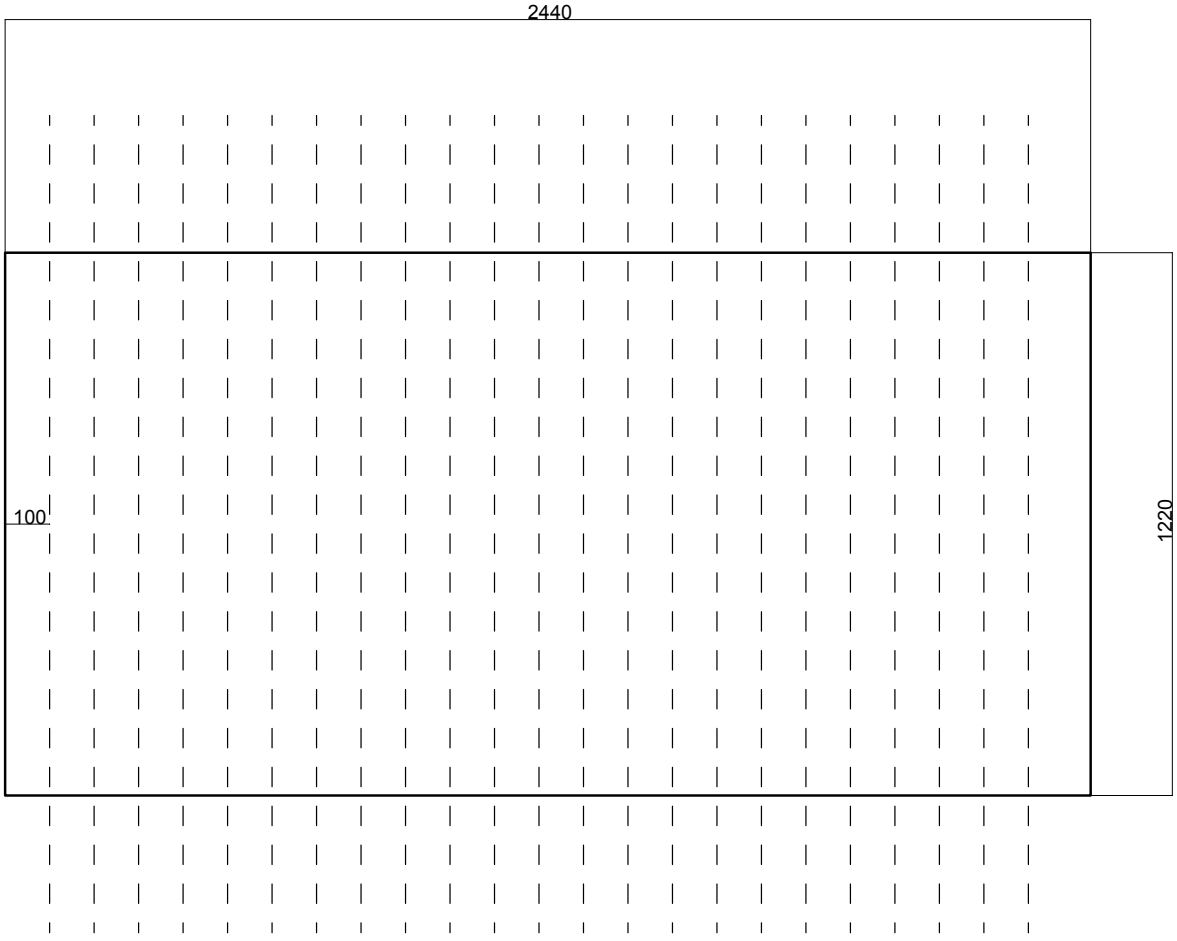


STEP 17



You have now finished the pavillon, and are ready to head on to mounting the edging strips.

EDGING STRIPS



1 x 4mm plywood board

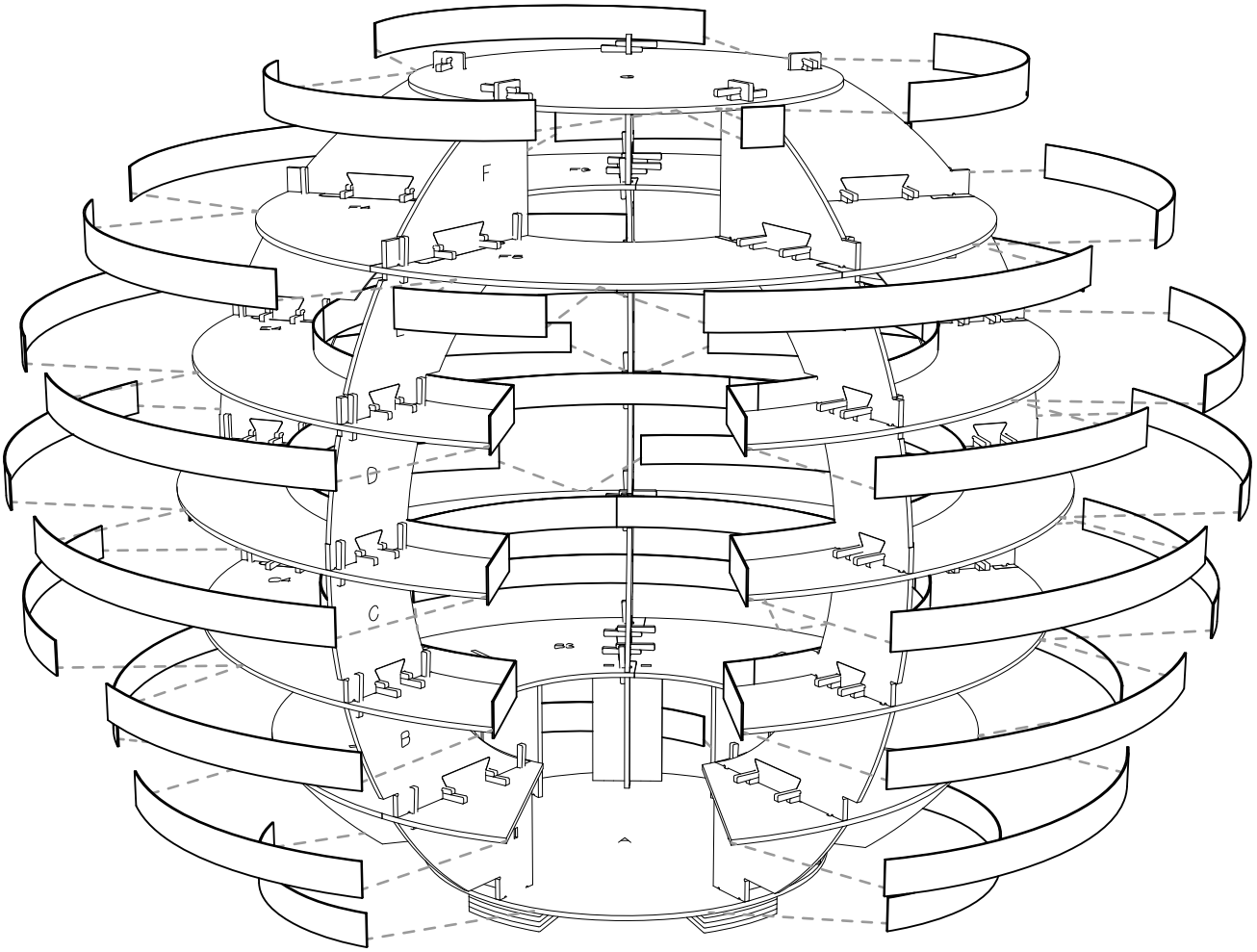
The 4mm plywood is cut up on the table saw as depicted above.
This results in edging strips with a length of 1220mm.
The edging strips are suggested cut per 100mm.

EDGING STRIPS

EDGING STRIPS CUTTING SPECIFICATION

Level	Length	Width	Amount
A - outside	1220	100	2
A - outside	826	100	1
B - outside	1220	100	4
B - outside	993	100	1
B - inside	1083	70	4
C - outside	1220	100	5
C - outside	906	100	1
C - inside	1220	100	4
C - inside	84	100	1
C - edge	351	100	2
D - outside	1220	100	6
D - inside	1220	100	4
D - inside	631	100	1
D - edge	315	100	2
E - oustide	1220	100	5
E - oustide	906	100	1
E - inside	1220	100	4
E - inside	84	100	1
E - edge	351	100	2
F - outside	1220	100	5
F - outside	378	100	1
F - inside	1220	100	2
F - inside	387	100	1
G - outside	1220	100	3
G - outside	110	100	1

Since the geometry of the pavillon isn't equivalent to the dimensions of plywood, each level has strips cut up in various lengths, as depicted in the tabel here.

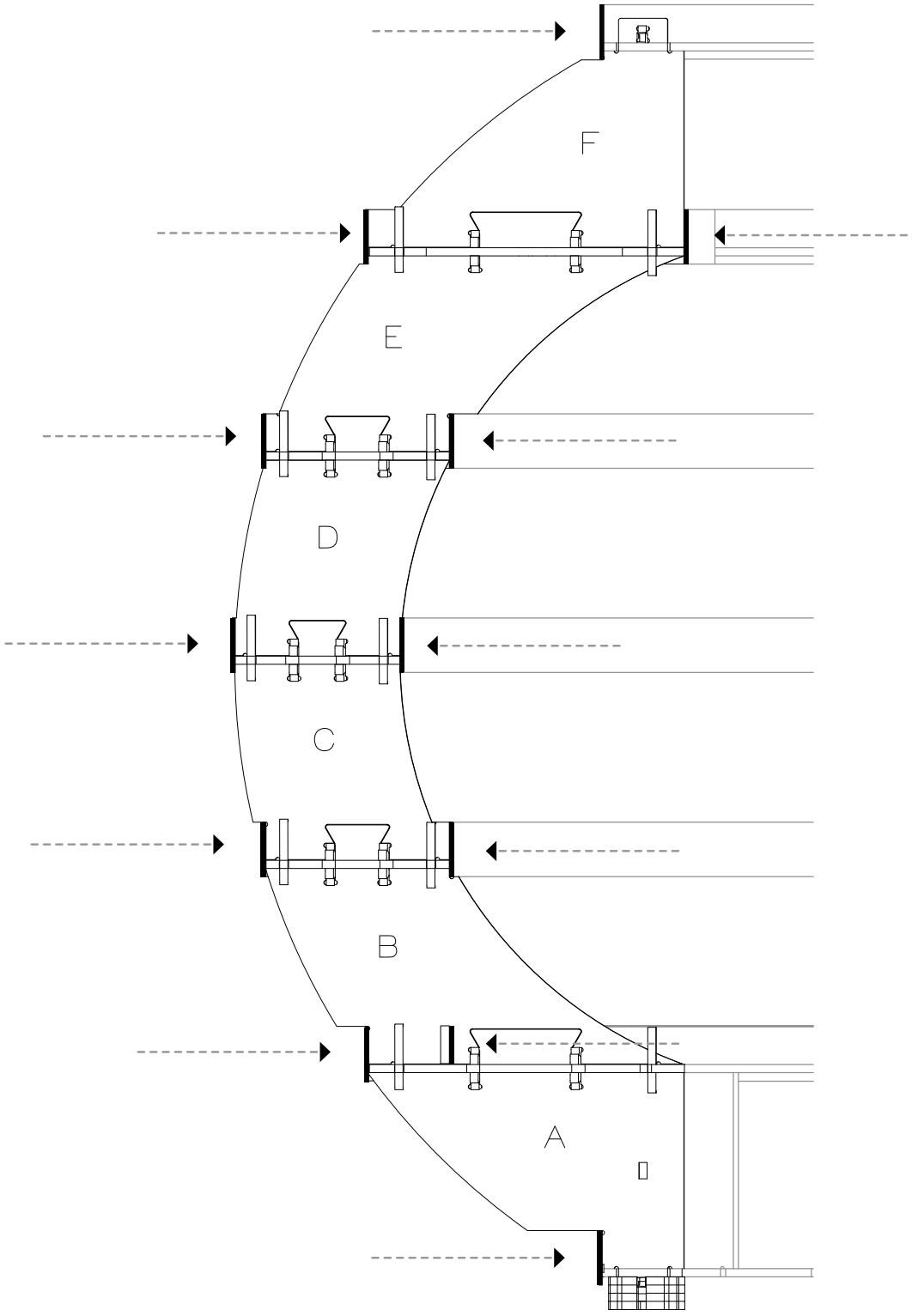


The edging strips are 100 mm strips cut from plywood board measuring 1220mm x 100mm, with small add ons where needed.

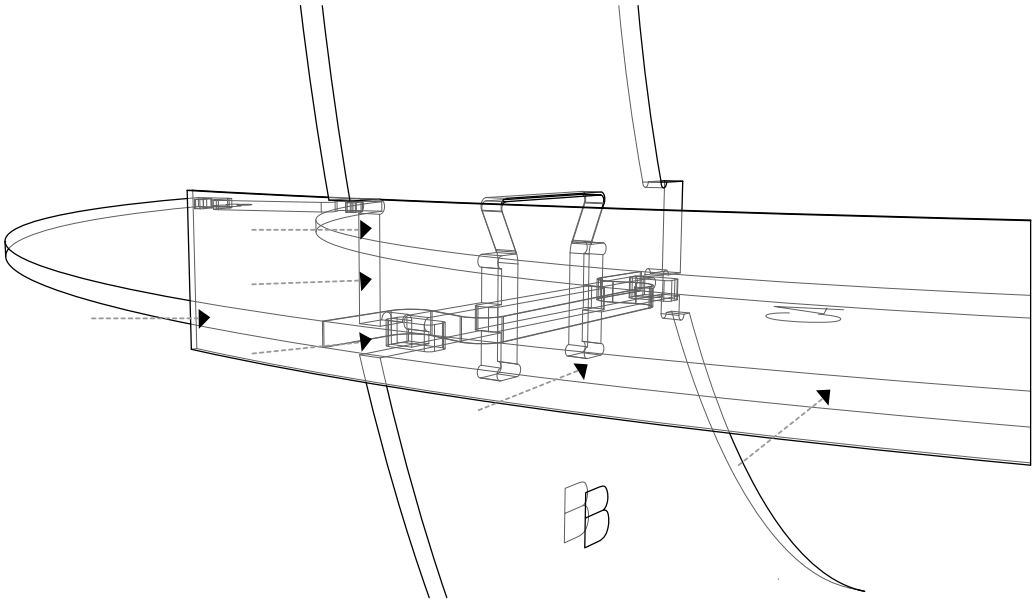
As you can see, the edging strips are mounted separately to the edge of the pavilion, placed directly next to each other.

Make sure that you start the mounting of the strips from both side from the door opening.

In order to make sure, that the strips does not bend after the soil is placed, add glue at the edges of the strips sp that the strips are glued together.

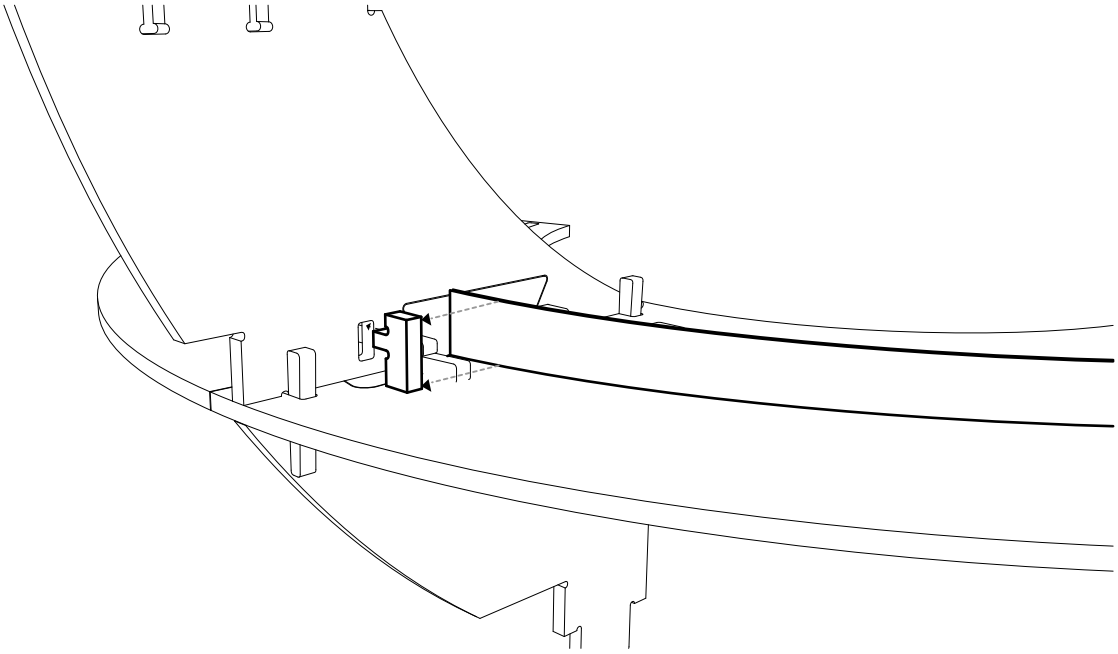


The edging strips are placed as depicted above in the section drawing. As you see they are always placed where the vertical boards has an indentation or the opposite. Be aware that the edging strips on groundlevel (Horisontal A) has a gap as big as the entrance, so the edging strips schould be placed so they aligns with the above levels in terms of the entrance gap.

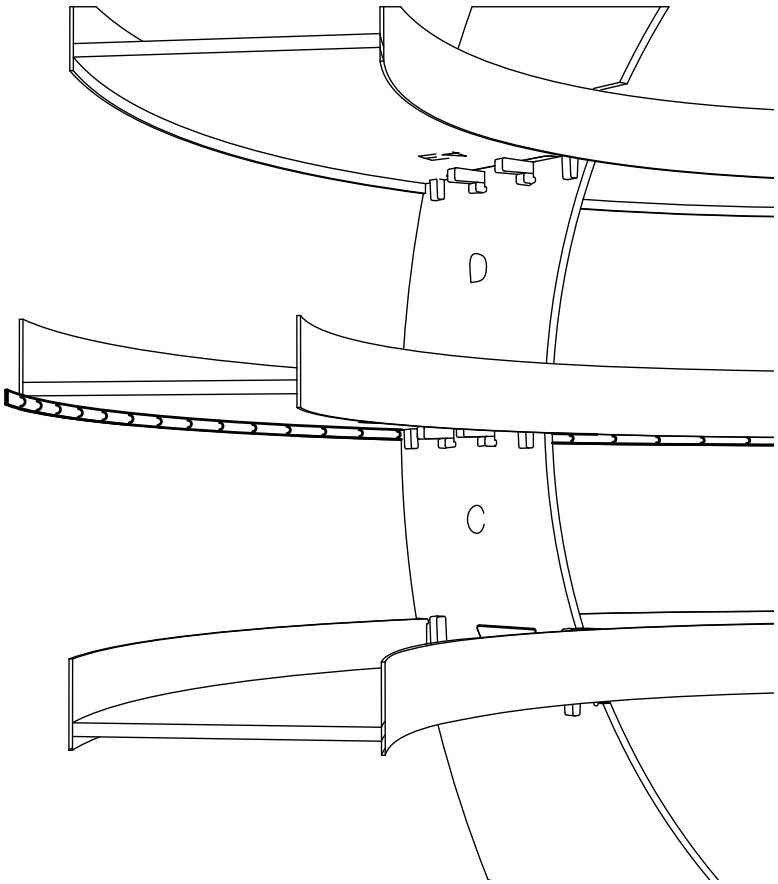


When mounting the edging strips, it is important to position the band, so that the top of the band touches or aligns with the detail of the vertical boards, as depicted above. Thereby you get devided spaces on most levels to contain the soil and plants, which is 70mm high.

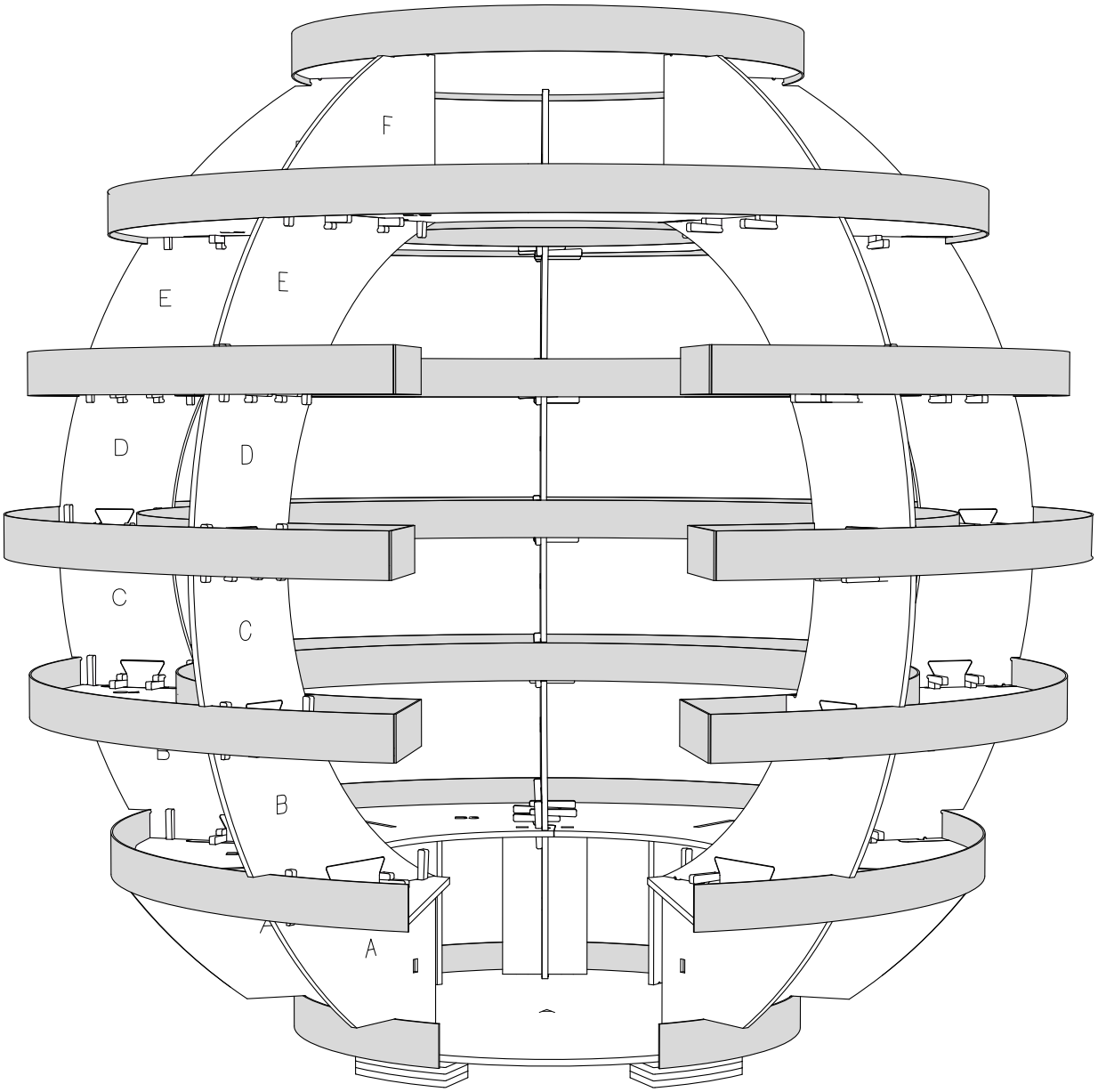
Below the edging strips becomes room for LED strip light if wanted.
The arrows shows where to place the screws.



Depicted above, you see the little element, that fits in the slot of the vertical B boards. This element is mounted from each side of B. On the element the edging strips are screw in (B-inside), from the inside. The lenght of the strip, as described on page 18, assures that the edging strip gets the proper circular curvature.



In this diagram an LED-strip is depicted, mounted on the bottom of the edging strip. This allows for an invisible and safe lighting of the pavillon, similar to the what is found on the original Growroom. The LED-strip can be mounted the same on all the levels.



The Pavilion is done, and you can start to fill in the soil and plants on level B,C,D,E,F,G.

To gain a better control of the soil and water, you can advantageously put plastic in each space, so that it covers the whole area before you put soil and vegetation in them.

Enjoy and give us please give us a nudge via email discover@space10.io or tag us on Instagram

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when you have built your own Growroom.