ROBERT
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ARCHITECTS

Wood Works

Assembly & Disassembly Manual

Must be printed as A4 booklet with facing pages

Assembly

GENERAL INFORMATION:

Asssembling the Butterfly Building will require at least 2 people. There are some steps that will require a third person to ensure that the pavilion is constructed safely and correctly without damaging any of the building materials.

The tools required to assemble the pavilion are:
- Power drill (x 2)
- Ladder (x 2)
- Temporary Timber prop (x2) (see Step 2)
- Screws (Various lengths ranging from 70-180mm)

The technical equipment required for the pavilion is:
- Projector (must have Keystone function)
- Keyboard
- Mouse
- Mac Mini
- HDMI cable
- USB extender cable (for Mouse)

General Assembly notes:

Elements will be fixed together by using clips, as shown in fig.5, or by screws, as shown in fig.3.

All pieces have been labelled.
There are three label types:

- Letters
- Numbers
- Symbols

Letters:
The lettters indicate position in relation to the main uprights/posts.

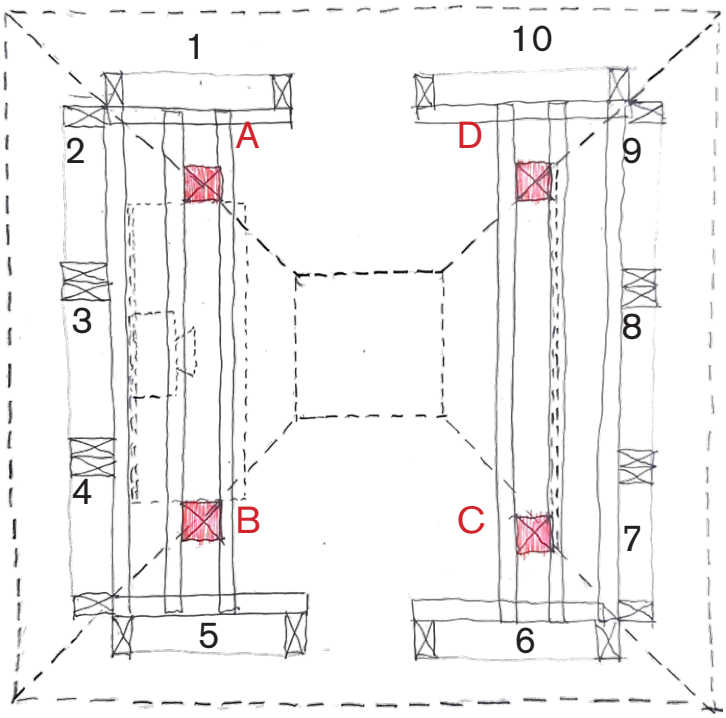
There are 4no. uprights/posts labelled A, B, C, D.
See sketch plan adjacent.

For Example:
In fig.1 you can see the top of upright/post D.
The roof lattice that fixes to the uprights is also labelled with “D top” this indicates where the upright/post and the roof lattice should meet.

Similarly, in fig.3 you can see that a frame peice is labelled with “A post”, this idicates that the frame should be positioned next to the “A” upright/post.

Numbers:
Numbers are used to indicate module sequence. for example in Step 6 fig.34 you can see that each of the wall modules are numbered 2, 3, 4. This is also shown on the adjacent plan.

Symbols:
Symbols are used to indicate where modules or pieces should be fixed together. For example in fig.1 and in fig.5 you can see some basic symbols have been drawn across the junctions where pieces meet.
In fig.5 the two pieces meet to form a solid black triangle.



POST POSITIONS - PLAN

fig.1

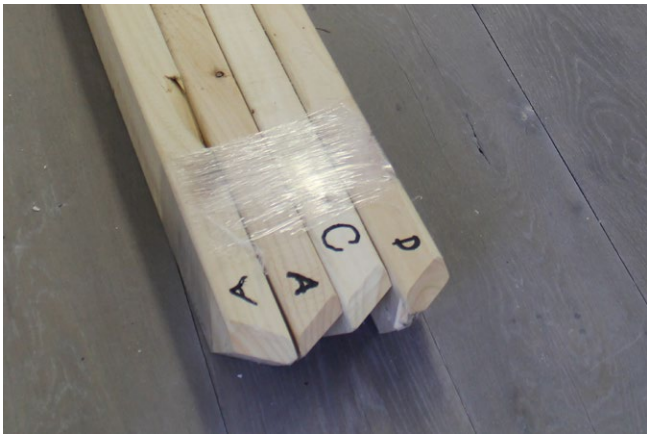


fig.2

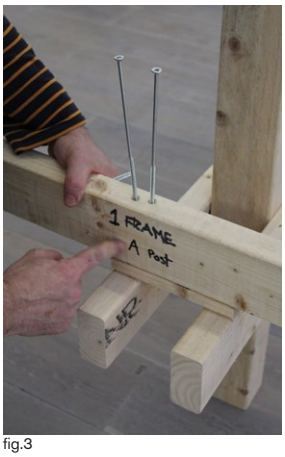


fig.3

fig.4

fig.5

STEP 1:

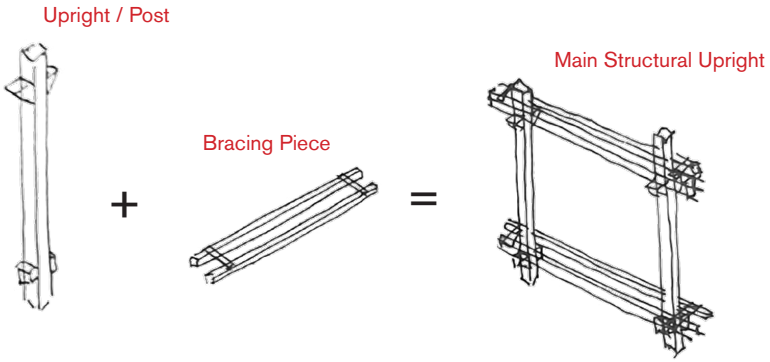
Begin by assembling the two main structural uprights.

To do this you will need to gather all 4 of the uprights/posts. These posts are labelled A, B, C, D. It is important to note that in order for all of the pavilion elements to align correctly you must ensure that the letters on each upright/post are facing inwards. Follow the plan shown on the general information page for post positions.

Fix the bracing pieces to the prefixed brackets on either side of the posts at the top and the bottom to form the main structural pieces as shown in the adjacent sketches and fig.8.

Repeat this step.

You will now have two main structural upright pieces.



STEP 2:

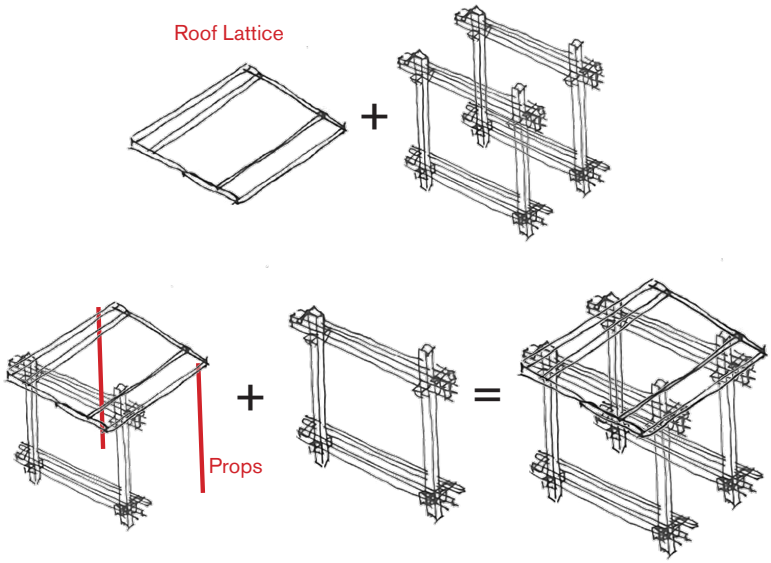
Once you have the two main structural upright pieces built you will need to attach the roof lattice.

To do this, align the roof lattice with the corresponding upright as shown in fig.9. Fix the roof lattice to the first main structural upright as shown in fig.10.

In order to fix the second main structural upright you will need to use temporary timber props as shown in fig.12. You may need to make your own props for this step.

Now that the props are holding up the first main structural upright and the attached roof lattice (see fig.13) you can then move the second main structural upright into place. Fix the second main structural upright to the roof lattice. The props can then be removed.

You should now have the two main structural uprights and the roof lattice fixed together and this should be standing upright as shown in fig.14



STEP 3:

You will now need to fix the two base frames. The base frames fix to the bracing pieces at the bottom of the two main structural uprights (see fig.16 & 18)

The base frames are labelled with letters indicating which upright/post they should be positioned at. (see fig.20)

These base frames should be screwed into place (see fig.19 , 20 & 22)

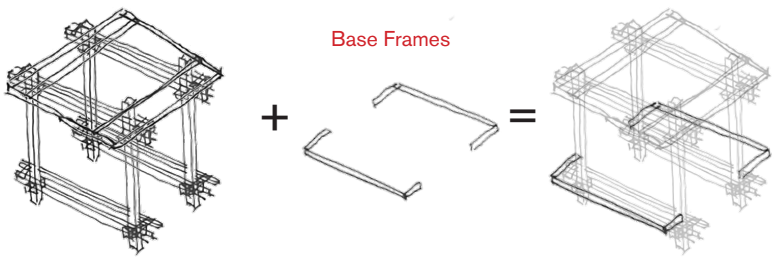


fig.6

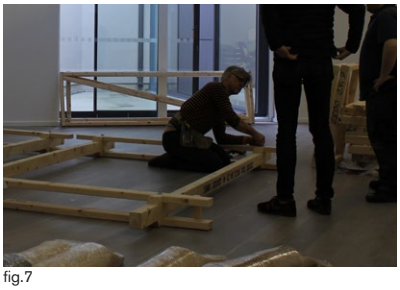


fig.7


fig.8


fig.9

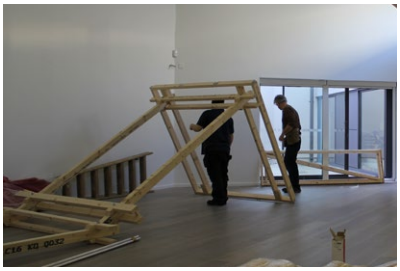


fig.10


fig.11

fig.12


fig.13


fig.14


fig.15


fig.16

fig.17

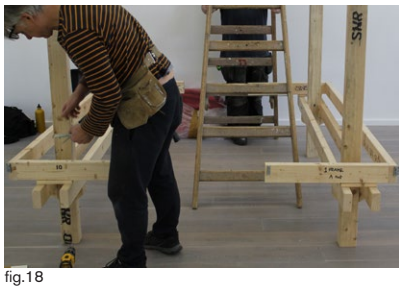


fig.18

fig.19

fig.20


fig.21


fig.22

Wall Type 01. with entrance void.

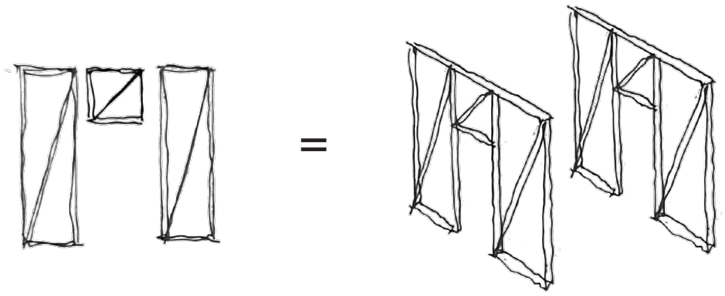
STEP 4:

There are 2 wall types.

The first wall type (shown in adjacent sketches) has a entrance void.
(Wall Type 01)

There are 2no. walls with entrance voids.

To form these walls gather the modules shown in the adjacent sketches and fix together. As outlined in the General Information section, use the numbers and symbols to align the modules. Fix together with screws (See fig.23 - 26)



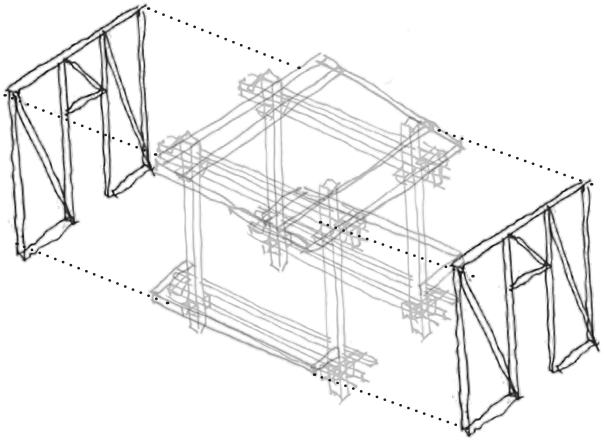
STEP 5:

(3 persons required for this step)

Once both walls with entrance voids have been formed, they should be lifted and attached onto the main structure (See fig.29)

These walls are attached using clips as shown in fig.28.

The walls are clipped to the base frame and the roof lattice. (See fig. 30 - 33)



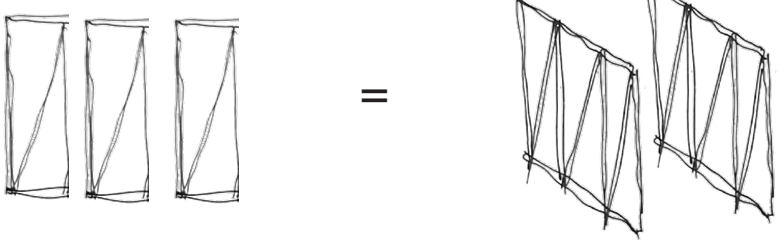
STEP 6:

The second wall type (shown in adjacent sketches) is formed with three full-length modules.
(Wall Type 02)

There are 2no. walls with full length modules.

To form these walls, gather the modules shown in the adjacent sketches and fix together. As outlined in the General Information section, use the numbers and symbols to align the modules. Fix together with screws (See fig.34 & 35)

Wall type 02. Full-length modules



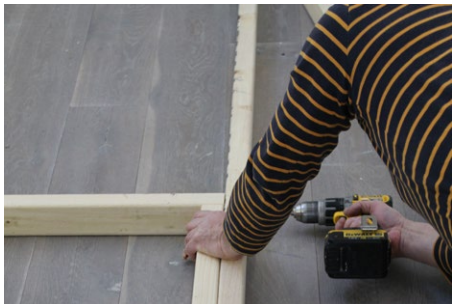


fig.23


fig.24


fig.25

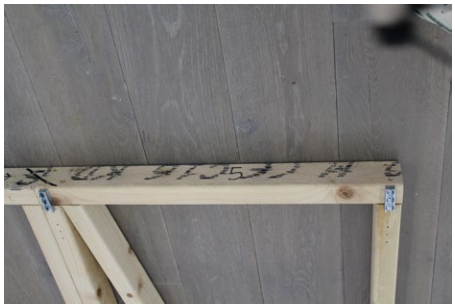


fig.26


fig.27


fig.28


fig.29


fig.30


fig.31


fig.32


fig.33


fig.34


fig.35

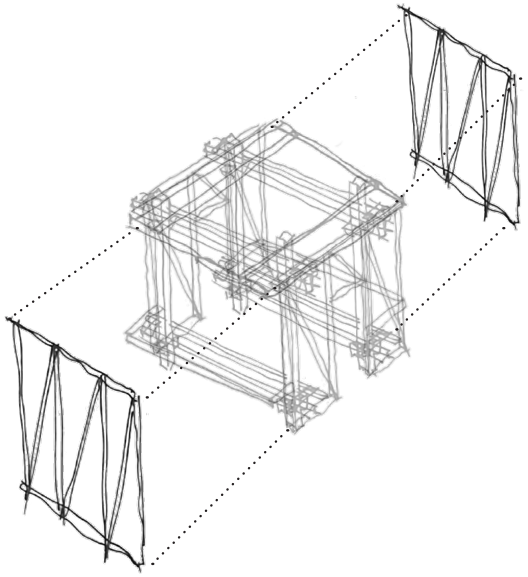
STEP 7:

(3 persons required for this step)

Once both walls with full-length modules have been formed, they should be lifted and attached onto the main structure (See fig.36)

These walls are attached using the clip system.

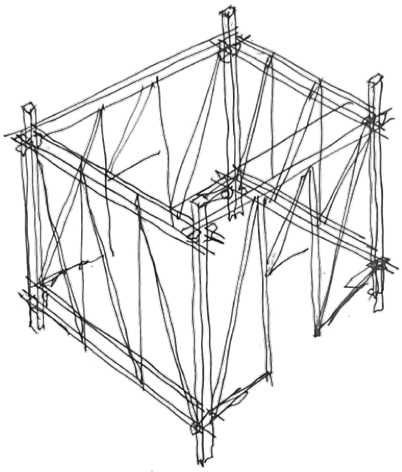
The walls are clipped to the base frame and the roof lattice. (See fig.37)



STEP 8:

You should now have he main structure of the pavilion completed as shown in fig.38.

Main structure of pavilion



STEP 9:

You will now form the roof structure.

The roof structure is made up of the rooflight frame (see fig.39) and 2 types of rafters (see fig.41&42)

The first rafter type is longer and runs from each corner of the rooflight frame down to each corner of the main structure of the pavilion. These rafters are labelled with letters and should align with the corresponding letters on the rooflight frame and the corresponding corners of the pavillion structure. (see fig.40 & 43)

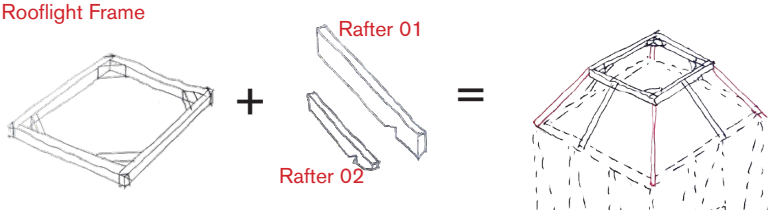
The second rafter type is shorter and runs from the sides of the rooflight frame down to the top of the walls on the main structure of the pavillion. (see fig.41)

Each rafter type should be fixed to the rooflight frame using screws as shown in fig.44 & 45

Rooflight Frame

Rafter 01

Rafter 02



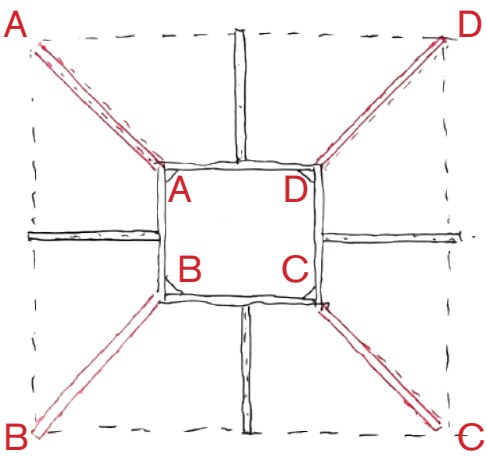


fig.36

fig.37

fig.38

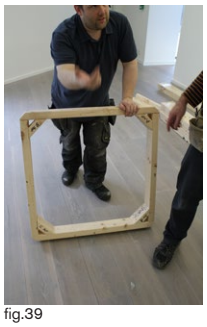


fig.39

fig.40

fig.41

fig.42

fig.43

fig.44

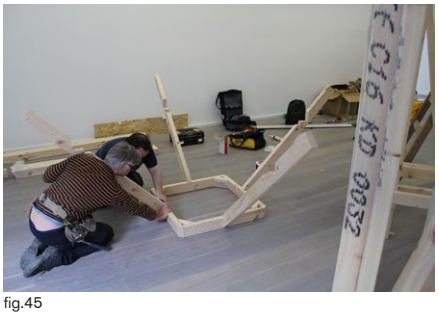


fig.45

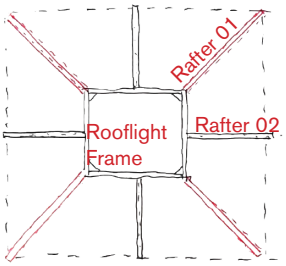
STEP 10:

(3 persons required for this step)

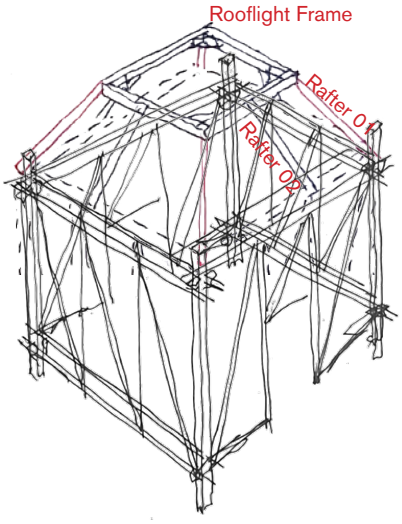
Once you have formed the roof structure it will need to be fixed to the main structure of the pavilion.

The roof structure will need to be lifted carefully above the main structure of the pavilion and moved into place.

Each rafter is notched so that the roof structure will sit on top of the walls. The rafters should then be screwed into place as shown in fig.47.



(Plan view of rooflight frame and rafters)

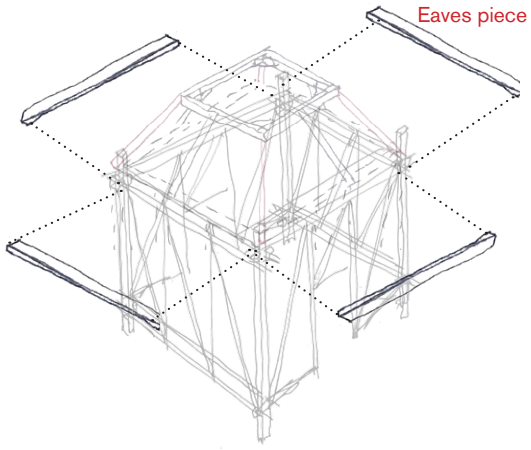


STEP 11:

You will now need to attach the eaves pieces to the roof structure.

Each eaves piece is mitred at each end to form sharp corners. These pieces should be fixed to the rafters at each end and at the centre as shown in fig.49 - 52

The combined structure is now complete.



STEP 12:

(3 persons required for this step)

You will now place the roof tarp on.

Begin by folding the tarp up and lifting it up through the rooflight frame. Unfold the tarp and pull down into position.

(See fig.53 -56)

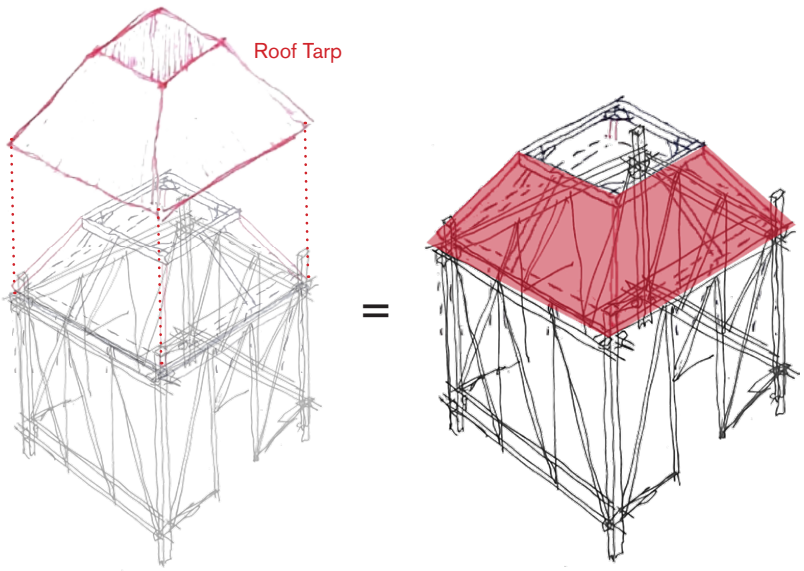


fig.46

fig.47

fig.48

fig.49

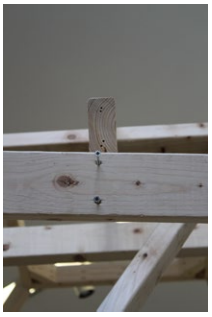


fig.50

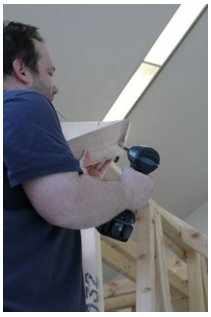


fig.51

fig.52

fig.53

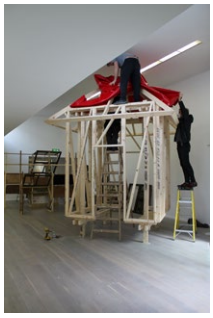


fig.54

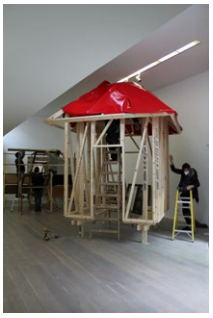


fig.55

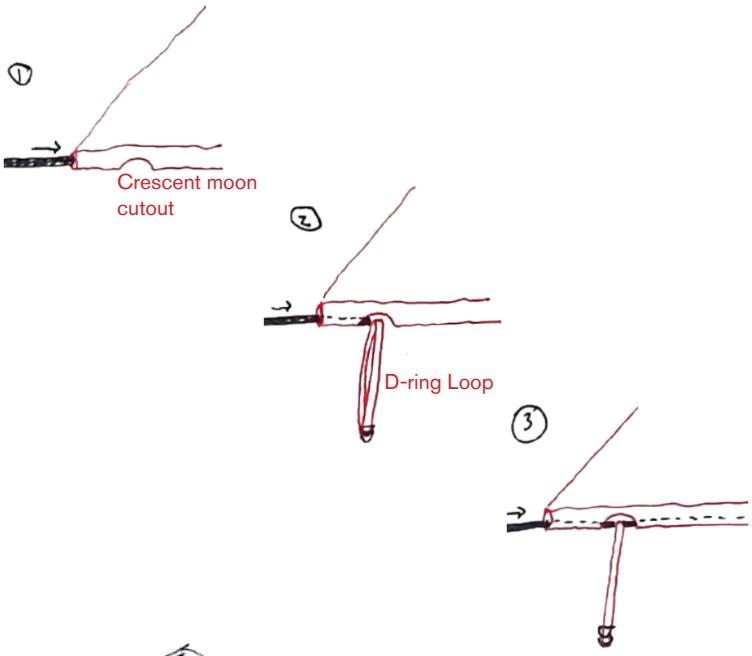
fig.56

STEP 13:

You will now insert the rods and loops to allow for the tarp to be pulled tight to the roof structure. There are three crescent moon shaped cutouts on each side of the roof tarp (see fig.61).

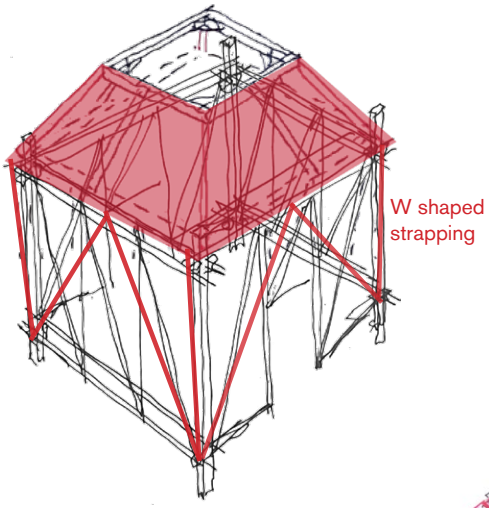
Begin from one corner and feed the rod through the corner (see fig.57).

Take a D-ring loop (see fig.58) and feed the rod through the crescent moon cutout as well as the D-ring loop.
Feed the rod thorugh to the centre crescent moon cutout.
Continue feeding the rod thorugh to the next crescent moon cutout and through another D-ring loop at the other corner.
Do this for all 4 sides of the tarp.

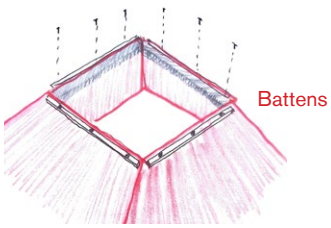


STEP 14:

You will now need to attach the strapping to pull the roof tarp tight to the roof structure.
Begin by fixing some steel loops to the bottom corners of the walls (see fig.62 & 64)
There are 4 lengths of strapping, one for each side of the pavilion. The strapping should form a W shape on each side of the pavillion (see fig.63)



Begin by running the strap through the D-ring loop on one side, feed the strap down through the steel ring at the base of the wall, bring the strap up to the centre crescent moon shaped cutout looping it around the rod, run it down to the other steel ring then up to the second D-ring loop.
Ensure that there is even amounts of slack at each D-ring loop and pull both sides at the same time to ensure the roof tarp is pulled tight (see adjacent sketch)
Repeat this step at the opposite side of the pavilion to ensure that the tarp is evenly tightened on both sides.
Repeat on the remaining two sides.



Finally, fix a small timber batten through the tarp and into the rooflight frame using 3no screws on each batten as shown in adjacent sketch.

STEP 15:

The bench is made up of two sheets of OSB board.

Begin by fixing the seat part of the bench to the two horizontal timbers of the bracing piece using screws.

Fix the back piece of the bench to the vertical timbers (see fig.67) Ensure that the back piece is fixed at a slight angle to allow for a comfortable seating position (see fig.65)

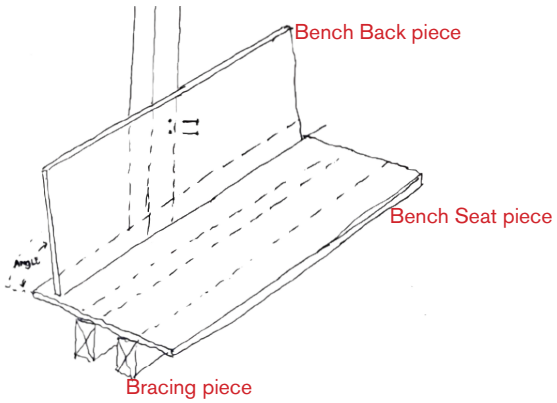


fig.57

fig.58

fig.59

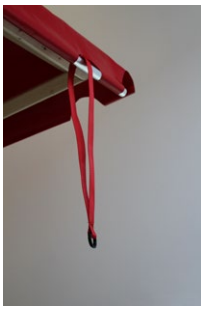


fig.60

fig.61

fig.62

fig.63

fig.64

fig.65

fig.66

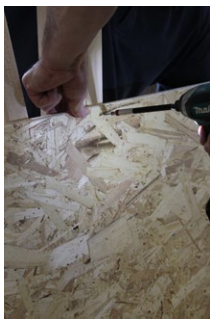


fig.67

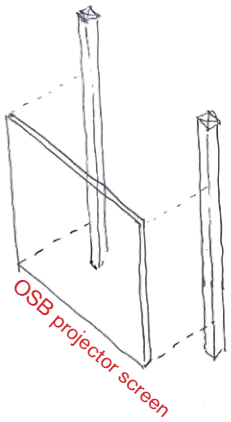
fig.68

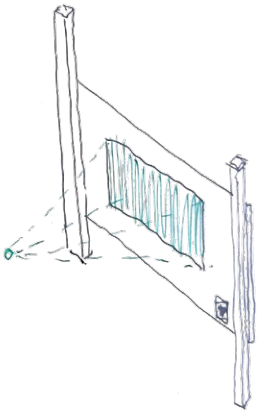
STEP 16:

The projector screen is a large piece of OSB board.

A white rectangle has been painted on one side to allow the configurator to be viewed clealry. A QR code should be fixed to the bottom right hand corner of the board. Use the provided QR code cutout at the end of this booklet.

Fix the OSB screen to the posts opposite from the bench. Fix with screws into the outside face/rear of the post as shown in adjacent sketch and fig.69 - 71





STEP 17:

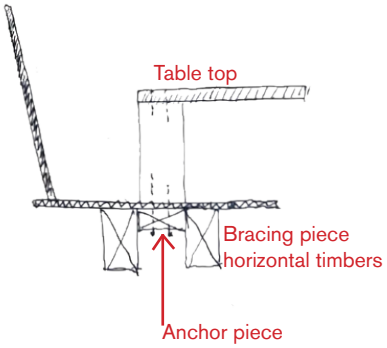
Table:
The table is used for the mouse to control the configurator. The table is made up of a flat table top piece, a vertical leg piece and an anchor piece.

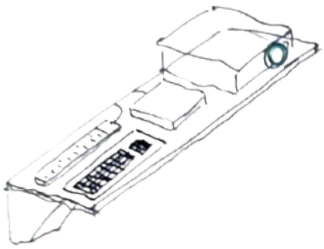
To fix the table to the bench:
fix the achor piece to the underside of the bench between the two bracing piece horizontal timbers. Screw through the anchor piece, the bench seat and up into the vertical leg piece of the table using long screws.

Ensure the table is centred on the bench.

Shelf:
The shelf will hold the projector, the computer and the keyboard. The projector may need to be angled downwards to get a clear projection onto the screen.

Fix the shelving brackets at high level to the vertical timbers on the same wall as the bench using screws. Fix the shelf to the brackets using screws





STEP 18:

Ensure that there is no loose cable by using cable ties where needed.

The cable for the mouse should be run down the vertical leg of the table, under the bench, then back up to the computer that sits on the shelf.

No cables should be visible when sititng in the pavilion and all effort should be made to have a tidy run of cabling as shown in fig.76 &77

fig.69

fig.70

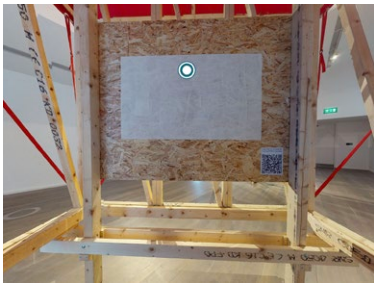


fig.71

fig.72

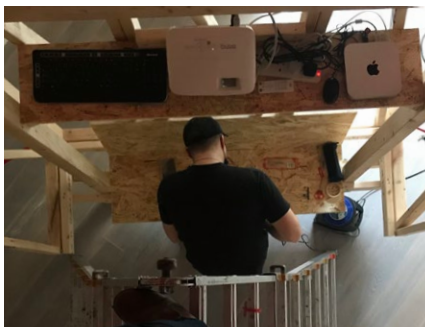


fig.74

fig.73

fig.75

fig.76

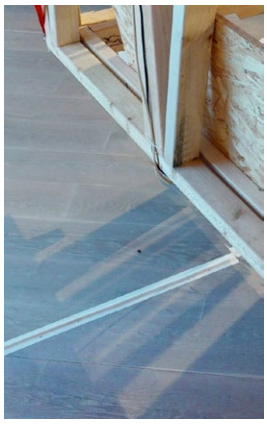
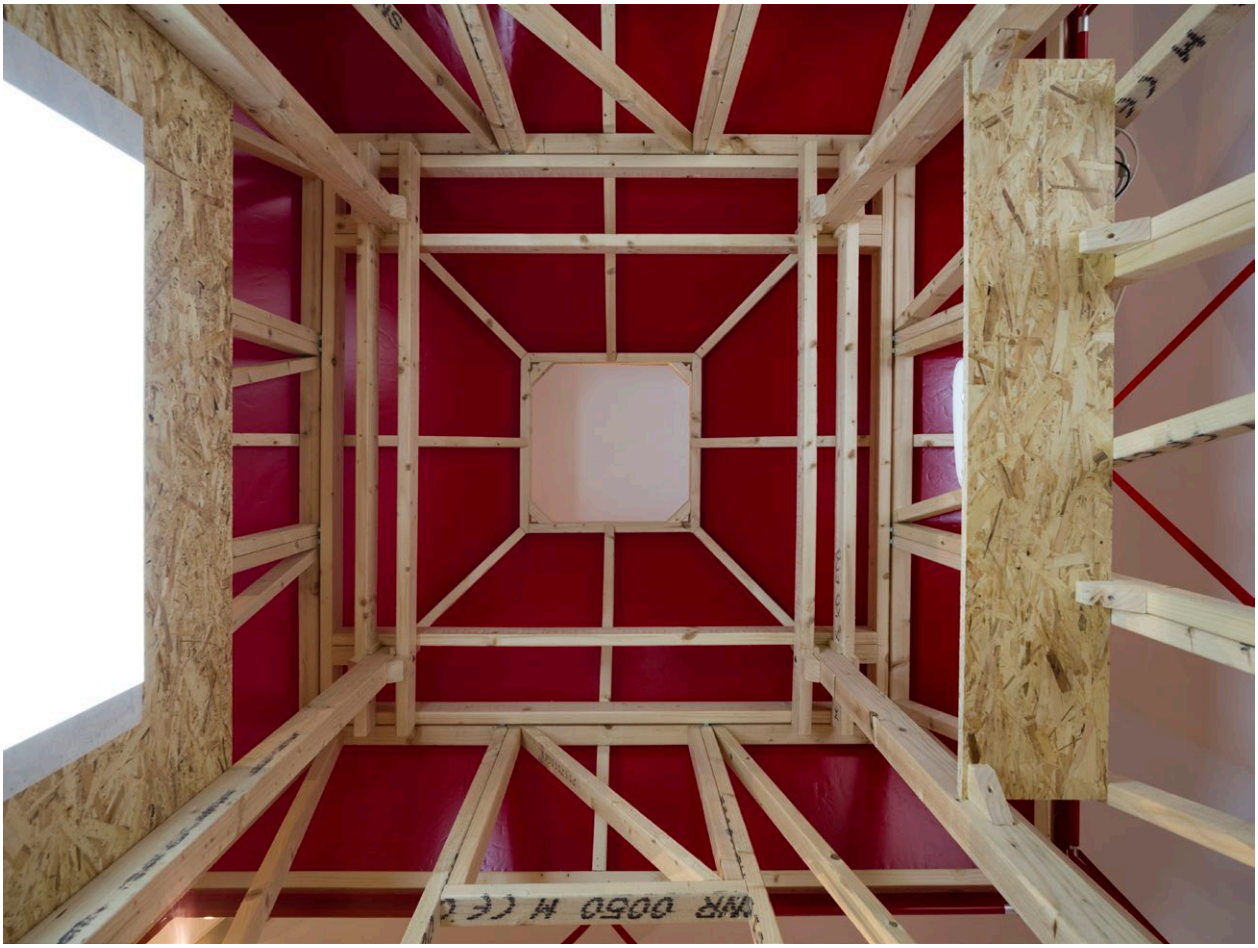


fig.77


SWR
C16



Disassembly

To disassemble the pavilion, you should follow the assembly instructions in reverse order, starting at step 18 and working back to step 1.

Before disassembly, ensure that all cables, computers, projectors etc have been removed from the pavilion.

As you disassemble the structure and prepare it for transport to Estonia, be sure to group elements as per the steps outlined above. For example, the tarp, rods, D-ring loops and strapping should all be grouped together.

✱ cutout and fix to OSB projector screen

SCAN ME TO CONFIGURE
YOUR BUTTERFLY BUILDING

ROBERT BOURKE ARCHITECTS

At RBA, we aim to create beautiful buildings that transform the lives of those who experience them.

We develop our designs through an open, collaborative and exploratory design process, resulting in unique spaces of character, integrity and material richness.

Our ambition is to create an architecture that is socially conscious, environmentally responsible and timeless in its aesthetic.

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