

Studio Projects

(Y1-Y2)

academic - uni

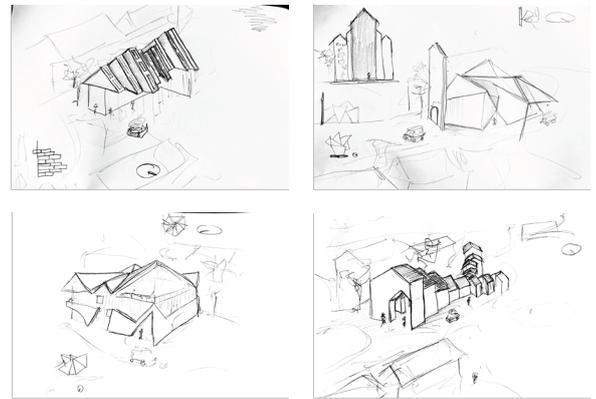
Sport & Leisure Centre



possible golf-hole arrangements

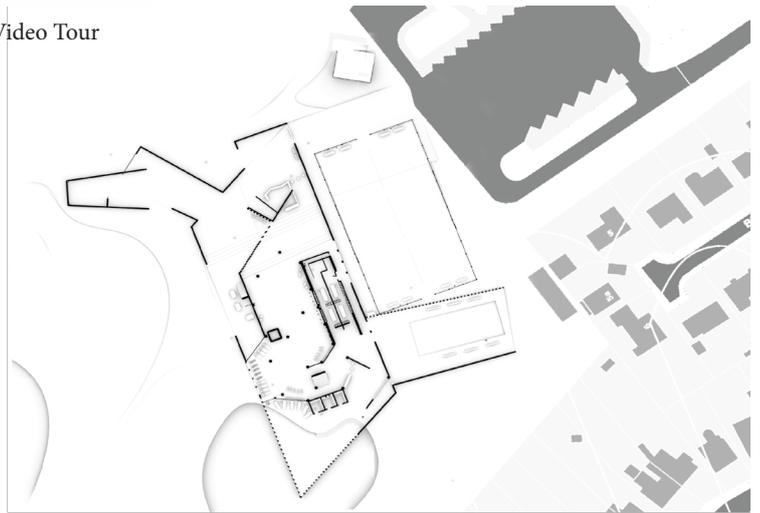


3D Video Tour

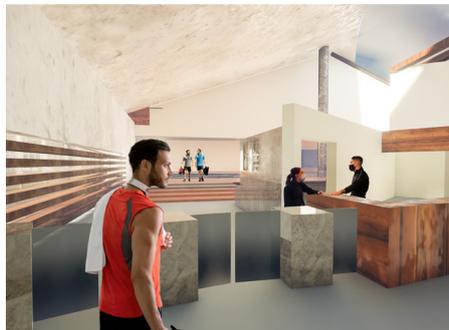
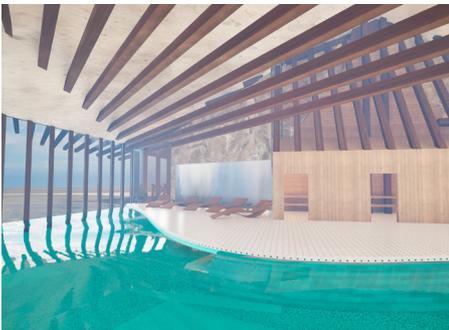


sketch idea iterations

Addressing the loss of identity and ageing population in Bottisham (a village in eastern England). Located near the youth and sports hub of the village, the aim was to establish a culture of sport and physical activity with facilities that appeal to all ages, surrounding the village with a golf course. The village becomes a showcase for players, who bring life to public areas as they engage in a social sport.

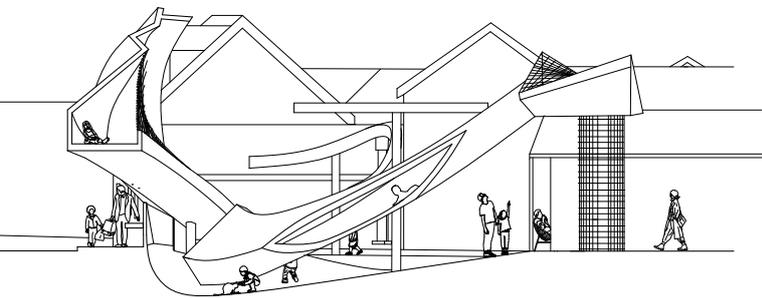
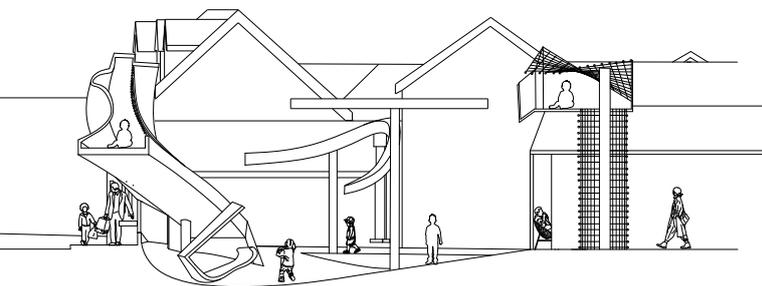
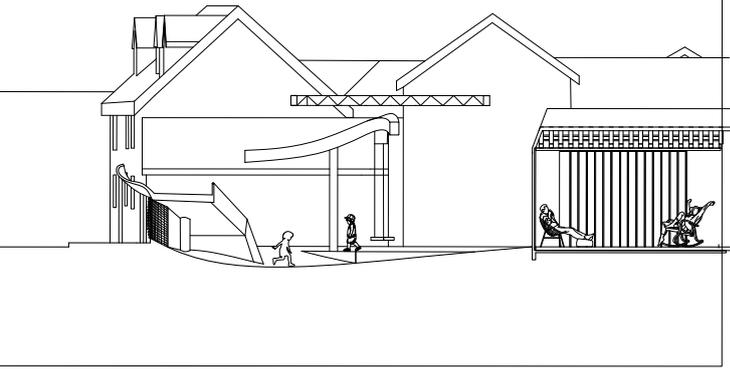


Ground floor plan CAD

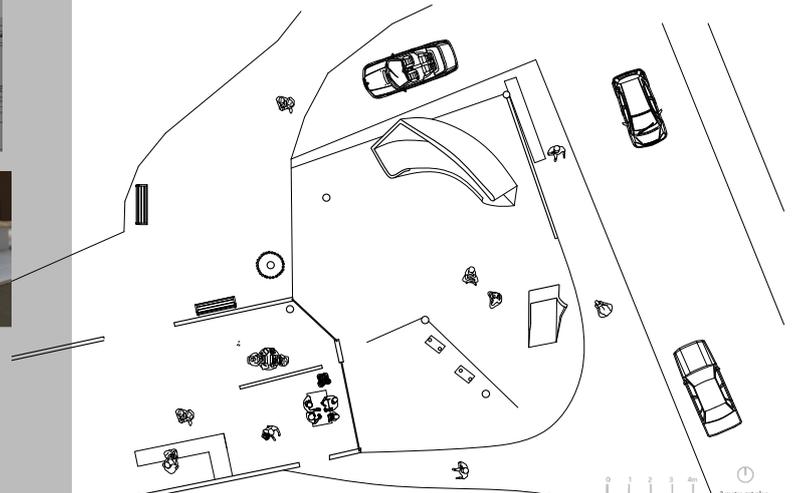
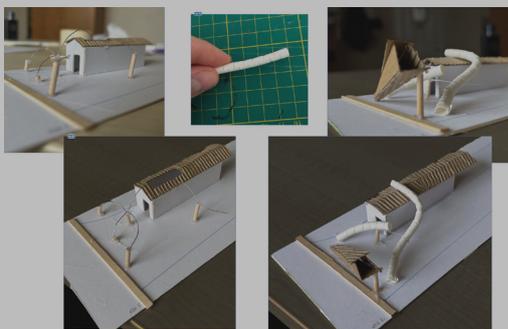
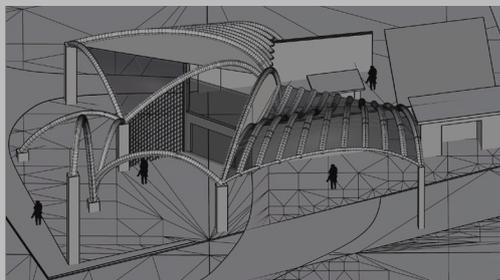


Playground

A provocation in Bottisham aimed at establishing a sense of community and local identity. Located on the site of a former abandoned gas station, the intervention creates a recognizable meeting and entertainment point, with a bus stop integrated into the structure.

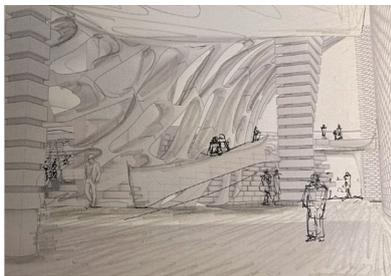
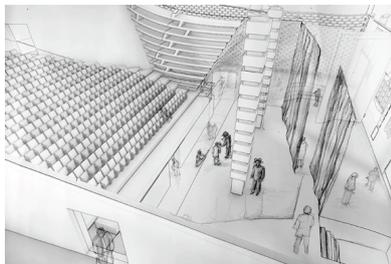
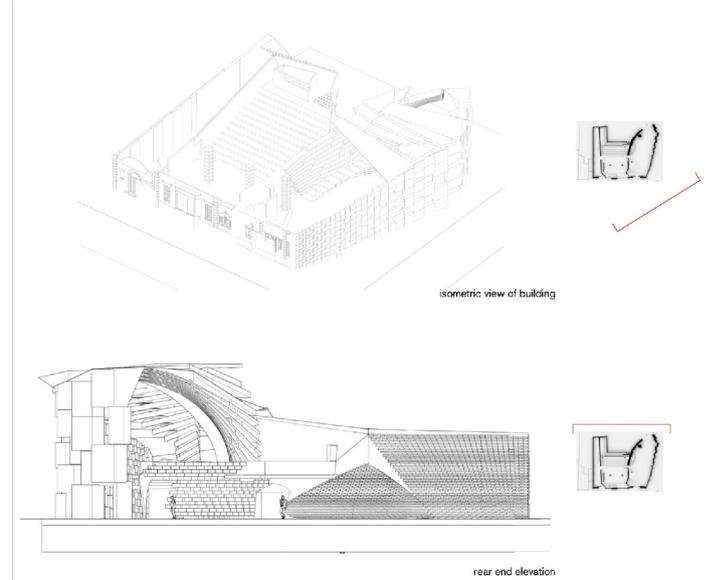
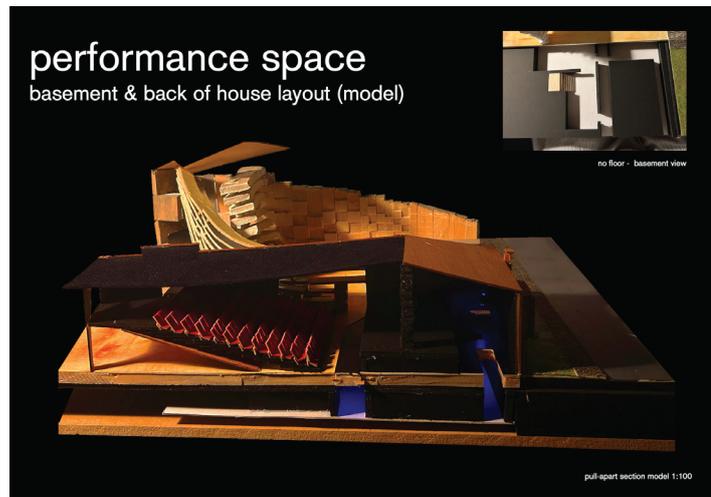
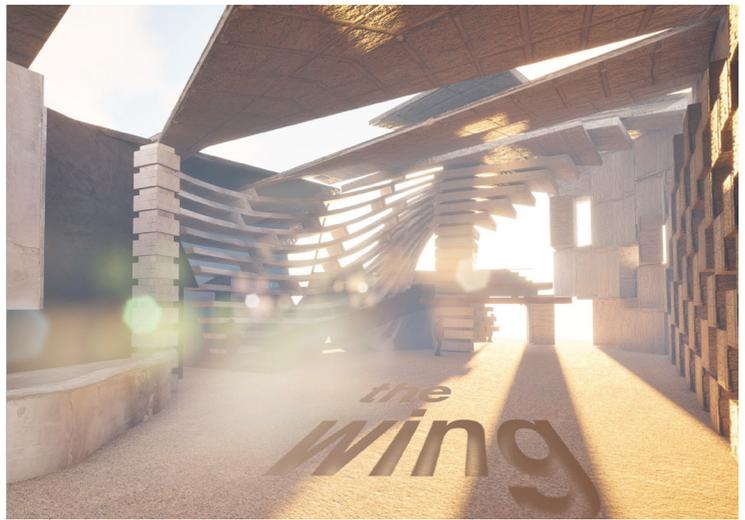


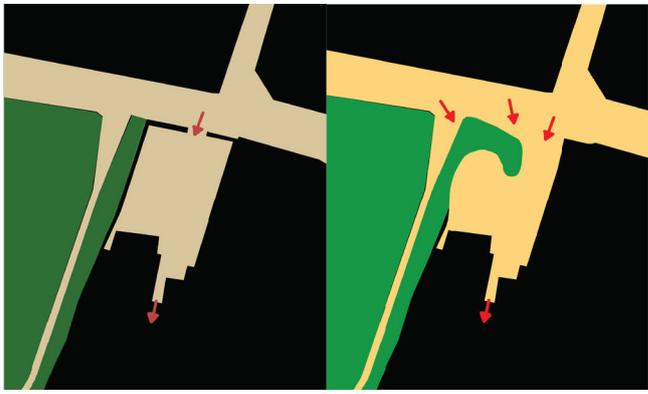
discarded iterations



Theatre - "The Wing"

Designed a theatre over an abandoned bar on one of Cambridge's main streets. Incorporated local textures and materials, along with recurring patterns from the area. Along the main wall separating the street from the interior, the stones increase in size and tilt progressively, casting unique images as sunlight filters through the irregular gaps. In contrast, the theatre room is dark and enclosed, heightening the viewer's sense of contrast after passing through the massive, light-filled reception hall. These 2 sections are the 2 contrasting wings of the project.





terrain adaptation

Market stall infrastructure

Designed a market that draws people to the Cambridge stadium area (2000m² plot). Used local materials, integrated into community. Camouflaged yet eye-catching.



construction plan 1:100



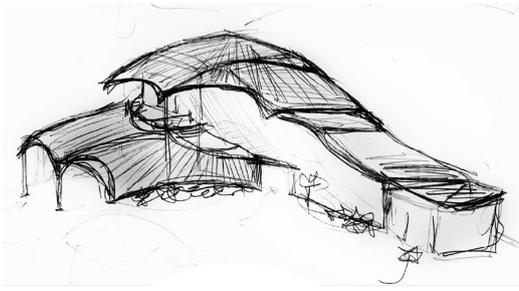
sketch model relief in context



physical model in context



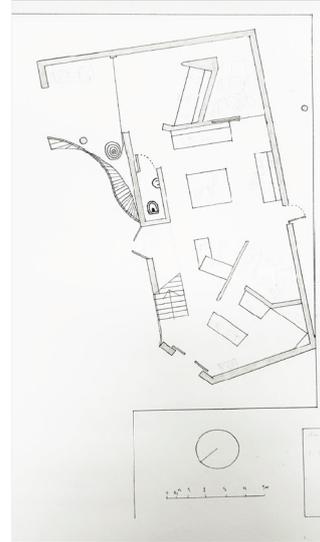
model 1:100



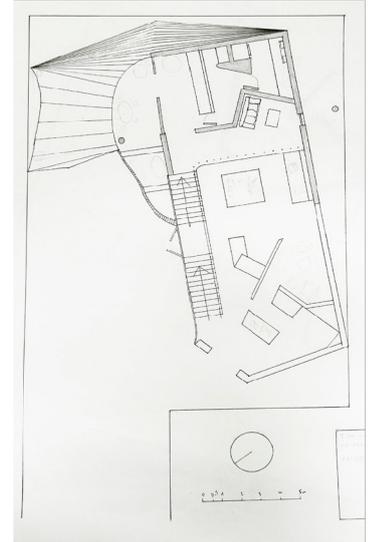
sketch model iteration

Sustainable Upholstery

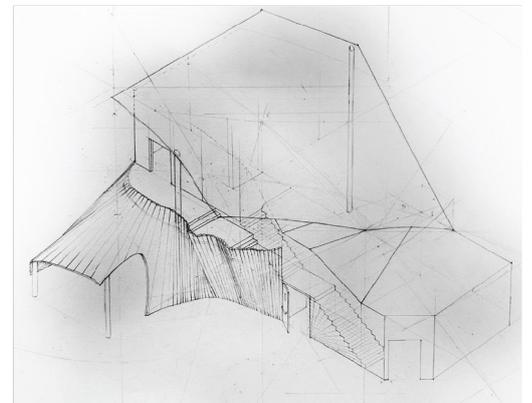
Designed a sustainable upholstery workshop in the centre of Cambridge (10m x 20m plot). Spaces are designed for a circular economy, where the community can take part in furniture repair and restoration.



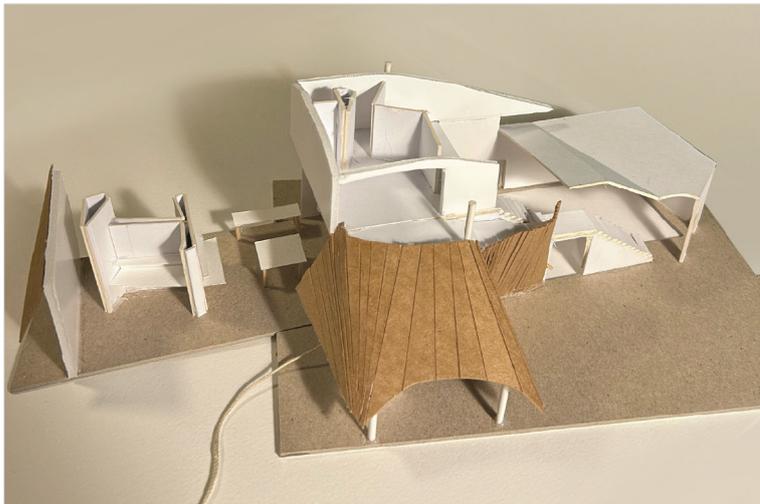
ground floor plan 1:100



2nd floor plan 1:100



technical isometric drawing 1:100



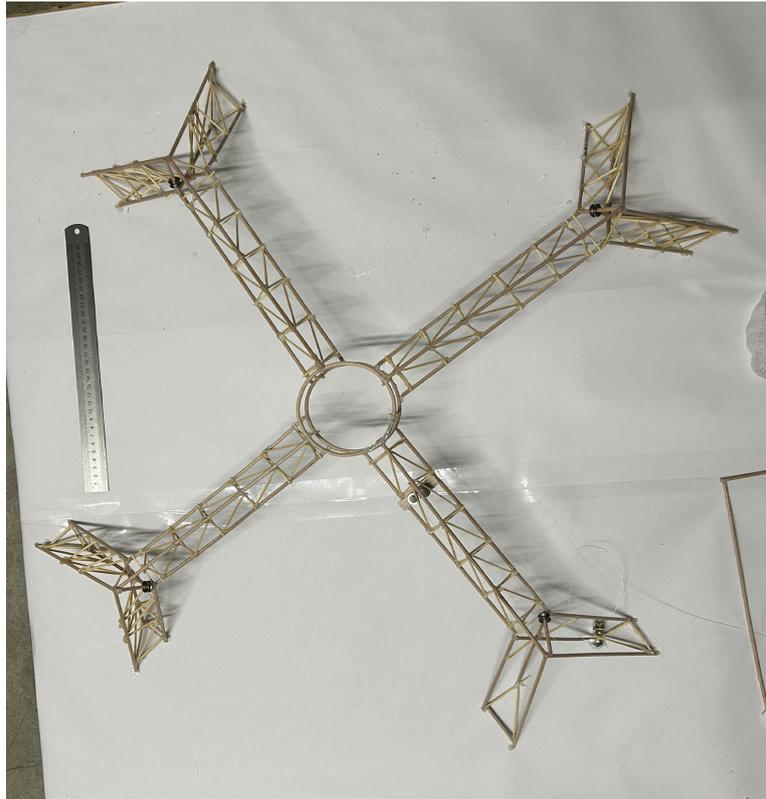
modular model (opened up) 1:100



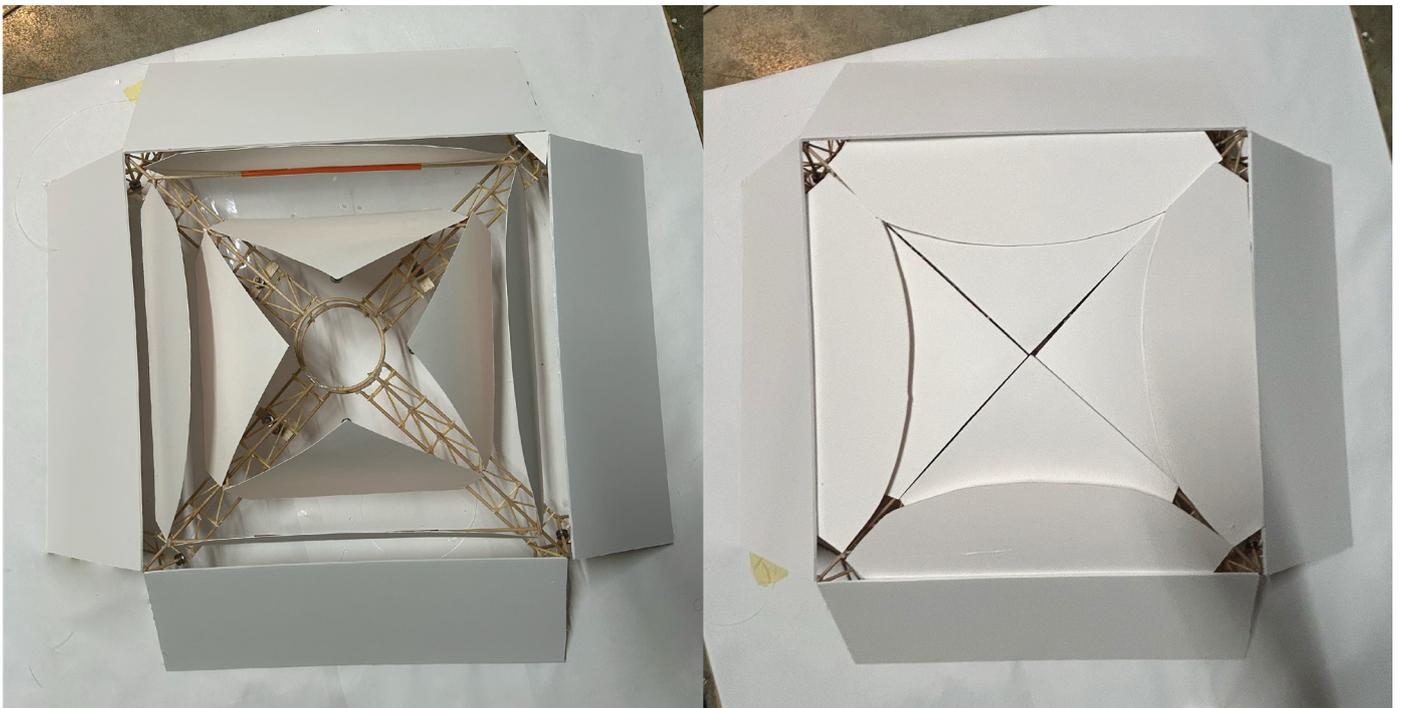
model in context 1:100

The Carp Project

academic - uni



skeleton truss without roof panelling



the structure

The main structure circles around a 4 legged truss arch that spans across the whole exhibition hall.

The four arms come together at the centre in a circular frame so when the ceiling retracts light can come in without obstruction (see openings on slide 8).

Figure 1 shows the calculations for the shape of the arms, and the moment where the bifurcations for the entrance occur is set for maximum possible angle while still respecting the load line.

Figure 2 elevation shows the direction of the members in the truss so it supports the framework accordingly.

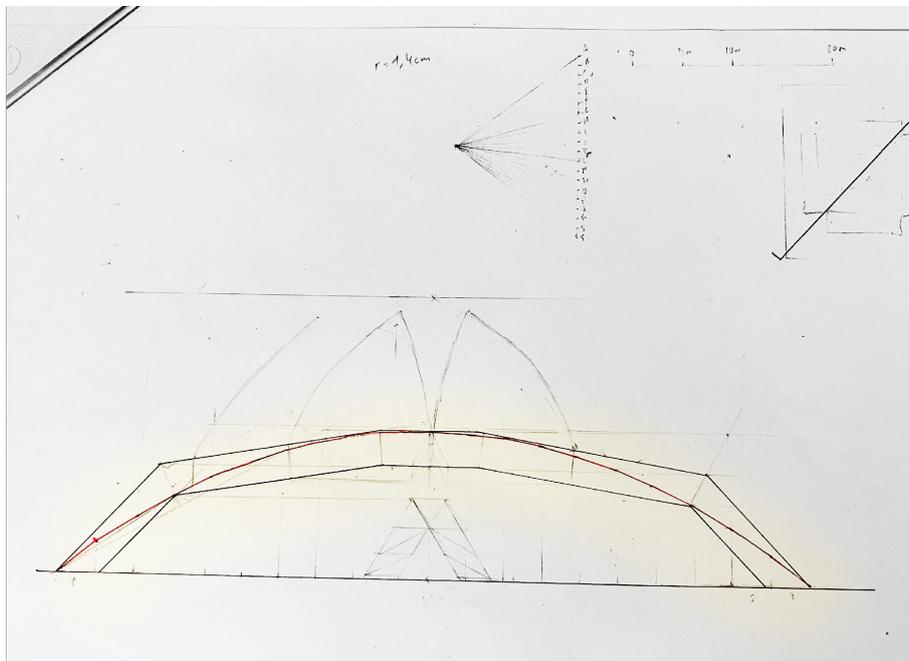


FIGURE1 - the red load line should be inside the main truss frame at all times

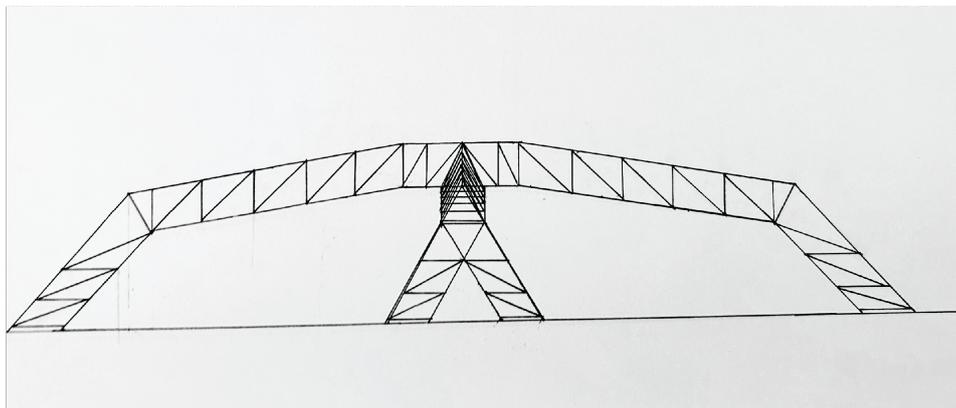
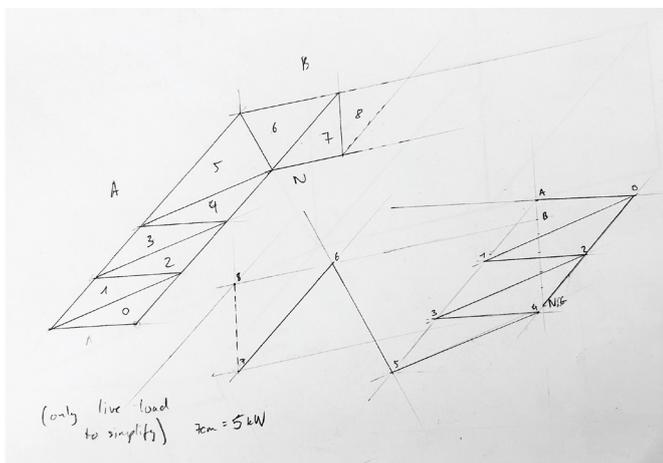
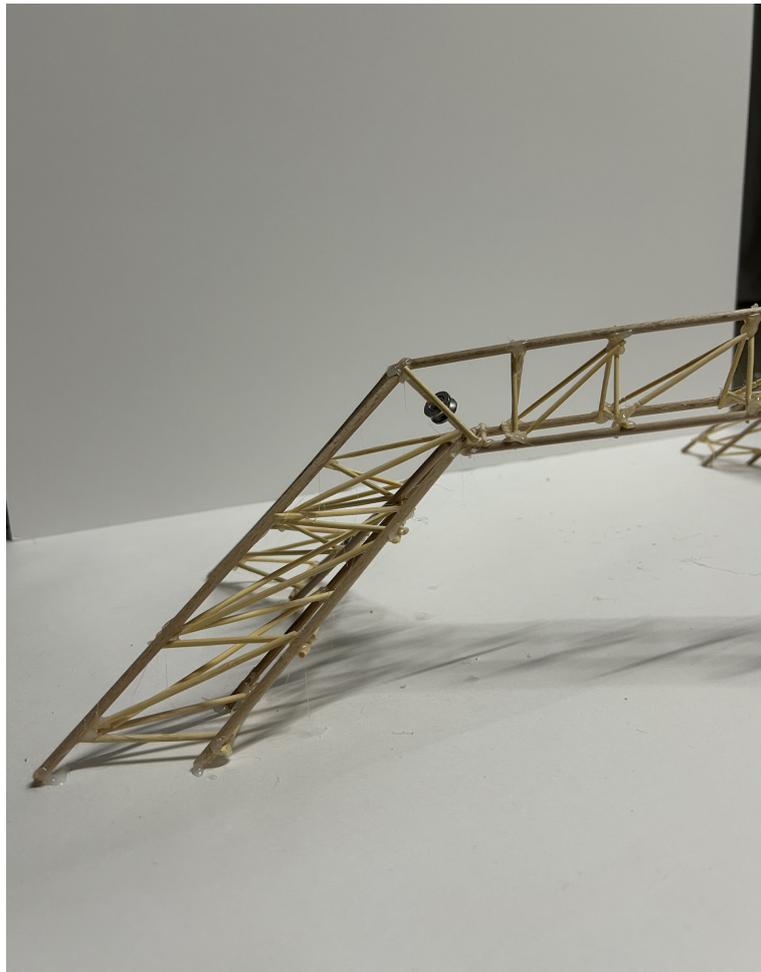


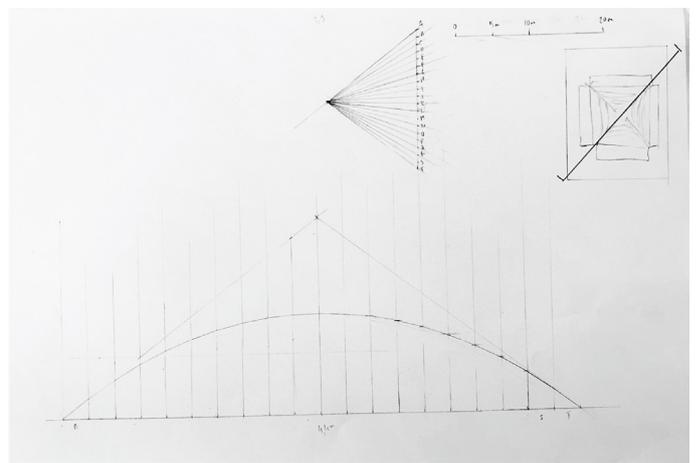
FIGURE 2 - members inside the truss align with force direction for support

force polygons

to simplify calculations, I used a 2d representation of the section of truss on the roof, instead of a 3d diagram.



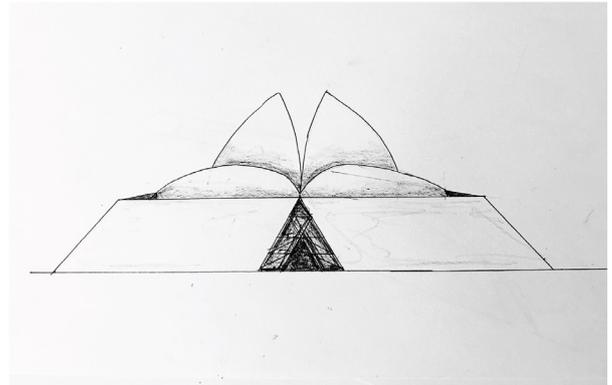
force polygon of a section of the truss on a bifurcation on one of the legs



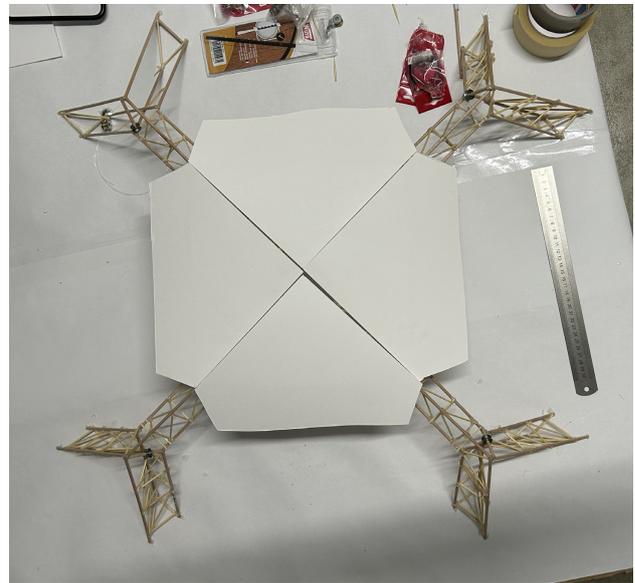
initial force polygon of the load line across the whole frame of the hall

the roof

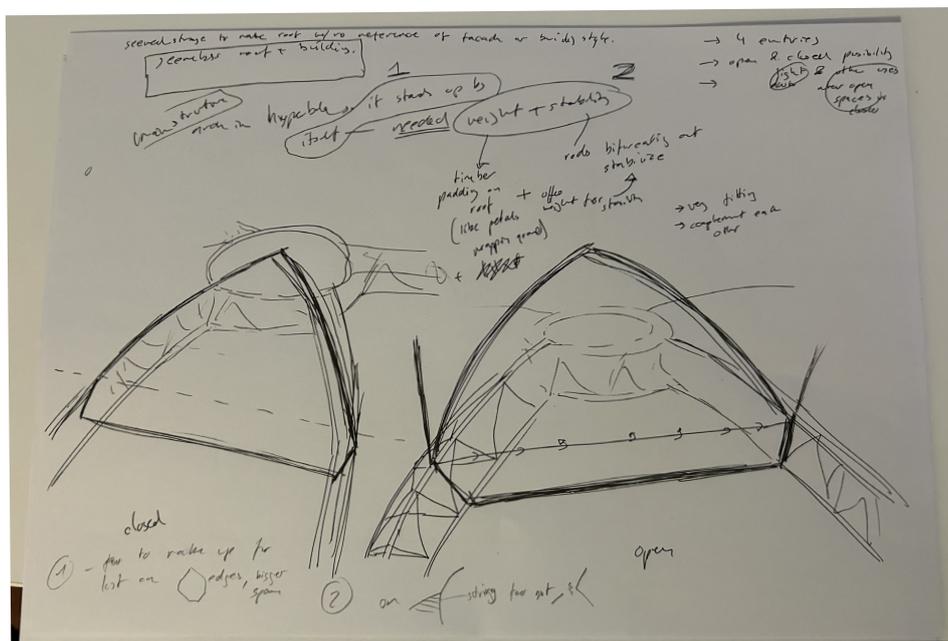
By having a continuous frame covering walls and ceiling, the roof can be molded over to create a seamless look. Why moving roof? Light penetration can be adjusted to taste, and depending on the circumstances and events the hall hosts. It has two modules containing 4 element each. The lower module is the one adjacent to the walls (module 1) and the top module which closes above the circle truss (module 2). It has an opening mechanisms, where pulling a string (threaded through the empty space of all 4 truss legs) flaps open all roof modules. Important to note that when the roof is open, no string is visible, so the light shining through has a regular pattern without any cabling obstruction.



Module 2 of open roof from above



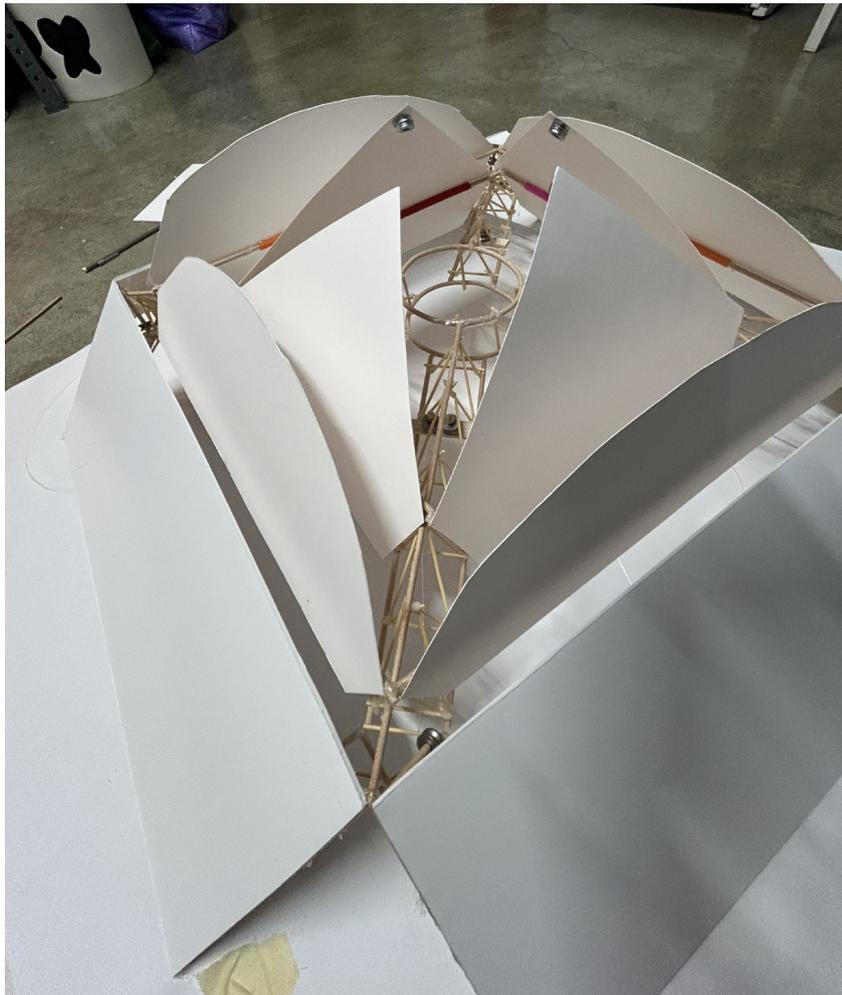
top module of closed roof from above



first idea of singular module shape (to allow for smooth rotation over an axis)



view from inside, while open, reveals toplight



full view of both open modules of roof