

Pockets Full of Sunshine

M6: Distribution

Eesha Nagpal, Emily Franco
Fundamentals of Computational Design, Spring 2022

Description

Given the site that we chose (shown in the image on the right), which is nestled in between Hunt Library and CFA, we were tasked with finding the purpose fore area that no longer has a large tree. We chose to create a space that offers connections to the ground while also growing from the ground. By using an undulating curve that draws viewers eye up, to the seating opportunities, the shaded spaces and the flexible zones for play under and over the curves the site is activated. The nature of the space frame and shaded devices allow for the sun to shine into shaded spaces at certain times of the day through the cut outs, however it is filtered and in specific zones that ensure that it is not to harsh. Within the space frame, there are LEDS that turn on at night and allow the structure to remain useable for people to come and study, lounge, meet up with friends and for children to continue playing on. There are also spaces for plantings in the niches that touch the ground. Overall, the structure reactivates the space to create a more useful zone for the CMU community to engage with as well.



Programmatic Day Render: The image shows the various ways users can come and sit on the structure, either on top in the sun or underneath in the shaded zones.



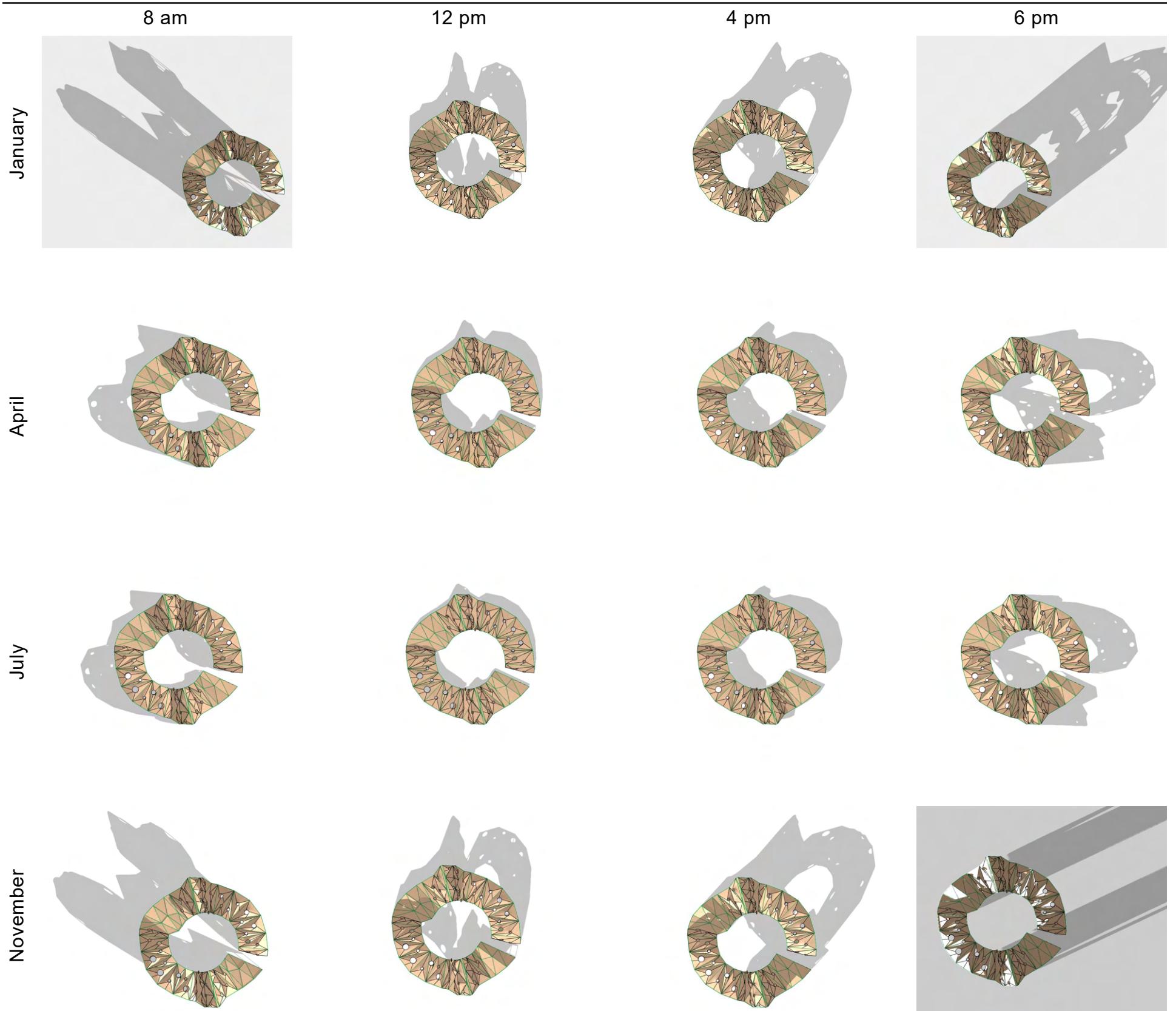
0 10' 25' 50' 100'

Site Plan: Located in the corner near CFA and Hunt Library one can see the size in relation and how it will reactivate the circle where the old tree was, as it is only lawn chairs now.

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Daylighting Studies: The studies demonstrate how the shadows the the structure will create during all seasons will offer a great deal of shade as without the strucutre not much consistent shade is offered.



Night Programmatic Render: This view shows the LED's within the two shading devices, which protects them from the elements and allows for the light to come through the holes. The planter is also evident at the is angle.

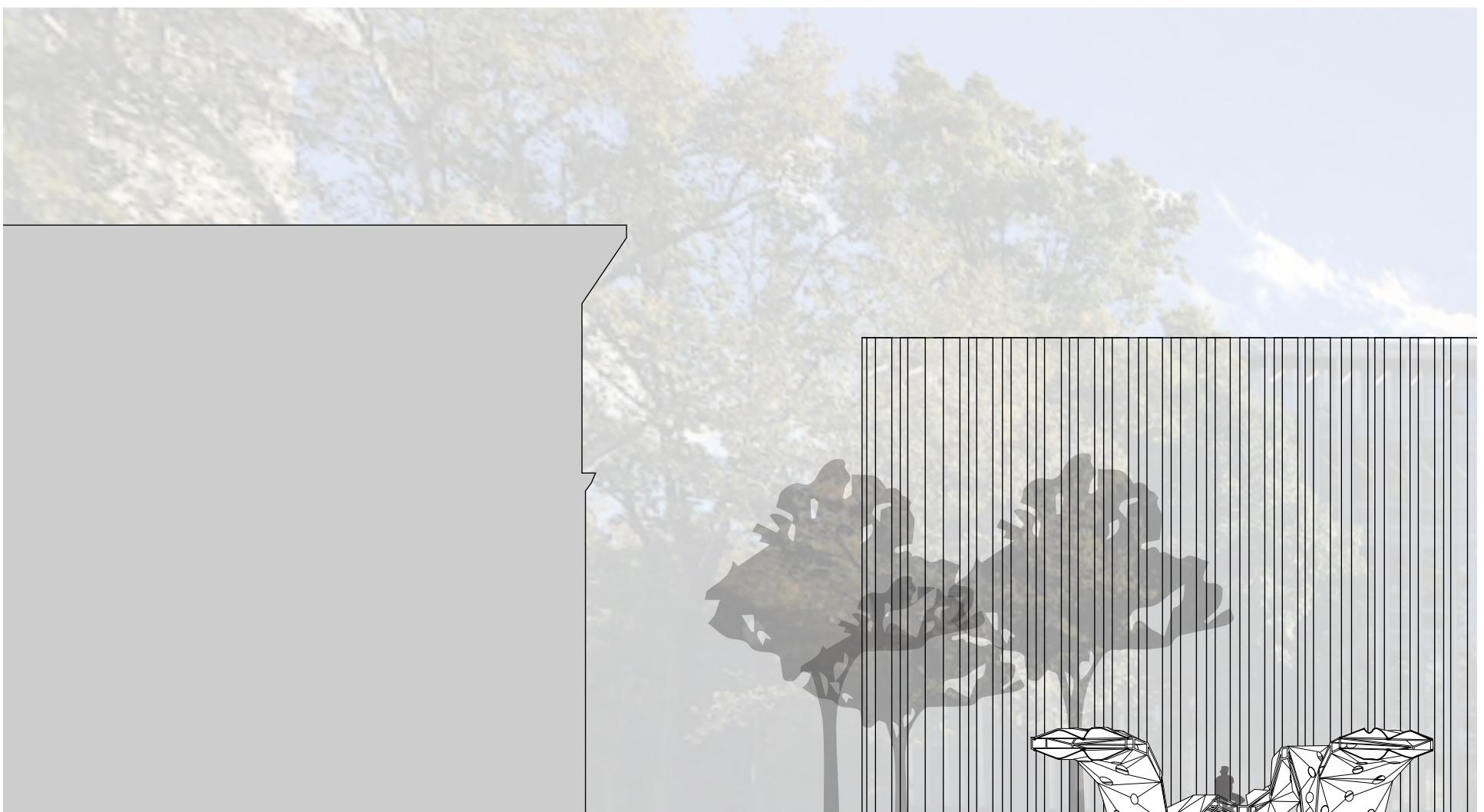
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Elevation: Above one can see the complexity of the structure in elevation with Hunt Library and CFA in the background.



Section: This helps explain the process of daylight as well as it shows how the top shading device allows for the sun to travel into the space frame through the holes reducing the amount of light and then the lower shading area reduces the light even more as it has to travel out of another set of holes. This helps allow for the shaded areas to remain shaded during majority of the day.

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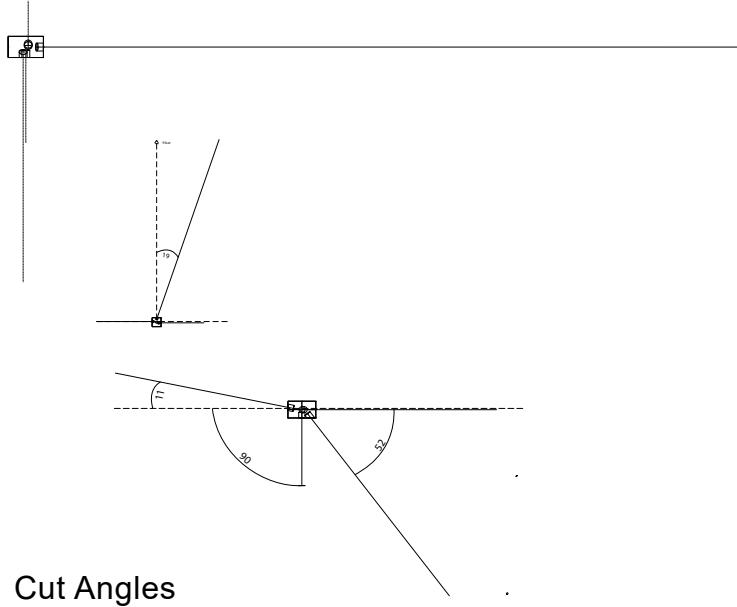
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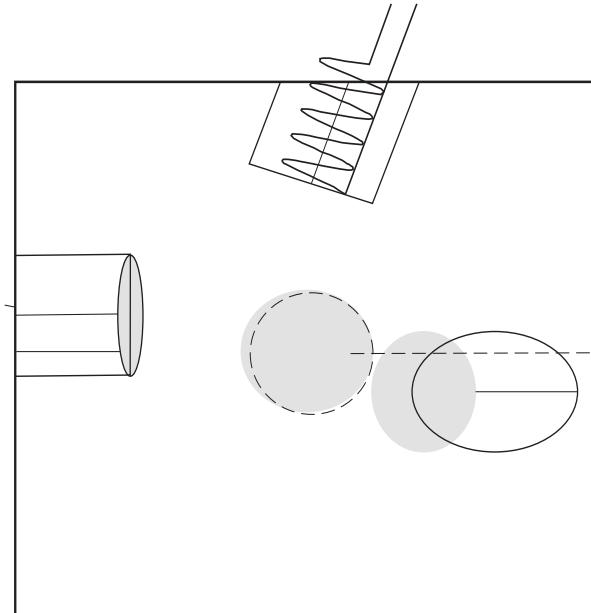


Exaggerated Daylight Sun Render: This render shows the cool and hot areas of the space through exaggerated yellow and blue zones to signify the shaded within the structure and the hotter sun receiving areas on top of the sun shades, that could potentially later be developed into solar panels.

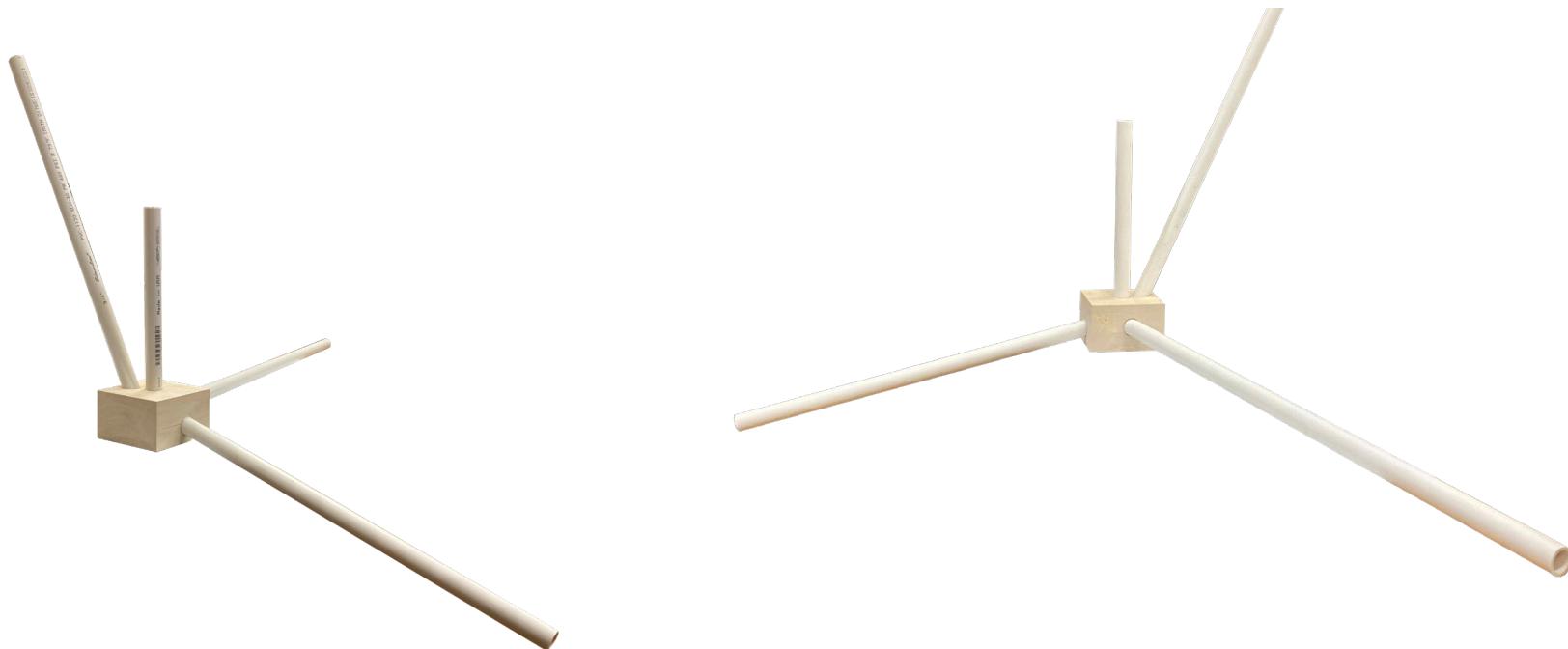
Fabrication



Cut Angles



Milled Block



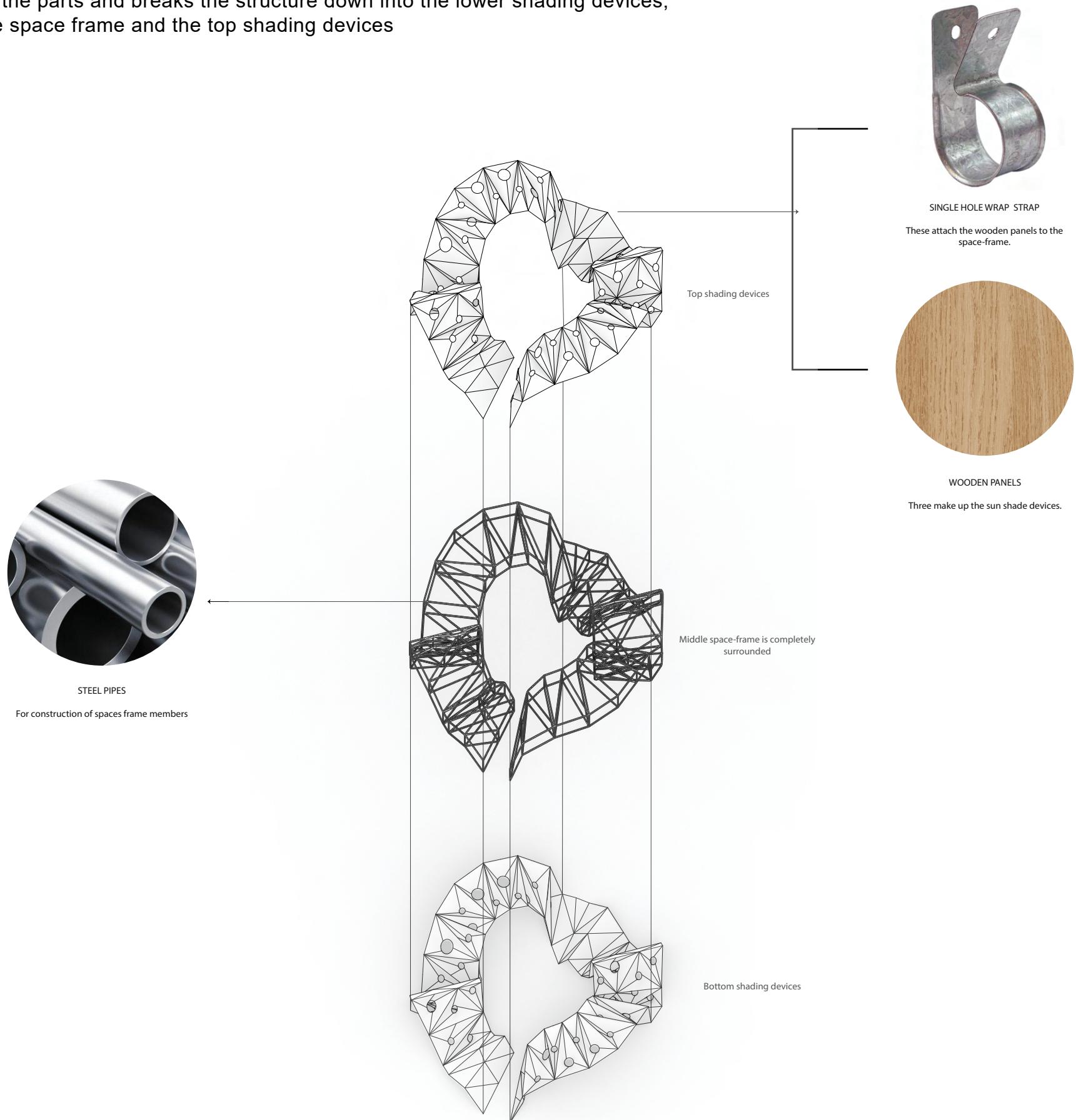
Model of Joint within Space Frame Structure helps show how these simplified connections could be made eventually.

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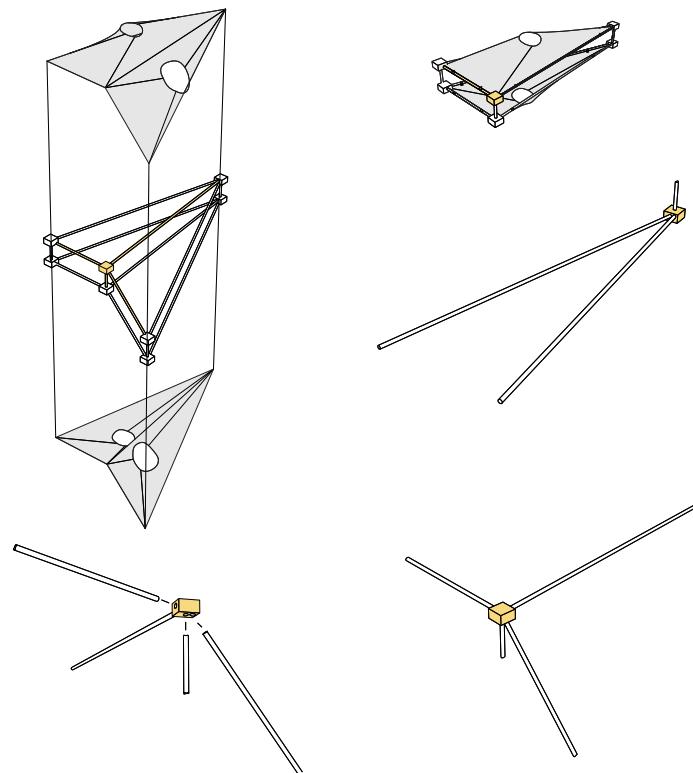
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Material Axonometric: This drawing helps explain the material qualities of all the parts and breaks the structure down into the lower shading devices, the space frame and the top shading devices



Assembly of shading device to space-frame.



Assembly of shading device.

