

Brick Bay Folly 2019 Submission

**The Wood Pavilion**



This design explores and aims to explicitly express the fundamental qualities of wood as an architectural material - **lightness and componentry.**

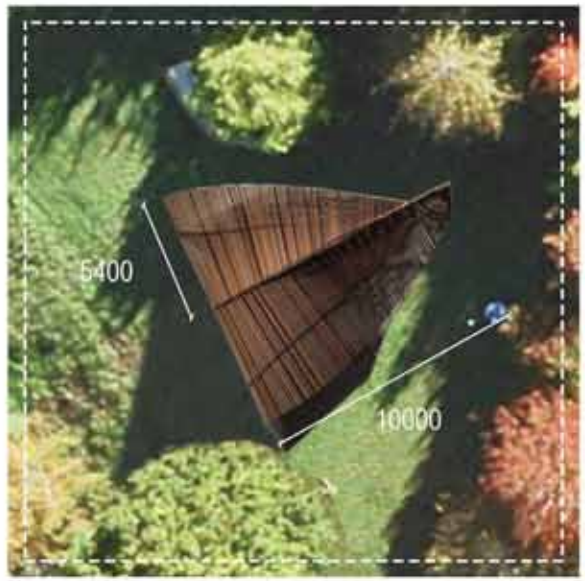
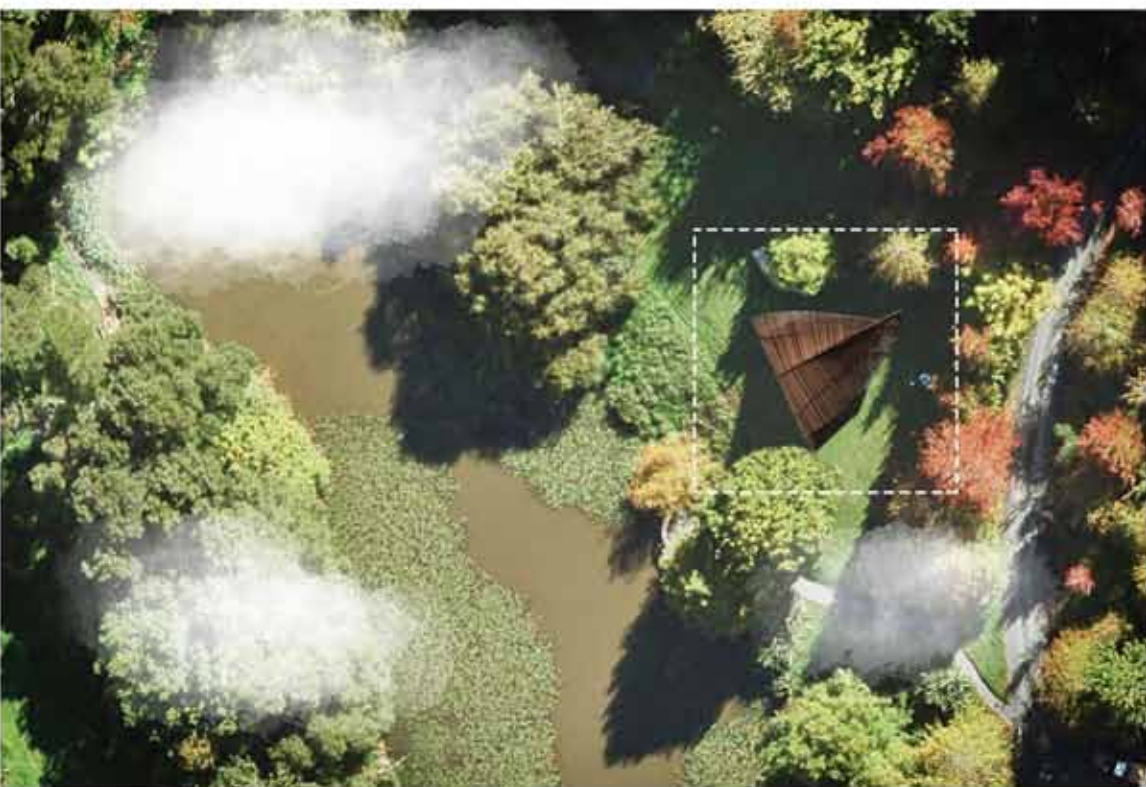
Free and unforgiving - released from the traditional horizontal and vertical arrangements of studs and nogs in domestic structures.

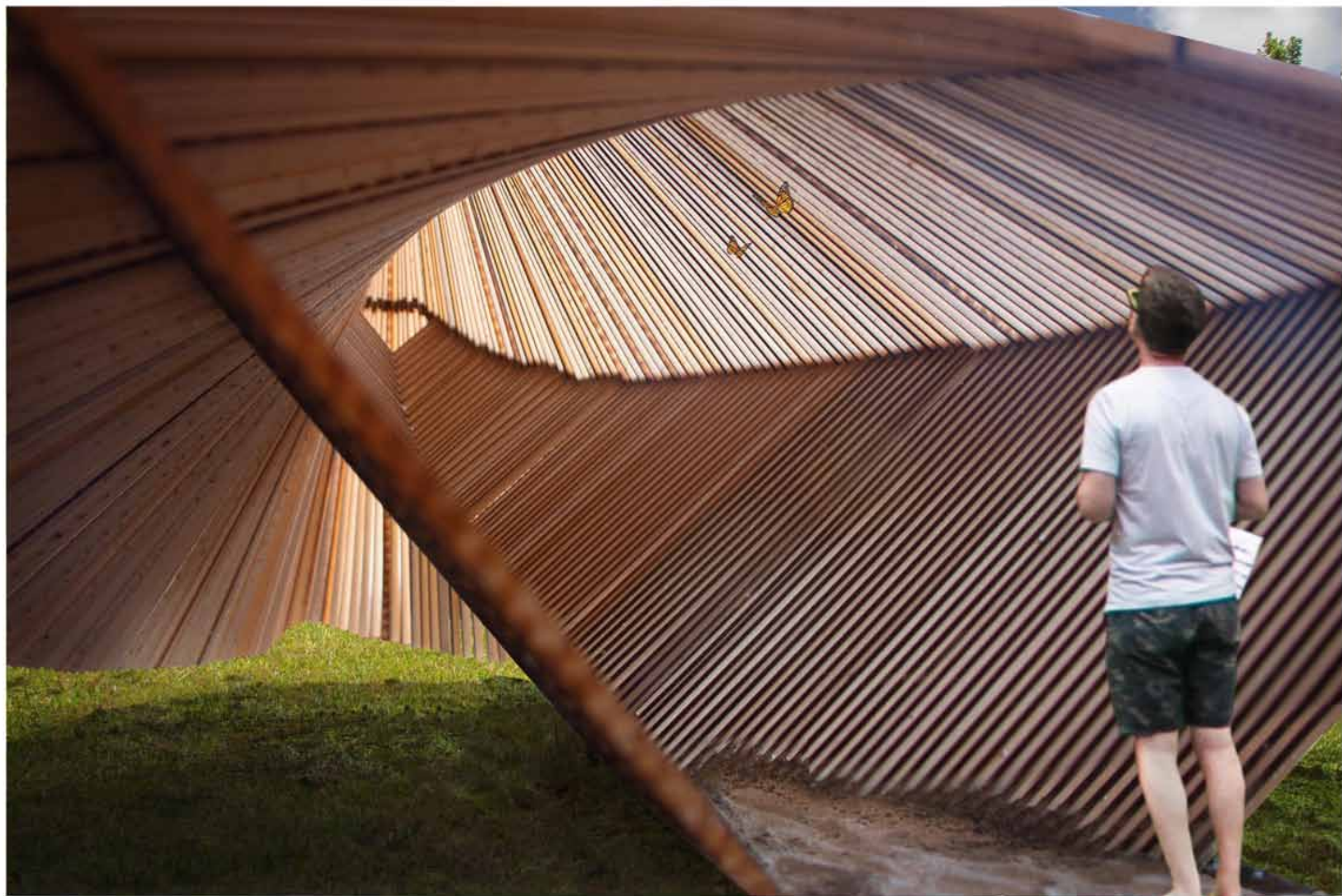
Contemplative or playful, a creature watching over the pond or a carcass of sort. The design becomes a quiet participant of the visitors' journey, encouraging them to dwell for a little longer under its shade, to realize the beautiful details of their surroundings that they may have missed.













## Ideation

One integral element that accompanies us throughout the sculpture journey are the exotic species of trees and the generous shading they provide. The shadows create natural rest stops that would bring people comfort and ease on a heated summer day. A very special space in my opinion as it subconsciously allows us to dwell for a little longer. We realise certain details of the surroundings and the sculptures that we may have missed. The creation of the design revolves around the idea of creating a space that allows and encourages the visitors to dwell.



This idea also made me wonder about overlooked elements of timber that may play an integral part in our everyday experience. I arrived at the timber structure of our domestic house, where the timber elements at the core are drowned under layers of cladding materials.

The members themselves are arranged in a rigid manner. Horizontal and vertical, very stable and stationary – fit for purpose. But how would the timber members behave if the context was different? What if they were free to express themselves in a sculpture park? The characteristics of timber that differentiate itself from other materials (such as concrete) were reflected upon. The first characteristic being sustainability, as a natural material that grows from an organic source. The second is its lightness and the third being the element of componentry, the idea of the collective whole, the notion of many members coming together to support each other to form one structure. These essential characteristics became the fundamental core for further explorations.





## Process of exploration

The decision was made to use the typical 90 x 45mm solid timber that would make up the studs and nogs of the house. To rearrange them in a sense for them to stand for something else.

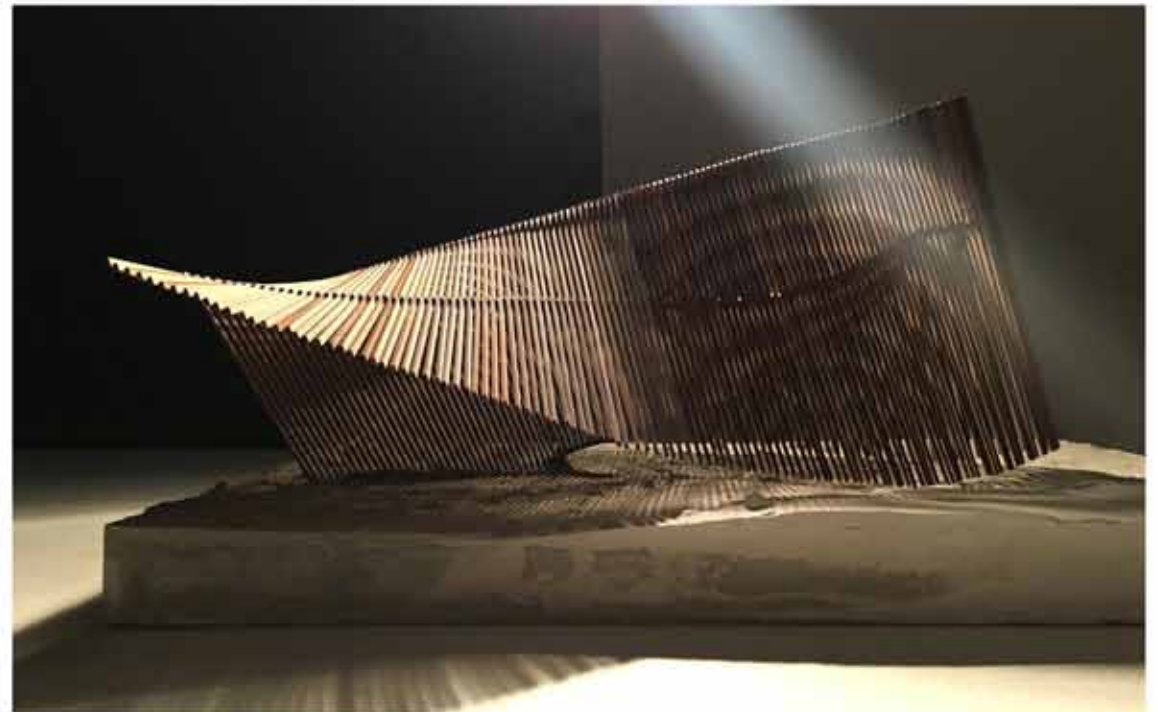
The rearrangement began with perceiving the horizontal and vertical positions as the end state for the members and visualizing the journey that they took to get there. Multiple models were made to explore this movement.

These models would capture key moments which were developed upon and eventually informing the final design.



## Final design

The final design is an intersection between sculpture and architecture. It is a structure with an immersive spatial experience of light and materiality. Sloped at 20 degrees, the interior is open for exploration. Hopefully becoming a companion of the visitors, a quiet witness of the stories and memories created in the park. It could be a parent on the opposite end of the shore, peeking through the leaves and telling their kids about the great protector of the pond. It could be a young couple, one lying on the other's lap, underneath the shelter and laughing at the zebra shadows casted on their white shirts. Or it could be a lone traveller sitting within the belly of the beast and enjoying the framed view, as a butterfly lands on one of the lilies. As it rests along the gentle slope with its wings soaring across the ground, the wood pavilion will become a delightful destination for the dwellers of the park.



## Colour

The three colours that I have decided to use are from the Resene Exterior Woodcare series, precisely Resene Woodsman Wood Oil Stains – Nutmeg (WW16), Timberland (WW0815) and Treehouse (WD037).

The decision to use stains rather than paint is due to the penetrating quality of the stains, which better retains the texture and grain of the timber.

The stain is to be applied on the border of all studs. Creating a colour palette in total of 4 colours - the fourth being the original colour of the timber.

The lower support studs are all in the darker stain, while the top studs will be a mix of Nutmeg, Timberland and Treehouse.

The subtle changes in colour creates a playful rhythm, effectively infusing another layer of detail and interest to the project.



## Description of Manufacture and Installation

Being fully aware of the need for consultation of other professionals on this matter, this is my best try at describing the process with the experience of building a 1:20 physical model of the pavilion.

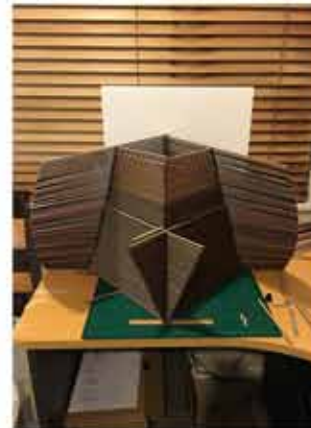
### 1:20 Model Procedure:

The 400 studs for the 1:20 model were laser cut from MDF boards to precise lengths. They were stacked together and glued in place. After the whole pavilion was assembled, it was rotated and held in place as the plaster and cement mix was poured and dried. The front of the model was intentionally embedded to hold up the cantilevering tail.

### Things learnt and thoughts:

- The underbelly studs must be numbered after they are cut, as the length of each is different.
  - The studs in the real project would also be stacked together like the 1:20 model.
- However due to the size of the real pavilion, assemblage should be broken into modular parts for the ease of transportation and crane-lifting.
- Jigs would be needed for the stacking of the studs to ensure they are at the right angles to each other.
  - In the real project the front of the pavilion probably won't be imbedded. (Consultation needed with engineer.)

(Real project procedure on the next page.)



# Description of Manufacture and Installation

## Real Project Procedure:

### 1. Concrete // Foundation:

Ground is surveyed and cleared.

Reinforced concrete foundation installed and poured.

### 2. Timber // Preparation:

- Wood is bought from local source and transported to workshop.

- The studs then sorted into piles according to the different lengths' requirements.

- Measure and cut the studs accordingly. (There is also the possibility of laser cutting the studs, one possible choice is Precision Laser Cutting Ltd.)

- Since the bottom supporting studs would be of different lengths they shall be numbered for easy reference during assemblage.

- The studs 5.4meter studs would be sorted and stacked into 3 piles, each being stained a different colour around the border.

- The short studs in pairs of different lengths would all be stained with Treehouse.

- After drying, the assemblage can begin.

### 3. Timber // Assemblage:

- Similar to the 1:20 model, the studs would lie on top of one another, screwed in place before the next stud goes on.

- A jig would most likely be needed to ensure all studs are placed at the right angles to each other.

- Due to the size, the pavilion shall be broken down and assembled in at least 6 modular parts. This also reduces the difficulty and likelihood of distortion of the frame when lifted into position by the crane.

- The issue of transport is a challenge. As the structure spans over 10m at one point and over 2m tall, it would be difficult to transport on the road. Assemblage may have to take place on-site, or in an open area near site where transport of the modular parts do not have to go on regular roads.

### 4. Timber // Erection on site:

- Each modular part would be placed with the aid of a crane to the correct location and secured in place.

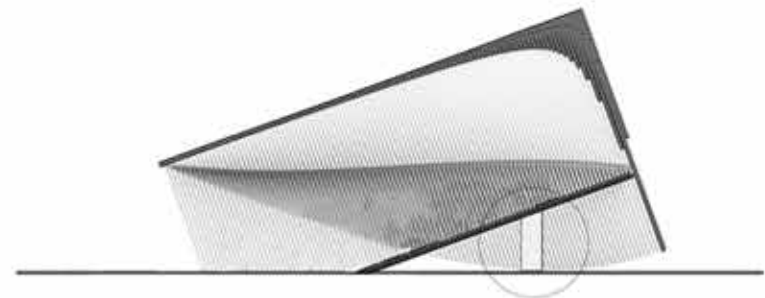
- Each of the modular part would follow piece by piece.

- Diagonal studs might be nailed in temporarily on each modular part to provide more bracing and prevent distortion as it gets lifted into place.

### Note on foundation and design:

- Understanding that the park may not want a big reinforced concrete slab installed for a temporary structure, with the possibility of the foundation going quite deep due to the cantilever feature of the design.

- The design can be slightly altered. An additional support column can be added on the underside of the cantilevering part of the design. This would distribute the load and avoid a deep foundation. The timber column though shall be coated in mirror panels, to make it 'invisible' and dematerialize, becoming a pleasant surprise for the visitors who decide to explore a little more.





End: