

FLEXIBLE FORMS

The Landscape Resource Centre (LRC) is located in Queen's Wood at Leeds Beckett University, Headingley Campus. The grounds are made up of woodlands, a semi managed garden and spaces left to grow wild. The LRC Shed is currently cramped, cold, and has leaks due to weather over time.

To make the most of the small space, while also making sure it can be used by the many students and staff of the university, this proposal uses a system of timber columns and sliding walls inspired by Japanese woodwork and joinery to create multi-purpose spaces which can change depending on current needs. It is also important to be as sustainable as possible through the use of timber from the existing building, local timber, and materials no longer used from another nearby building.



Landscape Resource Centre



Legend: LRC (green square), Shed (dark green square), Different sections of woodland (dotted green square), Specific trees to use (green circle), Road to university (arrow)

CONSTRAINTS

Fence north of shed cannot be removed and sudden drop-off in south direction limits size of expansion.

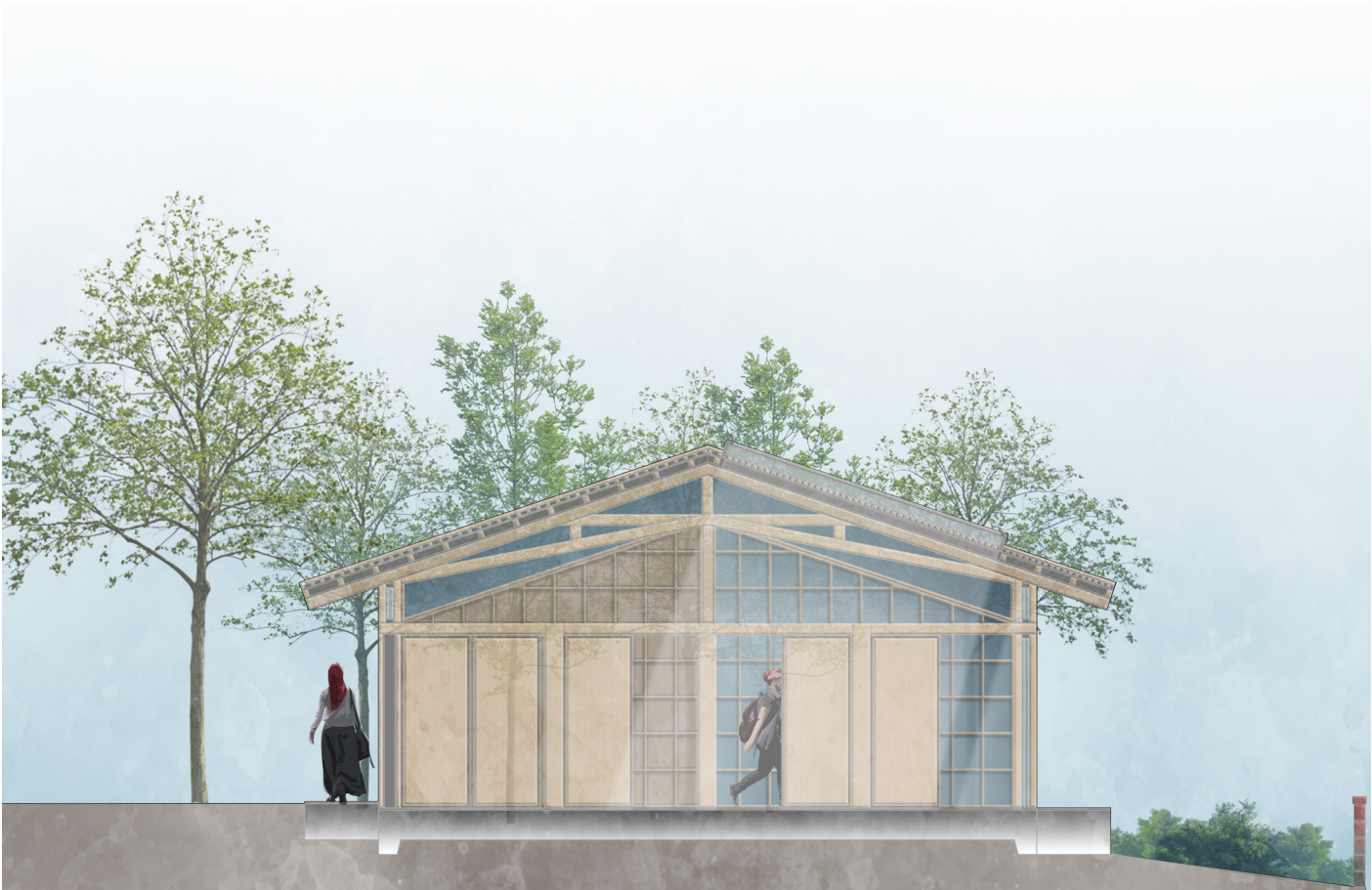
Certain equipment needs to be stored in the shed as they are used in the LRC requiring a designated and easily accessible space.

OPPORTUNITIES

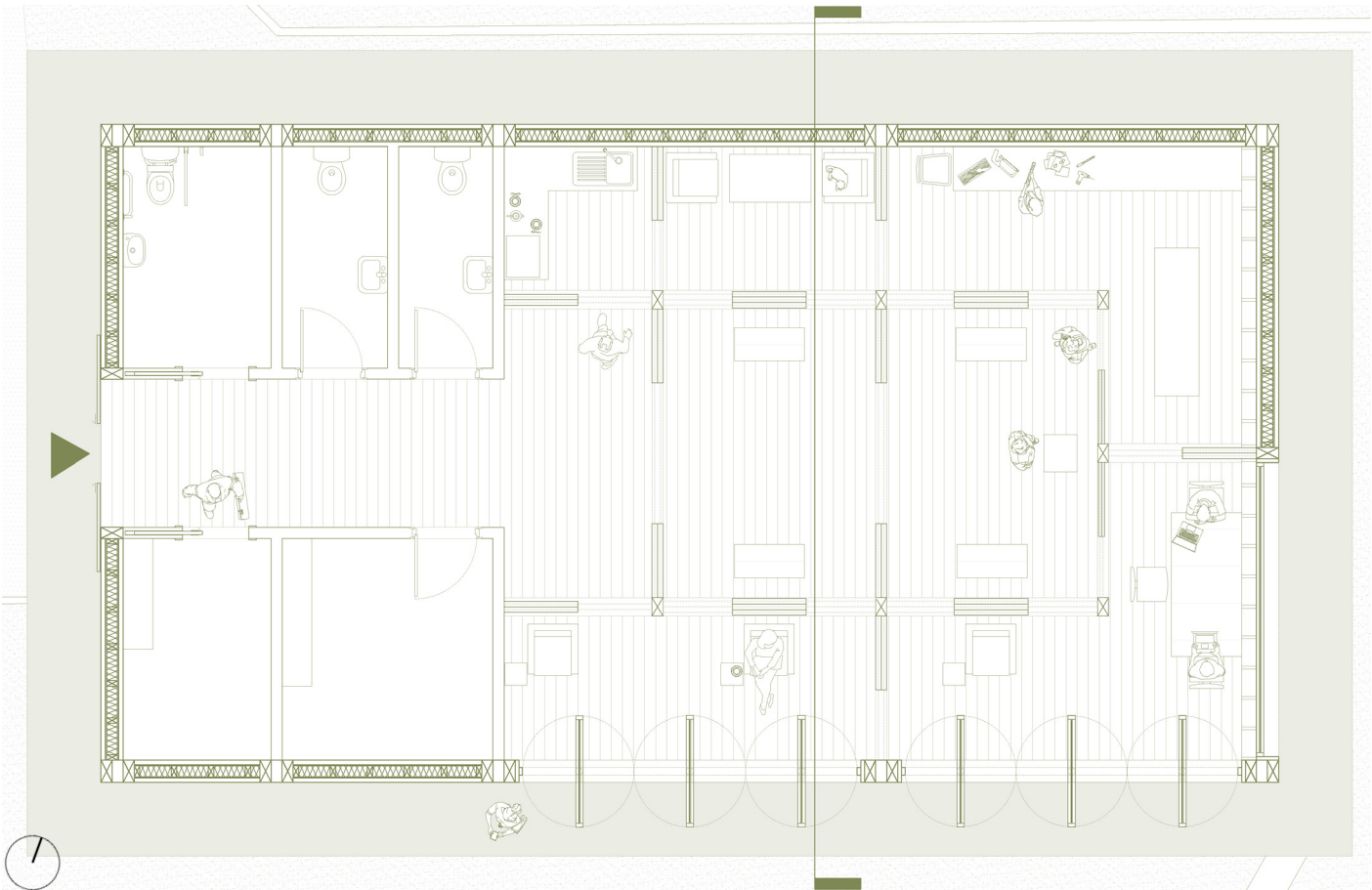
Beautiful view of the greenery on the south side of the shed which is not currently visible due to no windows and overgrown bushes.

Oak, cherry, and ash from surrounding woodlands encouraging active woodland management and making the project more sustainable.

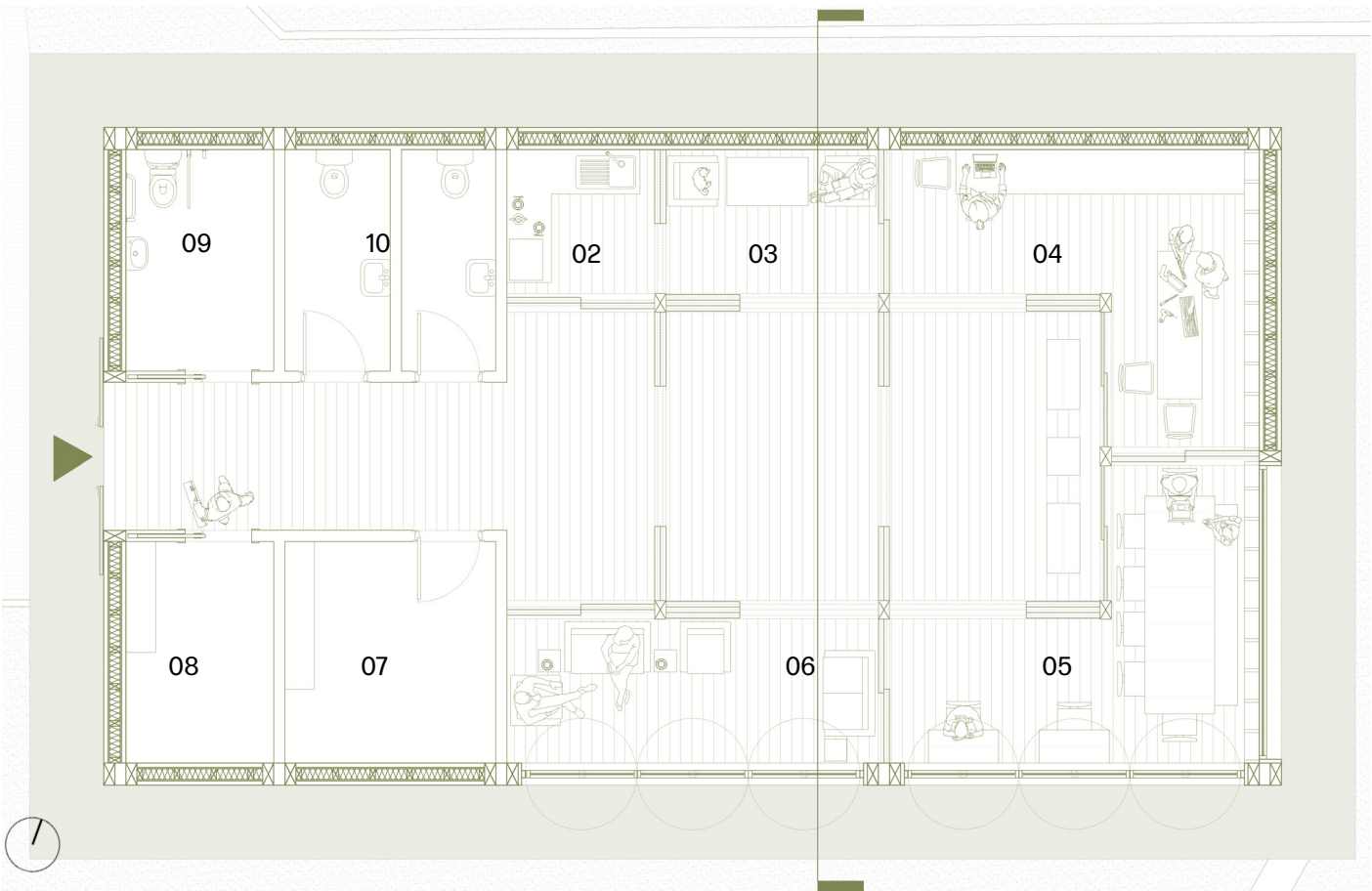
Use of SIP panels which are no longer used from a nearby tower.



1:100 short section



1:100 floor plan (open)



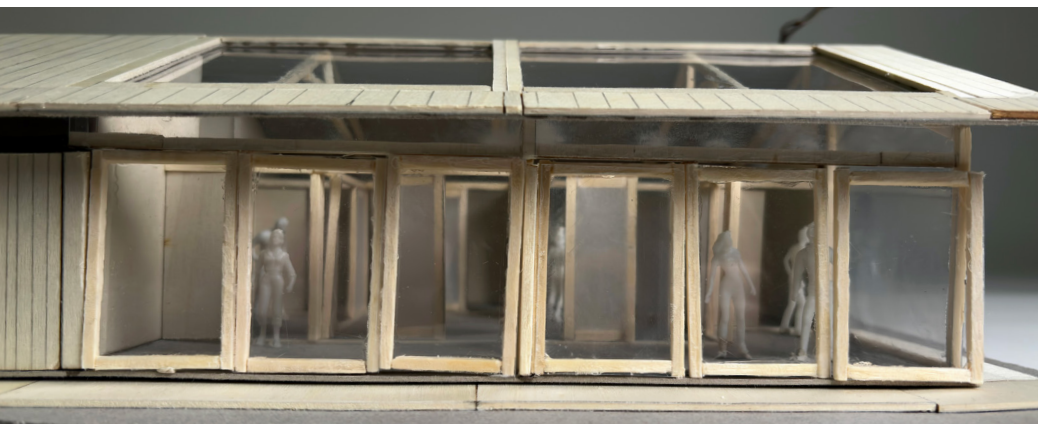
1:100 floor plan (closed)



1:50 model



Open



Closed

- 01 Open room
- 02 Kitchenette
- 03 Eating space
- 04 Workshop
- 05 Classroom/study area
- 06 Seating area
- 07 Furniture & workshop storage
- 08 Garden tools storag
- 09 Accessible toilet
- 10 Unisex toilets

1:50 MODEL MATERIALITY

Facade - Balsa wood
Glass - Acetate
Floors - Card

TACTILE APPROACH

In response to the smaller scale of the building, this project uses a tactile and exploratory design process grounded in sketching and model-making. Engaging directly with materials allows for experimenting with different iterations, exploration of form, and attention to the details.

Materiality and sustainability are aspects of great importance, especially in a compact space, as it impacts the environmental performance. The LRC is located in the heart of woodlands with local wildlife which makes this of greater significance. This is what set the tone and direction of the project.

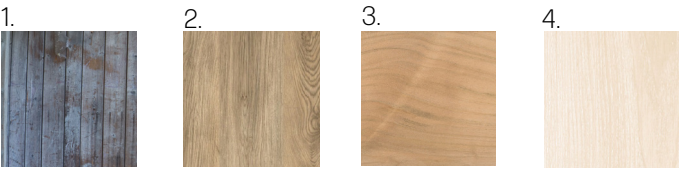
There was an opportunity of using SIP panels which were going to be discarded from a tower nearby. To be able to integrate it into the design, a puzzle system was to be used with columns used as the connecting piece and for structural purposes. This puzzle system is further explored to see how it can make the most out of the space.



1:10 model of SIPs

Local Timber

Being located in woodlands give a unique opportunity of using local timber. The woodlands are made up of a variety of trees which give choice to what can be used depending on their properties.

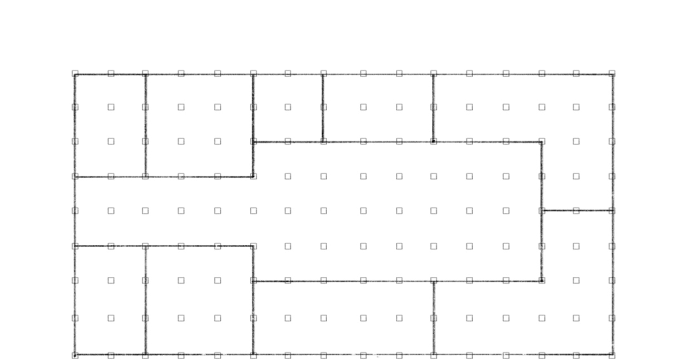


- 1. Existing cladding - Any usable wood will be used for cladding. It will be need to be sanded and varnished first to wanted finish and colour.
- 2. Oak - Used for the timber structure (columns and beams) as it is strong and durable.
- 3. Cherry - Used for structure and interior as it is moderately durable and easy to work with. Can use the tree that was felled on campus.
- 4. Ash - Used for interior as not weather proof and prone to rot when wet. Strong and takes well to staining and polishing.

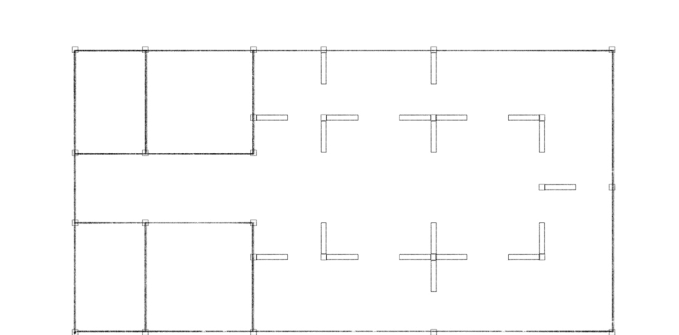
Flexible Grid

Starting with a small, cramped building made it important that the proposal maximises the limited space and cater to changing needs to allow as many people to use the space.

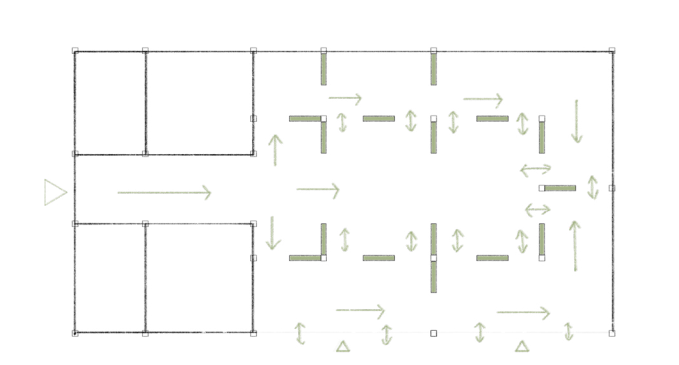
This led to creating a system which can be changed and flexible depending on current needs but also does not require lots of space. It uses a structural grid to divide into core areas which can be transformed into different combinations depending on how much space is needed for different activities.



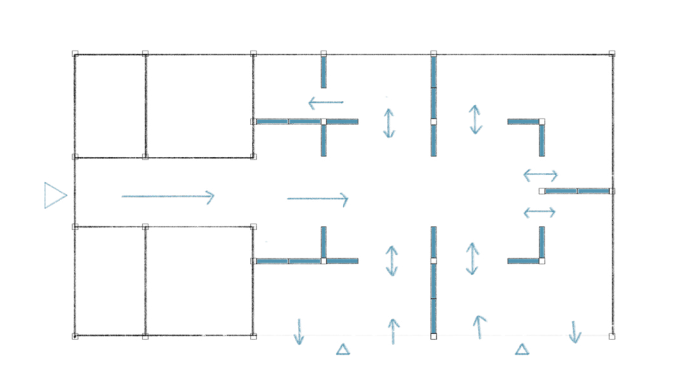
Divided into spaces uses grid



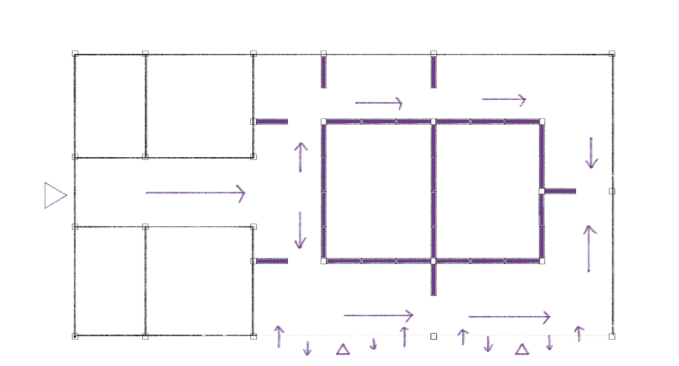
Some spaces are made flexible



Circulation (open)



Circulation (partially open)

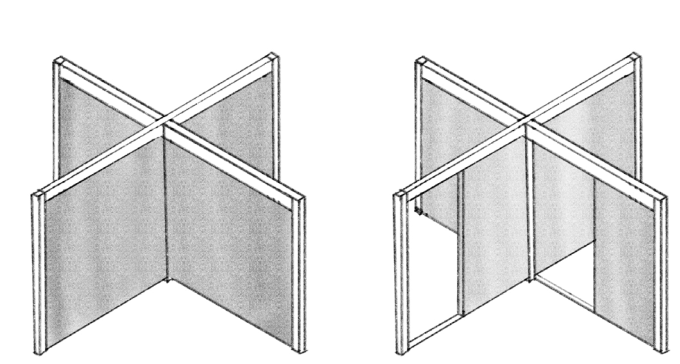


Circulation (closed)

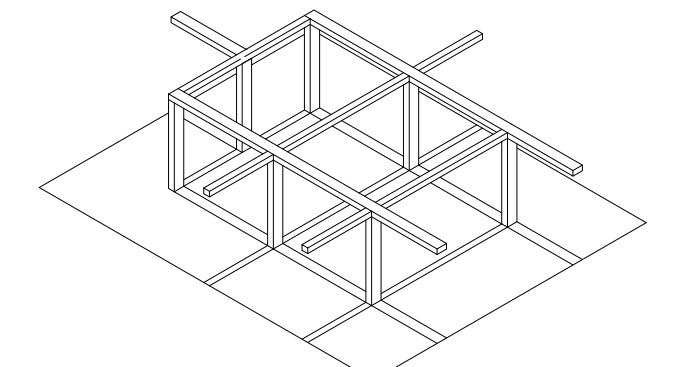
Shifting Structure

After dividing the spaces, it was then time to come up with a way to change the rooms that is simple and can be done by anyone, staff or students.

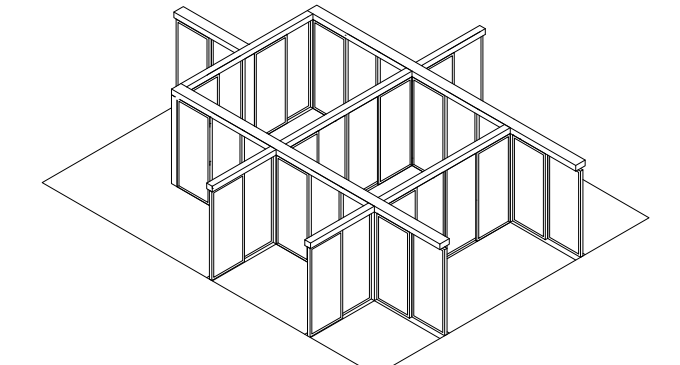
Inspired by Japanese architecture and woodworking, 'shoji' resulted in using sliding walls in combination with beams and columns to create a structure which can shift and change easily. A 1:10 model of this system was made to further understand how it would come together and function.



Sliding walls system with beams



Columns and beams following grid



Columns, beams, and sliding walls



1:10 model

Concept Model

A 1:100 model was made to physically test the system of movable walls, columns, and beams, providing a tactile way to explore how the system might function in real life. This was crucial as it was the first time seeing how the whole system works together rather than one standalone area.

This hands-on approach allowed for experimenting with different combinations of open and closed space, and to see how the space would interact with natural light. This informed what use each space would be best suited for.



1:100 model



1.(open)



1.(closed)



2.(open)



2.(closed)



3.(open)

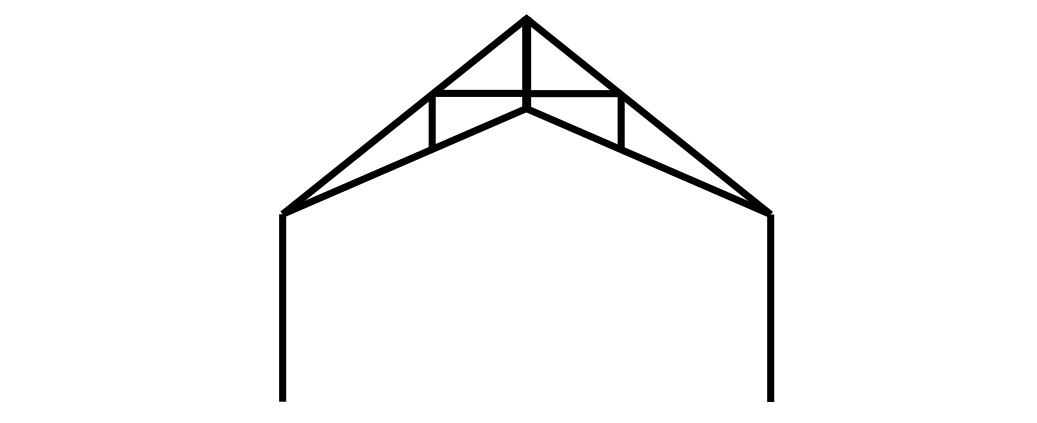


3.(closed)

Lifting Space

The movable walls added spatial flexibility and made the space feel more open horizontally, but to create as open of a space as possible, vertical space needed to be taken into consideration.

This resulted in exploring timber trusses and designing a shape which will compliment and harmonise with the grid of walls and columns while also making the space feel open as soon as someone walks in.



Drawing of truss shape



1:100 sketch model of truss



Trusses in final model



Final 1:50 model