ARCHITECTURE

# PORTFOLIO

Neaon Chaipatamanont

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Selected work from 2018-2019

2019

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Neaon Chaipatamanont

# 2018

# STUDIO SEMESTER 1

DESIGN INTEGRATION LAB : MATERIALS
‘Observatory For The Blind’

An observatory for the blind is obliged to respect the undesirable stigma surrounding the disabled and not draw attention to it. Instead, it should embrace their other enhanced senses. The observatory takes advantage of the lack of vision of their target visitors to blur the boundary between the interior and exterior, and to draw attention to various elements of the environment that may have been taken for granted otherwise.

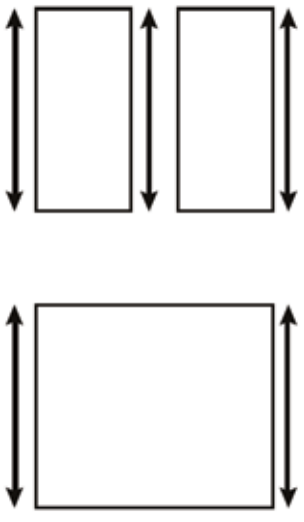
Neaon Chaipatamanont

Waves Observatory

This project is essentially created with the intention of providing the new experience for the users with vision lost and everyone else who pay visit the Cockatoo Island. Observatory has intensified the natural elements of chosen site with the used of timber studs. By designing the public building, the project extends into producing a very open atmosphere as a welcoming sign and the structure of the interiors allows the blinds to guide themselves around the building. It holds av warm and familiarity environment, yet explorative and exciting which are the main factors that are conveyed throughout the building.

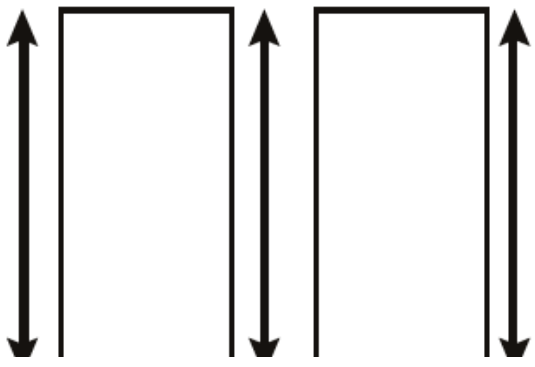
**Transparency**

Establishing the character of the timber studs by using the placement of the studs to blur the boundary between the building and the natural elements of the site.



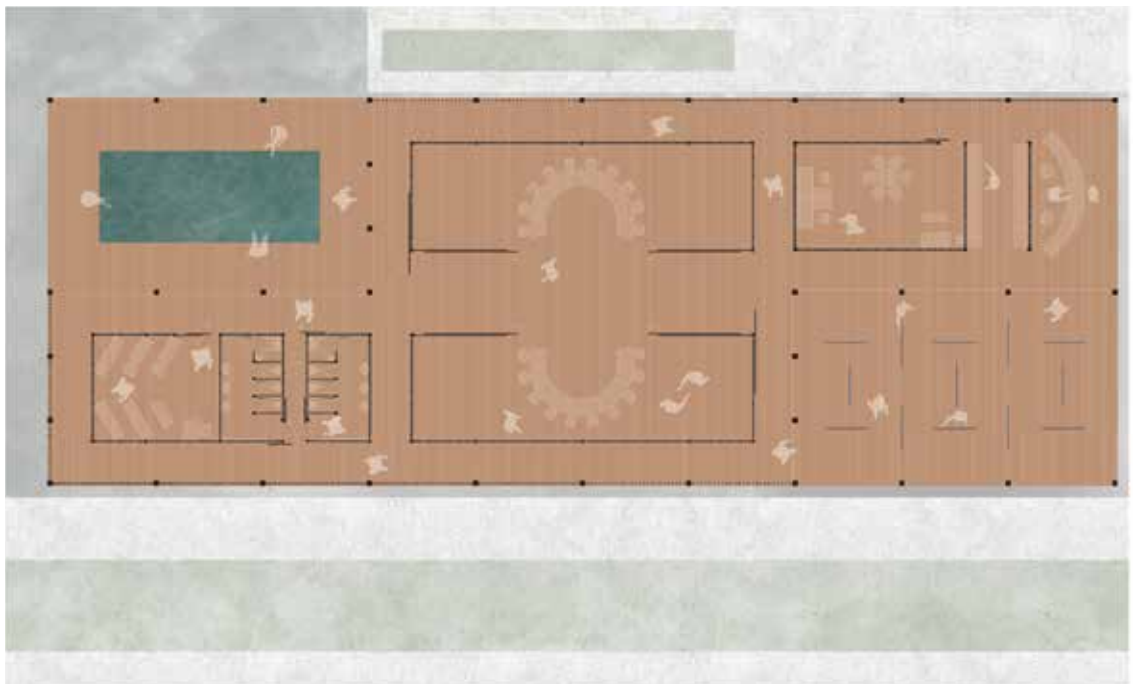
**Alternative Pathway**

Inspired by how Japanese architecture manipulate the room shape and size, making them more flexible by using the sliding screen and giving the choice of pathway for the visitors to explore.



**Special Feature**

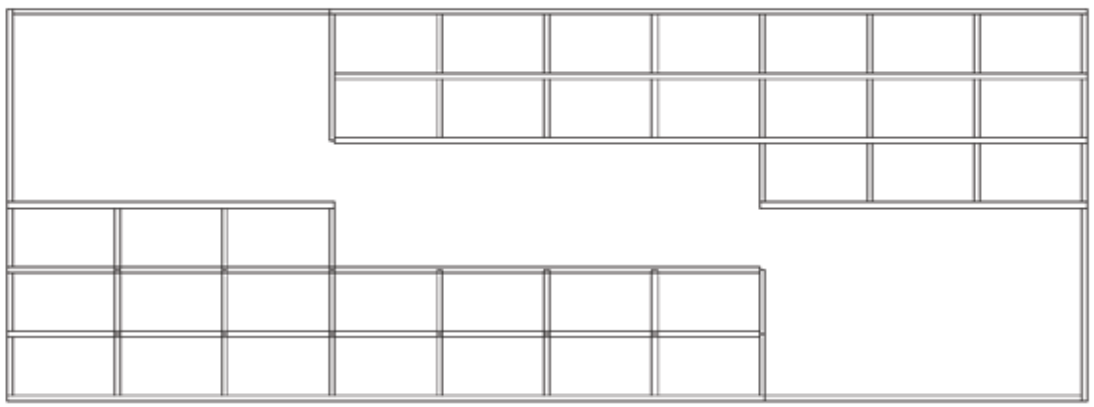
The building incorporates layered charred timber panel that helps intensified the strength of the smell of “charred timber panels” located in the Wind Observatory. The charred timber has been used for the entrances to identified openings within the



The floor plan was drawn by my partner for the design we did together.

## Floor Plan

A Single floor plan that adequately fits within the ramp and provides multiple entrances that will allow visitors to enter and explore in their own way from all directions giving that welcoming and freedom atmosphere.



Roof Plan Structure

## Roof Plan

The design of the roof is made with varying spatial differences between the timber studs, according to how public/private the space below is. The roof and the wall has cohesive arrangement of timber studs. A more dense arrangement provides privacy and closure to the space, while a less dense arrangement allows the space to be more open, and therefore more public.

Image Source : https://insideretail.asia/2015/04/09/world-class-emquartier-bangkok-unveiled/

# Algorithm Architecture

Semester 2 : 2018

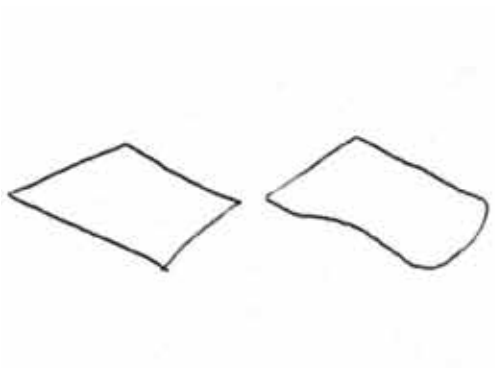
**Brief :** This subject is focus on using **Grasshopper Software** to build the 3D model of selected precedent building, which later on the grasshopper skills is use to create your own grasshopper script for building design.

EMQUARTIER shopping centre

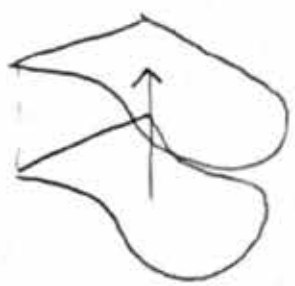
## Case Study

Architect: Leeser architetcure
Date : May 2015
Location : Bangkok, Thailand
Purpose : Shopping Centre

## Approach for the script of building transformation



create rectangular based using rectan-gle tool then possi-bly create the box in order to create the curvy line that are able to control the shape with sets of parameters



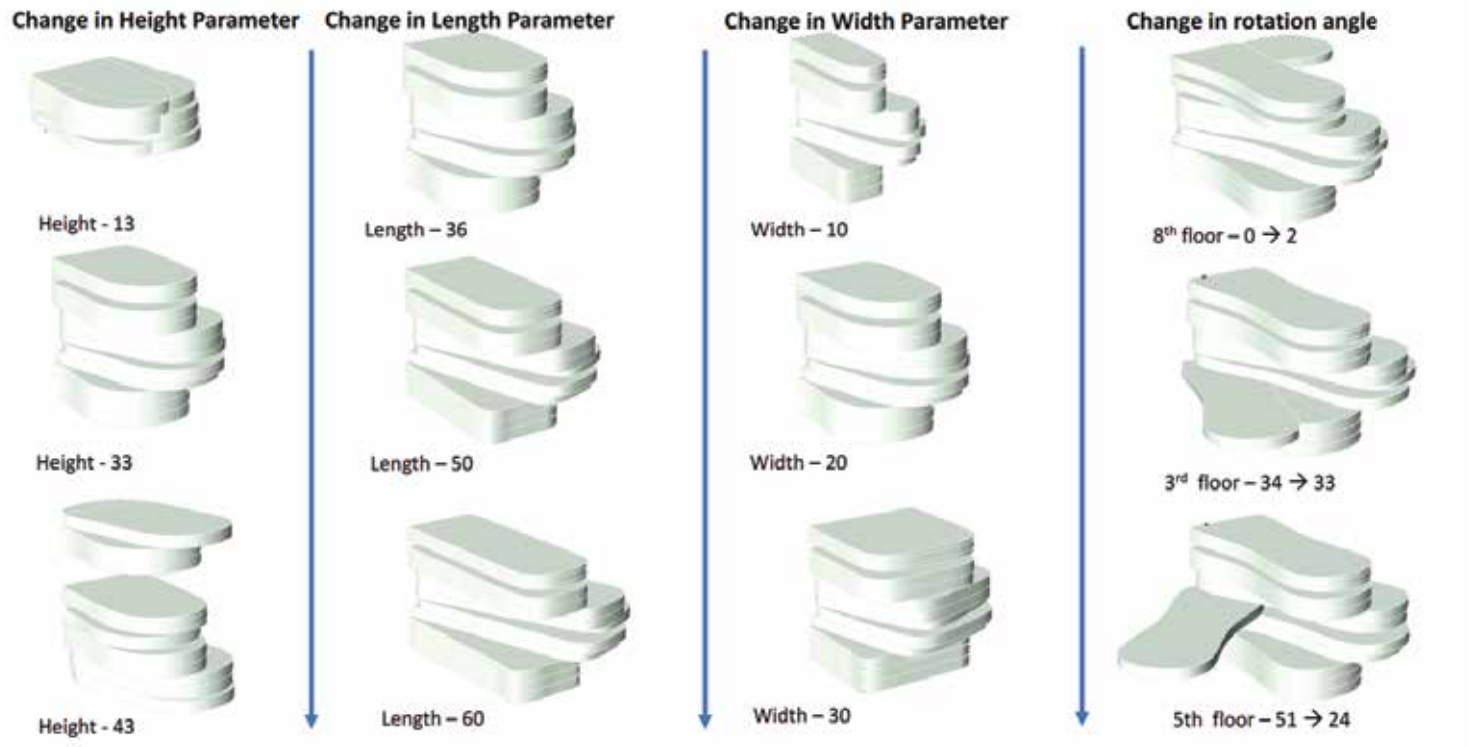
After the curve is created the use move command in ‘z’ direction. Before using the loft command to create surface.

the surface is create d as one whole shape of the building via ‘loft; command .

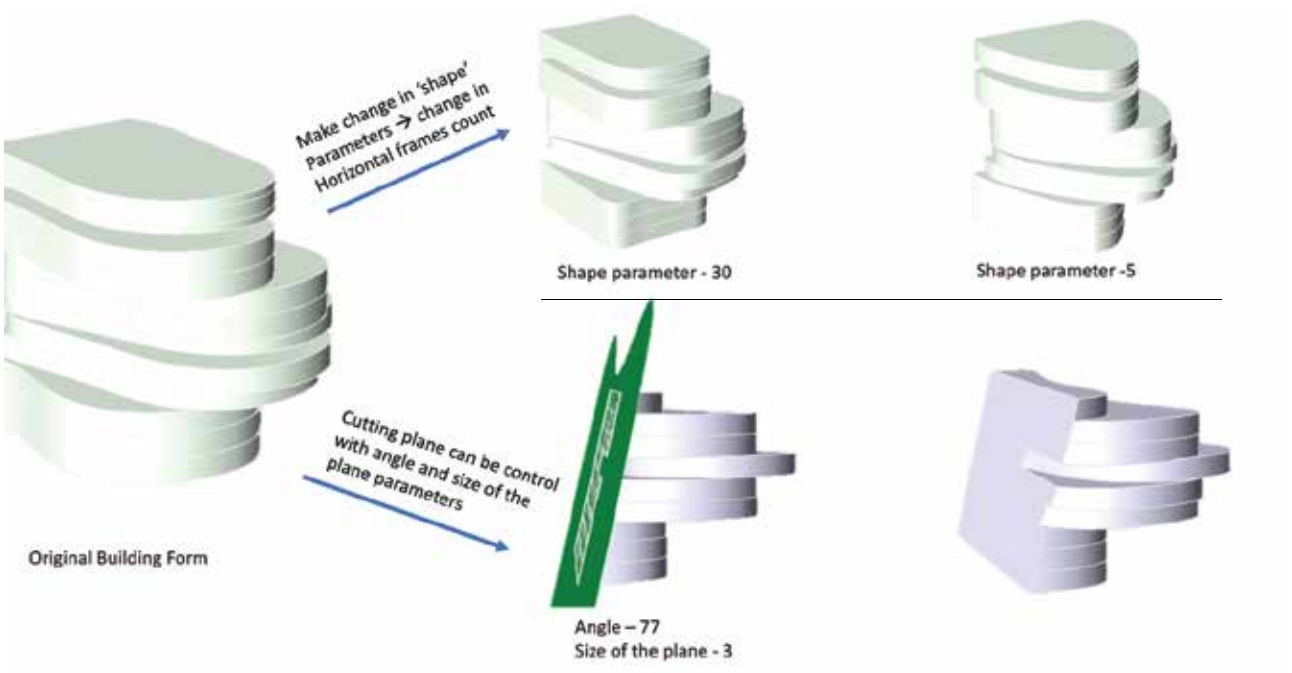
the surface is created as one whole shape of the building via ‘loft; command . Then use ‘contours’ command to generate the floor plates. (11th floors)

Split the floors using Split Surface and list each floor plate in list items.Manipulate the shape using the previous parameters.

## CONDITIONING



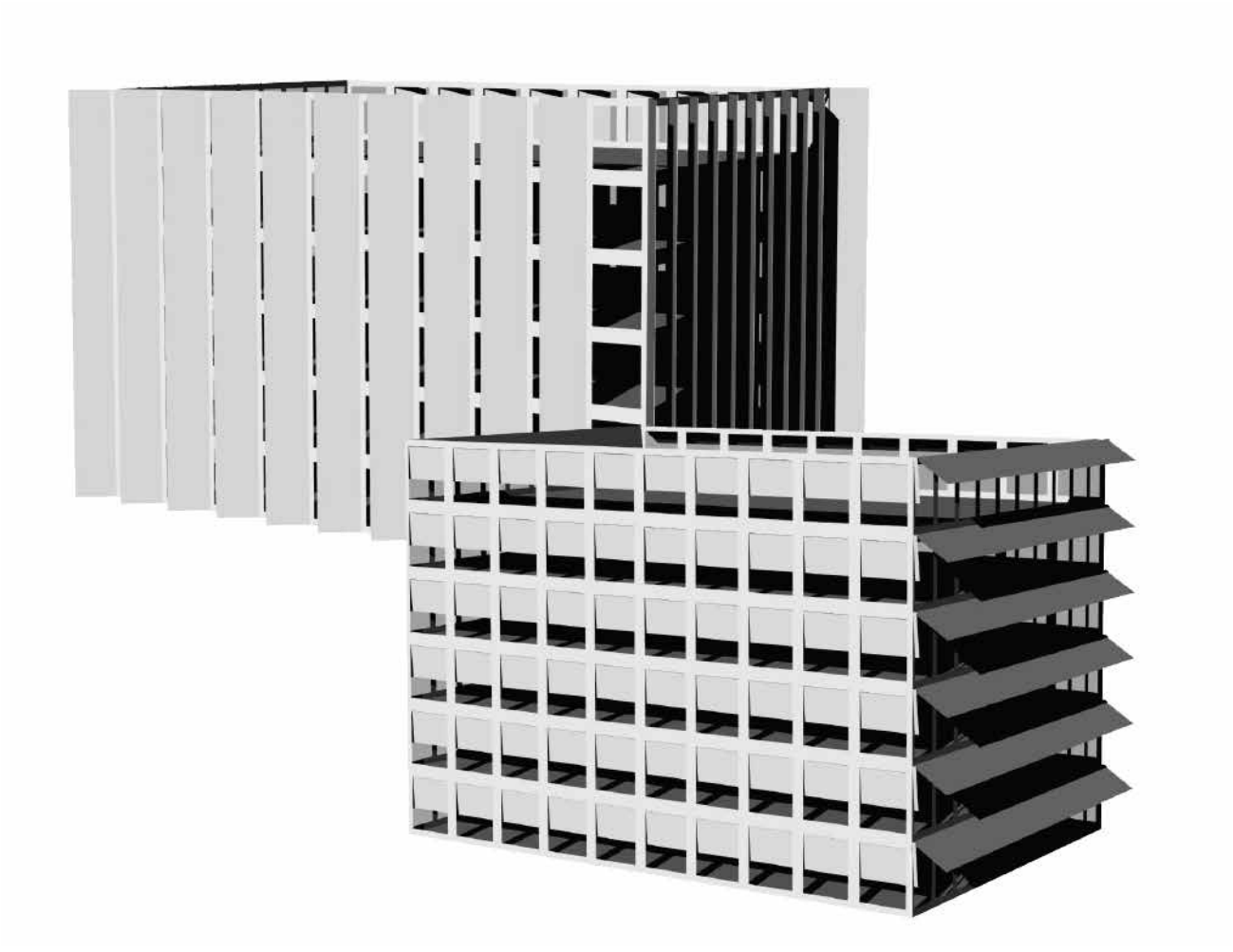

## VERSIONING



# **Adaptive** Solar Facade

Assessment 3
Algorithm Architecture

**Brief** : Use Grasshopper to create the tool for architecture design that could be useful when 3d modelling.



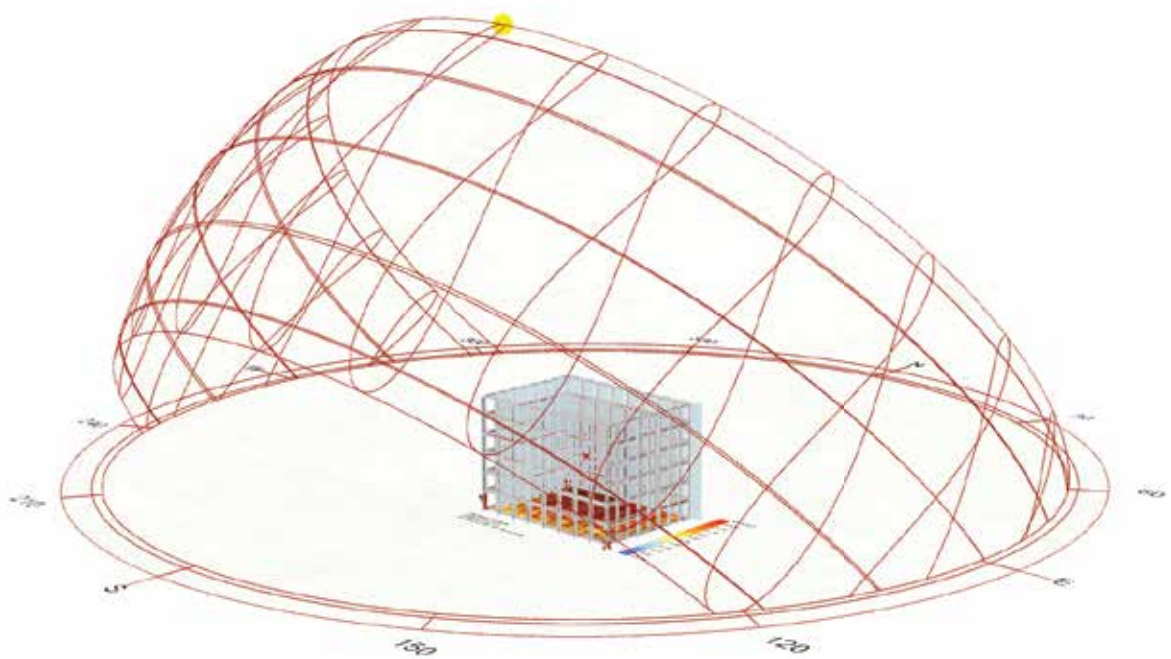
Daylighting is a significant element in designing a building and its envelope. The sunlight that enters the building can give both lighting and heat which in commercial building only the certain amount of sunlight is needed. There are many reasons to the desire to control daylighting as it can cause the excessive solar gain and may result in high cooling energy consumption.

Neaon Chaipatamanont

# 01

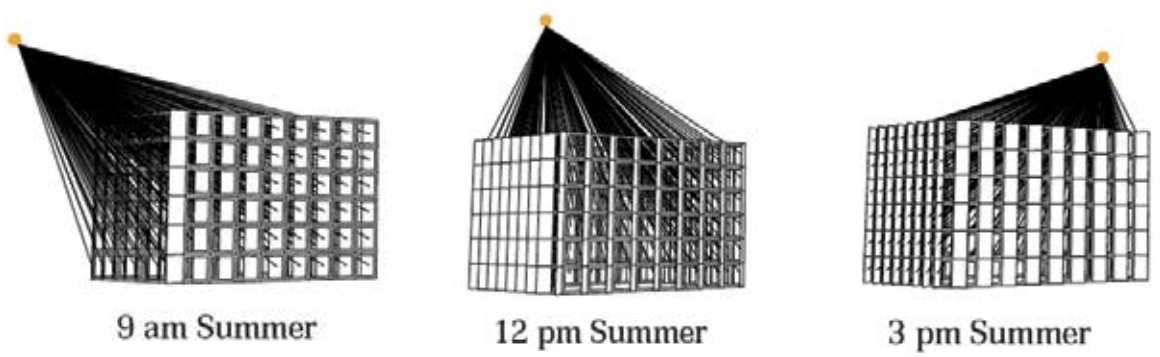
## Typology

Verticle Louvres



The first typology is thhe verticle louvres help protecting the sun at the sun azimuthh angle. The adaptation of the louvres helps minimising the unnecessary sunlighht for the buildinjg and this is an example of the typology using the summer in London as a scheme

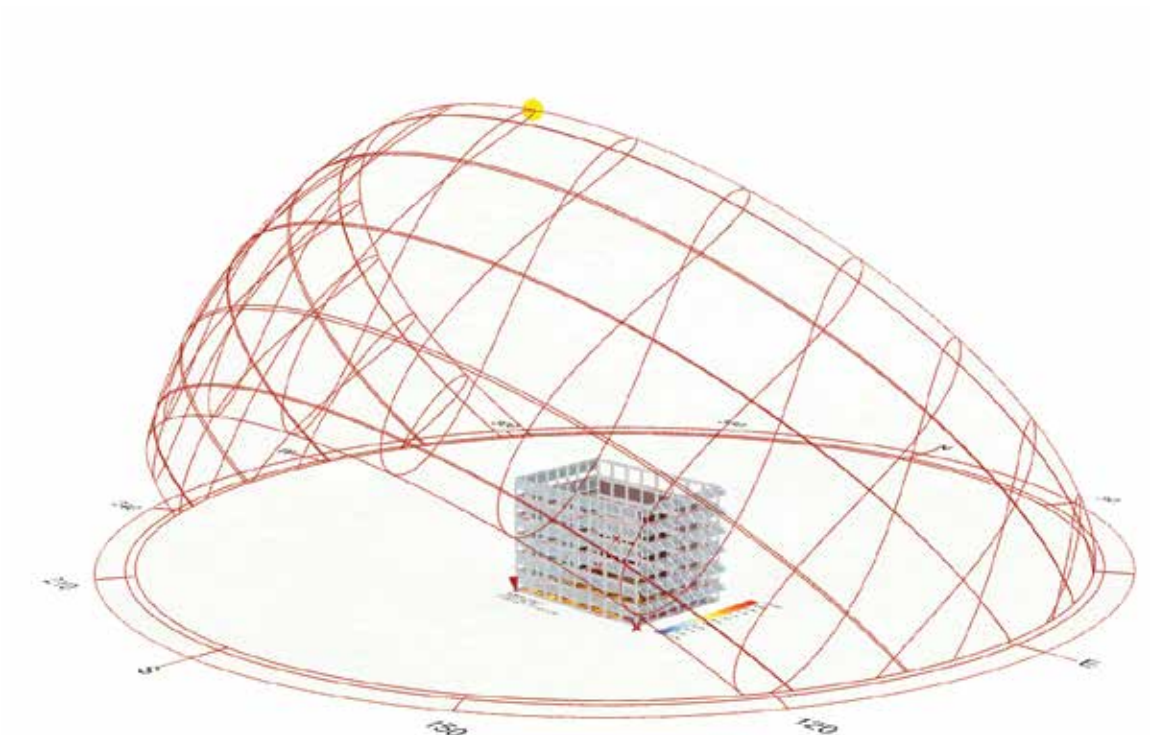
Louvres Rotation



# 0 2

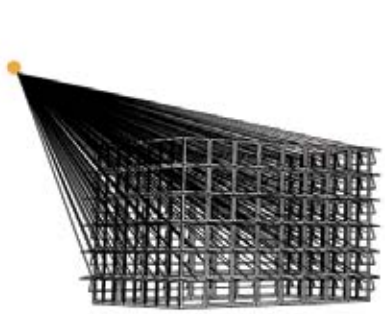
## Typology

Horizontal Louvres



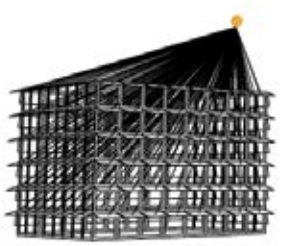
Tis horizontal louvres helps protecting the sun at the sun altitude angle. The adaptation of the louvres helps minimising the unnecessary sunlighht for the buildinjg and this is an example of the typology using the summer in London as a scheme.

Louvres Rotation



9 am Summer

12 pm Summer

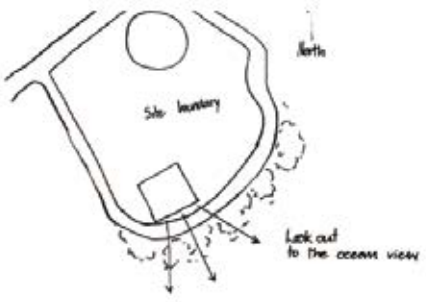


3 pm Summer

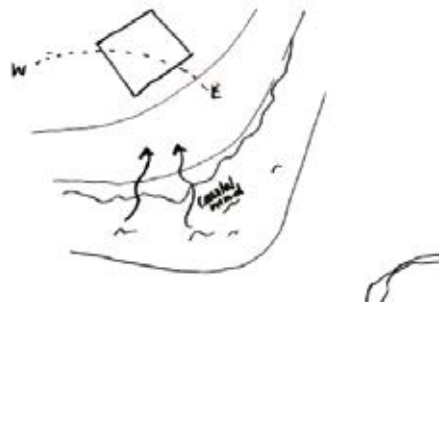
# ARCHITECTURAL TECHNOLOGIES

Semester 2 : 2018

**Brief :** Aim of this task is to design a “House Of Celebration” in a chosen location around New South Wales.For this project ,the design was for Little Manly Point in Manly. The design needs to incorporate passive design strategy and emphasis on the construction method

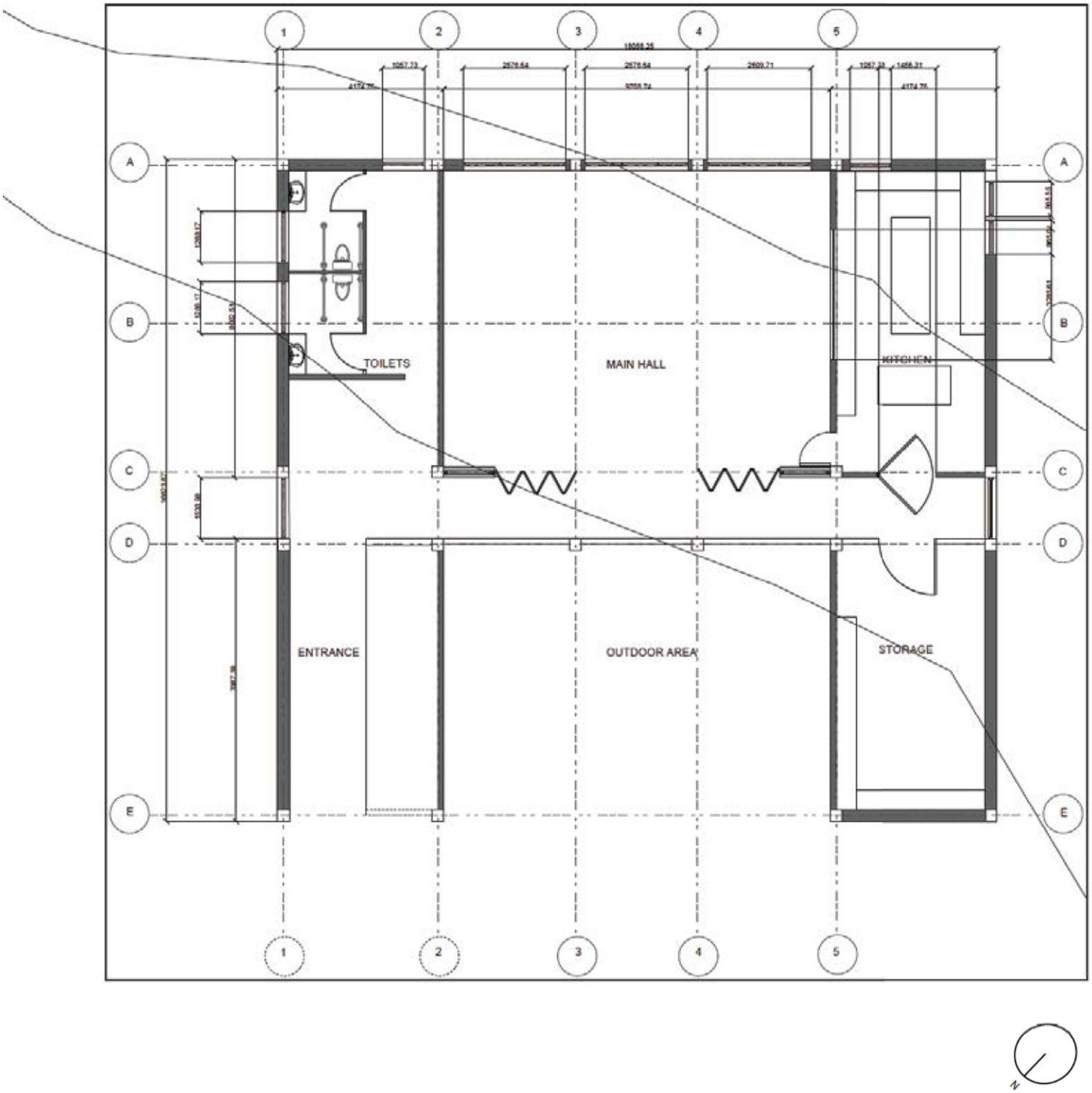



- Hide in the edge of the site to captured the the ocean view and giving the exlusive feels to the building eventhough it is a public use space.
- Stable Foundation that allows the building to be carried by the ground
- Aligned the building to the contour lines.

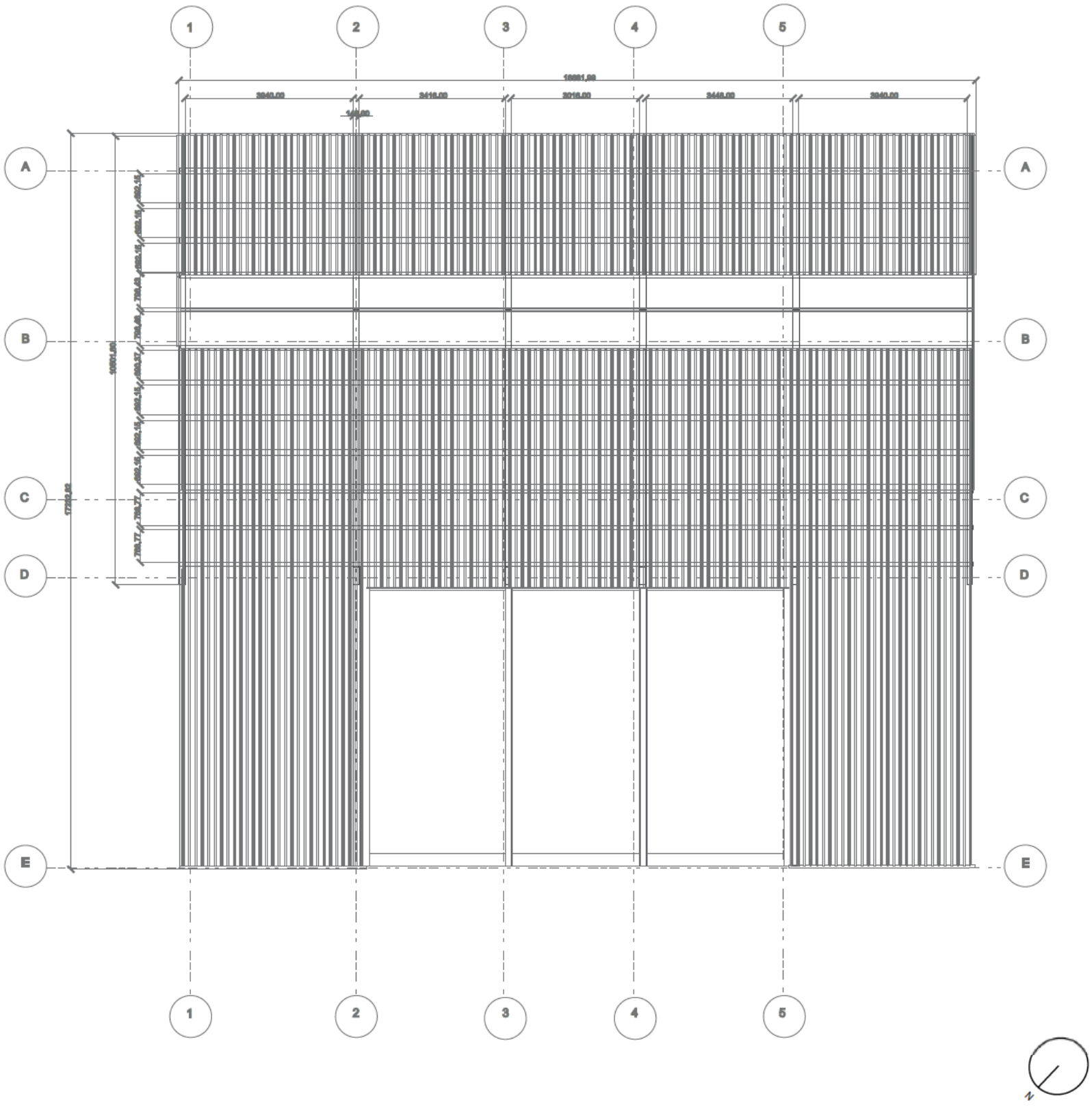


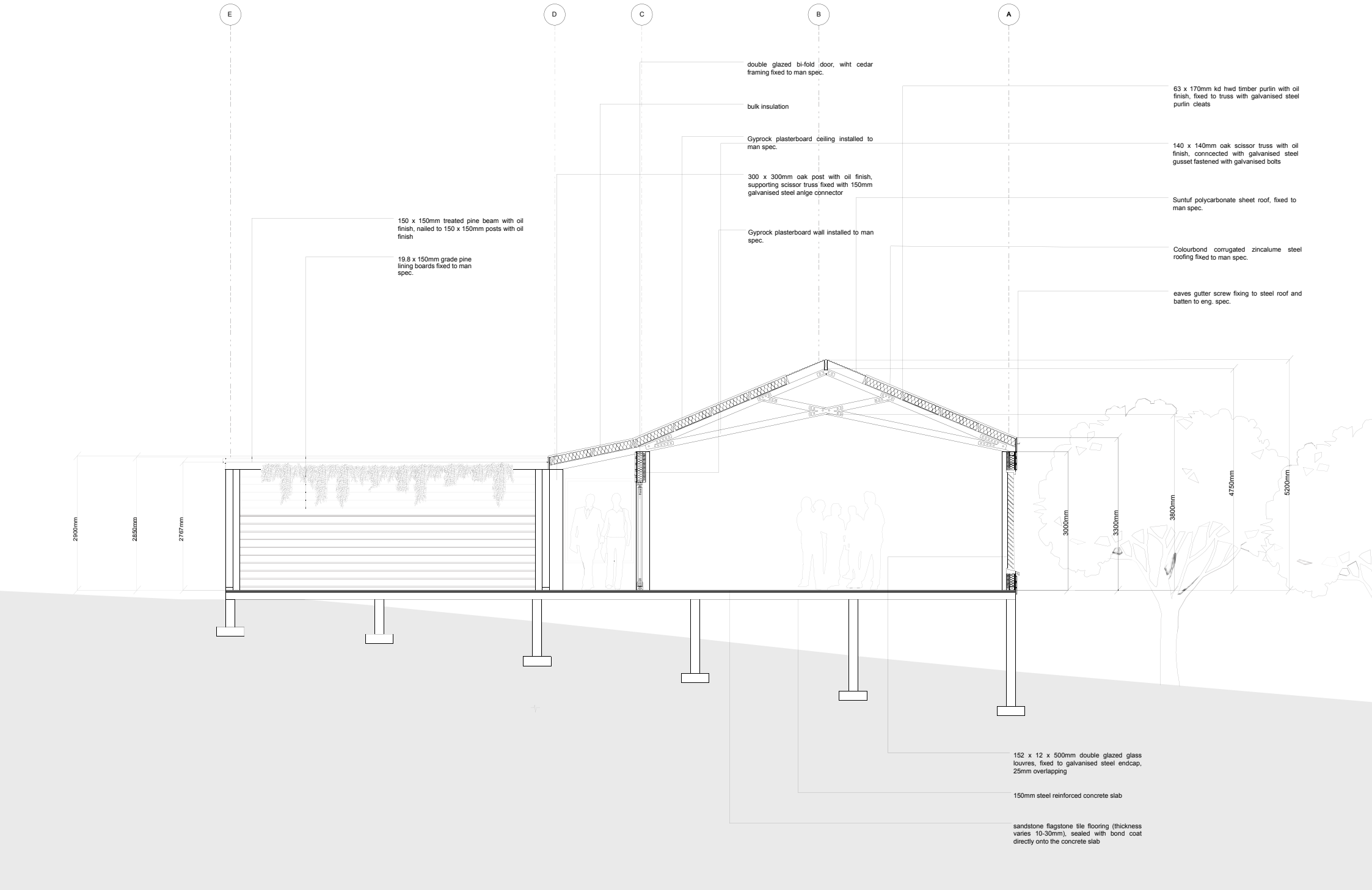

- Full access to sunlight and summer wind from the north.
- Look out to the exclusive ocean through given natural materials such as tress and bushes. The view through the branches allow the buidling to blend in with the surrounded environment
and visitors being closer to the nature.
- minimise the opening and has solid walls on the southern edge of the building to eliminate the southerly buster wind.

# FLOOR PLAN


1
2
3
4
5
A
B
C
D
E
TOILETS
MAIN HALL
KITCHEN
ENTRANCE
OUTDOOR AREA
STORAGE

# ROOF PLAN

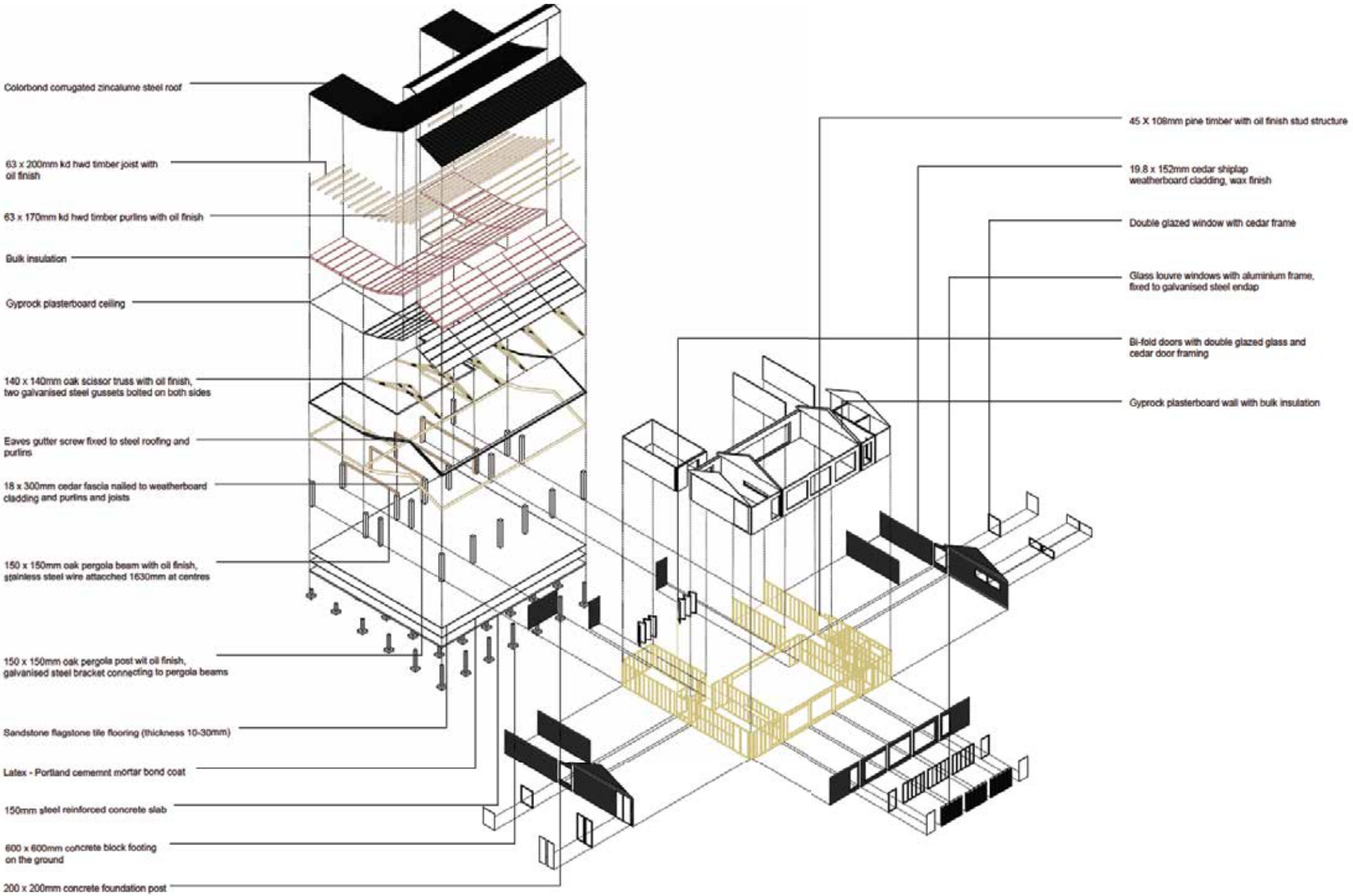





drawn by my partner for thhe design we did together

**Section Drawing**

The drawing is showing how the constrcution analysis join together and the place-ment of materials that are used for the House of celebration. The placement of the openings encourage passive design such as cross ventilation between the rooms. The roof has continuous insulation envelope to help maintain interior temperature.




**Construction Analysis**

Exploded Axonometric drawing is showing Majority of the materials are easy to find in Australia and relatively sustainable and the House of Celebration has mostly light weight construction with the whole house having timber framing.

# 2019

# EXCHANGE

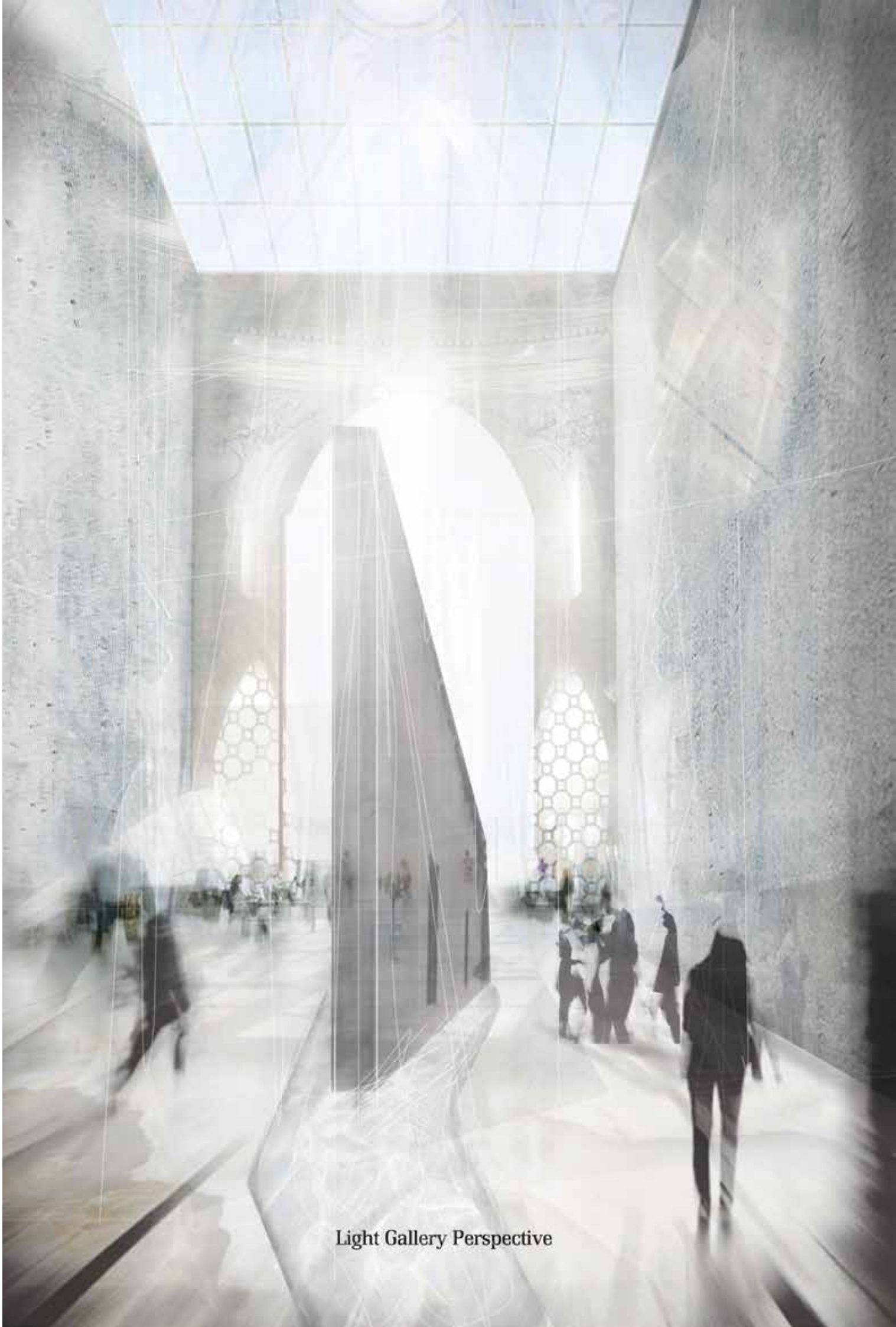
# STUDIO

**At Nottinggham University,U.K.**

,

SITE: Lincoln, United Kingdom

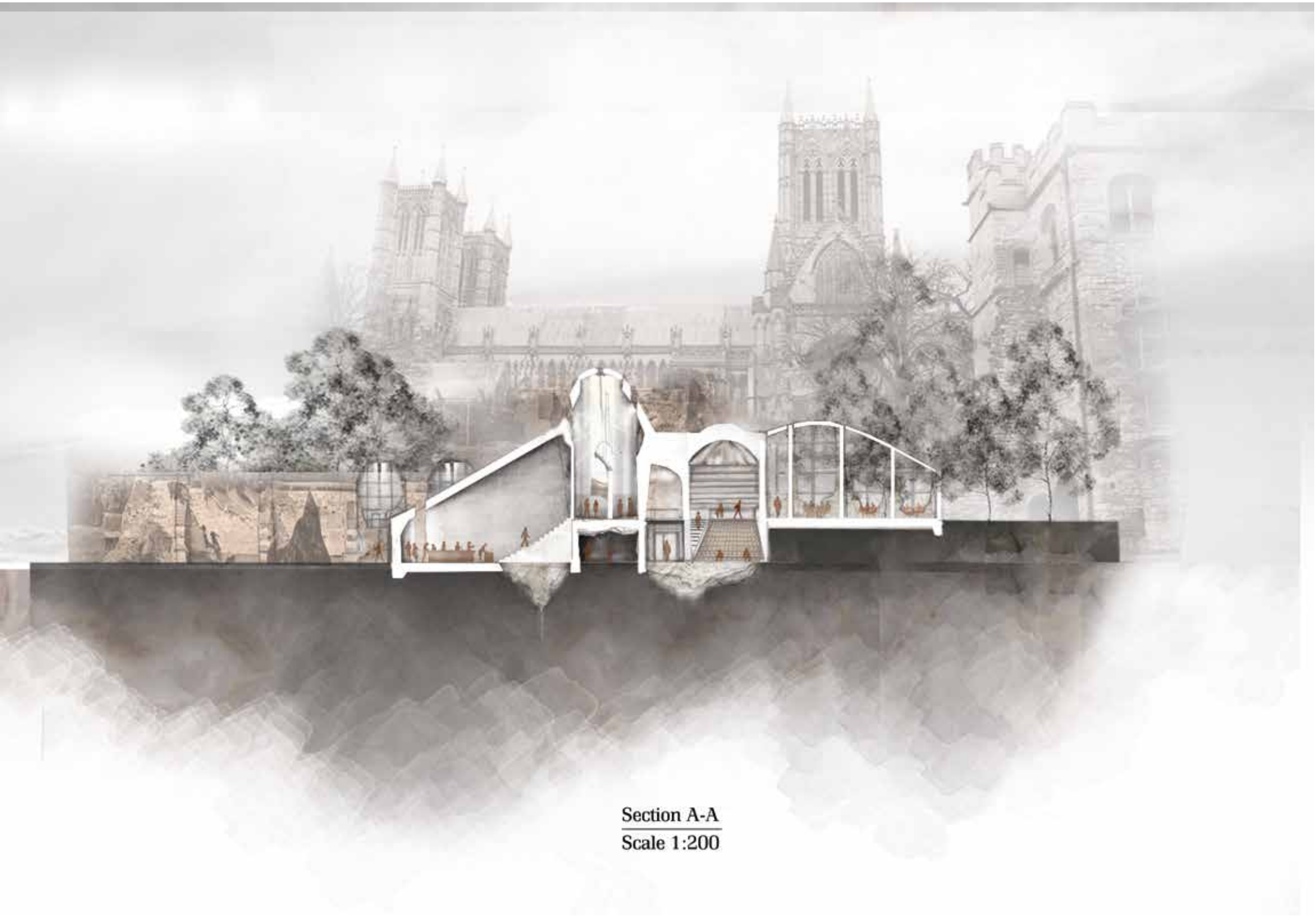
The project is aimed to design an institution of your choice and provide a narrative into how the design is approach. The unit that I selected has an abstract design perception which is different from the normal classes I took in Sydney and the class is encouraged onproducing hand drawn architecture drawings.



Project: For this project the photography school would have an interesting twist on both contemporary on this historical site of Lincoln Medieval Bishop's Palace.

# A - A

## Section



Section A-A
Scale 1:200

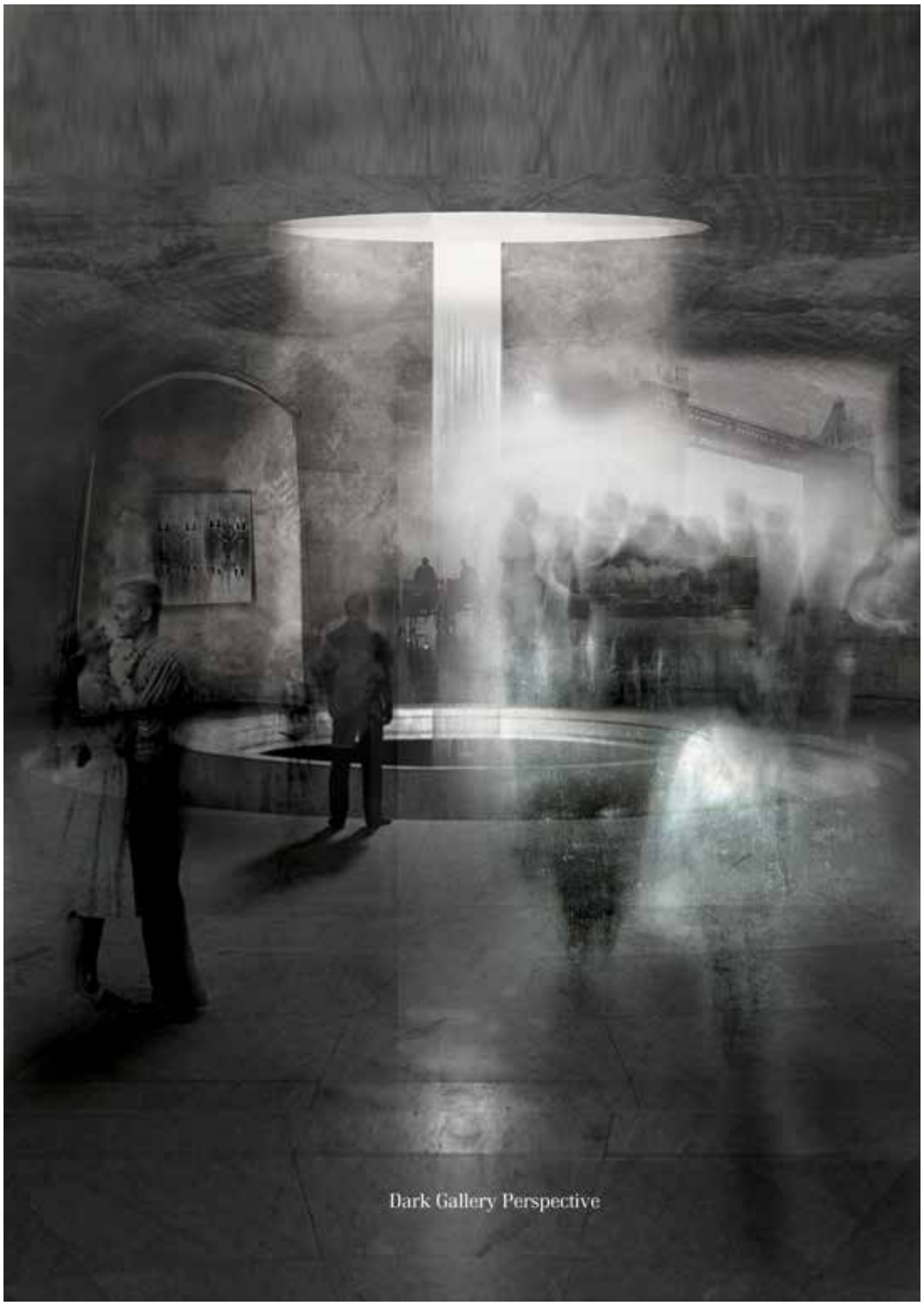
# B - B

## Section

Section B-B

Scale 1:200


**Group Studio Space Perspective Render**
The drawing is visualing the studio space, located near the light gallery where students can learn about different types of photography techniques relying on the natural lighting that shine through the architecture design.




**Dark Gallery Perspective Render**
The gallery is a representation of the dark room for developing photos , located underground has one source of light from the above skylight roof. The visual is showing the past memories to exhibit what old photograph can make us feel like.

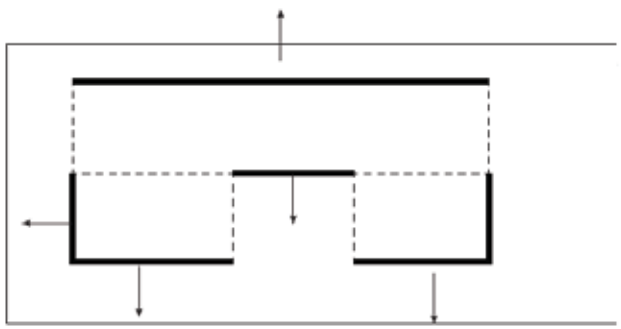
# ARCHITECTURAL PROFESSIONAL PRACTICE

Semester 2 : 2019

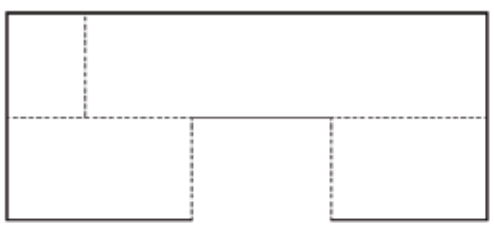
Brief : The project will focus on the hypothetical design of a residential alterations and additions and preparation of the necessary documentation for submission of a Development Application to the council. As a student we were required to do site visit then analyse the information and turns it into a design and prepare the drawings as we learn about housing policies.

**SITE VISIT**

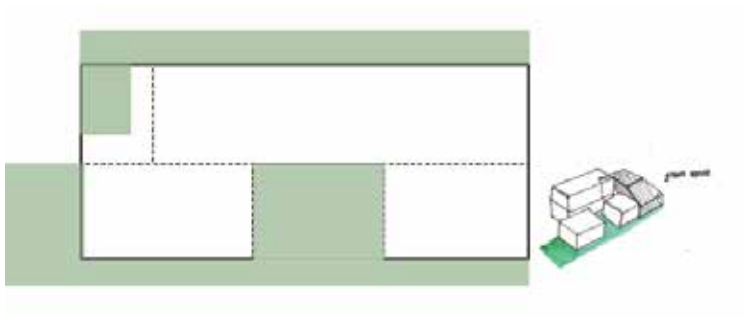
Character of the existing dwelling is a single-story brick house with an area of 372.3 m2 facing the north-east of the lot including the garage towards the back part of the house and heritage are not present within the settings.



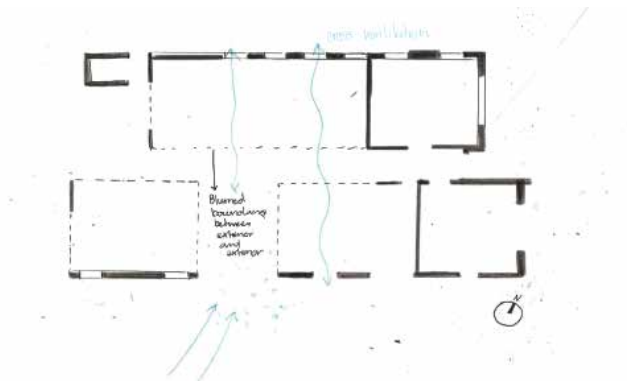
keep the privacy from public with solid walls and being transparent  within the house



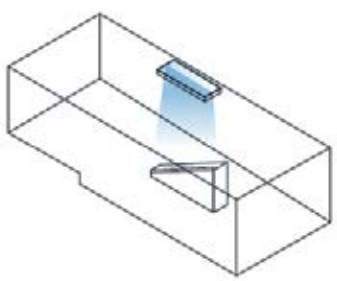
The use of operable glass sliding door increase the flexibility of the spaces



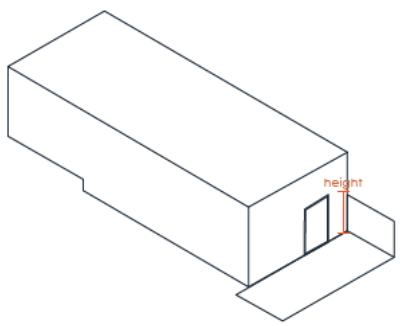
Allowed the green spaces to integrated into every rooms in the house.



The use of glass sliding doors



Skylight at the staircase allow the natural light to enter in the centre part of the house

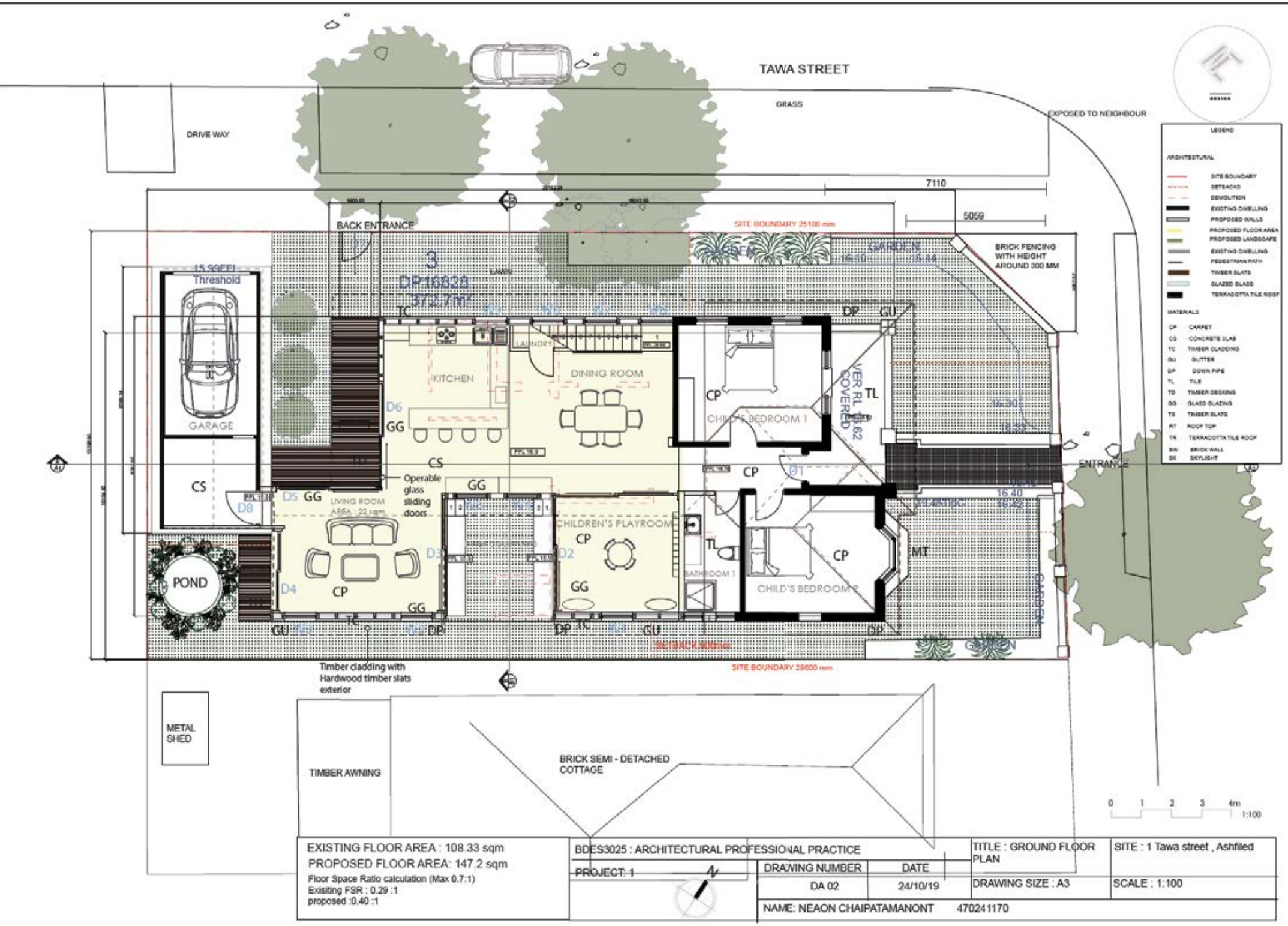



The height of the windows and doors are design to match the height of the boundary fence to create the framing view for the new room.

Circulation: Linear circulation through out the spac-es.

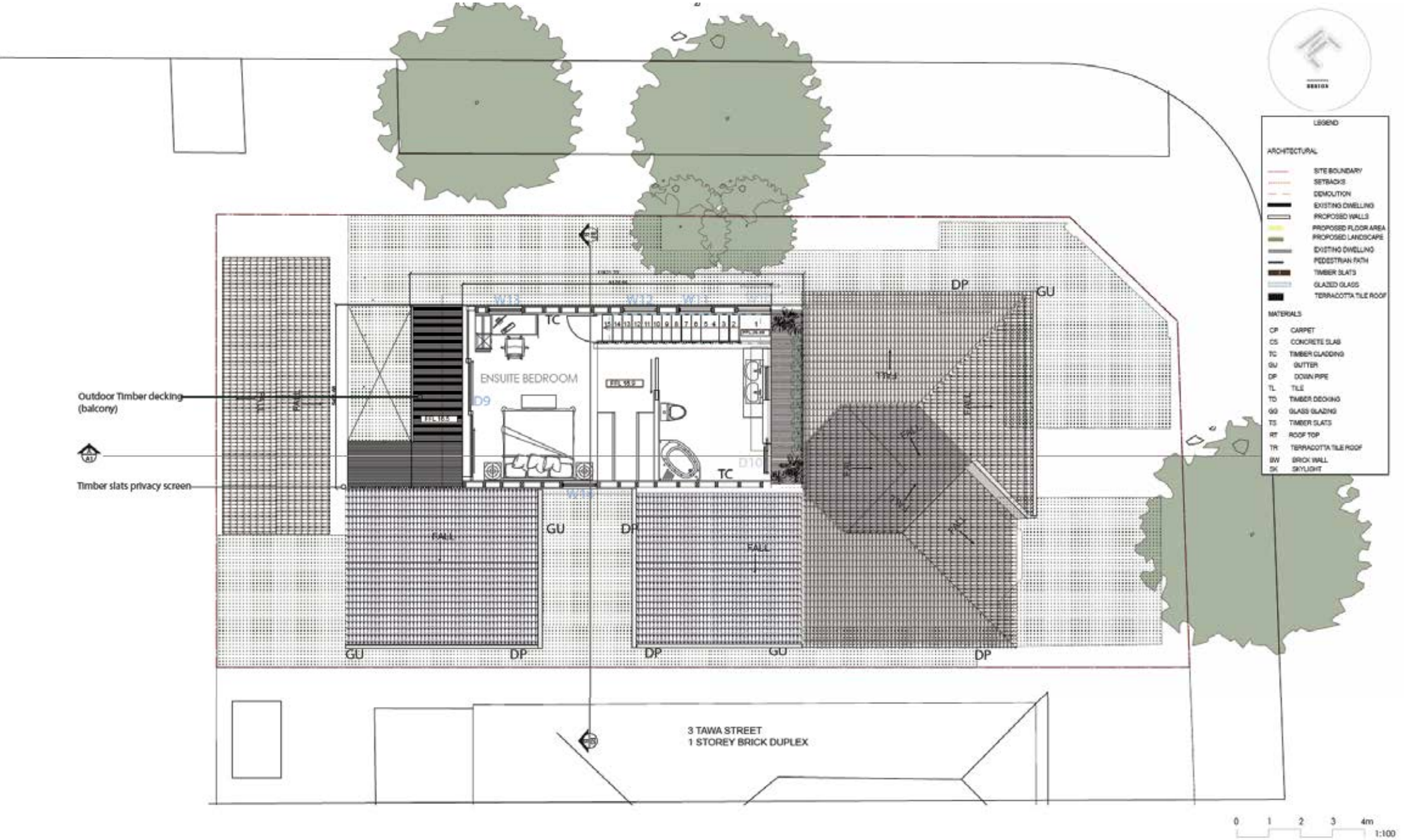
# GROUND FLOOR PLAN

Architectural Professional Practice


TAWA STREET
GRASS
DRIVE WAY
EXPOSED TO NEIGHBOUR
7110
5059
BACK ENTRANCE
SITE BOUNDARY 25100 mm
BRICK FENCING WITH HEIGHT AROUND 300 MM
3
DP16828
372.7m²
15.99FFL
Threshold
GARAGE
CS
D8
D5
GG
LIVING ROOM
AREA : 22 sqm
Operable glass sliding doors
KITCHEN
LAUNDRY
DINING ROOM
D6
GG
CS
CP
CHILD'S BEDROOM 1
TL
OVER RL 18.62 COVERED
ENTRANCE
CHILDREN'S PLAYROOM
D3
D2
D4
CP
GG
BATHROOM 1
CHILD'S BEDROOM 2
MT
POND
GARDEN
DP
GU
TC
Timber cladding with Hardwood timber slats exterior
SITE BOUNDARY 28600 mm
METAL SHED
TIMBER AWNING
BRICK SEMI - DETACHED COTTAGE
0 1 2 3 4m
1:100
LEGEND
ARCHITECTURAL
SITE BOUNDARY
SETBACKS
DEMOLITION
EXISTING DWELLING
PROPOSED WALLS
PROPOSED FLOOR AREA
PROPOSED LANDSCAPE
EXISTING DWELLING
PEDESTRIAN PATH
TIMBER SLATS
GLAZED GLASS
TERRACOTTA TILE ROOF
MATERIALS
CP CARPET
CO CONCRETE SLAB
TC TIMBER CLADDING
GU GUTTER
DP DOWN PIPE
TL TILE
TD TIMBER DECKING
GG GLASS GLAZING
TS TIMBER SLATS
RT ROOF TOP
TR TERRACOTTA TILE ROOF
BW BRICK WALL
SK SKYLIGHT
EXISTING FLOOR AREA : 108.33 sqm
PROPOSED FLOOR AREA: 147.2 sqm
Floor Space Ratio calculation (Max 0.7:1)
Exisiting FSR : 0.29 :1
proposed :0.40 :1
BDES3025 : ARCHITECTURAL PROFESSIONAL PRACTICE
PROJECT: 1
DRAWING NUMBER
DA 02
DATE
24/10/19
TITLE : GROUND FLOOR PLAN
SITE : 1 Tawa street , Ashfiled
DRAWING SIZE : A3
SCALE : 1:100
NAME: NEAON CHAIPATAMANONT 470241170

# FIRST FLOOR PLAN

Architectural Professional Practice




NOTES
Refer to drawing Index for lebelling and annotations.

BDES3025 : ARCHITECTURAL PROFESSIONAL PRACTICE

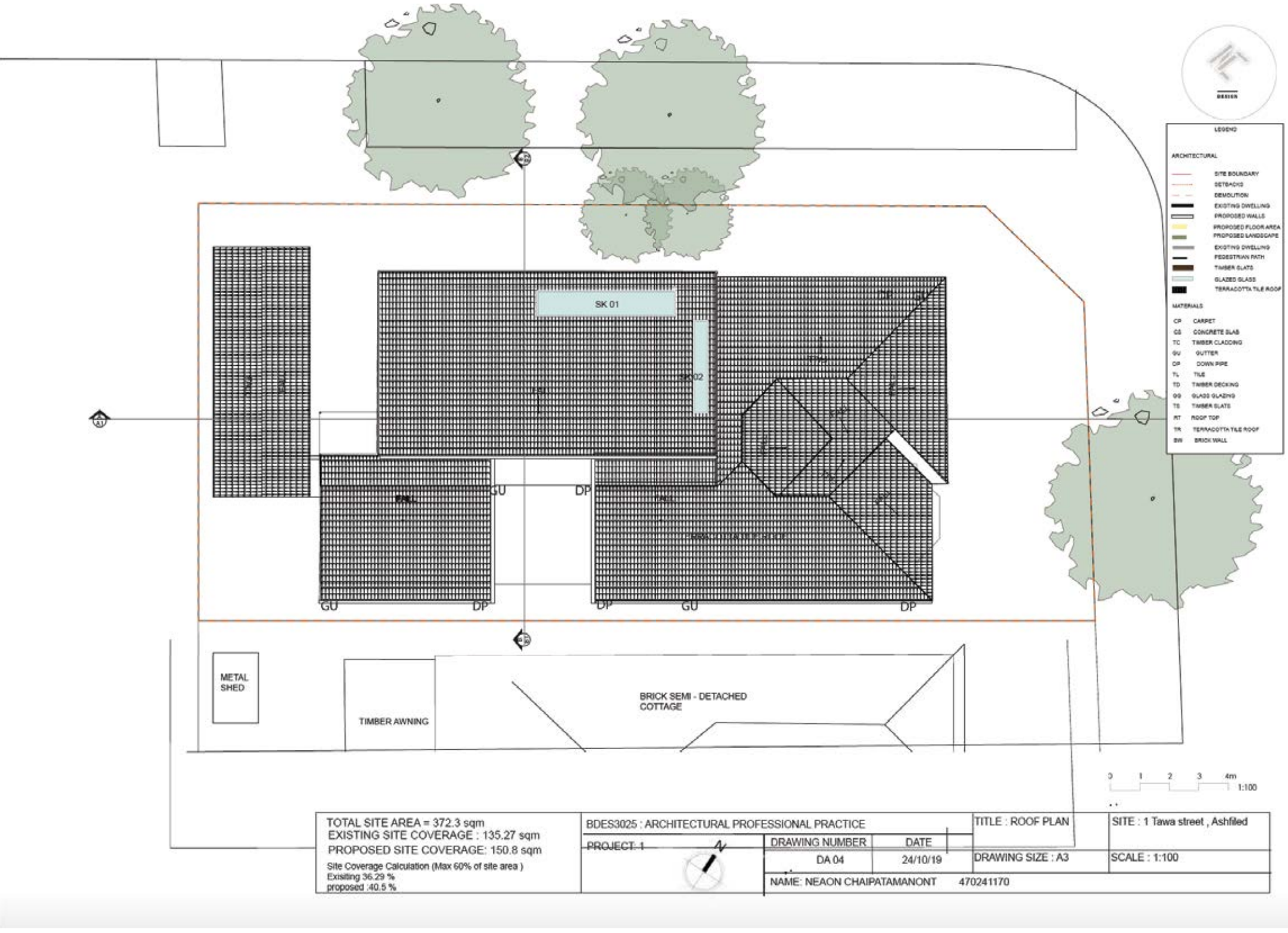
TITLE : FIRST FLOOR PLAN

PROJECT: 1

| DRAWING NUMBER | DATE | | |
|---|---|---|---|
| DA 03 | 24/10/19 | DRAWING SIZE : A3 | SCALE : 1:100 |
| NAME: NEAON CHAIPATAMANONT 470241170 | | | SITE : 1 Tawa street , Ashfiled |

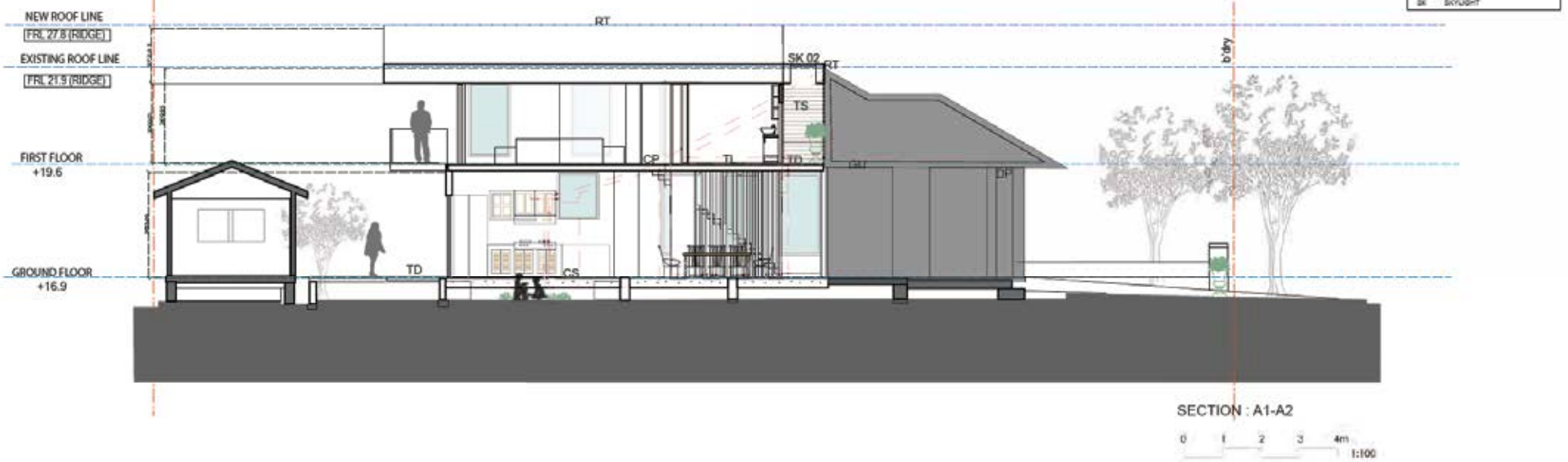
# ROOF PLAN

Architectural Professional Practice


LEGEND
ARCHITECTURAL
SITE BOUNDARY
SETBACKS
DEMOLITION
EXISTING DWELLING
PROPOSED WALLS
PROPOSED FLOOR AREA
PROPOSED LANDSCAPE
EXISTING DWELLING
PEDESTRIAN PATH
TIMBER SLATS
GLAZED GLASS
TERRACOTTA TILE ROOF
MATERIALS
CP CARPET
CS CONCRETE SLAB
TC TIMBER CLADDING
GU GUTTER
DP DOWN PIPE
TL TILE
TD TIMBER DECKING
GG GLASS GLAZING
TS TIMBER SLATS
RT ROOF TOP
TR TERRACOTTA TILE ROOF
BW BRICK WALL
SK 01
SK 02
GU
DP
METAL SHED
TIMBER AWNING
BRICK SEMI - DETACHED COTTAGE
0 1 2 3 4m
1:100
TOTAL SITE AREA = 372.3 sqm
EXISTING SITE COVERAGE : 135.27 sqm
PROPOSED SITE COVERAGE: 150.8 sqm
Site Coverage Calculation (Max 60% of site area )
Exisiting 36.29 %
proposed :40.5 %
BDES3025 : ARCHITECTURAL PROFESSIONAL PRACTICE
PROJECT: 1
DRAWING NUMBER
DATE
DA 04
24/10/19
TITLE : ROOF PLAN
DRAWING SIZE : A3
SITE : 1 Tawa street , Ashfiled
SCALE : 1:100
NAME: NEAON CHAIPATAMANONT 470241170

# SECTION A1-A2, B1-B2

Architectural Professional Practice


| | | | | | |
|---|---|---|---|---|---|
| NOTES<br>Refer to drawing Index for lebelling and annotations. | BDES3025 : ARCHITECTURAL PROFESSIONAL PRACTICE | | | TITLE :<br>SECTION DRAWINGS | SITE : 1 Tawa street , Ashfiled |
| | PROJECT: 1 | DRAWING NUMBER | DATE | | |
| | | DA06 - DA 07 | 24/10/19 | DRAWING SIZE : A3 | SCALE : 1:100 |
| | | NAME: NEAON CHAIPATAMANONT | | 470241170 | |

# LONG ELEVATION: A,B

Architectural Professional Practice



| | | | | |
|---|---|---|---|---|
| NOTES<br>Refer to drawing Index for lebelling and annotations. | BDES3025 : ARCHITECTURAL PROFESSIONAL PRACTICE | | TITLE : ELEVATION DRAWINGS | SITE : 1 Tawa street , Ashfiled |
| | PROJECT: 1 | DRAWING NUMBER / DATE | | |
| | | DA 08- DA09 / 24/10/19 | DRAWING SIZE : A3 | SCALE : 1:100 |
| | | NAME: NEAON CHAIPATAMANONT 470241170 | | |

# SHORT ELEVATION: A,B

Architectural Professional Practice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| BDES3025 : ARCHITECTURAL PROFESSIONAL PRACTICE | | | TITLE : ELEVATION DRAWINGS | SITE : 1 Tawa street , Ashfiled |
| PROJECT: 1 | DRAWING NUMBER | DATE | | |
| | DA 010 -DA 011 | 24/10/19 | DRAWING SIZE : A3 | SCALE : 1:100 |
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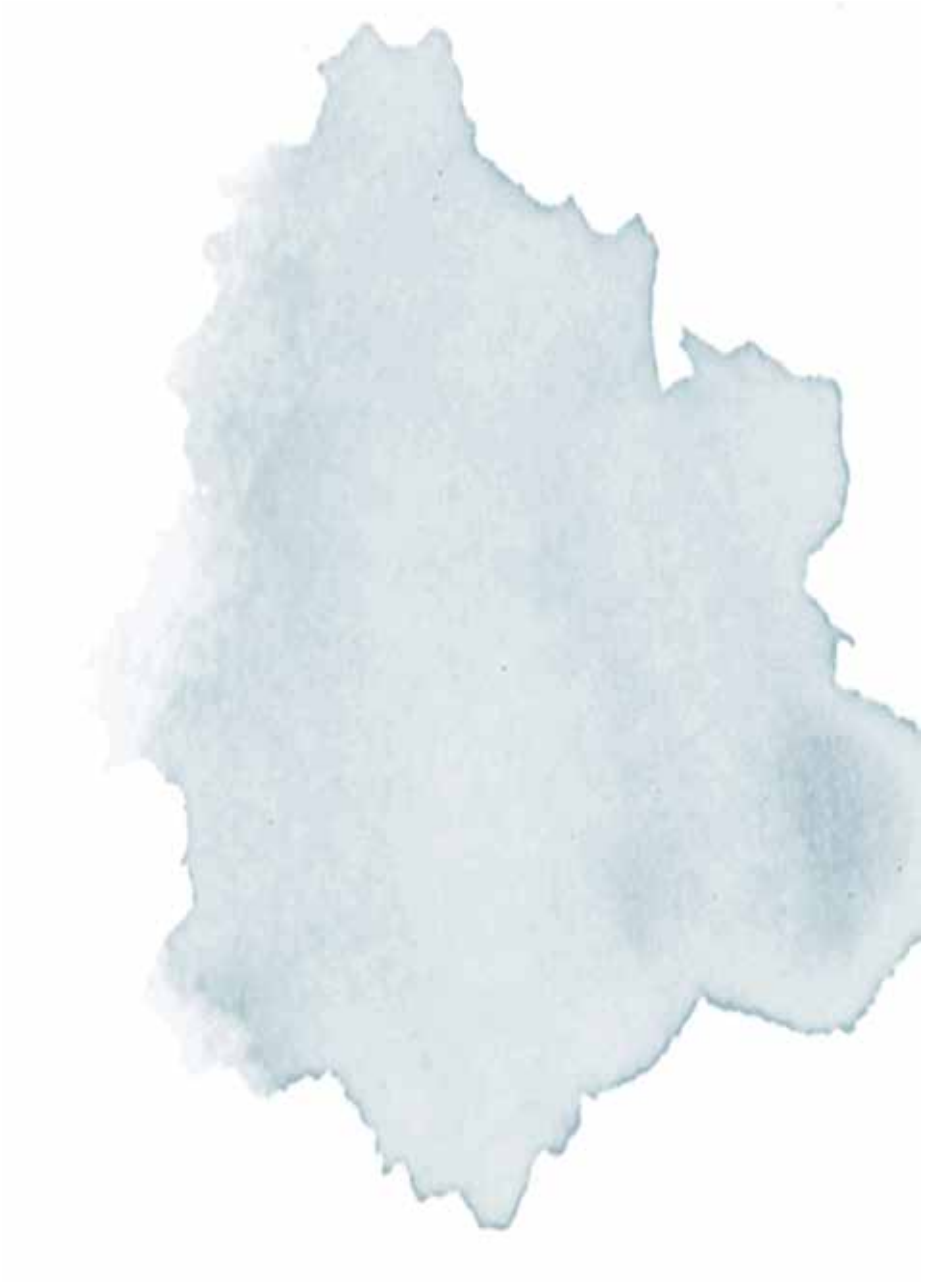
# 2019

# STUDIO SEMESTER 2

BDES 3002 Capstone Studio

The development of Westmead has been proposed as part of the growth of the Greater Parramatta region. The main proposal for the area is to provide better facilities, increase job opportunities and the interconnection of the community to create a better living space for its occupants. .

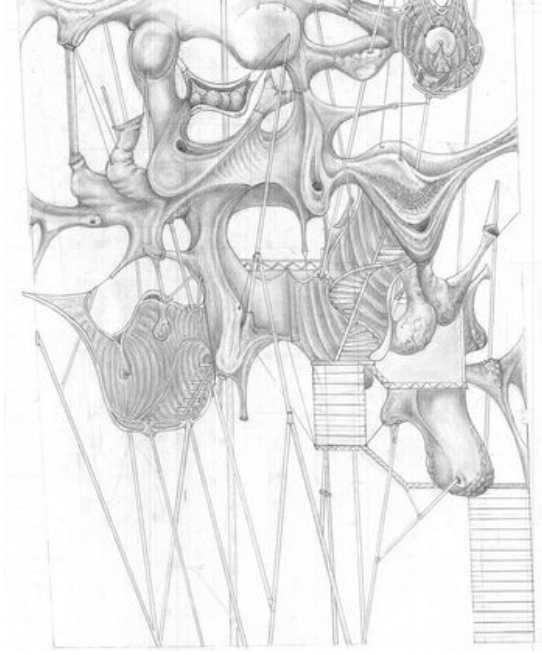
Neaon Chaipatamanont



WESTMEAD CREATIVE CAMPUS

Brief: The task for this project is essentially to design a new vision for Westmead Public school according to the issues that the school is facing such as lack of outdoor space due to over populated students, the sfaety for the children and accessibility for the parents and such.

“School with an organic architecture design and organization of the space that engaged relationship between students in their environment and allow their creativity to flourish”.



# Introduction

The development of Westmead has been proposed as part of the growth of the Greater Parramatta region. The main proposal for the area is to provide better facilities, increase job opportunities and the interconnection of the community to create a better living space for its occupants.

The population of Westmead possesses a diverse range of cultures and it is a region that provides one of the largest education facilities within Sydney. As a designer, it is important to create a social space for the community through architecture that not only engages with the environment but also supports the sustainability of the area.

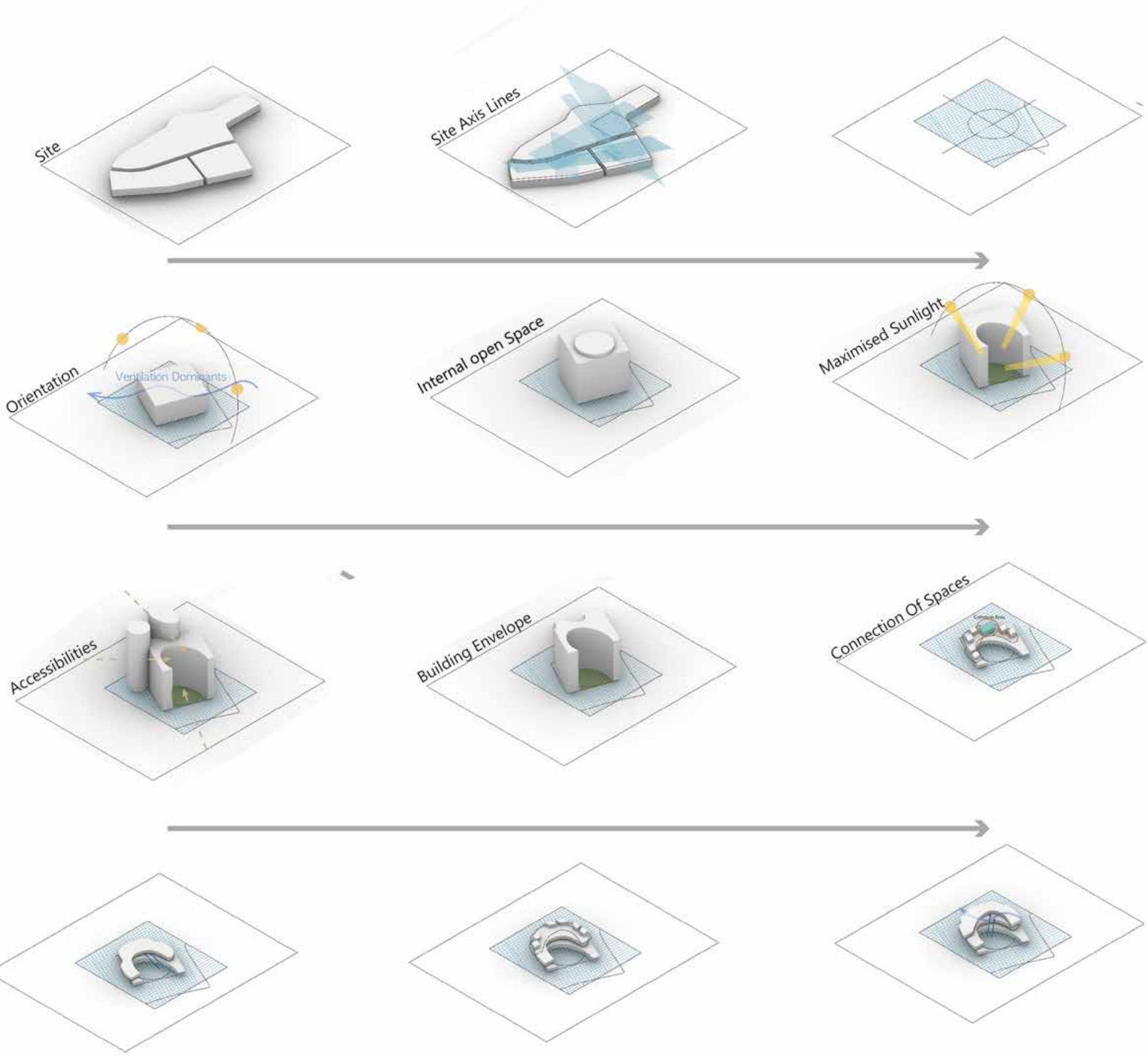
There is great potential for developing this given site into a multi purpose gathering space that can help shape the community and introduce a new vision of enhanced social interaction. The idea of providing mixed use facilities for the school is to centralise the activity in one place which creates a productive environment not only for students but for all visitors of the site.

A large portion of the population are in the younger generation, with 45.8% being young children. Furthermore, a high percentage of the families within the residential area are overseas immigrants. Therefore, constructing these facilities will provide these families with a welcoming environment that will support them as they settle down within the region.

The main focus of this project is on the design aspect, where the concept of 'organic forms' is being explored and integrated within the design. Organic forms seek to connect the relationship between structures and their surrounding environment. The design is influenced by the natural elements of the site such as the site contours and site axes.
The Westmead Creative Campus is an art specialised primary school consisting of 3 main buildings containing classrooms and other small facilities. Included within the site is a communal open area with a multi-use function, designed to bring the community together in a centralised space.

The most important aspect of this design is the classrooms and the transition between the learning and shared spaces. It was evident during the site visit that the current configuration of the classrooms lacked connection and thus, hindered the engagement and relationship between the students. The new design is aimed to help enhance the student's social interactions and provide them with an engaging learning environment which allows them to explore and discover their own creativity. This is achieved through the organisation of the classrooms and the surrounding spaces.

Accessibility is taken into consideration with the pedestrian connection between spaces possessing a fluid design which is both practical and designed to draw attention to the green open spaces incorporating the sustainability aspect of this project. Passive design is also being utilised throughout the building to allow lighting and ventilation to be maximised and therefore, reduce energy consumption. Overall, the school is a unique perspective on the possibilities of modern architectural design, integrating organic shapes and influences to achieve a sustainable outcome for an ever-growing community.




**Building Envelope Diagrams**

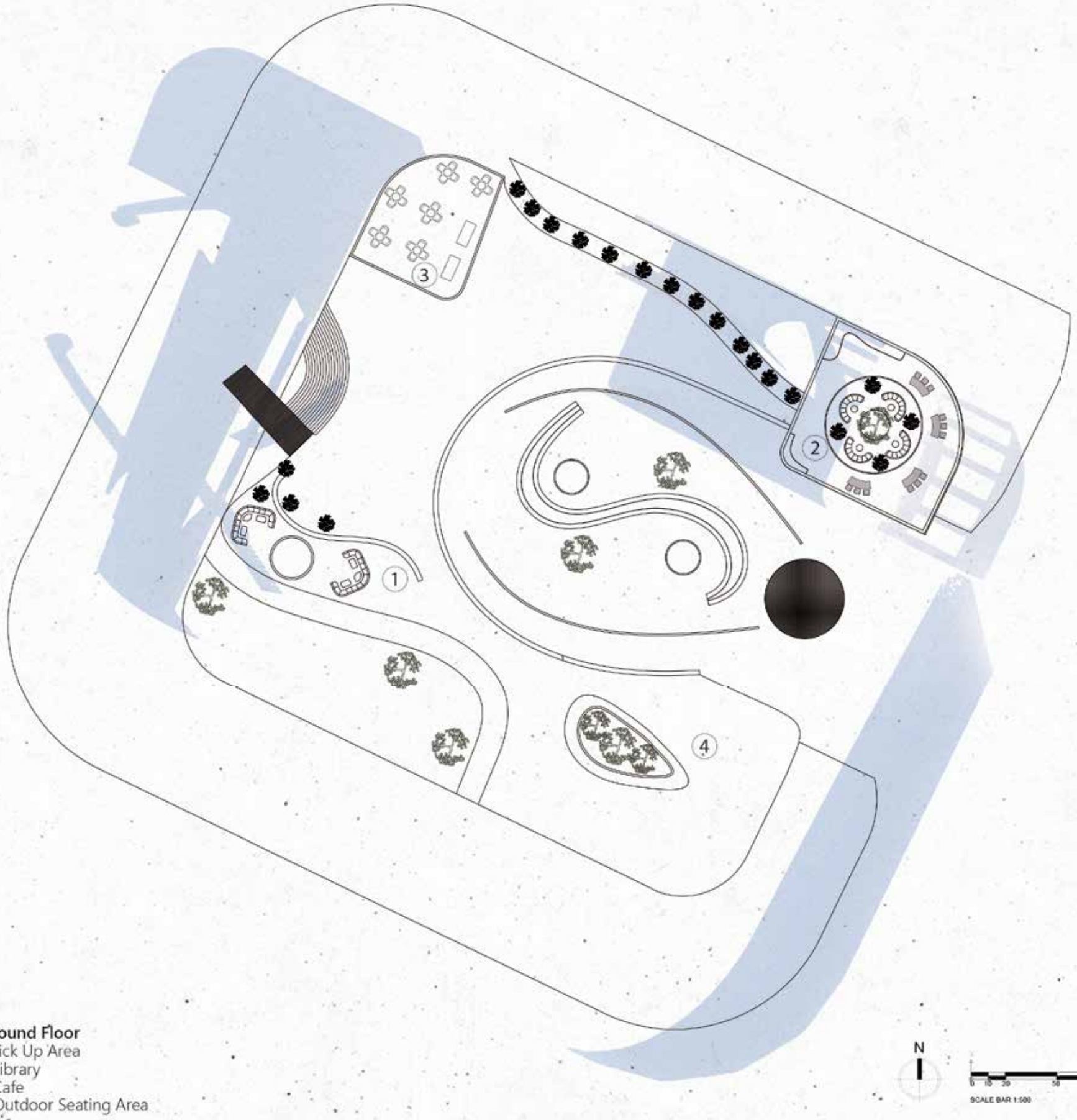
The envelope of the building is design according to the site elements and aimed to provide more open space and a passive design , with a structure that will help shape the students  to become more explorative , creative and exposed to the natural elements as much as possible

# 01

School Design


## Masterplan

The Masterplan is aimed to provide a mix-use facilities for the community where the school is divided into 3 main buildings to accommodate 1500+ students and build in a way where they can replicate and place any available space as they consist of their own mini-facilities functions within the school building. The Public facilities are remained on the east of the site for a more convenient public access and for a better security for school students. The shared-facilities will then help engage the students and the community together.




**Ground Floor**
1.Pick Up Area
2.Library
3.Cafe
4.Outdoor Seating Area

GROUND FLOOR PLAN

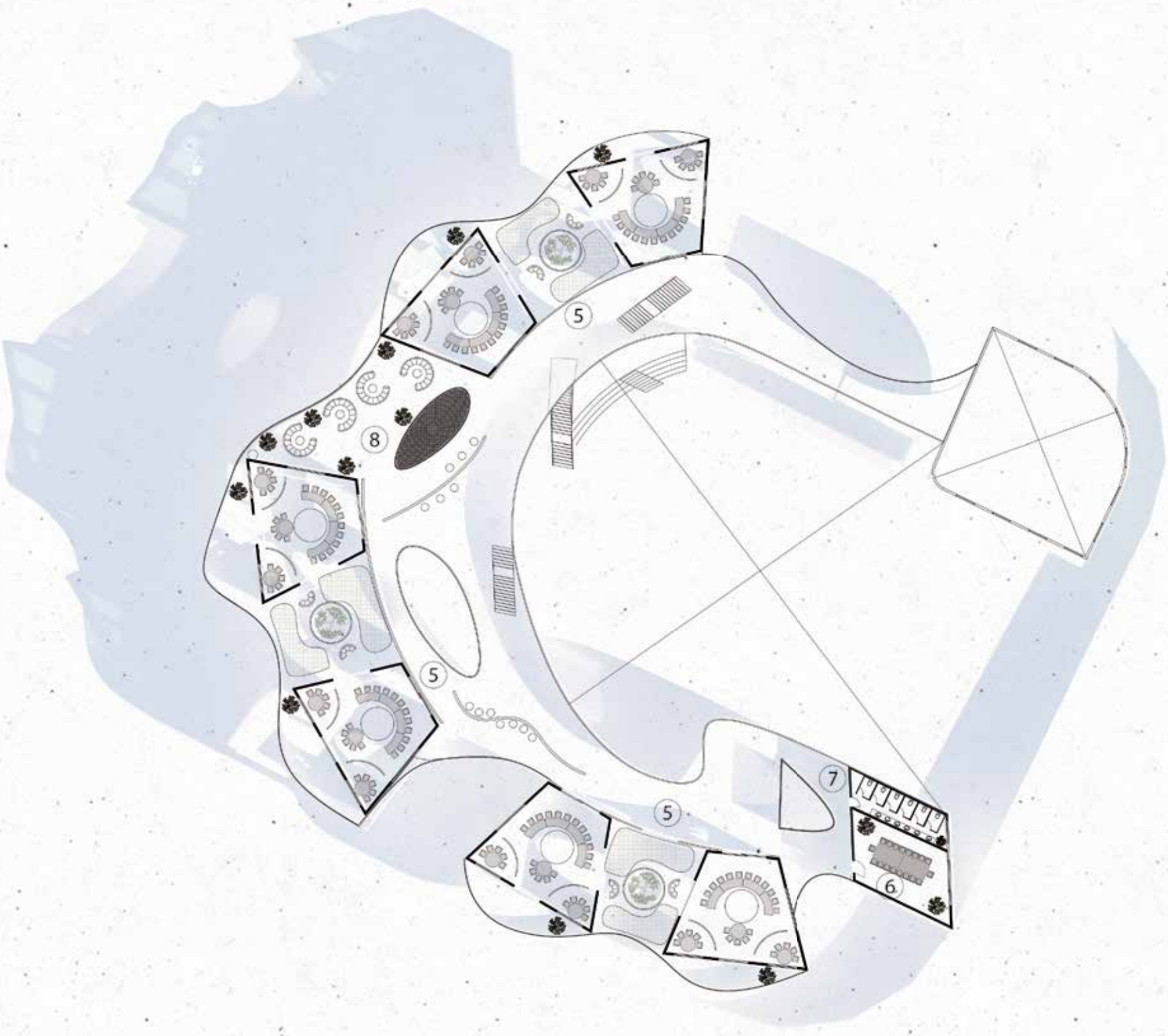
The space is designed to be semi-Public and each building have their own facilities that theyr are nedded to avoid congestion and overflowing of students using the space

**INTERIOR RENDER OF COMMON AREA**

**The area is located on First Floor where students can enjoy indoor open space**

**INTERIOR RENDER OF CLASSROOMS**

**The students are exposed to indoor green space and are able to go outdoors to explore their external surroundings**




**First Floor**
5.Grade 1 Classrooms
6.Teacher's room
7.Toilets
8.Common Area

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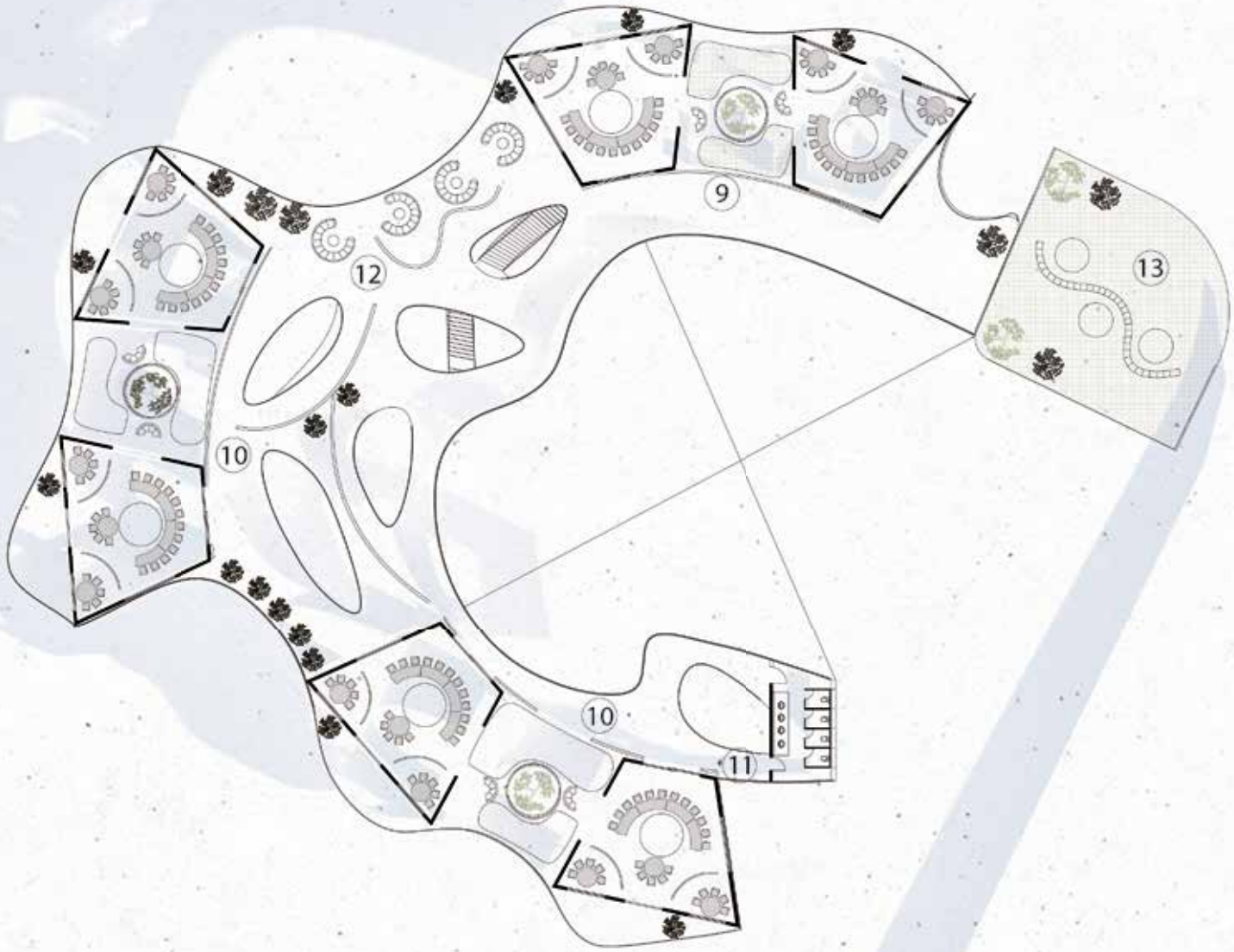
SCALE BAR 1:500

FIRST FLOOR PLAN

The common area act as a central space where the classrooms are then branched out from the centre to mimick the organic nature of space cpnnection.




**Second Floor**
9.Pre-School Classrooms
10.Grade 2 Classrooms
11.Toilets
12.Common Area
13.Roof top Playground

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SOUTH WEST SECTION
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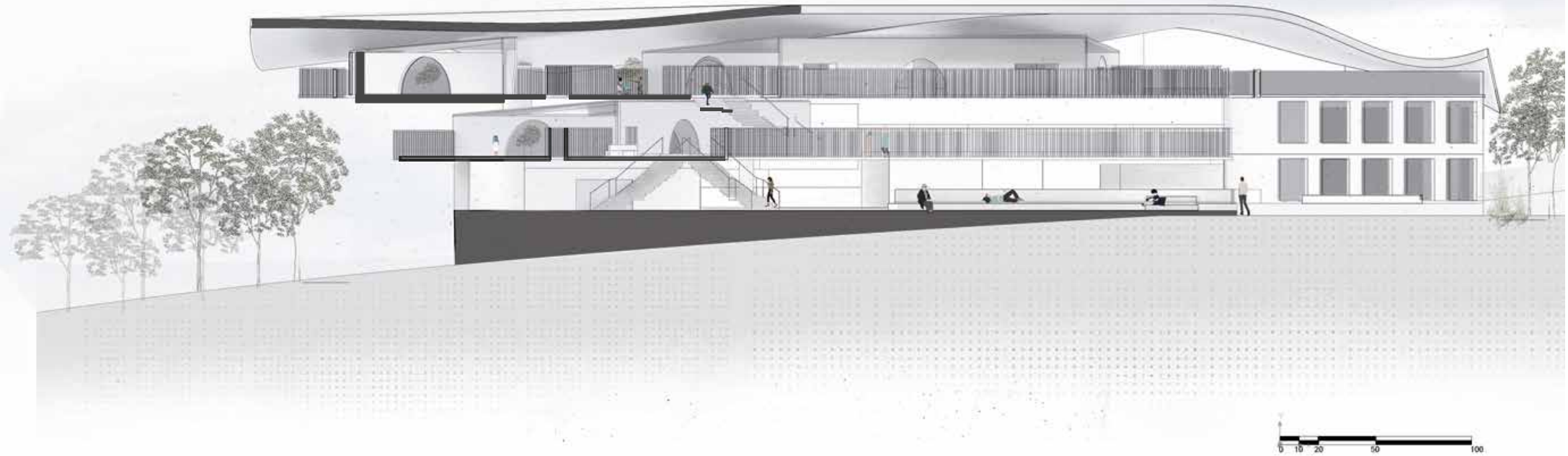
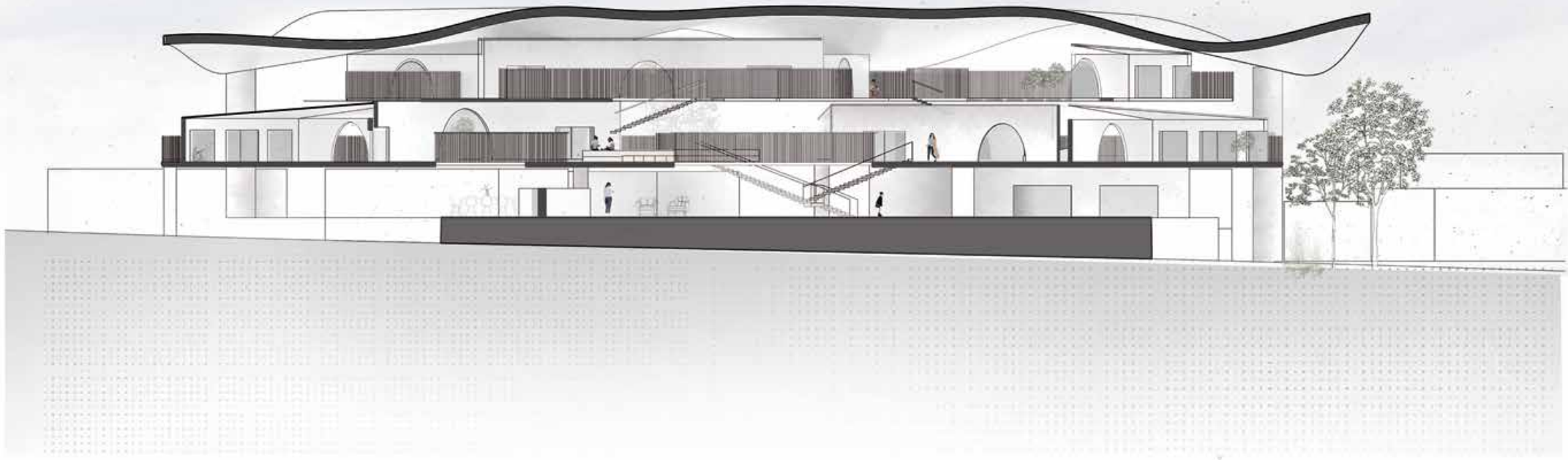
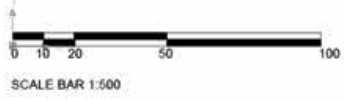


NORTH EAST SECTION
SCALE: 1:200



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**Skillion shading roof**
help protecting them from the rain and allow the ventilation to occur on the side/ cross ventilation

**Concrete Floor**
heat is absorbed then released in to the atmosphere

**Insulated gypsum wall**
help protects the interior from outside temperature.

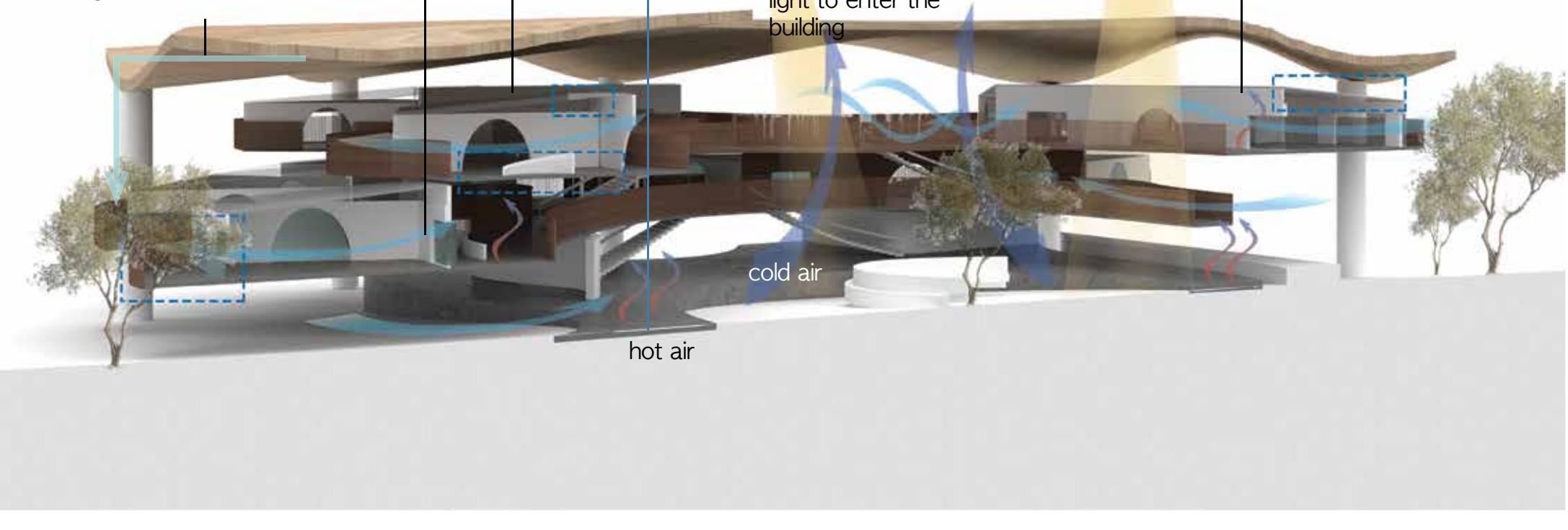
**Rain water usage**
The rain water is being directed down to the trees on the ground.

Suspended free ventilation

**Passive Solar**

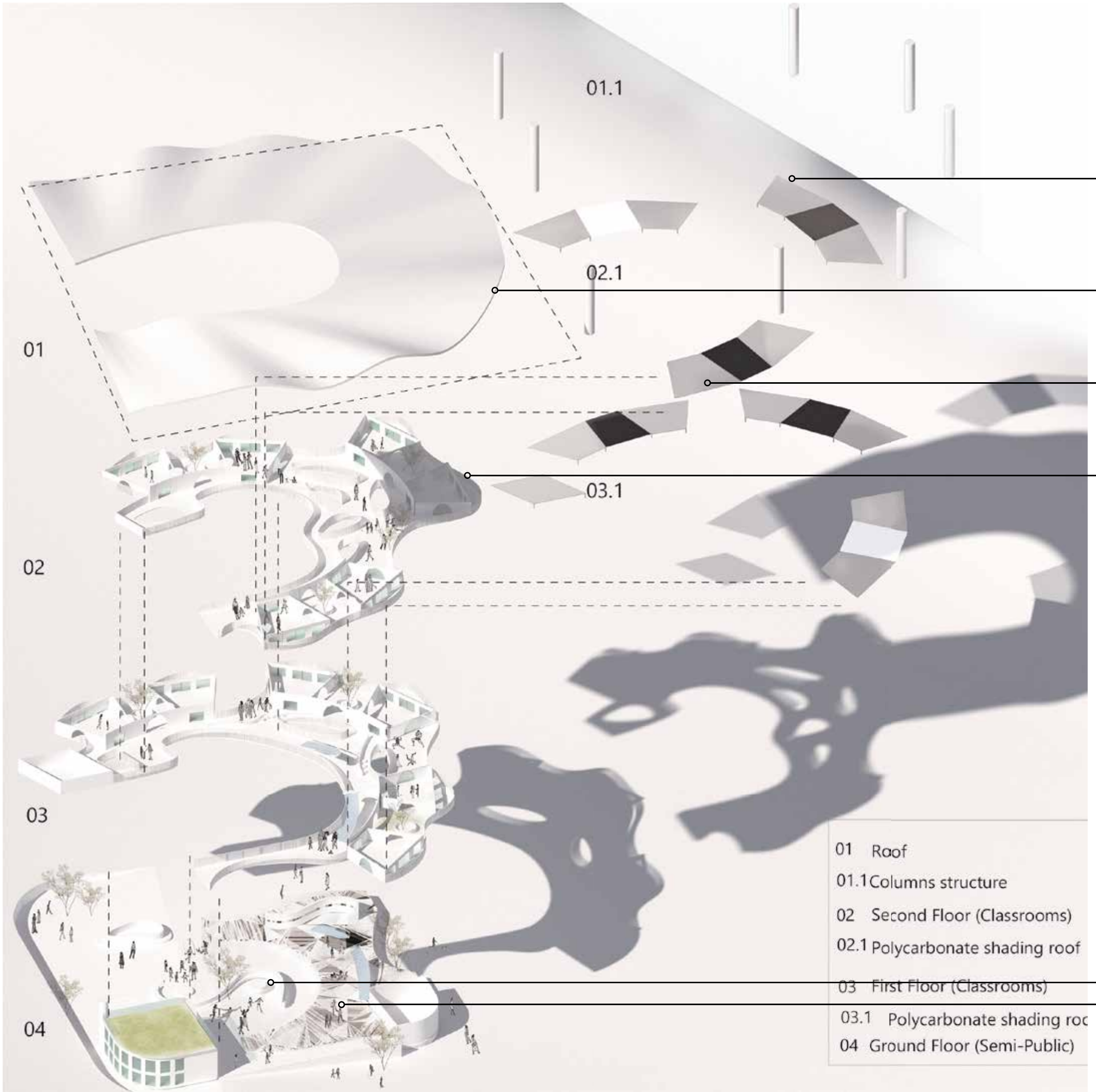
winter day
allow the sunlight to enter the building

summer day
Protect the interior from direct hot summer sun-



**Exterior Render of Front Access Point**

The design of the access point is open up for a welcoming atmosphere and have playground and semi public facilities avilable for parents or visitors.


01.1
02.1
01
03.1
02
03
04
01 Roof
01.1 Columns structure
02 Second Floor (Classrooms)
02.1 Polycarbonate shading roof
03 First Floor (Classrooms)
03.1 Polycarbonate shading roo
04 Ground Floor (Semi-Public)

WELL BUILDING CERTIFICATION

OUTDOOR AIR SYSTEM
The Building is a semi-open building so in WELL Building Statndard in Chpater20 , it mentioned that "Dedicated outdoor air systems remove the constraints associated with linking heating and cooling with ventilation, so that optimal air quality "properly designed DOAS can save energy compared to conventional systems while always supplying the appropriate amount of ventilation. This feature sets"

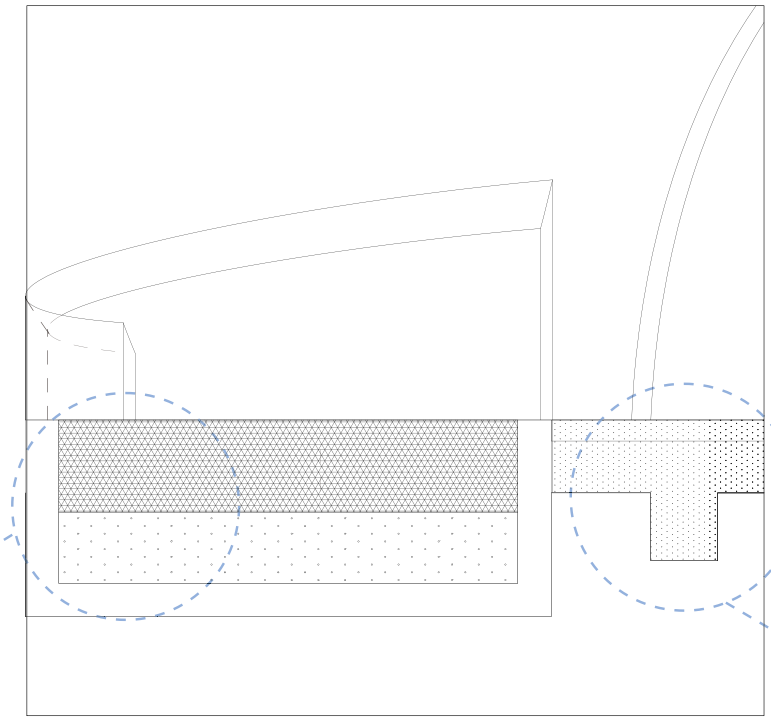
CLT INSULATED TIMBER ROOF
Imrpove indoor environmental quality

POLYCARBONATE ROOF
allow the daylight and sunlight in to the building especially the leaning spaces to improve lighhting quality and save energy consumption

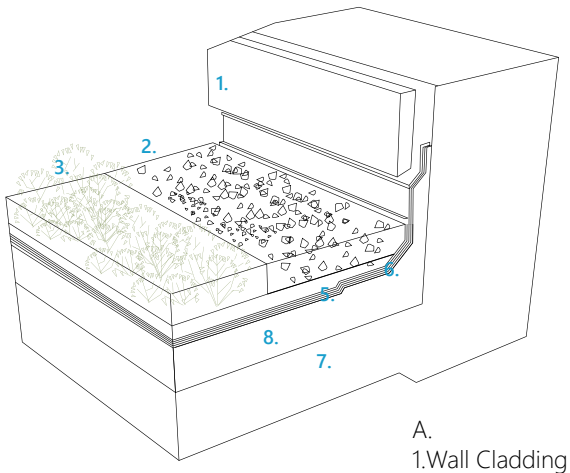
OPERABLE WINDOWS
opens up to the balcony for students to do their own project and learn in the outdoor class according to WELL Building standard Chapter 03 Part 2 the demand for ventilation "Projects that have met the Operable windows feature demonstrate that natural ventilation is sufficient to keep carbon dioxide levels below 800 ppm at intended occupancies."

PLAYGROUND/BUILD-IN FURNITURE
Naterials are made with timber panlels or lime platers (natural materials) which followed the WELL Building Standard Chapter 97 Part 1 stating that : At least 50% (as measured by cost) of interior finishes and finish materials, furnishings (including workstations) and built-in furniture have some combination of the following materiala.
Declare Label.
19
b. Health Product Declaration.
28
Any method accepted in USGBC's LEED v4 MR credit: Building Product Disclosure and
Optimization - Material Ingredients, Option 1: material ingredient reporting.

CONCRETE FLOORING
is consider is low VOC materials in Chapter 7.2 of Neighbour indoor Environment Guide state that the source of pollutatant must be removed from the spaces

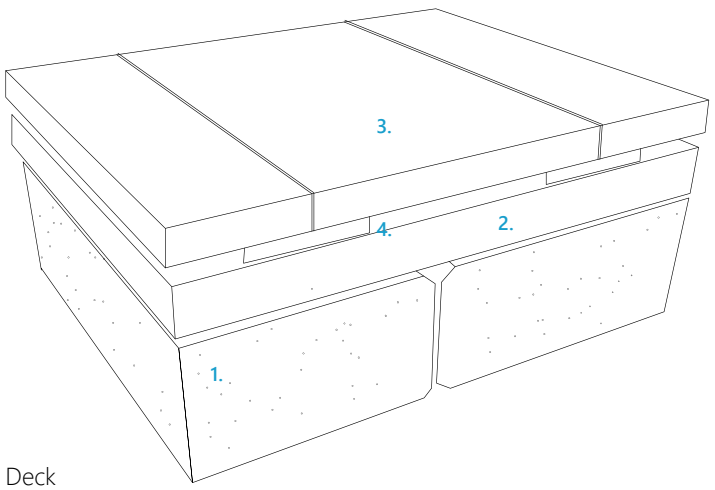


**A.** Showing Green Floor




A.
1.Wall Cladding
2.Smooth Gravels
3.Soil/growing medium
4.Concrete deck
5.Filter Sheet
6.Vapour Barrier
7.Concrete Deck
8.Thermal Insulation

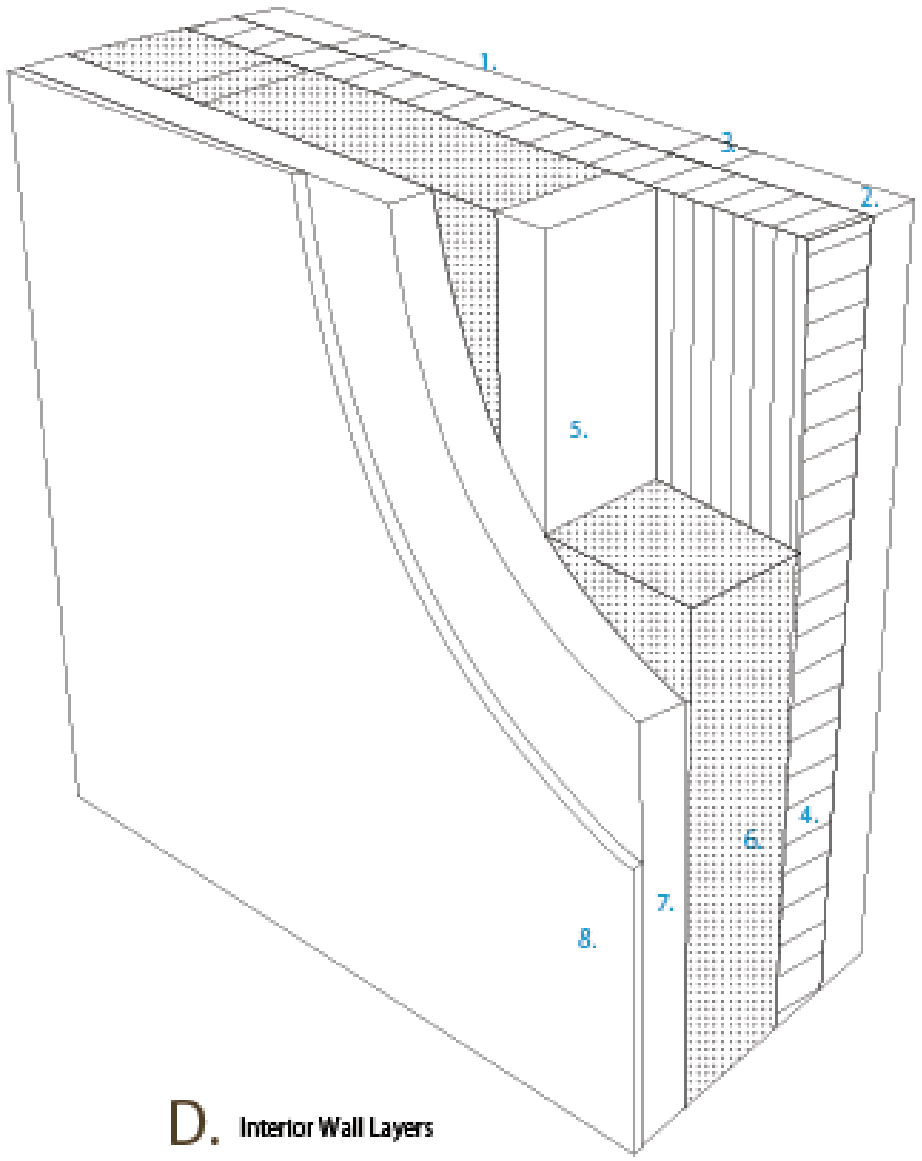
**B.** Expansion Joint Conrete Slab




B.
1.Concrete Deck
2.Thermal insulation
3.Paving Slabs
4.Waterproof Membrane

**Green Indoor Floor**
**Help imrpove the indoor quality by allowing the clean air to circulate in the building**

**Floor Details**
**The Joint Concrete Slab are use to compenstate when the expansion of the concrete occur according to the change in temperature. and this will then help minimised the stress when the contraction and expansion occur.**




D. Interior Wall Layers

D.
1.Mineral /Clay Plaster Lining Board
2. 60 mm Serice zone,Insulated
3.Counter Battens
4.Crosslam Timber Panel
5.Timber Studs
6.Renewable Insulation between studs
7.Compatible Wood Fibre Insulation

Wall Layers
The selection of wall layers is to imrpove the air quality and cooporate sustainable materials such as Lime Plaster as it is considered eco-friendly materials and can help maintain building temperature

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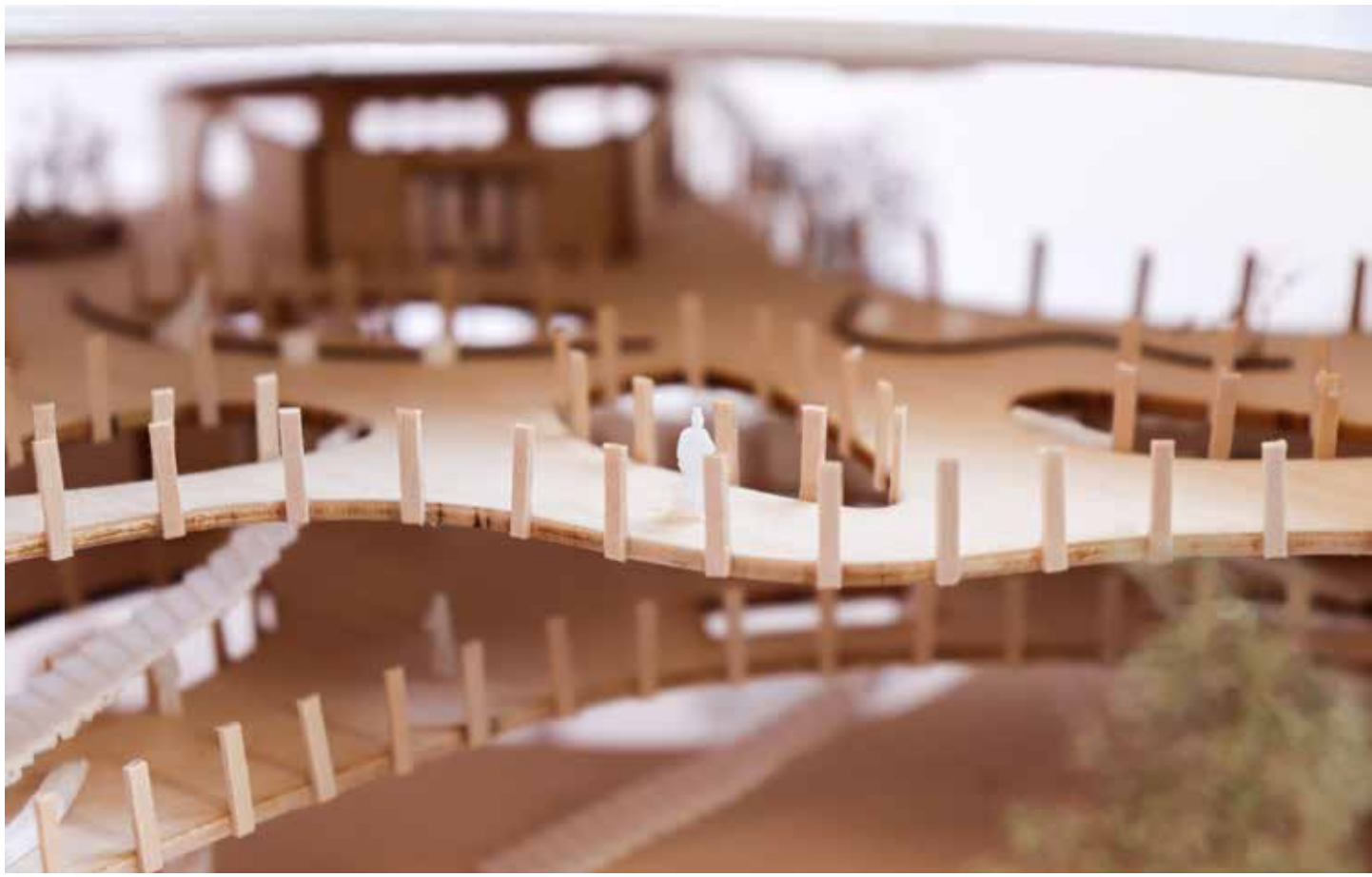

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