Portfolio
Architecture

BTAR2026 DESIGN STUDIO IV

Y2S3

1. Architect's Site Office : Organic Idea Pod
2. Site Analysis @ TTDI
3. Precedent Studies : Penang Digital Library
4. Precedent Studies : Mokyeonri
5. Youth Centre : TTDI Entrepreneurship Youth Centre

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20WVR08685

I’m Rex Tai

Hi, welcome back reading my next portfolo, which shares new chapters of different projects. For this last semester of the second year, the design brief given were more towards considering the public users instead of a private family.

Challenges were getting higher and hectic, but at the end its still managable. As long as things are going according to plan, it shall be fine.

This semester was conducted online as well. Good news is that we would be leaving this so called ‘new norm’ life very soon, which will be the next semester.

Well there is nothing much to say now, so why not digging into this portfolio?

Speacial thanks to my lecturers again , Mr Cheah , Cikgu Fadzil , Ar Julius and Pn Maisarah for guiding us for this second year.

13/4/2021

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Project 1

Architect’s Site Office :

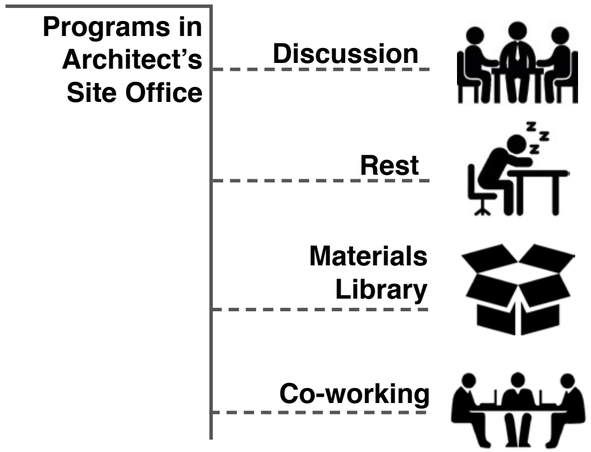
Organic Idea Pod

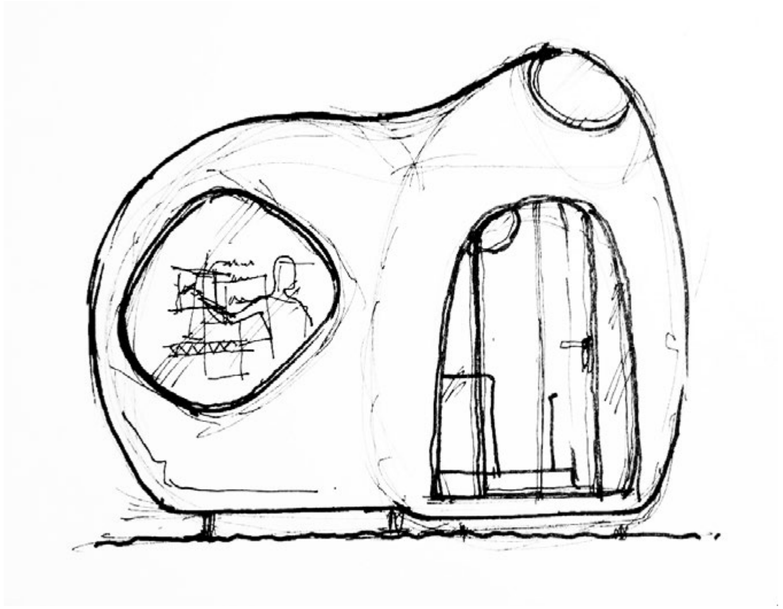
Proposed to be located at a site around Taman Tun Dr Ismail, opposite of Kiara Park, the Organic Idea Pod is an organic formed site office for enhancing architects’ working experience in construction sites. The form was idealized as a round, beanie shaped cladded with polished steel sheets. This was inspired by the Hutong Bubble by MAD Architects. Compared to the typical local cabin style site offices, the Organic Idea Pod is far more non conventional than its match box shaped friends.

Architects or any construction workers are free to discuss, rest, store material samples and work together in the 3 people office.

Besides taking inspiration, the idea behind the form is a strong belief in interesting spaces boost creativity and promote inspiration to the architects.

It connects to the interesting characteristic of nature, which is irregular, random and full of surprises. Hence, the interior of the office is not as expected from the exterior view. The difference and surprise are not only expressed in forms, as well as the chosen material.

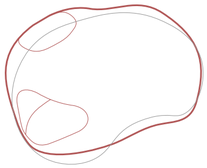




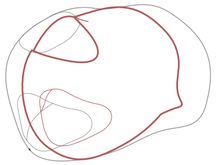
Developments

Initial Form
Started in a solid sphere as a simple beginning.

Development
Sculpting based on the sphere into desired form. Trial and error were made to achieve the desire.

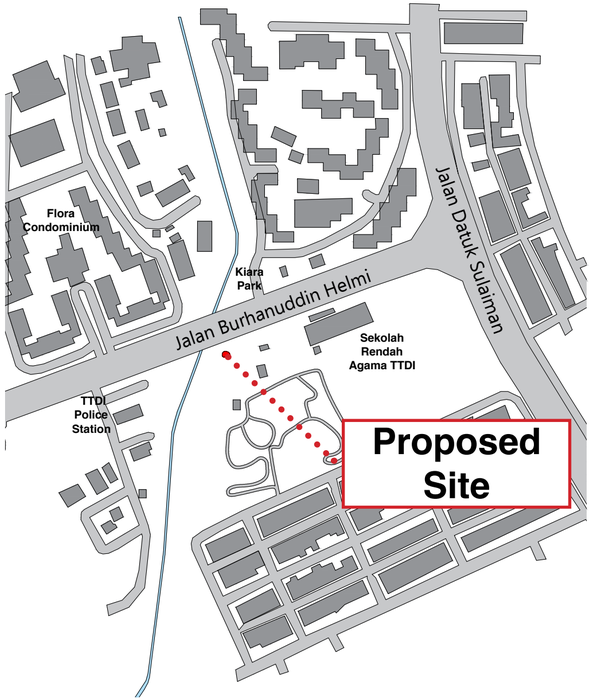


Exterior Developed
After sculpting the right form, openings are created to follow functions.

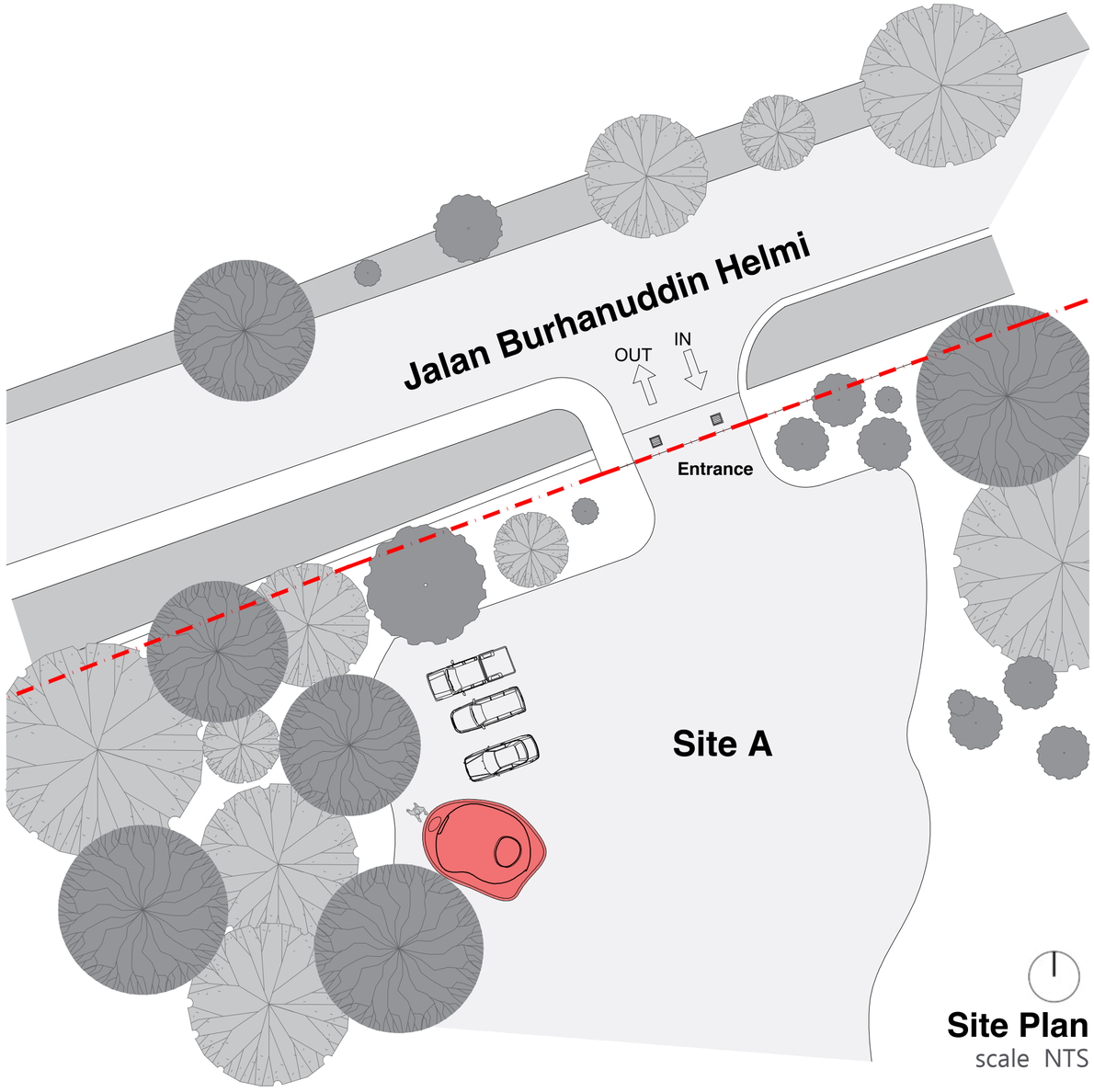


Interior Development
To enhance interior experience, the interior space is altered instead of offsetting from the outer shell

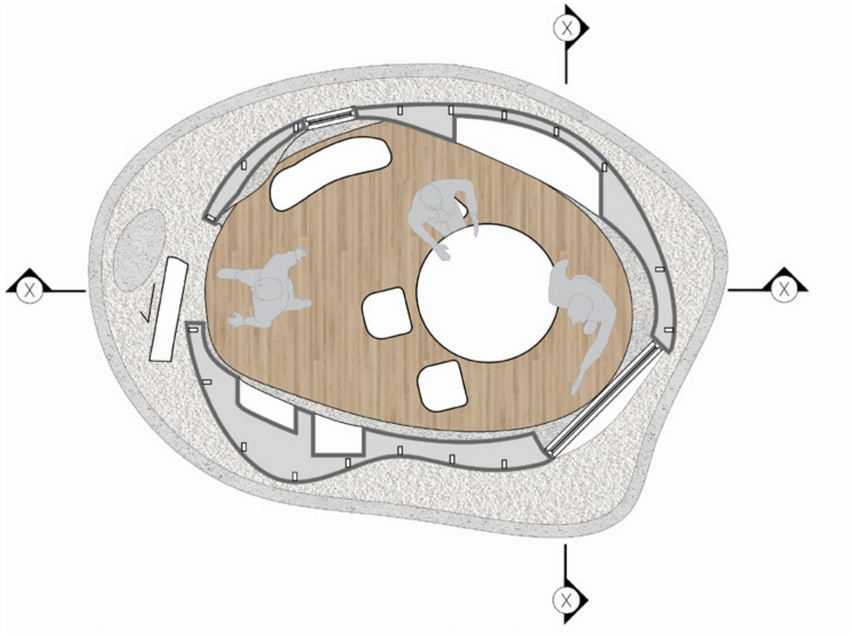
Key Plan
scale N.T.S



Location Plan
scale N.T.S



Site Plan
scale NTS

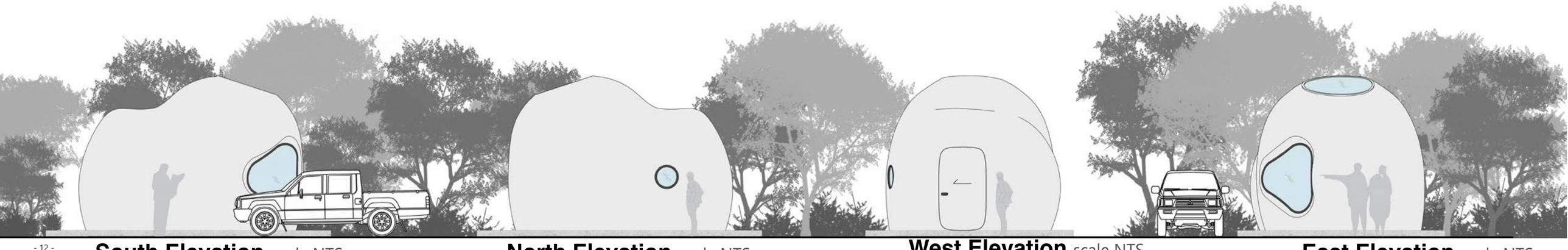


Floor Plan
scale 1:50

SCALE BAR 1:50
0m 1m 2m 4m

Section X-X
scale 1:50

Section Y-Y
scale 1:50



South Elevation scale NTS

North Elevation scale NTS

West Elevation scale NTS

East Elevation scale NTS

The main materials of the Organic Idea Pod are steel; hollow steel sections for structure frame and polished steel sheets for facade. The steel sheets are cladded by welding to the steel frames.

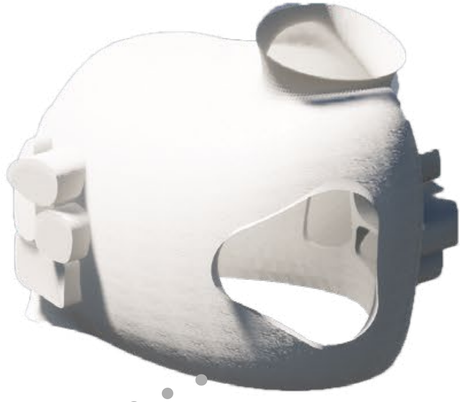
As for the interior, it was cladded with wood fibre concrete pieces with a layer of pebble wash.

In between the hollow space of both shells, glass wool insulations are installed. The space is good for wiring electrical appliances as well.

The elevated floor base is supported by concrete blocks from lab tests under steel joists, cement board and laminated timber strip flooring. Overall, the construction of the pod can be prefabricated in a factory space before sending to the actual site. Thus, the construction process would be in a better environment compared to local climate.

Exterior Shell
Reflecting surface generates free facade from time to time

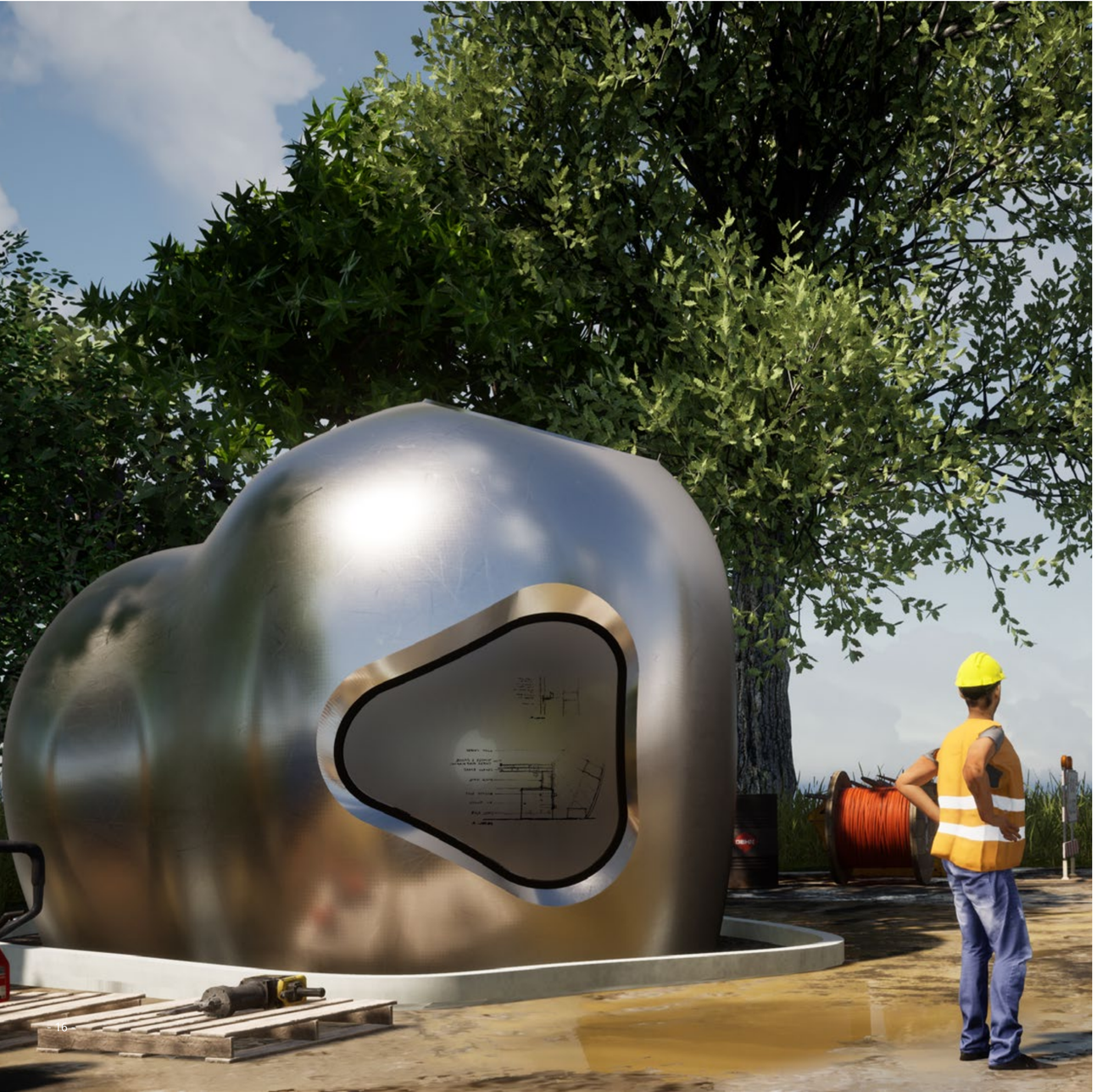
Hollow Steel Section Frame (HSS)
Strong and easy to bend into desired forms

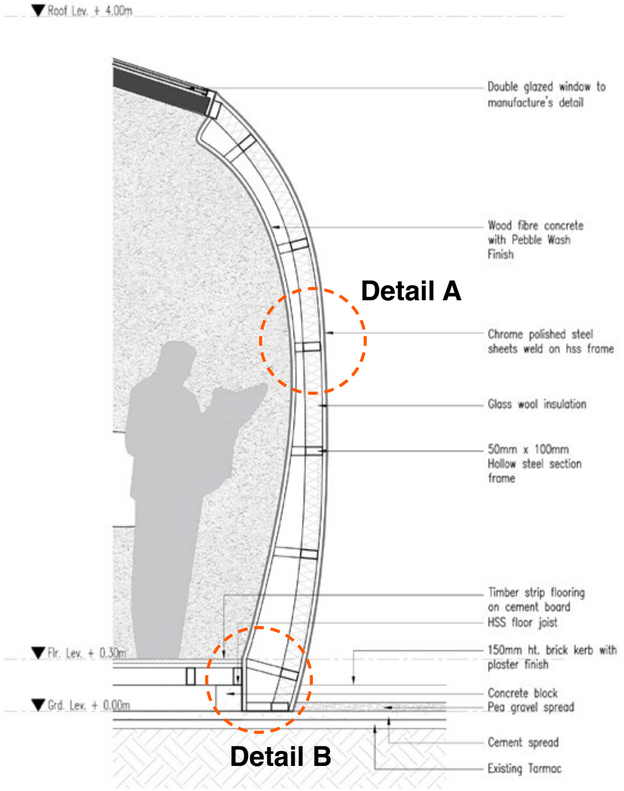


Interior Shell
Rough texture of pebble wash replicates nature caves

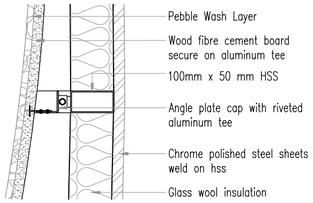
Elevated Floor Base
Wood texture provides warm within the interior space

Exploded View scale N.T.S

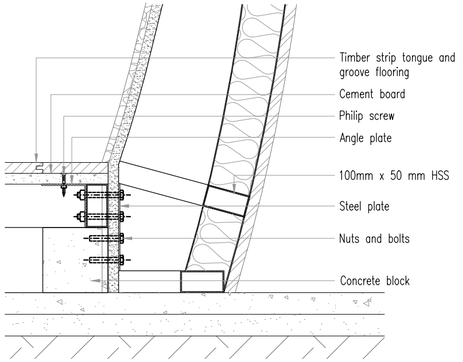




Sectional Details scale 1:25



Detail A scale 1:10

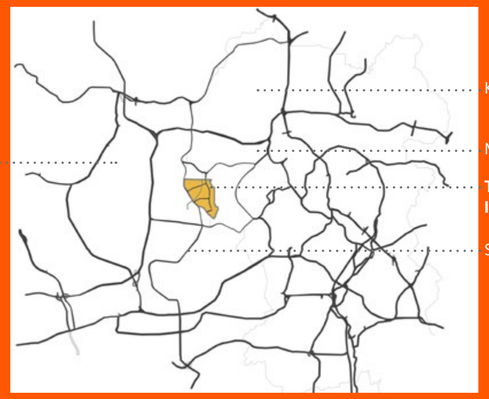


Detail B scale 1:10

Project 2a
Site Analysis @ TTDI

TTDI was an old rubber estate land located in the constituency of Segambut. Development plan began in 1973 with the merge of developers UDA-Seapark Sdn. Bhd. and S.E.A. Housing Corp. Sdn. Bhd. TTDI was considered rural. The construction began in 1974. Consists of mixture of development. It was affected by the recession in 1986, developed properties were more affordable in 1994, TTDI township awarded with award of distinction for residential property.

For this site analysis, it will be looking on 2 different site locations



Key Plan scale NTS

Location Plan scale NTS

Historical Timeline

The development in TTDI is a blend of residential, commercial, cultural, institutional and entertainment designations since the 1973's the architecture in general is a blend of : Old Colonial ,Asian Traditions. Malay Islamic, Modern Architecture & Post Modern Mix Architecture.

1970

Construction of landed house and community facilities with post colonial style.

Early 1980s

TTDI wet market were built in 1983s with art deco building style.

Late 1980s

Shophouses were built with early modern architectural value.

Early 1990s

High rise condominiums emerged with colonial architecture style.

Late 1990s

Commercial offices built. it was built with late Modernism style.

Early 2000s

Modern contemporary house were built towards a sustainable architecture

Late 2000s

Sustainable offices with community spaces built with late Modernism style.

Site Plan A

scale 1: 1000

Lot No. 32437, Jalan Burhanuddin Helmi,
Taman Tun Dr Ismail, 60000 Kuala Lumpur,
Wilayah Persekutuan Kuala Lumpur.

The vast area with parking lot at the entrance emphasized the welcoming effect in site A .

The design of the crisscrossing pathways highlights the interesting nature of the park.

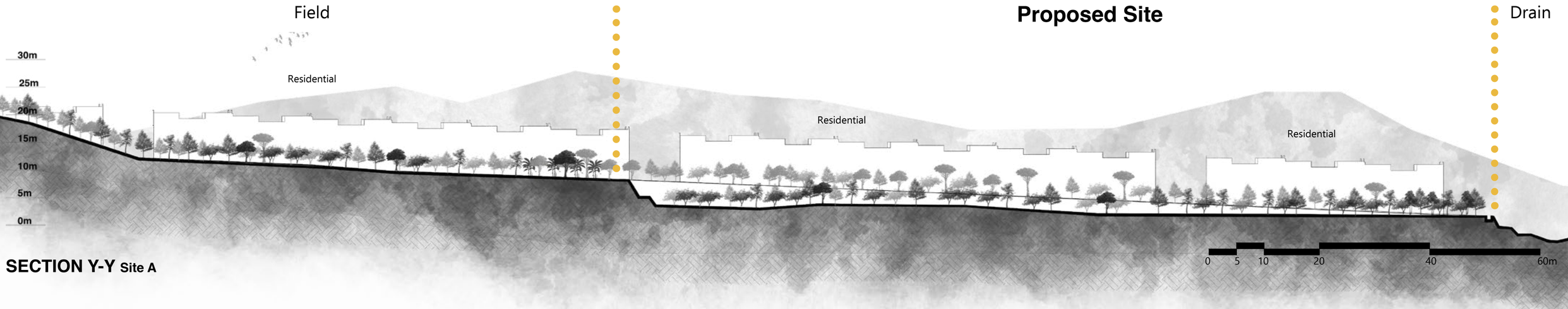
A tiny hill with fixed slides.

SECTION X-X Site A

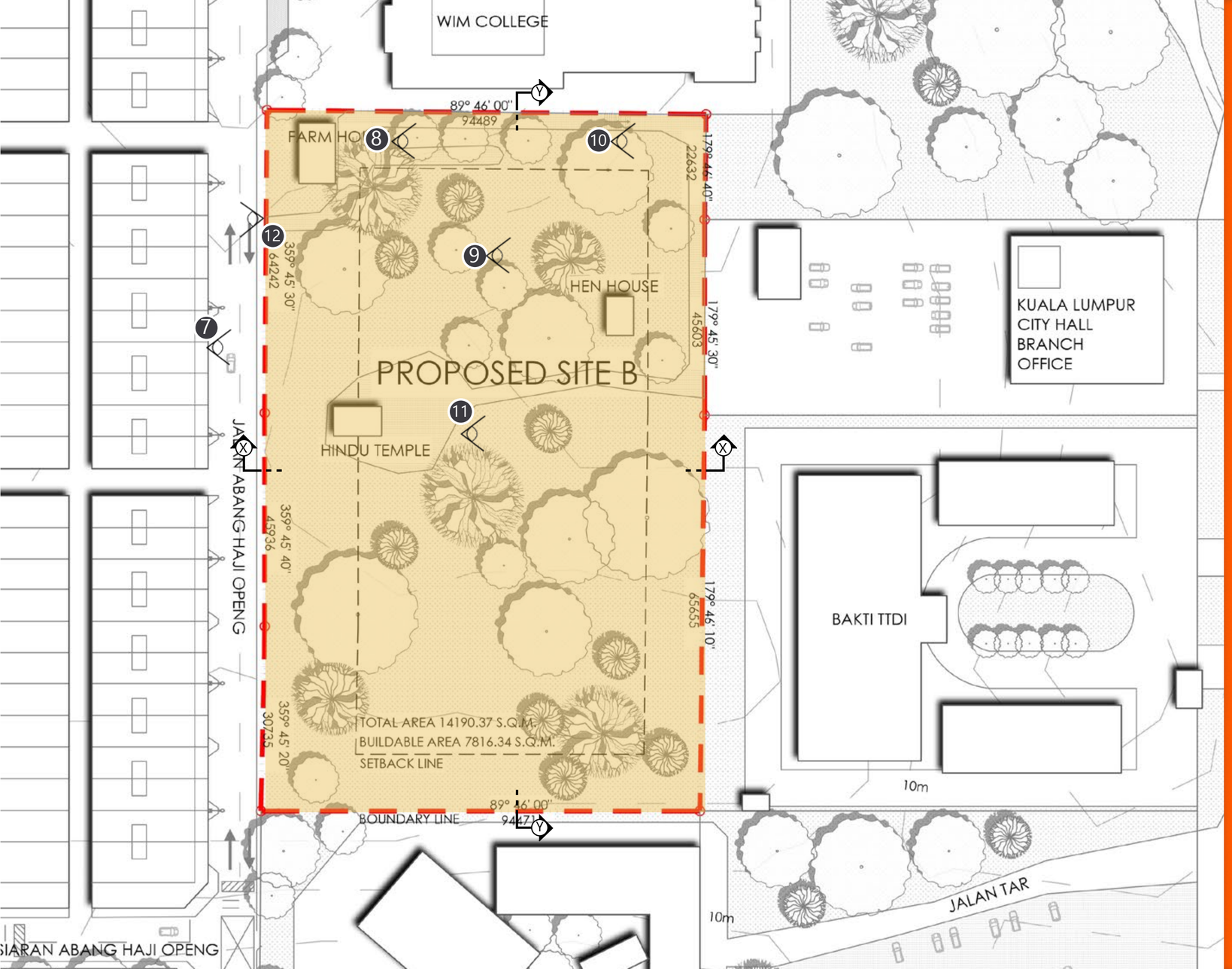
Path way leads the visitor ro explore the park in site a.

The tall trees planting at the surrounding of the park increase the vitality in the site A.

The Drain area can be seen, as well as the police station opposite site A



SECTION Y-Y Site A



Site Plan B

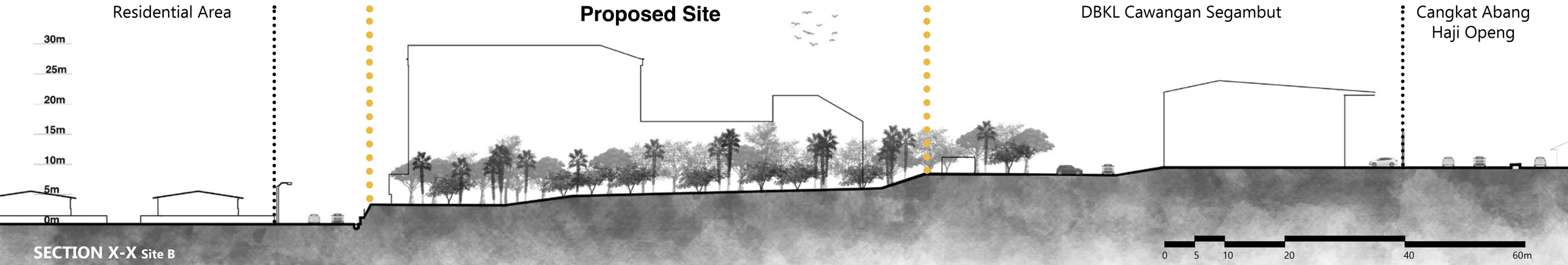
scale 1: 1000

Lot No 52396/51866, Changkat Abang Haji Openg, Taman Tun Dr Ismail, 60000 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur.

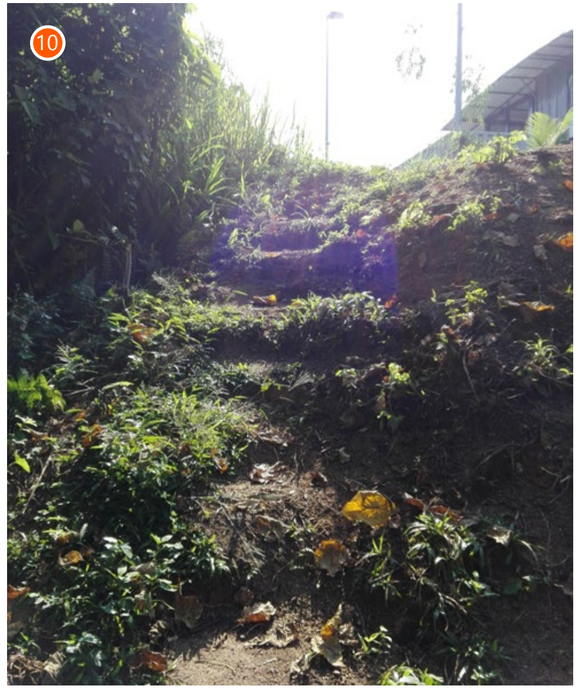
Panaromic view from residential to the site B.

Path way beside wisma wim surrounding with landscaping in serene feel.

A hidden path among the trees highlights the inexhaustible breath of nature.



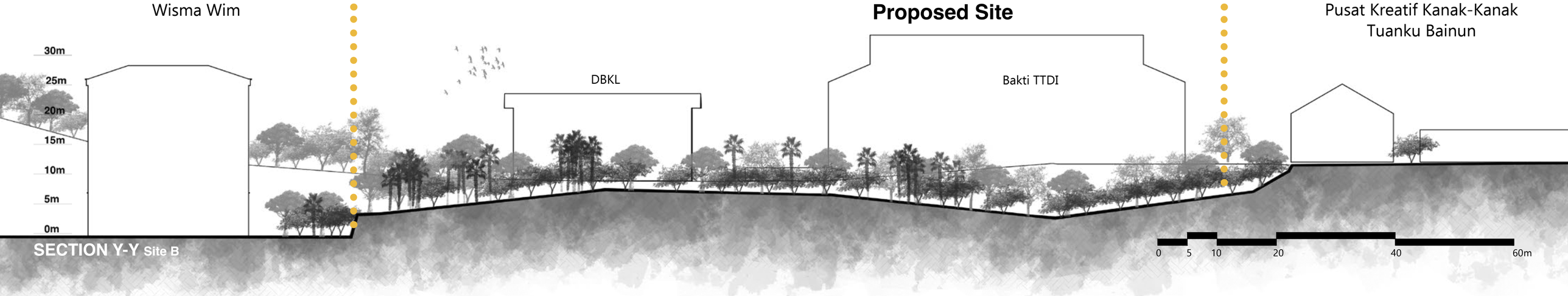
SECTION X-X Site B



Excavated steps in the site B.

Path way surrounding with landscaping.

Panoramic view from site B to residential housing.



SECTION Y-Y Site B

Morphology

Phase 1 (1973-1978)
First phase of development that put TTDI to existence. Designed for medium cost single storey and also one and a half storey houses.

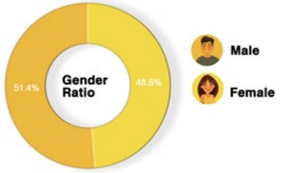
Phase 2 (1978-1984)
Mixed development consist various type of residential houses,shoplots, and public amenities. Phase 2 creates a high demand from society.

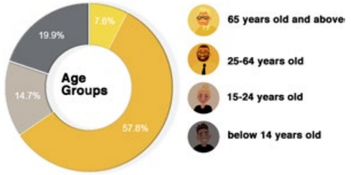
Phase 3 (1984-1990)
With growth of population, phase 3 further enhanced qualities of development,be it in the construction or the services provided.

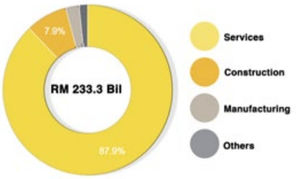
Phase 4 (1990-2000)
Last phase of development propelled itself with high rise building and highways. Value of residential houses and commercial building rise.

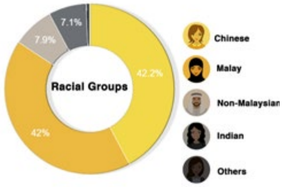
Local Demographics

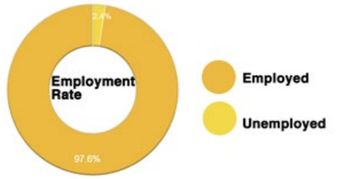
Taman Tun Dr Ismail is a town that is a mix of people from all ethnicity. TTDI is a thriving suburban township located to the northwest of downtown Kuala Lumpur. Those early beginnings saw TTDI grow as a residential area with a strong sense of community, a sentiment that makes this affluent suburb a desirable location for families till today.

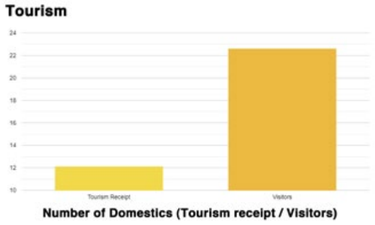




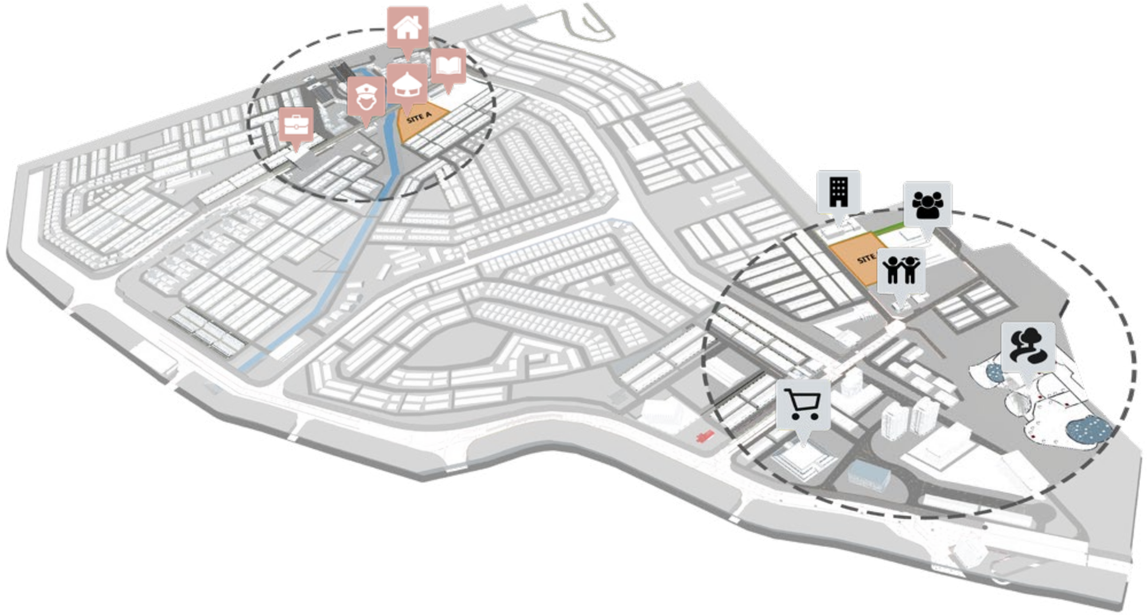








Landmarks



Legend

Site A Landmark

Site B Landmark

Site A

Kiara Park

Sekolah Rendah Agama TTDI

Dewan Avenue

Police Station

Menara Ken

Site B

Wisma WIM

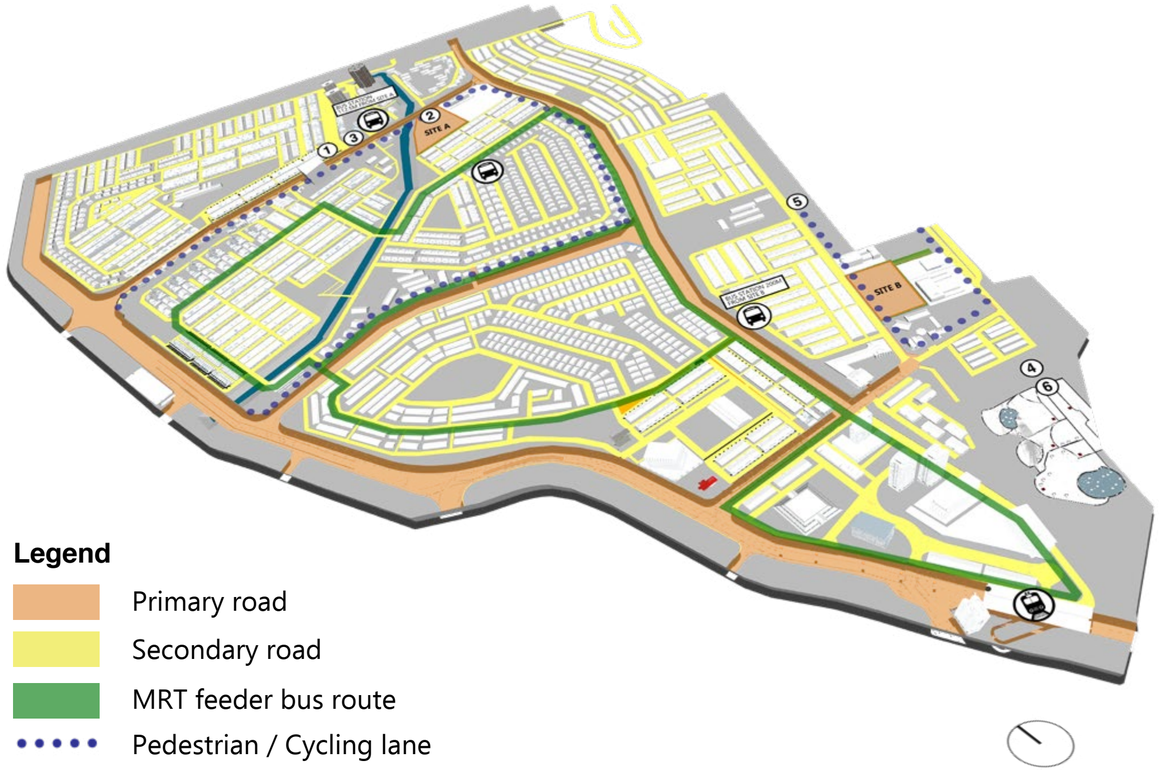
Bakti Siti Hasmah

Taman Rimba Kiara

Pusat Kreatif Kanak-Kanak Tuanku Bainun

TTDI Wet Market

Traffic Flow Diagram

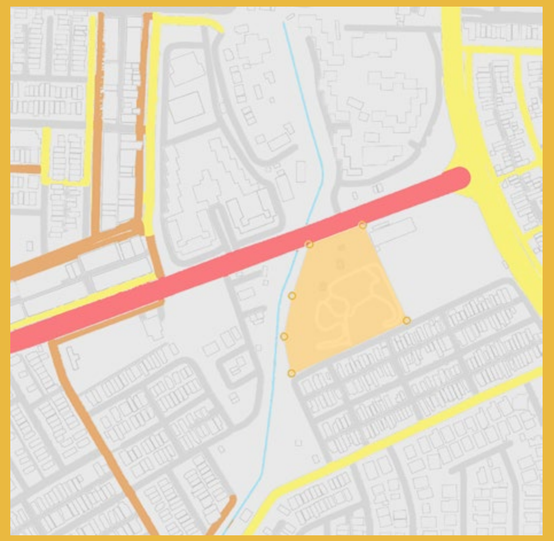


Legend

- Primary road
- Secondary road
- MRT feeder bus route
- Pedestrian / Cycling lane
- Bus station
- MRT station

Traffic Flow

Legend Smooth — Crowded



Site A

The traffic flow at the main road is usually high and declined steadily until the off peak hour. Medium amount of traffic at shoplots area and low traffic at the residential area.

Site B

The traffic around the site will be high initially and decreases steadily until off work hour. High traffic amount at the shoplots area during lunch and dinner time.

U-Turn at Site A

Site A is provided with a U-turn at about 300m at Jalan Burhanuddin Helmi and requires about 1.3km to reach back Site A in case of overpassing the site.

U-Turn at Site B

Site B is much more direct which it needs to turn back directly for 300m at Changkat Abang Haji Openg as moving upwards is the private lane.

Dual Carriageway

In front of Site A consists of two direction of two lane traffic which is separated by the divider.

Side Parking at Site B

Side Parking along the road which may cause traffic jam during lunch hour or off work hour.

Car Park in Site A

Car Park is provided for the visitors at the entrance of the recreation park which may link to Site A.

Two Way Lane Road

Site B is surrounded by two direction of single lane traffic which may cause heavy traffic during peak hour.

Human Density

Legend Smooth — Crowded

Site A

The site is usually less people until evening, while the residential area will be high density at the off work hour in the morning and night. Large amount of human density at shoplots area which will decline steadily due to meal time.

Site B

High Density of people around the site due to morning class and work peak hour. The shoplots in are high in density for lunch hour and grocers in the afternoon.

Social Activities Diagram

Legend

- Weekend activities
- Leisure activities
- Educational activities
- Religious activities

Weekend Activities

1 TTDI Community Hall

2 Pustaka KL

3 TTDI Night Market

Leisure Activities

4 TTDI Park

5 Taman Rimba Kiara

Educational Activities

6 Pusat Kreatif Kanak-kanak Tuanku Bainun

7 Lorna Whiston, Plaza VADS

Religious Activities

8 TTDI Gospel Centre

9 Chapel of Kristus Aman

10 Masjid At-Taqwa TTDI

11 Kuil Sri Maha Mariamman TTDI

Behavorial of the People

TTDI residents were battling with the government and City Hall (DBKL) over a development project at a park.

Residents of all ages in TTDI are involved in the face shield making project.

Residents of all ages in TTDI are involved the activities of the Earth Day.

Future Development

A mixed development project of 3.24 ha was proposed at Taman Rimba Kiara since 2017.Proposed mixed development with high rise affordable apartments for locals who resides in the longhouses in Taman Tun Dr Ismail. It was scaled down after a court appeal was made by (TTDIRA) residents to protect the Taman Rimba Kiara.

Initial plan proposed

Revised plan

Longhouses in Bukit Kiara

Zoning, Water , Sewerage and Services

Legend

- Leisure
- Amenities
- Residential
- Waterway
- Site location

(Site A)TNB Substation
200m from site

(Site B)TNB Substation
150m from site

(Site A)LPG tank

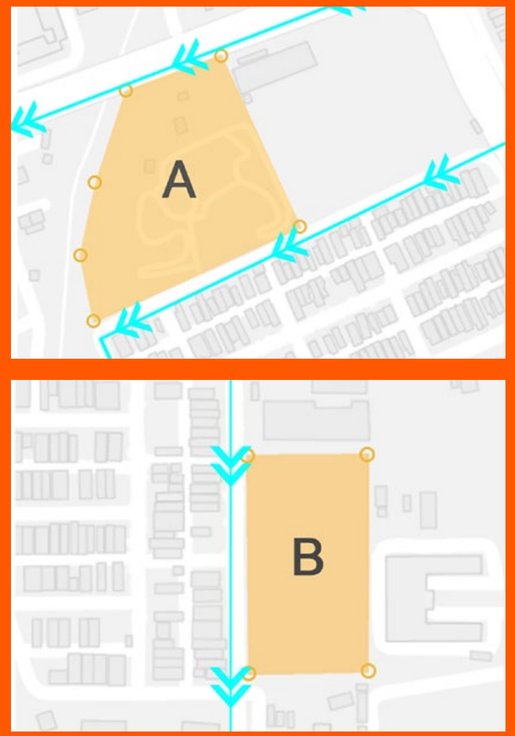
Sewerage Treatment Plant

“AIR” water storage tank

Sewerage, Water and Services

Water Supply System

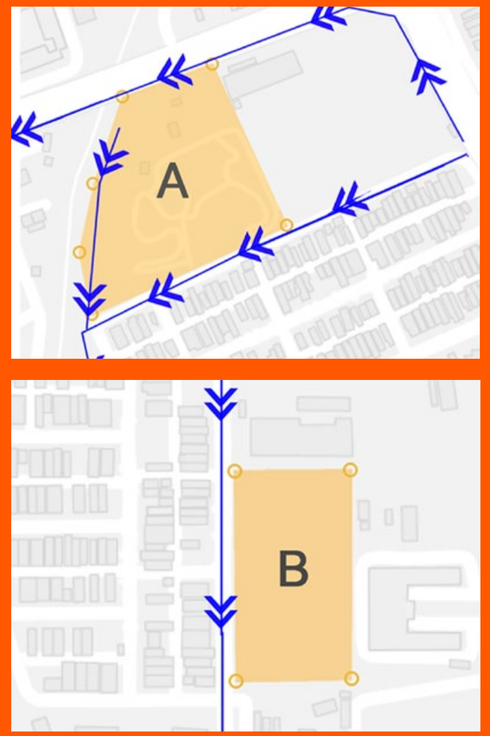
Water Supply System



Fire Hydrant

Water Discharge System

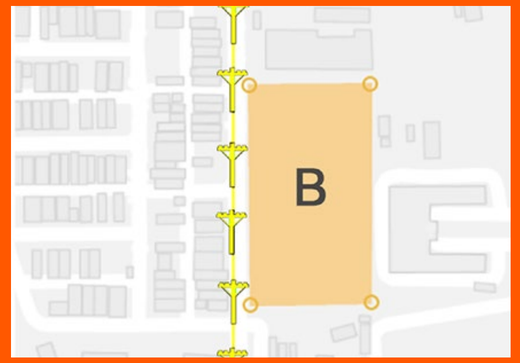
Drainage



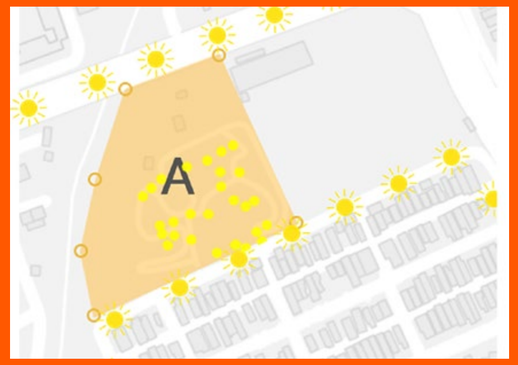
Sewage

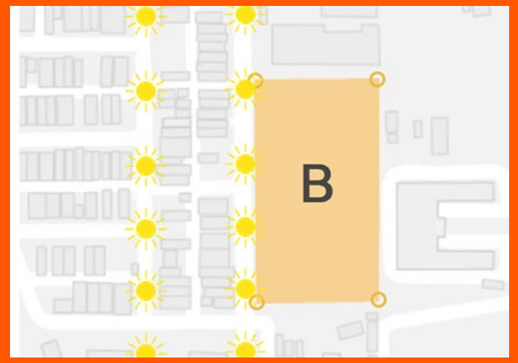
Electricity & Lighting

Electricity Supply



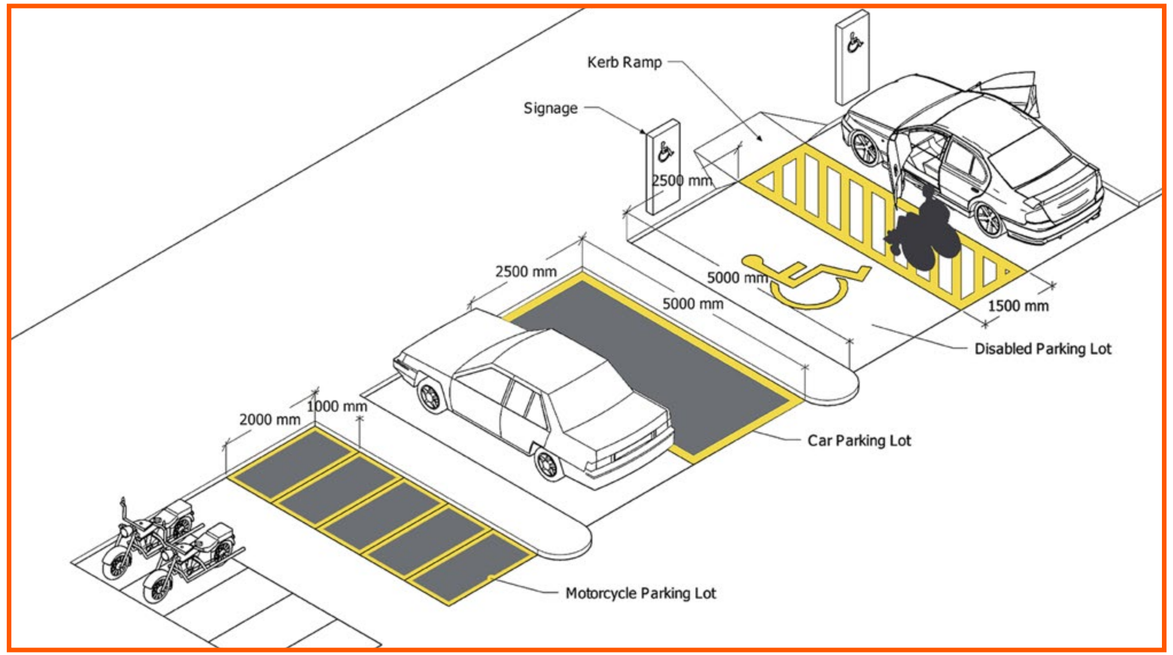
Lightings



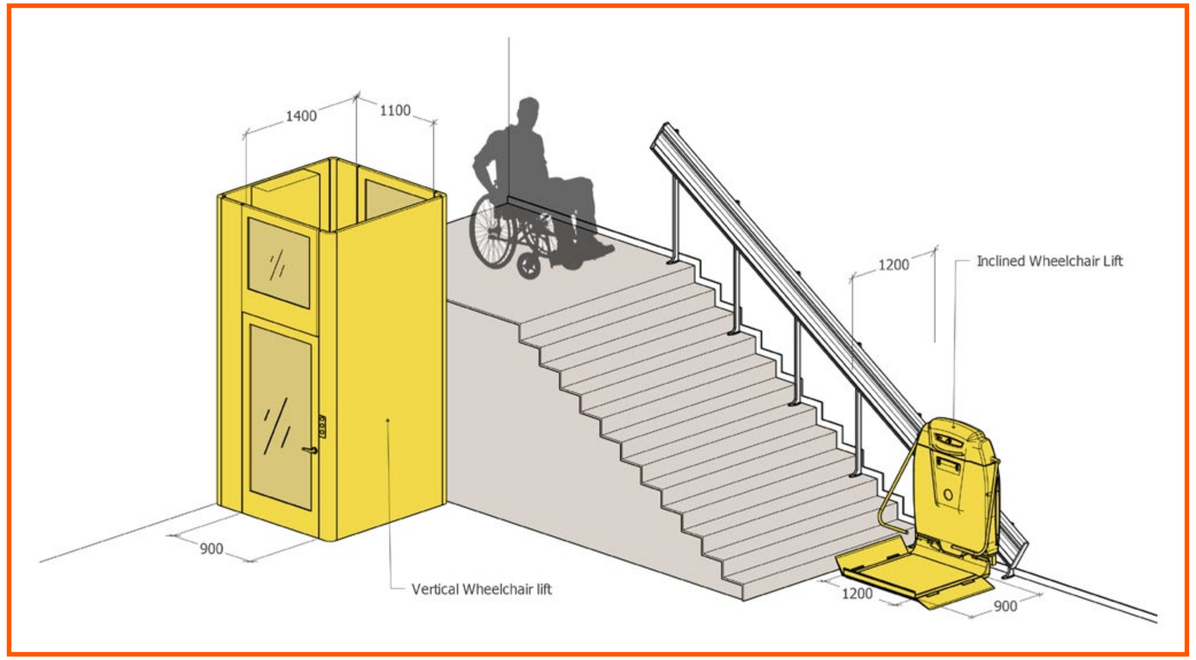


UBBL 1984 & Malaysia Standard Universal Design

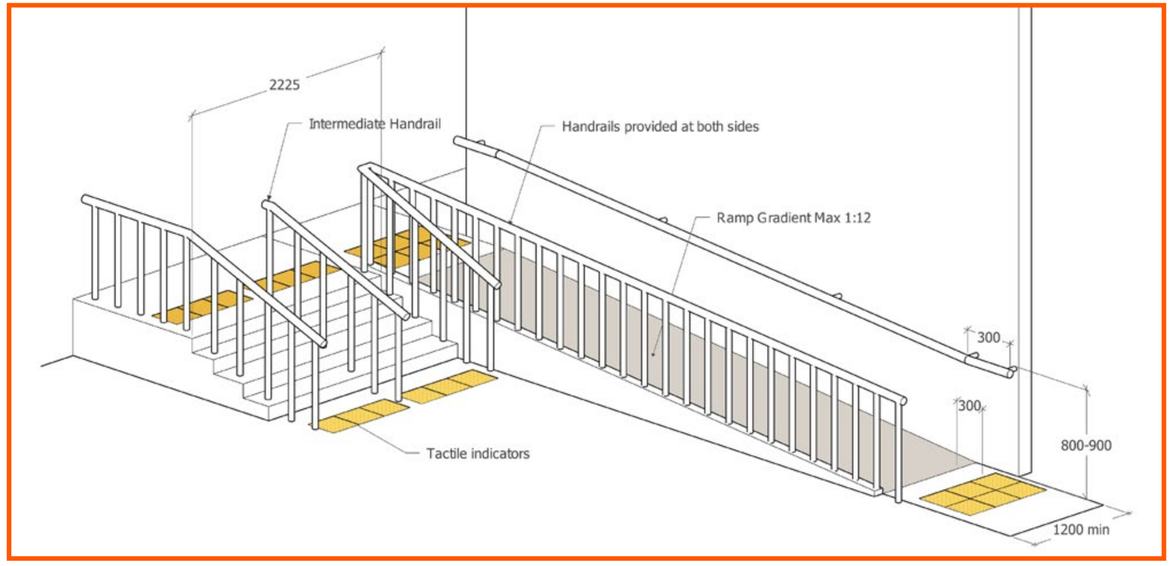
1. Disabled Friendly Parking Lot



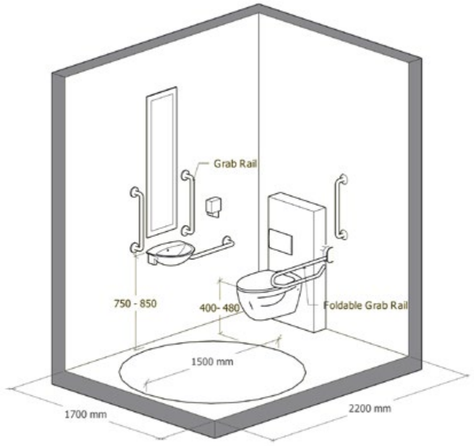
2. Wheelchair lift



3. Ramp Access

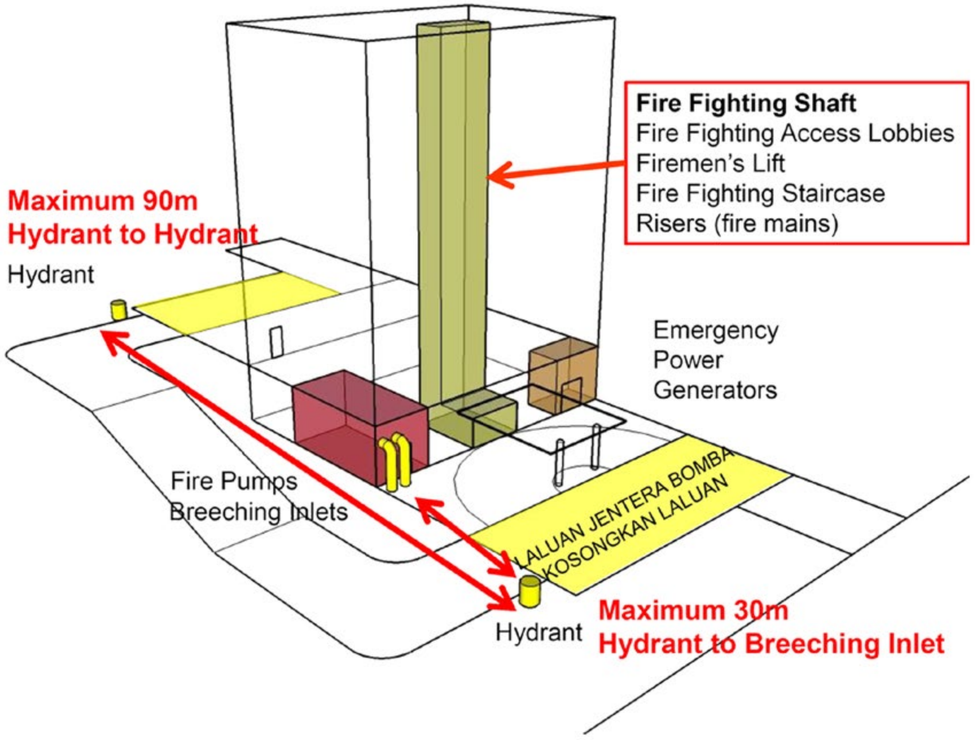


4. Disabled Toilets

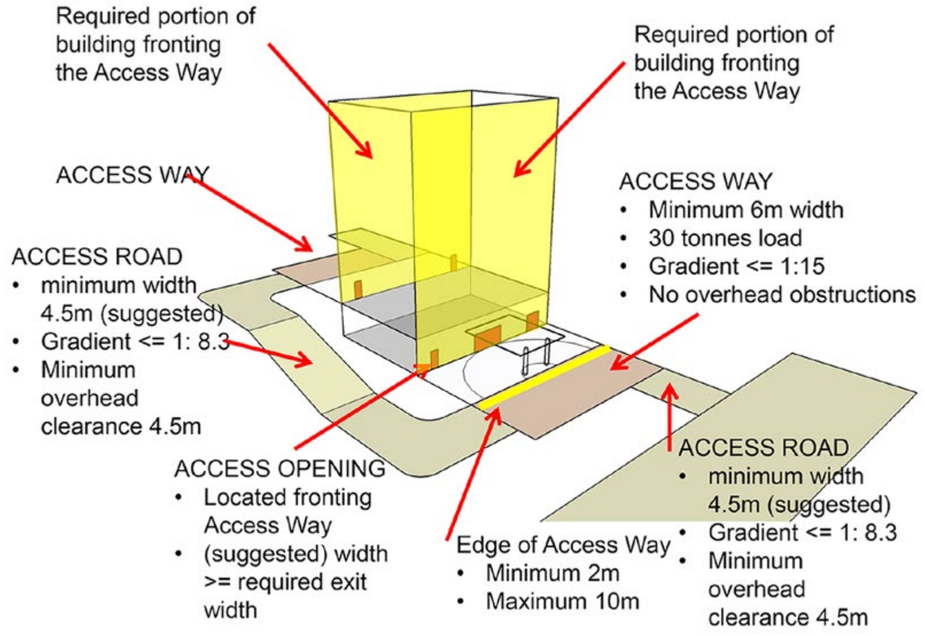


Fire Requirements

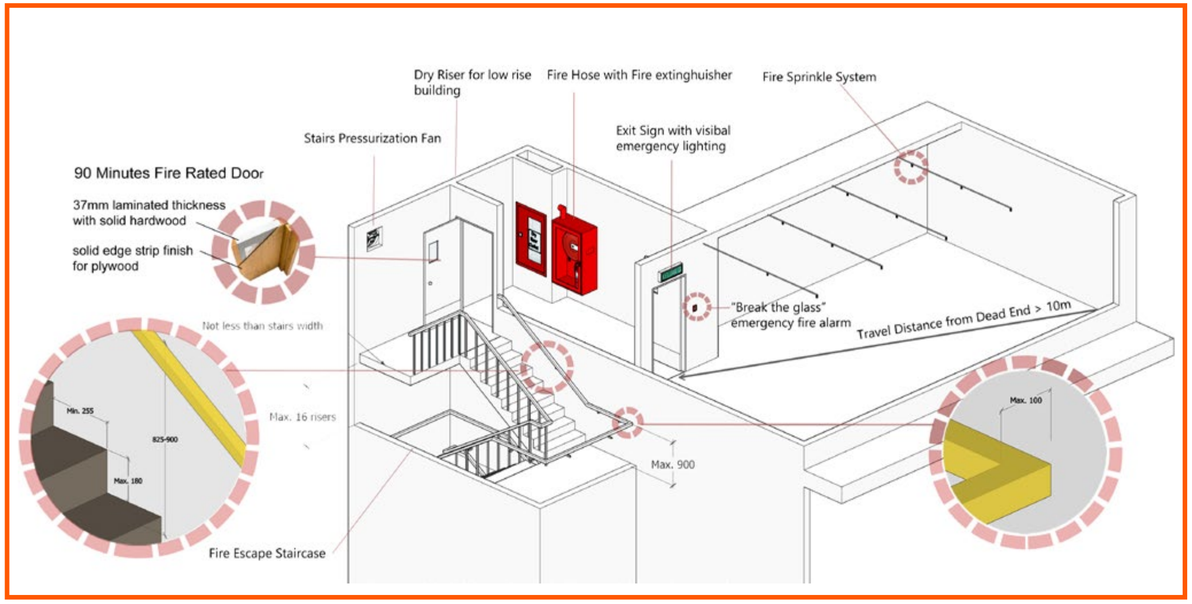
1. Fire Hydrant



2. Fire Appliences Access



3. Fire Escape Requirements



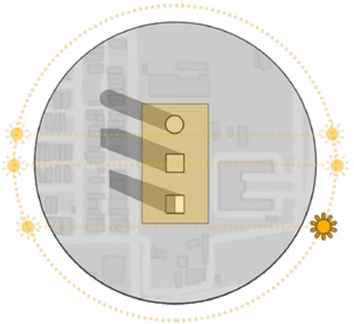
Climate

Site A Sunpaths

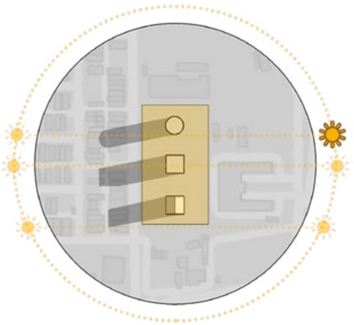
Sunrise

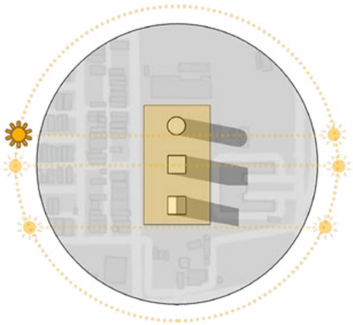
Sunset

20-JAN

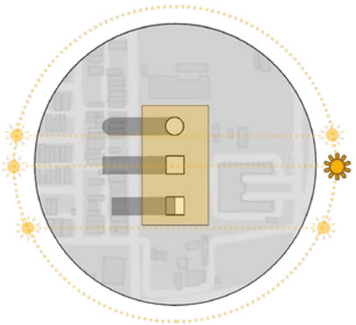


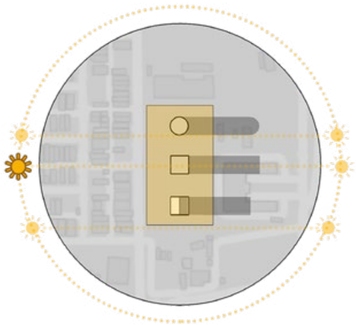
20-APR





20-SEP



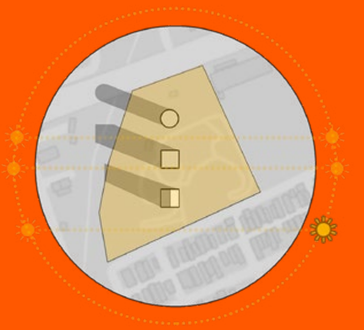


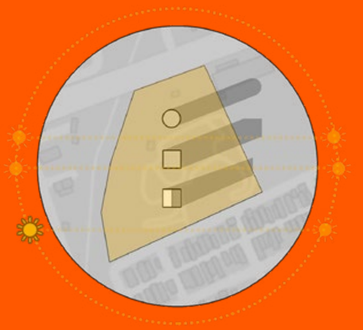
Sunrise

Sunset

Site B Sunpaths

20-JAN

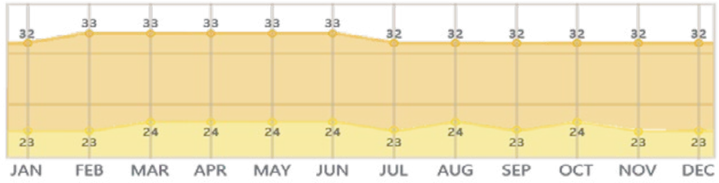




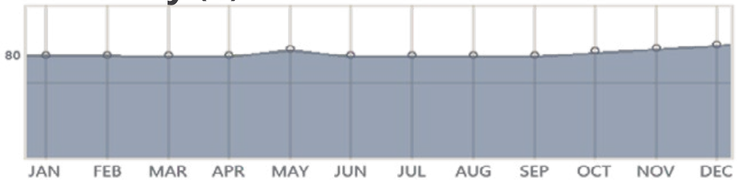
20-APR

20-SEP

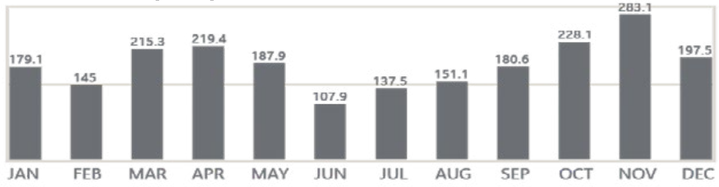
Temperature (°C)



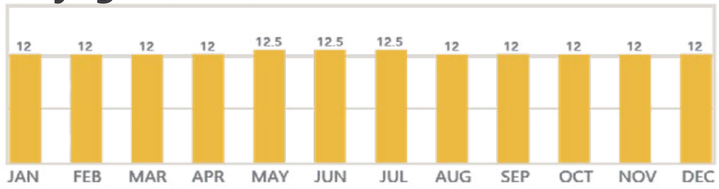
Humidity (%)



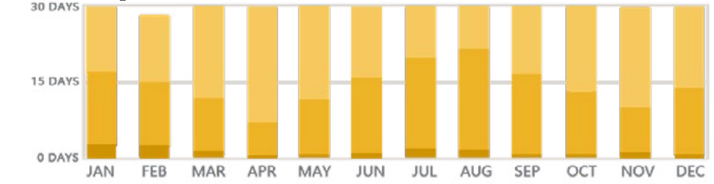
Rainfall (mm)



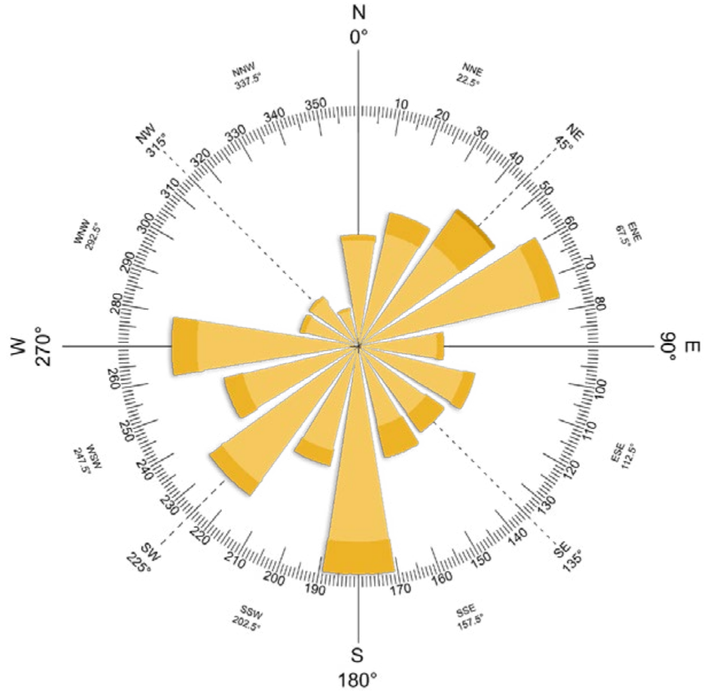
Daylight (Hours)



Wind Speed (Km/h)



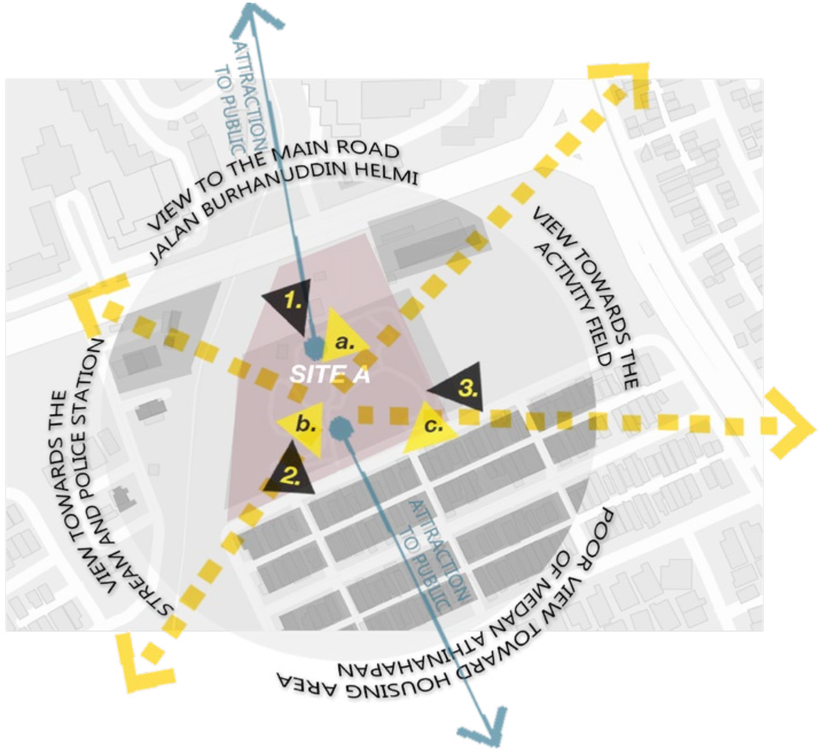
Wind Direction



Average wind speed is 3.6 km per hour . The wind is mostly from Northeast and Southwest due to the monsoon wind.

Sensory

Site A



Ambient of environment in proposed site A are covered by the trees, which cause shady environment.

In the morning, they are a group of senior citizens having exercise together, enjoying the cool and high humidity surrounding, also the environment with good air quality. In evening, the child may consume thier energy by playing with the playground facilities.

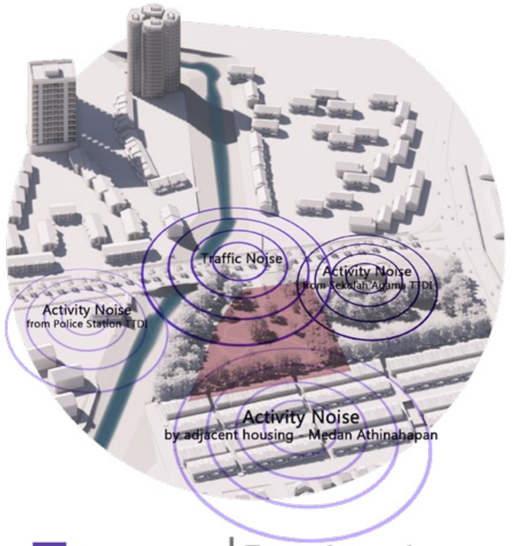
Site B

An elevated site surrounded by multiple types of building purposes, having high private level and giving sense of condescending to the users when standing on top the site because the site level are higher than the housing area.

The trees around the site cause shady environment, and cheerful rustling leaves sounds when wind blow.

Sensory analysis of Sounds

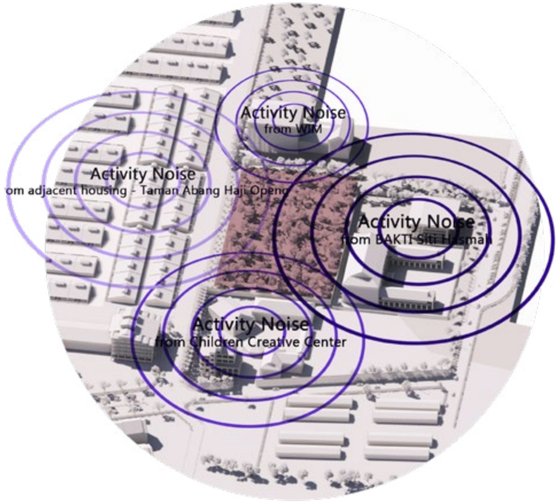
Site A



60db above
45db - 60db
20db - 45db

Type of sounds
- Traffic (70db-80db).
- School's activities
- Housing's activities
- Bird chirping (20db-30db).

Site



60db above
45db - 60db
20db - 45db

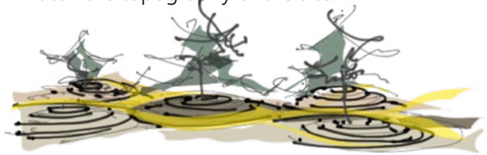
Type of sounds
- Traffic (60db-70db).
- Public activity noise.
- Housing activity.
- Leaves rustling (30-40db).

Sensory analysis of Views

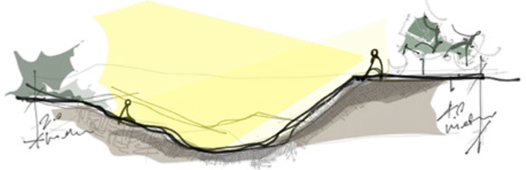
Views to the site.

1. View from car park/entrance to the site
The concrete pavement act as a guidance for the users to travel around the park.

2. View from adjacent housing to the site
The irregular and curvilinear design of the pavment match the topography of the site.



3. View from activity field to the site
Views can be create in different level of position.



Site A

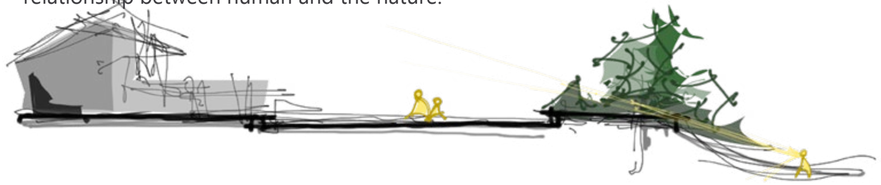
Sensory analysis of Views

Views to the site.

a. **View from the site to the car parking/main road.**
This view create a feeling of eerie becuase of the abandoned community hall, the empty car parks, the school are silence due to the pandemic, shady environment by shadow casting of trees. However, this picture also shows that site having distance from the main road.

b. **View to opposite housing**
The view show the transition of greenery to solid mass building. This indicateing the relationship between human and the nature.

c. **View between site and housing**

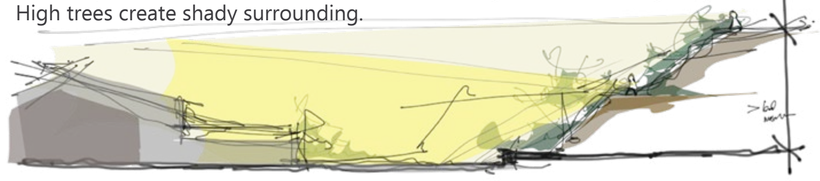


Site A

Views to the site.

1. **View from opposite housing to the site**
The trees becomes natural buffer between site and adjacent building, it also covered and give more privacy to the site.

2. **View from entrance to the site**
The site provide wider view toward the surrounding becasue of it higher position. High trees create shady surrounding.



Site B

Sensory analysis of Views

Views to the site.

a. **View from site to opposite housing - Taman Abang Haji Openg**

The morning sun casting shadow that make the surrounding to be serene and peaceful.

b. **View from site to the building beside - Women Institude Management**

A organised view provided as the building design of the Women Institute Management is about in blockage form and its window are well arranged with repitition, so it give a boredness image.

Site B

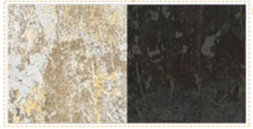
Sensory analysis of Textile

1. **Asphalt**
hard & rough

3. **Concrete pavement**
hard & rough texture

5. **Tree trunk**
scratchy & rough

6. **Grass + Leaves**
soft & loose



2. **Old wall paster +Rusted steel**
solid & sandy

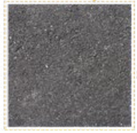
4. **EPDM color flooring**
bouncy, rough & playful

Site A

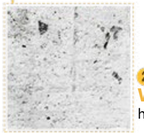
3. **BRC fence**
solid, metalic &smooth

4. **Grass + Leaves**
soft & loose

6. **Dry clay soil**
sandy loam & loose



1. **Asphalt**
hard & rough



2. **Worn concrete**
hard & rough

5. **Withered tree**
dry & brittle

Site B

Natural Elements

DOMINANT

Rain Tree

(Samanea Saman)

Height : 16m (approx.)
Maximim height : 20-30m (approx.)
Landscape uses : Roadside Tree, General, Shade providing tree

Senegal Mahogany

(Khaya Senegelansis)

Height : -
Maximim height : 30m++
Growth Rate : Fast
Landscape uses : Roadside tree

Pong Pong Tree

(Cerbera Odollam)

Height : 12m (approx)
Maximim height : 15m
Landscape uses : Coastal, Roadside Tree

VIBRANT COLOR

Sealing Wax Palm

(Cyrtostachys Renda)

Height : -
Maximim height : 12m (approx.)
Growth Rate : 2-4 months (approx.)
Landscape uses : Roadside Tree, General,Parks & Gardens, Small Gardens, Hedge, Riverine

Hibiscus Malaysia

(Hibiscus Rosa-sinensis)

Height : 1m (approx.)
Maximim height : 3m (approx.)
Growth Rate : Fast
Landscape uses : Parks & gardens
Canopy Diameter : 2.4m (approx.)

Frangipani Tree

(Plameria Rubra)

Height : 15ft (approx.)
Maximim height : 25ft (approx.)
Growth Rate : Fast
Landscape uses : parks & gardens
Thematic lanscaping : Fragrant/ Aromatherapy garden
Canopy Diameter : 25ft (approx.)

FRUIT & VEGETABLES

Papaya Tree

(Carica Papaya)

Height : 2m (approx.)
Maximim height : 10m (approx.)
Growth Rate : Fast
Ethnobotanical uses : Food
Landscape uses : Container planting,- general, parks & gardens.

Cocoyam

(Colocasia Esculenta)

Height : 1m (approx)
Maximim height : 1.5m (approx.)
Ethnobotanical uses : Food
Landscape uses : Pond/lake/river, marsh/bog, phytoremediation (ground/water Contaminant)

Banana Tree

(Musa Paradisiaca)

Height : 2m (approx.)
Maximim height : 8m (approx.)
Ethnobotanical uses : Food
Landscape uses : genral, focal plant, container planting, parks & gardens

LEAST COMMON

Chinese Violet

(Asystasia Gangetica)

Height : -
Maximim height : -
Growth Rate : Fast
Notes : Leaves are oval/triangular, 2.5-16.5cm long and 0.5-5.5cm wide.

Coconut Tree

(Cocos Nucifera L.)

Height : 15m (approx.)
Maximim height : 30m
Growth Rate : Leaf emergence to shedding takes about 2.5-3 years.
Circumference : 16cm (approx.)
Canopy Diameter : -

Glossy Privet

(Ligustrum Lucidum)

Height : 7.9m (approx.)
Maximim height : 10m
Growth Rate : -
Circumference : -
Canopy Diameter : 5.3m (approx.)

Landscape Planning

Overview

When it comes to landscape, softscape and landscape are the prime aspect in landscape, these two aspect are the bread and butter that compliment each other, brings life to surrounding and add quality of life.

Landscape Benefits

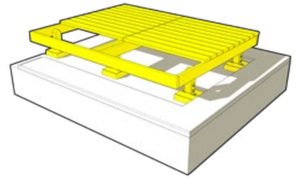
Serenity

Enchance Architecture

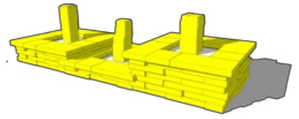
Natural Coolant

Encourage Outdoor Activity

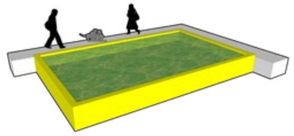
Hardscape



Decking



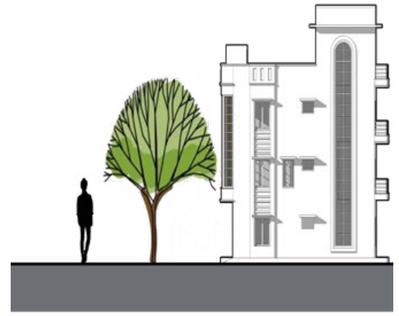
Water Fountain



Wading Pool

Patio

Softscape



Feature Tree

Screening Tree

Shading Tree

S.W.O.T

Site A

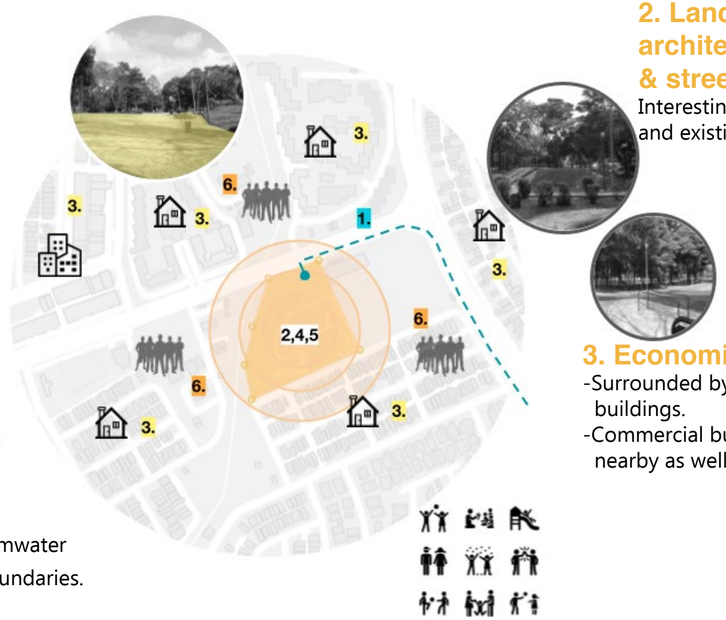
Strength

1.Circulations & Parking

Existing Vehicle Entrance and Parking Spot.

2. Land use, architectural & streetscape

Interesting topography and existing contexts.



6. Social Impact

Nodes of attracting youth around the area with its existing equipments.

3. Economics

-Surrounded by residential buildings.
-Commercial buildings are nearby as well.

5. Environmental

Serene, shady in site and stormwater discharge ready along site boundaries.

4. Image identity

Having a strong recreational area identity.

Site B

1. Circulations & Parking

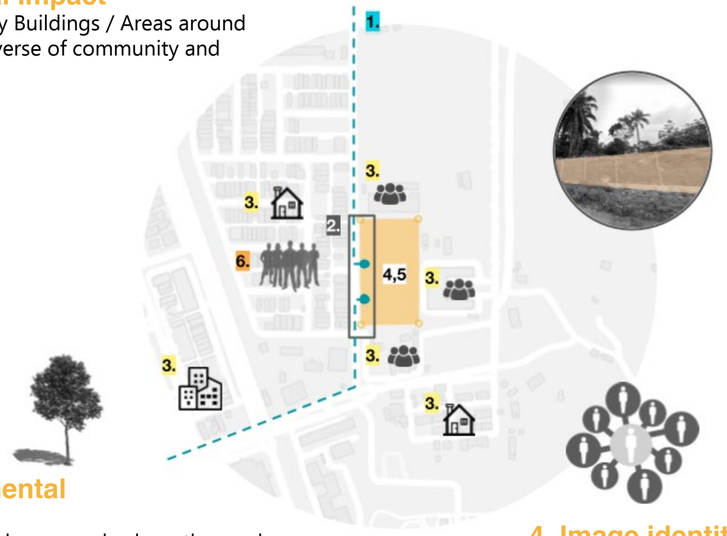
Simple single road to access.

6. Social Impact

Community Buildings / Areas around created diverse of community and culture.

2. Land use, architectural & streetscape

Elevated ground with less risk of flooding.



3. Economics

Surrounded by residential buildings and public community buildings.

5. Environmental

-Quiet, shady
-Stormwater discharge ready along the road at west side.

4. Image identity

Flexible identity, mainly relation to community.

Site A
Weakness

1. Circulations & Parking
No opening junction for other side to acess.

6. Social Impact
Is attracting more elders than youth.

5. Environmental
Area of tall grass and bushes at west side are home of pests or vermins.

2. Land use,architectural & streetscape
-Challenging on planning layout without affecting existing context.
-Limited good views from site,mostly blocked by trees.

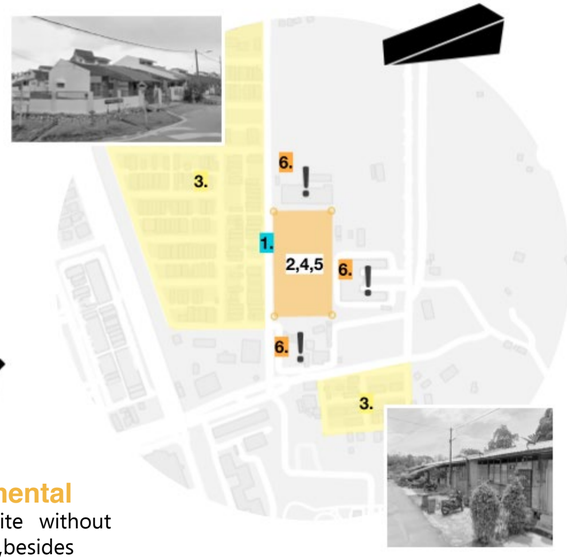
3. Economics
Existing land and community hall not properly utilise.

4. Image identity
Limitation of modifying identity.

Site B

1. Circulations & Parking
Need to provide vehicle ramp to enter site.

6. Social Impact
Introduce an interesting new community.



2. Land use, architectural & streetscape
Lacking of design characteristic.

3. Economics
Smaller development than other regions in TTDI.

4. Image identity
No strong identity.

5. Environmental
Dark in the site without proper lighting ,besides along the road area.

Site A

Opportunity

1. Circulations & Parking
Utilising existing parking and create more options to access site.

6.Social Impact
Is attracting more elders than youth.

2. Land use, architectural & streetscape
Using existing contexts as design feature or intention.

5. Environmental
Convenience for being a sustainable building based on context.

4. Image identity
Limitation of modifying identity.

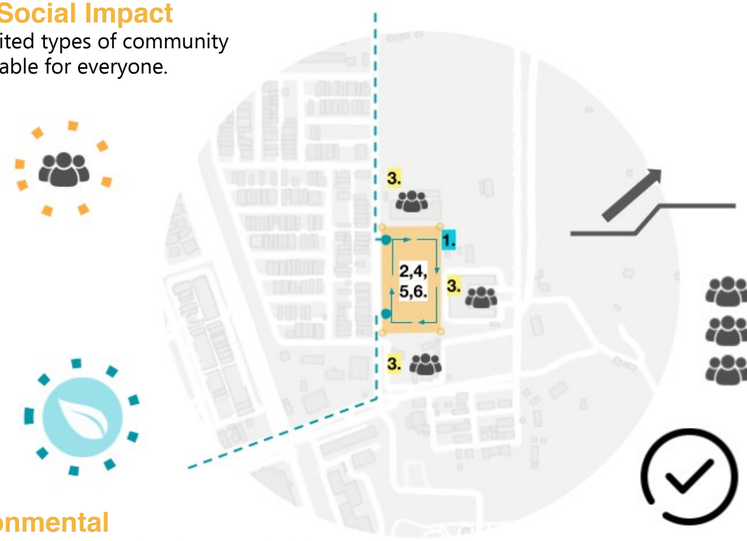
3. Economics
Existing land and community hall not properly utilise.

Site B

1. Circulations & Parking
-Internal circulation for vehicles to enter, exit.

-Ramps & Stairs can be provided in circulation.

6. Social Impact
Limited types of community suitable for everyone.



2. Land use, architectural & streetscape
Making use of elevated surface as feature.

3. Economics
Creating a community hub with its contexts.

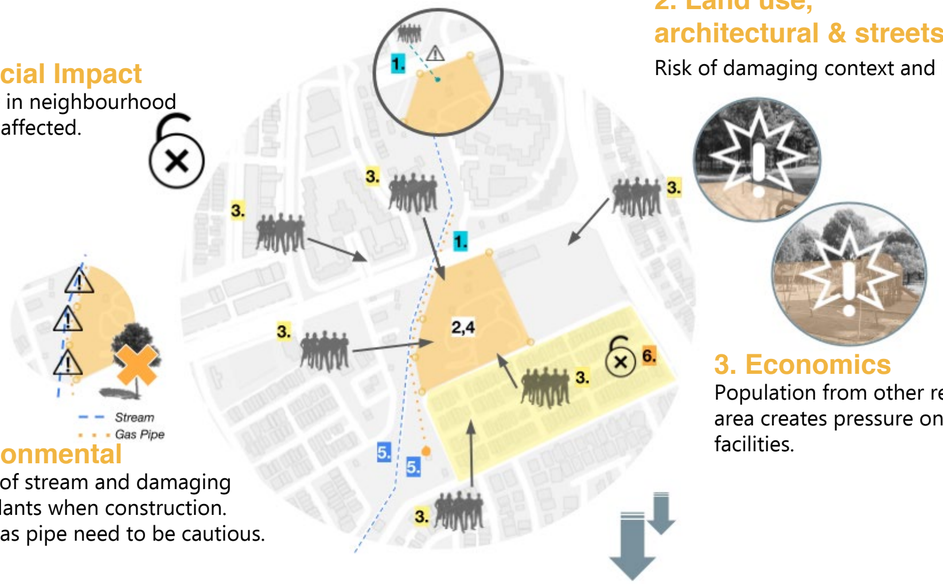
5. Environmental
Being the outstanding performing sustainable. building compare to its neighbouring community buildings.

4. Image identity
Chance of determine its identity to the community.

Site A
Threat

1. Circulations & Parking
Pedestrians taking risk of vehicle accidents to cross to site A.

2. Land use, architectural & streetscape
Risk of damaging context and identity.



6. Social Impact
Privacy in neighbourhood will be affected.

3. Economics
Population from other residential area creates pressure on limited facilities.

5. Environmental
-Pollution of stream and damaging existing plants when construction.
-Existing gas pipe need to be cautious.

4. Image identity
Easily loss its identity when development with intention does not relate to context.

Site B

1. Circulations & Parking
Pedestrians taking risk of vehicle accidents to cross to site B, but lesser compare to site A.

6. Social Impact
Site development might introduce larger future developments that affect the neighbourhood

2. Land use,architectural & streetscape
Possibility of landslide at the side close to the main road

3. Economics
Plenty of community centres creating competitions.

5. Environmental
Damaging of existing trees in site.

4. Image identity
Low levels of security affecting safety from crimes.

Project 2b (i)

Precedent Studies :
Penang Digital Library

Penang Digital Library 2 is the first prize-winning project of the competition for PAM Award 2019,which award for architecture in Malaysia recognises leading architects' contributions to design quality in the built environment. The project aims to merge the demand of library with modern lifestyle and latest technology.

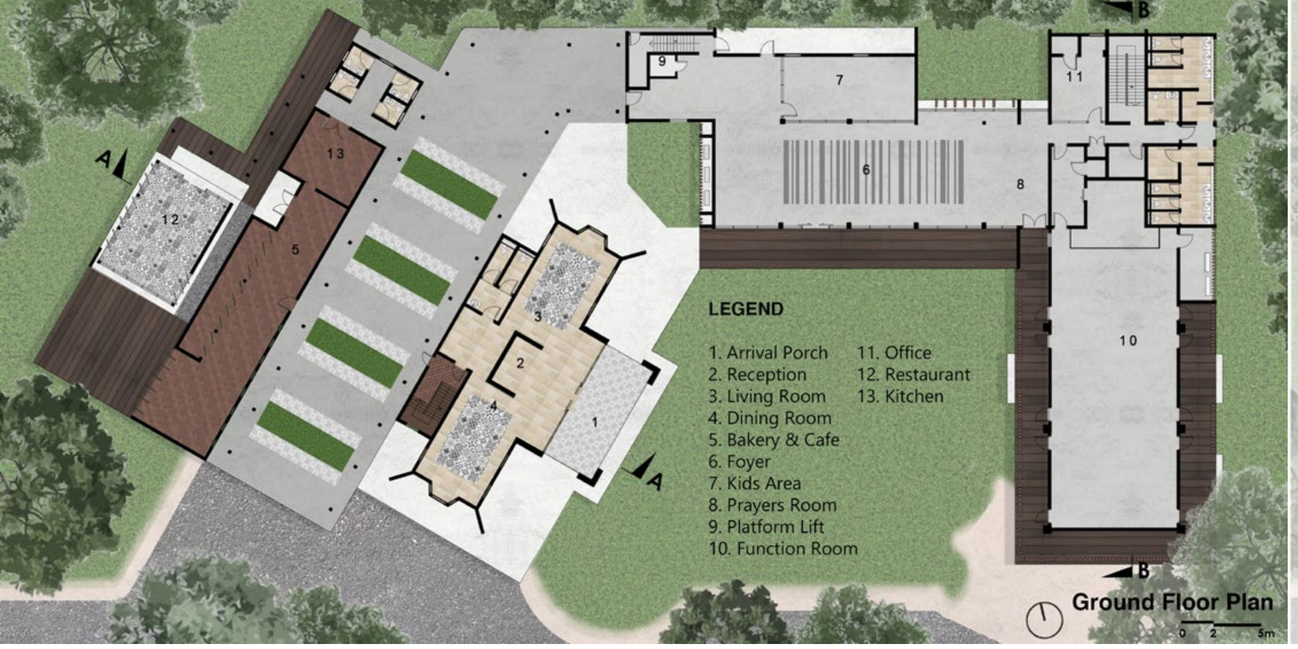
Architect : Tan Bee Eu Architect
Year Completed : 2018
Locations : George Town, Malaysia
Coordinates : 5.405511N 100.304011E
Area : 1600 sqm
Client : Chief Minister of Penang
Occupancy : Maximum of 540 people

Client Needs

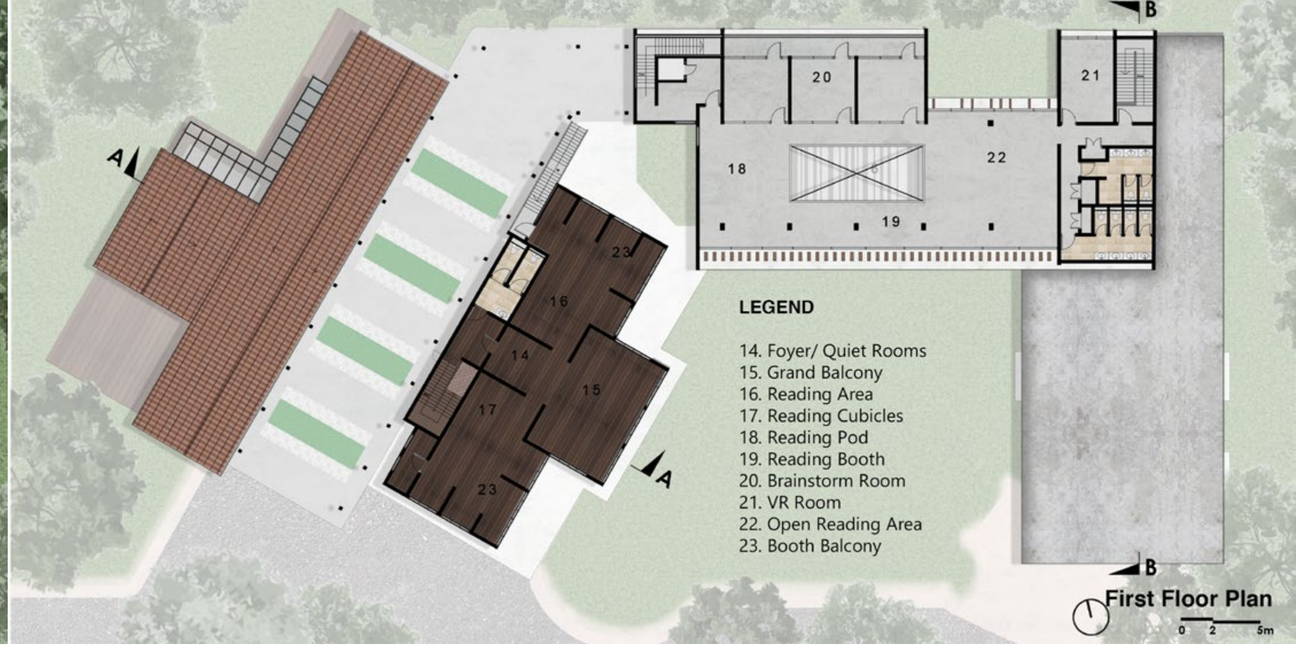
- Accommodate the user with good facility related to modern technology.
- Reduce space required and manpower.

Architect Proposals

- Library with cloud-based network to access.
- Interior comes with less apparent boundaries, creating contemporary and warm atmosphere.
- Spaces and facilities designed to encourage f2f discussion and sharing sessions.
- Conserve existing building and matured trees on site.



Ground Floor Plan



First Floor Plan

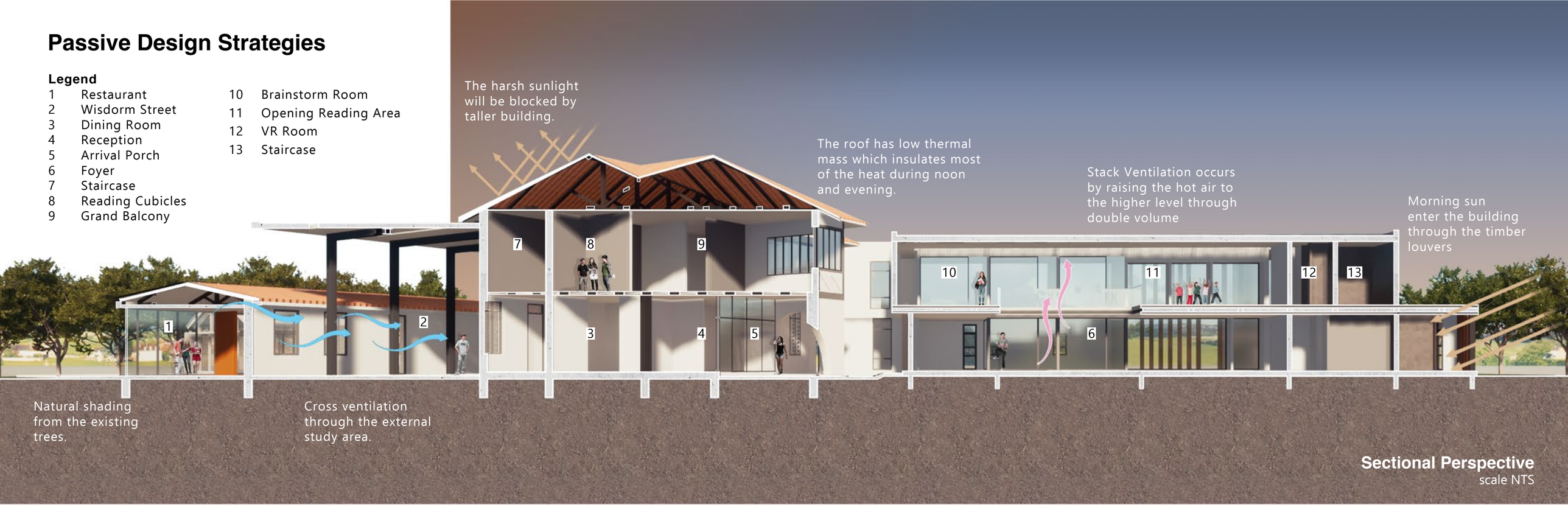
Section A-A

Section B-B

Passive Design Strategies

Legend

1 Restaurant
2 Wisdorm Street
3 Dining Room
4 Reception
5 Arrival Porch
6 Foyer
7 Staircase
8 Reading Cubicles
9 Grand Balcony
10 Brainstorm Room
11 Opening Reading Area
12 VR Room
13 Staircase



Sectional Perspective
scale NTS

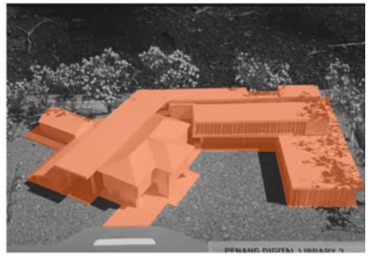
Side Elevation
0 2 5m

Front Elevation
0 2 5m

Design Feature and Ordering Principle

Repetition of wooden louvers

Linear elements of wooden louvers



Datum, the intervention of the rectangular and vernacular form

Axis on the building are balancedly distributed into three parts

Space linked by common space

Path-space relationship pass by space

Design Approaches

Civics

The most dorminant element of the building is the interrelation on the site and human by manipulating the spaces with the site contexts.
It creates strong connection betwenn the nature and occupants feel like they are reading in the garden and enhance their focus.

Design Pros

The building orientation, form and space planning maximized the response to the morning sunlight

The building have strong connection to the nature and respect the existing old mansion

The application of the modern technologies to enhance the study like VR, E-learning, etc

Provides a central space for the adolescent and encourages communication and interaction among themselves

Design Cons

The existing vegetation may attarct pest which lead to the intrusion of pest

Potential noise pollution from the main road

Tons of electricity demands especially the facilities, air conditioner, and various systems in the building

High mainteinance on timber and steel materials exposed to the sun

Lounge Area
A relax area of the library when visitors would like to enjoy themselves.

Grand Balcony
Open area with natural ventilation that has visual connection to the landscape.

Kids Room
Designated room for playful kids to have fun without disturbing others.

Study Pods
Part of the library where visitors could enjoy a different reading experience.

Cabin in the Park
Cafe for prepared for library visitors to dine in.


PENANG DIGITAL LIBRARY

Project 2b (ii)

Precedent Studies :
Mokyeonri Kinetic Wood Museum

Mok Yeon-ri is is the first prize-winning project of the competition for Wood Museum supported by Korea Forest Service and organized by Incheon Metropolitan City. The project name, "MOKYEONRI", means a harmony between trees from different roots, which identifies architecture of a series of spatial experience sensing diverse attributes of wood.

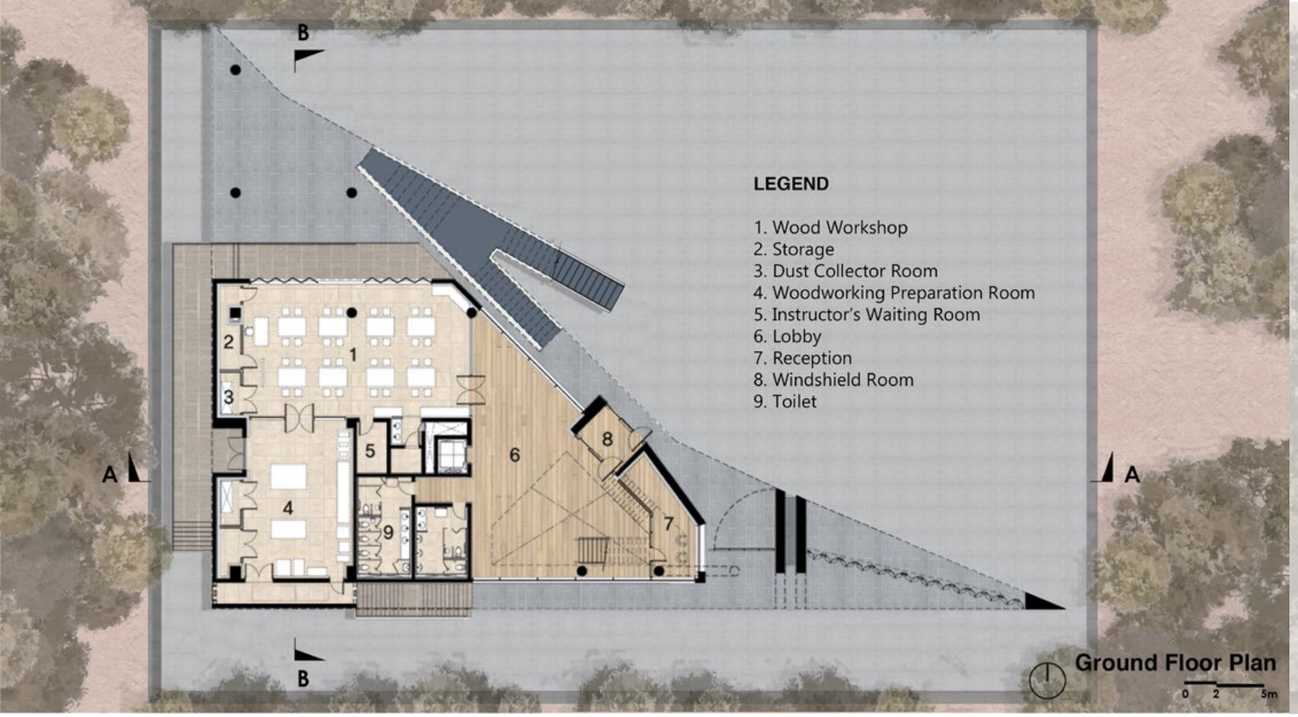
Architect : Softarchitecturelab
Year Completed : 2017
Locations : Incheon, Republic of Korea
Coordinates : 37.460556N 126.752806E
Area : 1173.88 sqm
Client : Incheon Metropolitan City
Occupancy : Maximum of 400 people

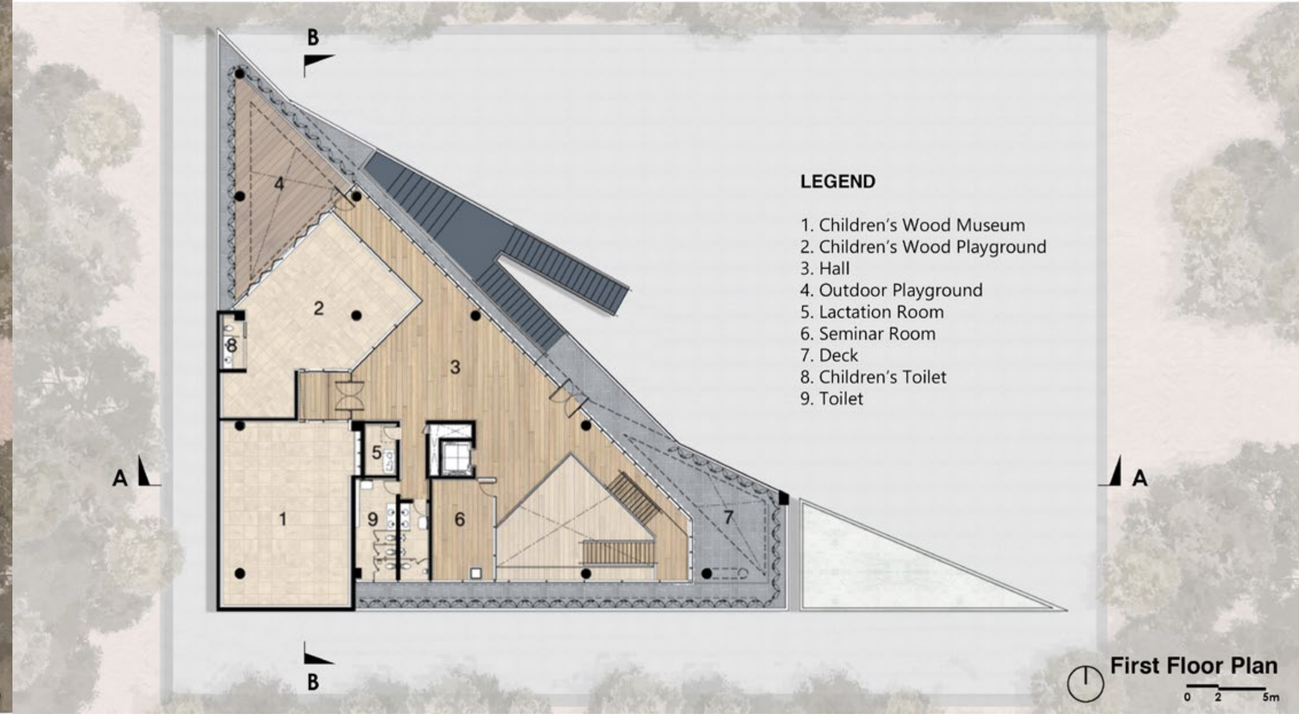
Client Needs

- Overcome the issues of the existing wood museum; not attractive for people and not effective in promoting the wood culture.

Architect Proposals

- Used locally sourced timber as building materials.
- Create an arboretum by applyingdifferent wood materials on the building wall, floor, and ceiling.
- Ambience wall reflecting human activities and micro-weather around the building.

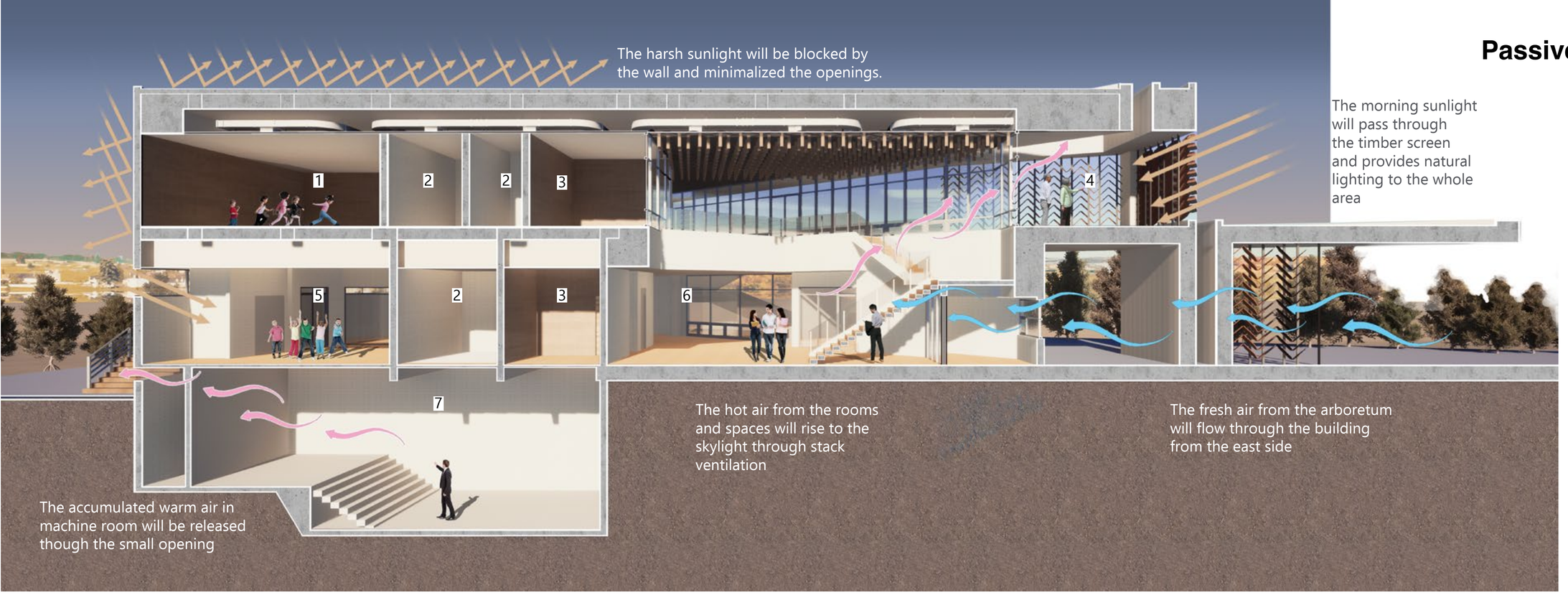

B
A
A
B
1
2
3
4
5
6
7
8
9
LEGEND
1. Wood Workshop
2. Storage
3. Dust Collector Room
4. Woodworking Preparation Room
5. Instructor's Waiting Room
6. Lobby
7. Reception
8. Windshield Room
9. Toilet
Ground Floor Plan
0 2 5m


B
A
A
B
1
2
3
4
5
6
7
8
9
LEGEND
1. Children's Wood Museum
2. Children's Wood Playground
3. Hall
4. Outdoor Playground
5. Lactation Room
6. Seminar Room
7. Deck
8. Children's Toilet
9. Toilet
First Floor Plan
0 2 5m


RF
2F
1F
GL
B1
1
2
3
4
5
6
7
8
LEGEND
1. Children's Wood Museum
2. Toilet
3. Seminar Room
4. Storage
5. Woodworking Preparation Room
6. Machine Room
7. Deck
8. Lobby
9. Reception
Section A-A
0 2 5m


RF
2F
1F
GL
B1
1
2
3
4
5
6
7
8
LEGEND
1. Outdoor Playground
2. Children's Wood Playground
3. Children's Wood Museum
4. Woodworking Room
5. Woodworking Workshop
6. Air-Conditioning Plant Room
7. Machine Room
8. Generator Room
Section B-B
0 2 5m

Passive Design Strategies



Legend

1 Children's Wood Museum
2 Toilets
3 Seminar Rooms
4 Deck
5 Woodworking Preparation Room
6 Lobby
7 Machine Room

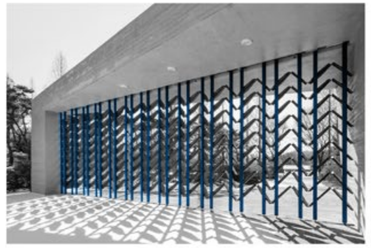
Sectional Perspective
scale NTS

South Elevation
0 2 5m

Northeast Elevation
0 2 5m

Design Feature and Ordering Principle

Repetition of wooden facade panel



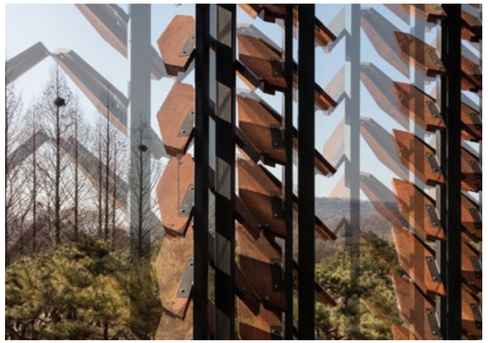
Linear elements of wooden facade

Interlocking building form with rectangle and triangle

Hierarchy of entire building

Space linked by common space

Path-space relationship pass by space



Design Approaches

Tectonic

The most dorminant element of the building is the application of the timber structures on the facade and ceiling. Unique and distinctive ambience are formed when these aesthetic pleasing timber structures intervent with the building spaces.

Design Pros

The building orientation, form and space planning maximized the illumination of morning sunlight

The building serves its purpose as a wood museum,and reconnect the occupant to the surrounding nature

The bold intervention of the building and nature through intermediate technology

Served as an attraction and create a linkage between the aged people and adolescent

Design Cons

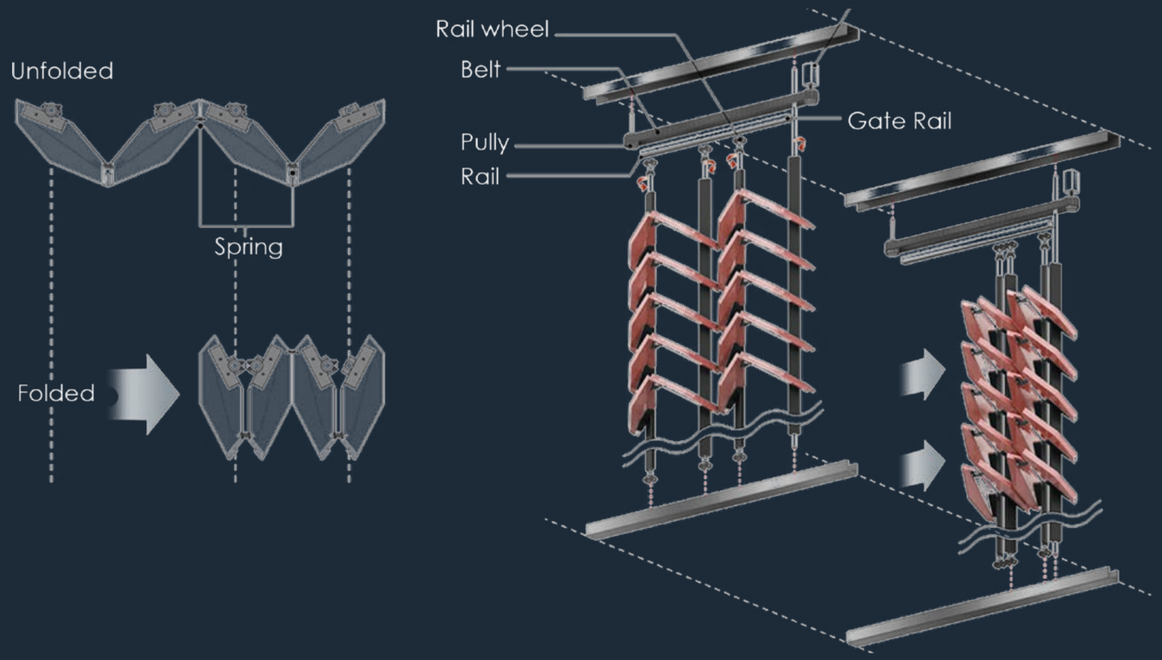
Lot of openings may lead to the intrusion of pest

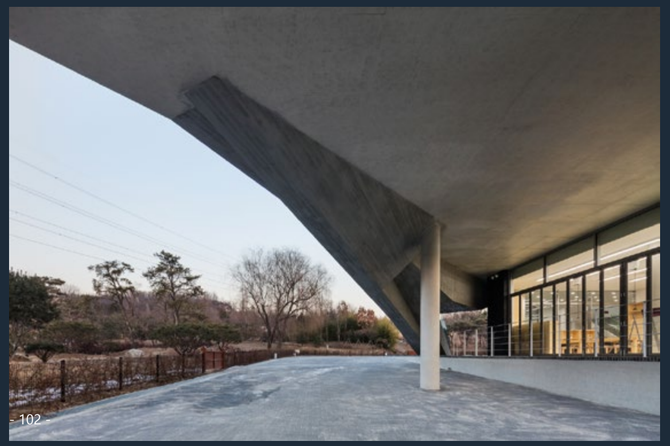
Noisy sound produced by the machine in the workshop

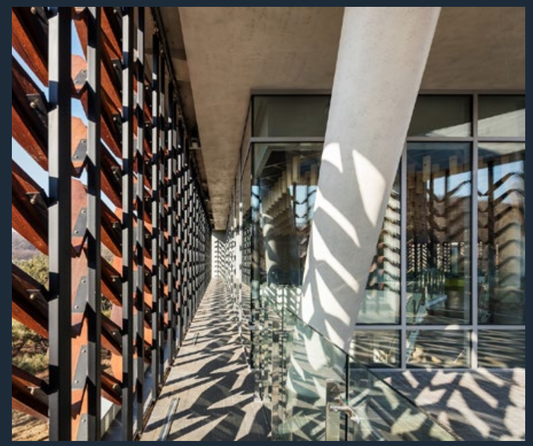
Tons of electricity demands especially the machine in workshop and kinetic timber facade

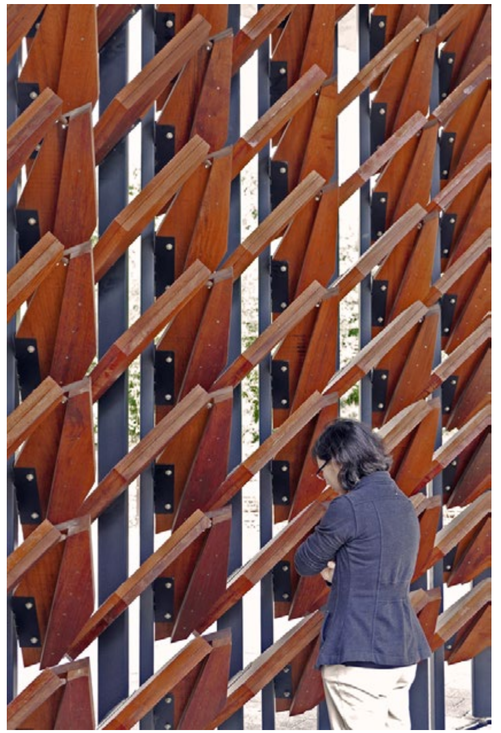
High mainteinance on timber materials, as well as the timber facade

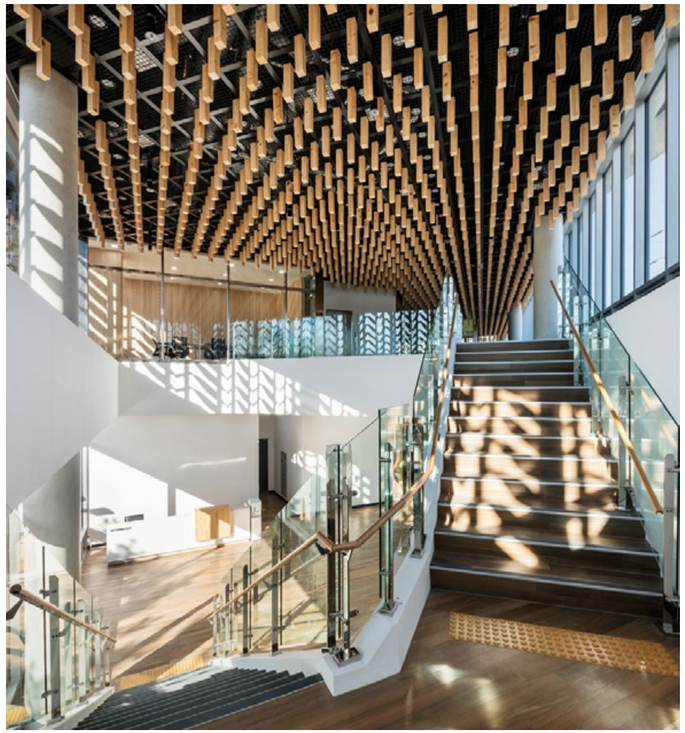
Construction Details - Kinetic Facade

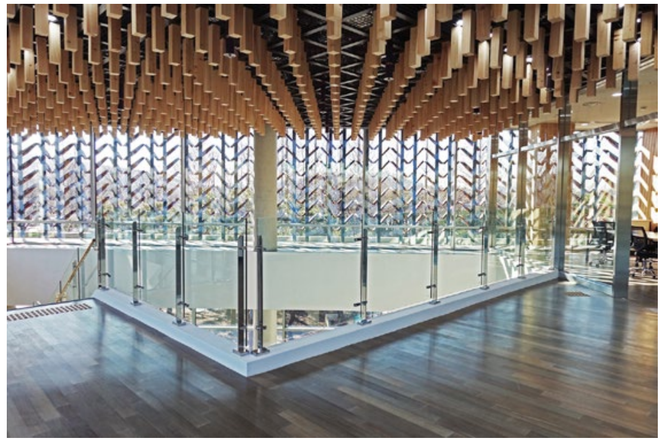












Project 2c

Youth Centre :

TTDI Entrepreneurship Youth Centre

The current project is to propose a youth centre with designated programs which gives benefits to the youths or other public users around TTDI, which was studied in the previous chapter.

Given brief was to design the building within 1000sqm and 2 storeys. The total occupancy load will be 50-100 people.

What is Youth Centre ?

The youth culture is first started from the industrial revolution in the 18th century, which young men left their own homes and cottage industries to migrate to the big towns. The emergent of youth centre in urban area is to meets the needs ot the young people and the wider community. The foundation of every state is the education of its youth.

Outdoor Avtivity

Sport

Water sport

Extreme sport

Games

Indoor Avtivity

Art Classes

Physical

Acadamic

Entertainment

Impacts of Youth Centre

With compelling force

Such as music, spiritual/ religious guidance and advice or characteristics such as determination.

Public or private

Have a leader youth worker who normally organizes trips or workshops.

Physical, Social, Emotional, & Cognitive Abilities.

Offer internet access, homework assistance, peer mentoring, and educational workshops.

Activities with friends

To keep them off the streets and out of trouble. Activity varies according diverse histories, cultural, political and social contexts.

Encouraging volunteerism

Hold charity events and even volunteer to do many different things connect youth with the local community.

Self expression without judgement

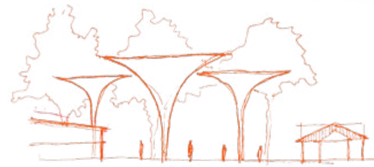
Discuss different topics regarding current health and worries, advise with their future.

Proposed Objective

Youths are getting creative and driven by entrepreneurship. However, not all of them are able to experience it with a suitable environment. Thus, a safe and healthy environment is proposed for them to manifest the entrepreneurship within them.

Concept - Growth

Manifesting youth entrepreneurs requires growth.The manifestation and patience along the process will slowly bloom into success. The process is similar to a flower bud blooming into beautiful form.

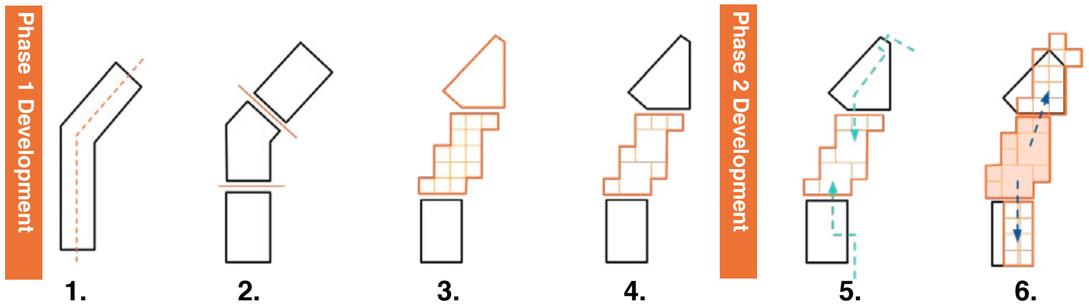


Main Entrance

The main entrance welcomes visitors with an array of vibrant blooming structures. Visitors are able to visually spot glimpse of the main event space through filters of landscape trees, which boost excitement and curiosity to explore around. A layer of curtain wall shows transparency of the interior space, giving visual connection between different spatial elements.

Form Developments

The development of the design form was developed with 2 phases. The first phase was getting the general form together. Next, it was further developed to suit the design language and strengthen the concept.



Phase 1 Development

1. Linear

The initial form was in a linear path, the form was orientated along the 2 sides of the existing site boundary

2. Segregation

The centre is split and converted into main space on the next development. It is to make different spatial experience

3. Approach and Grid

The centre is converted into grid form, where lies the canopy structures; The head was altered to signify entrance.

Phase 2 Development

4. Hierarchy

Playing along with different sizes of canopy structures, giving a cheeky characteristic.

5. Involvement

Youths from different directions learn and acknowledge entrepreneurship in safe environment, then expose themselves to the public society

6. Influence

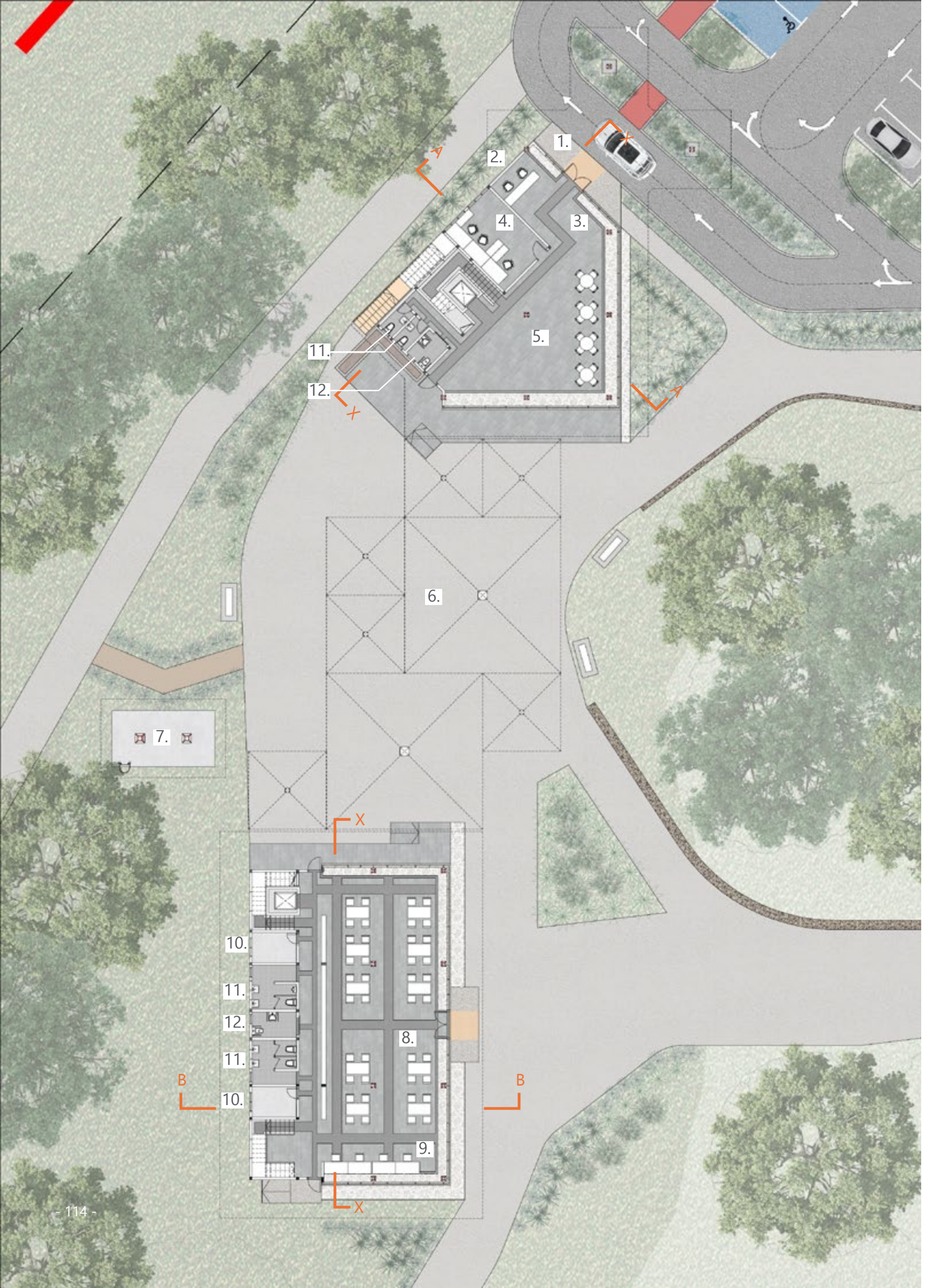
After develop the skills, knowledge and passion, youths inspire the new generations by spreading the spirit and influence

Lot No. 32437, Jalan Burhanuddin Helmi, Taman Tun Dr Ismail, 60000 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur.

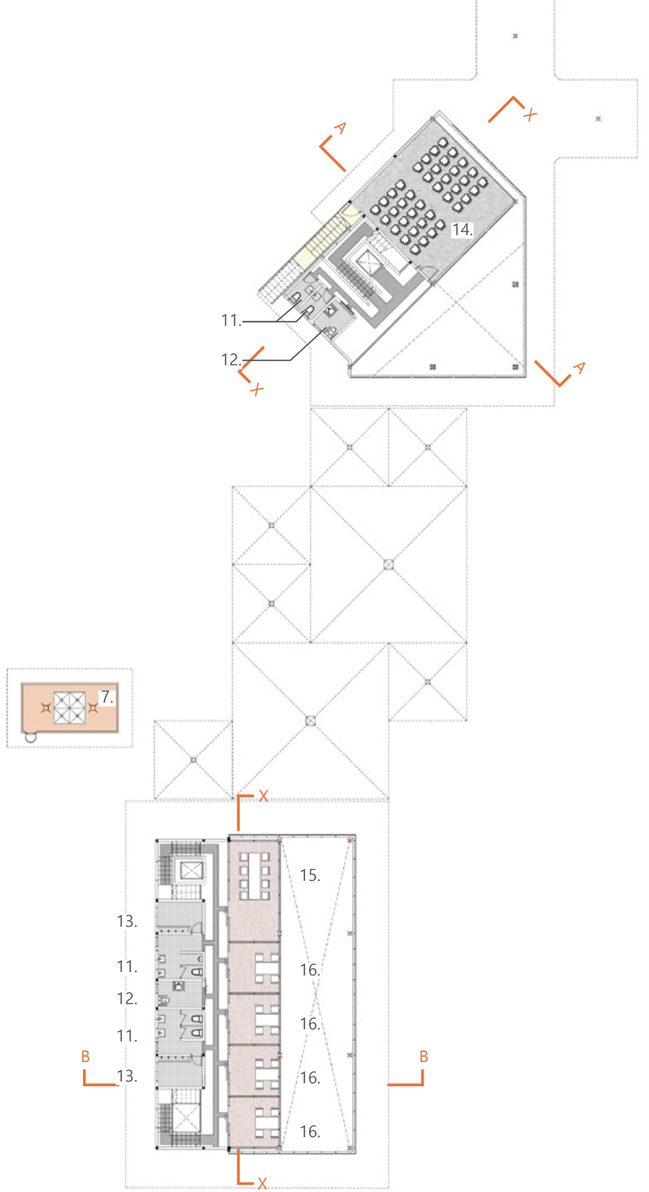
An existing community park where the main entrance is from Jalan Burhanuddin Helmi, which is at the north side. Residents from the south terrace houses are able to access the site as well.

The site is filled with lush greens and tall trees, creating a shady and cool environment even in hot times.

Plenty of context around the site such as small streams and gentle topographies.



Ground Floor Plan
scale NTS



First Floor Plan
scale NTS

0 5 10 20m

Spaces

Ground Floor

1. Drop Off
2. Reception
3. Entrance Lobby
4. Staff Office
5. Gathering Hall
6. Multipurpose Event Space
7. Water Tank Tower
8. Information Library
9. Digital Corner
10. Services
11. Toilets
12. Disabled Toilet

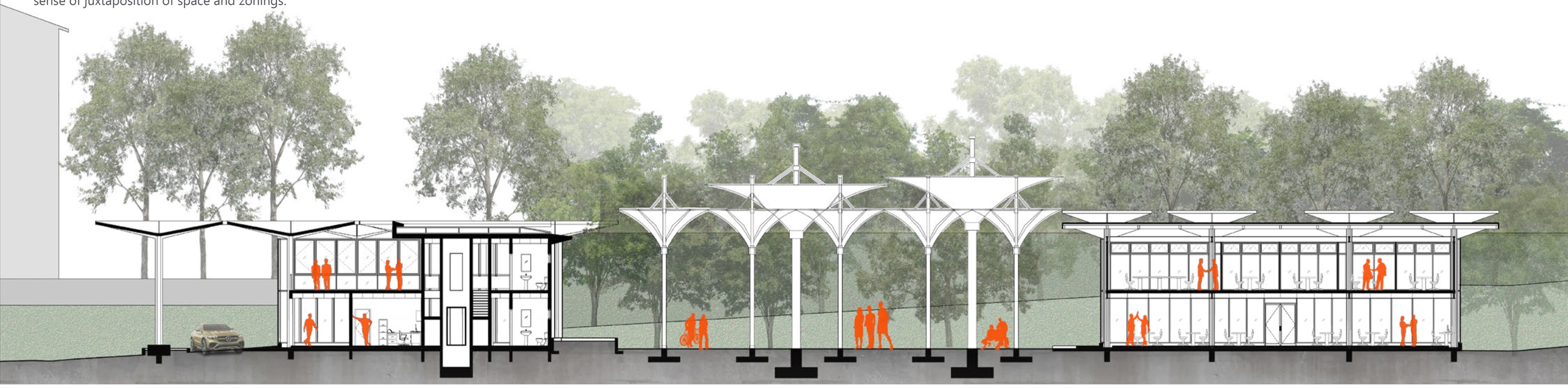
First Floor

11. Toilets
12. Disabled Toilets
13. Surau
14. Seminar Hall
15. Large Discussion Room
16. Regular Discussion Room

A transition of different spatial volume of void and solid is shown along the section. Giving a sense of juxtaposition of space and zonings.

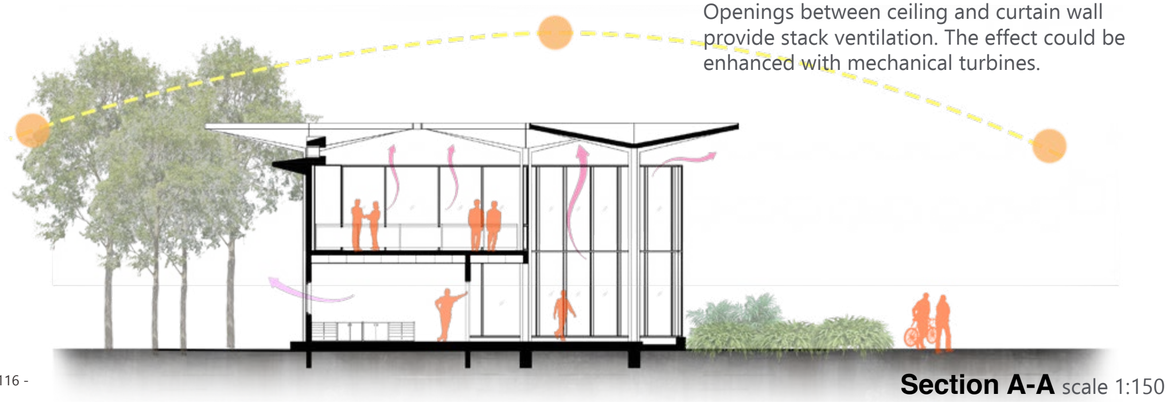
0 5 10 20m

Section X-X scale 1:150

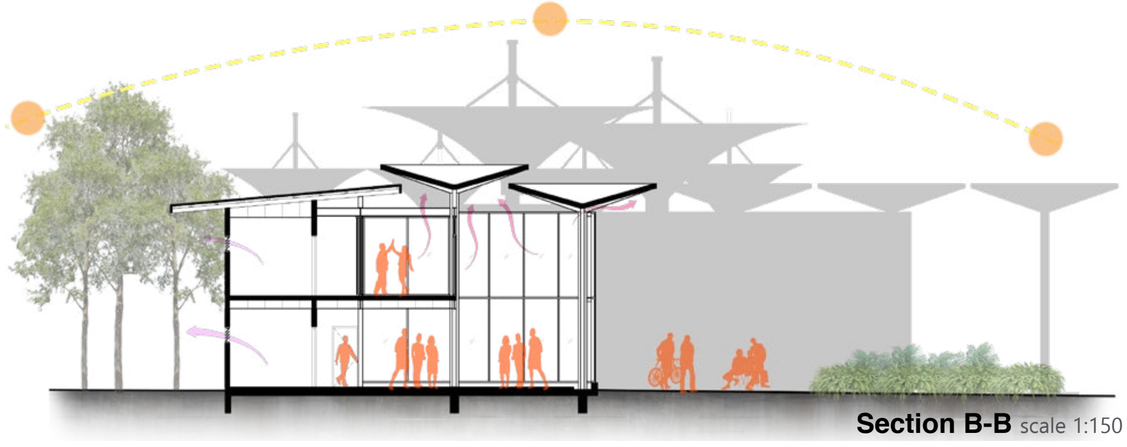


Passive response is relatively simple, open to east, close at west ; controlling the solar gains.

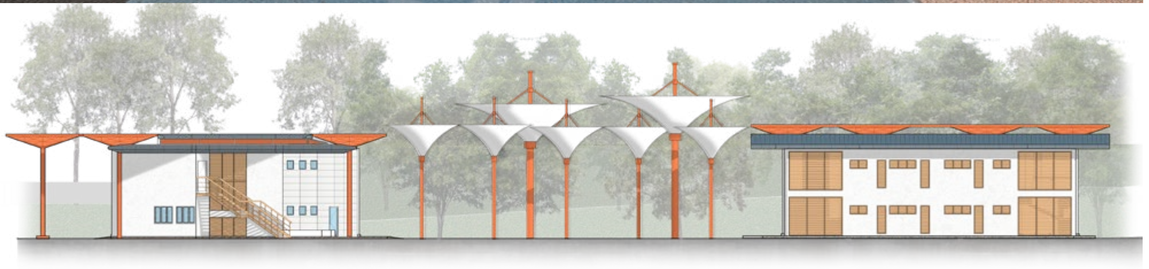
Openings between ceiling and curtain wall provide stack ventilation. The effect could be enhanced with mechanical turbines.



Section A-A scale 1:150

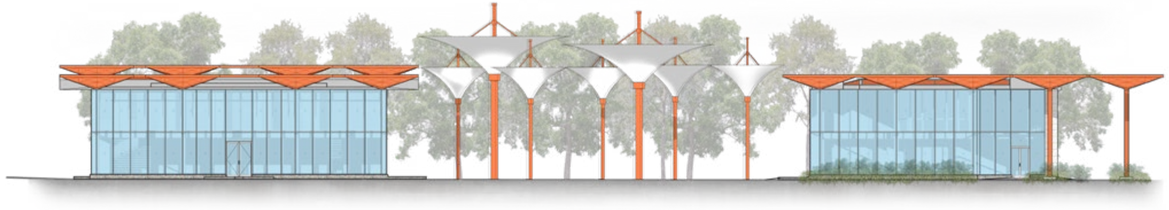


Section B-B scale 1:150



0 5 10 20m

South West Elevation scale NTS



North East Elevation scale NTS

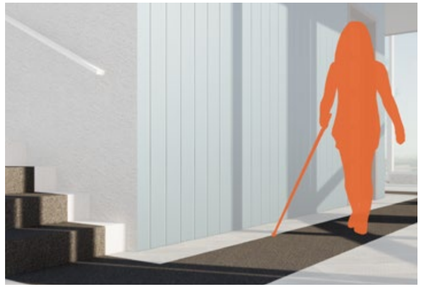
Disabled design considerations

Disabled parking

Provided designated parkings close to building, giving convenience to movement impaired visitors

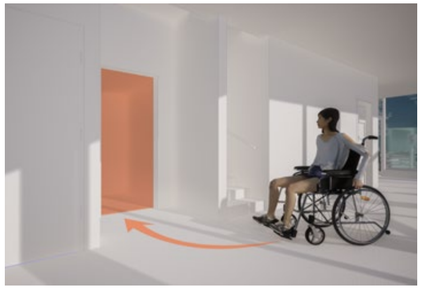
Low Ramps

Low floor level heights with gentle ramp slopes, easier to go up with wheelchairs



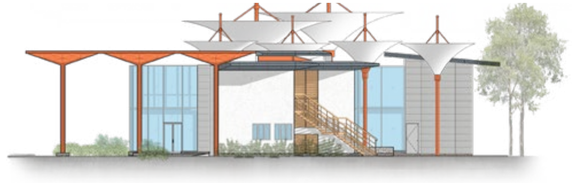
Textured tiles

Different textures provide guidance for visually impaired visitors by letting them sensing with their feet.

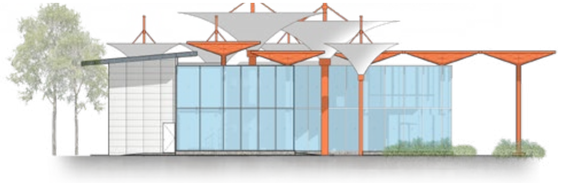


Lifts

Space saving and allows movement impaired visitors to access different floor levels.



North West Elevation scale NTS

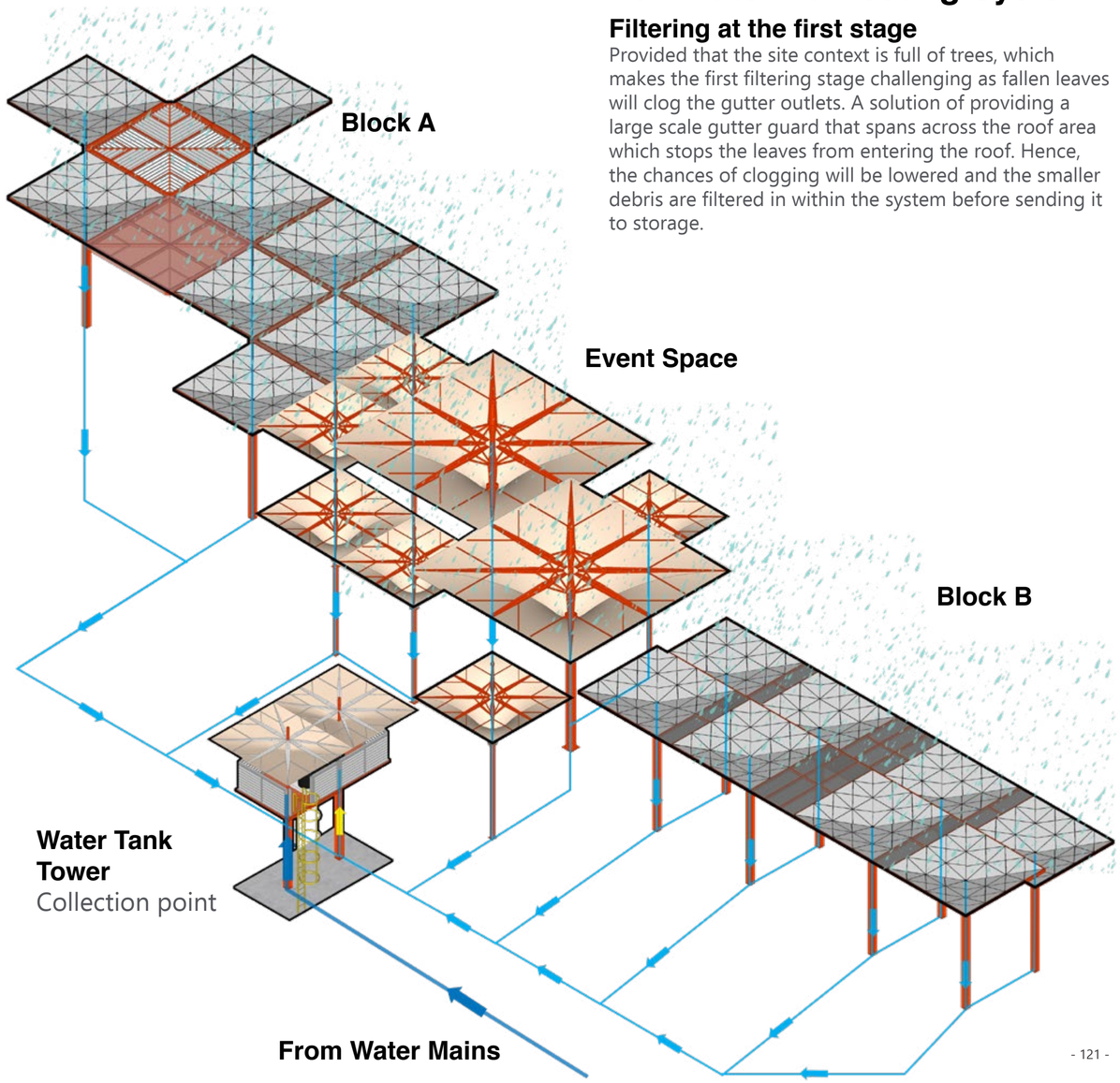


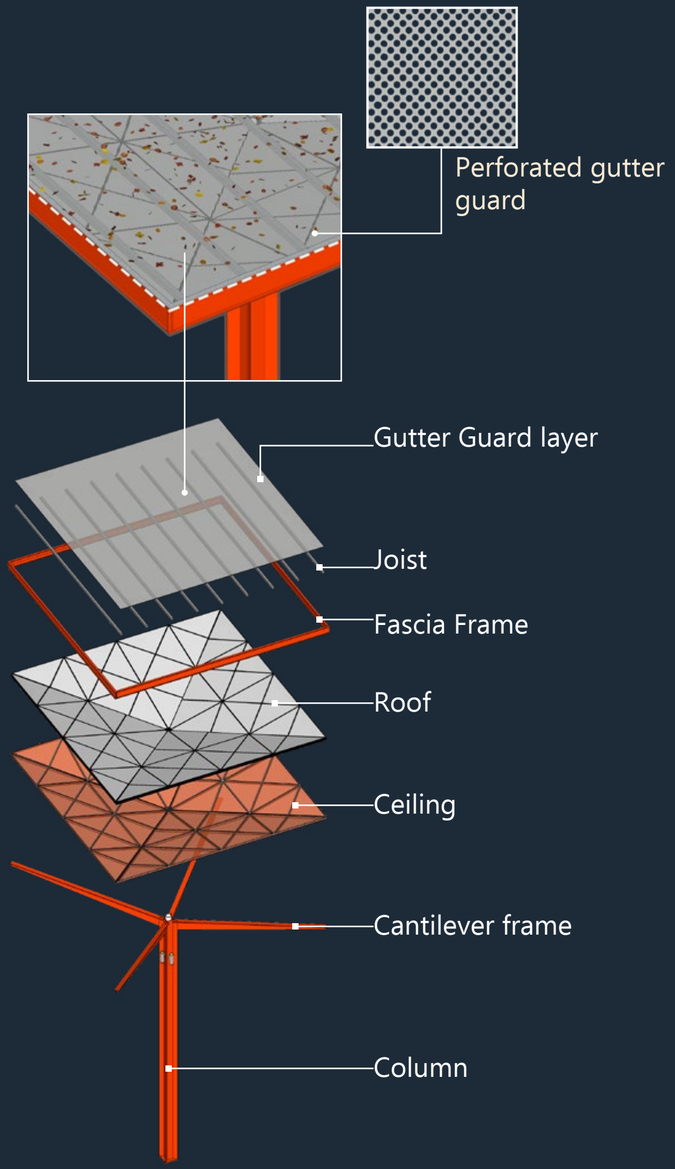
South East Elevation scale NTS

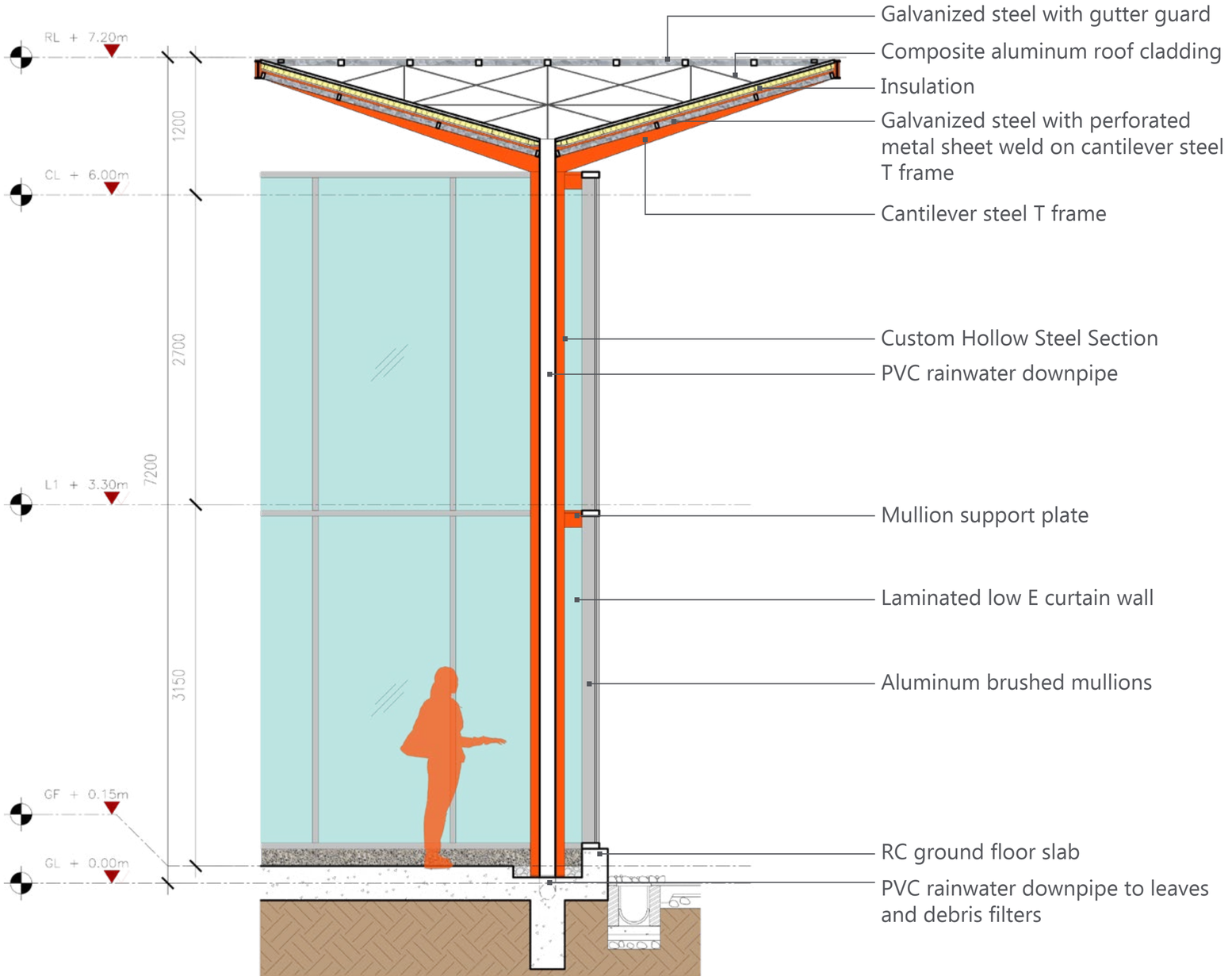
Rainwater Harvesting System

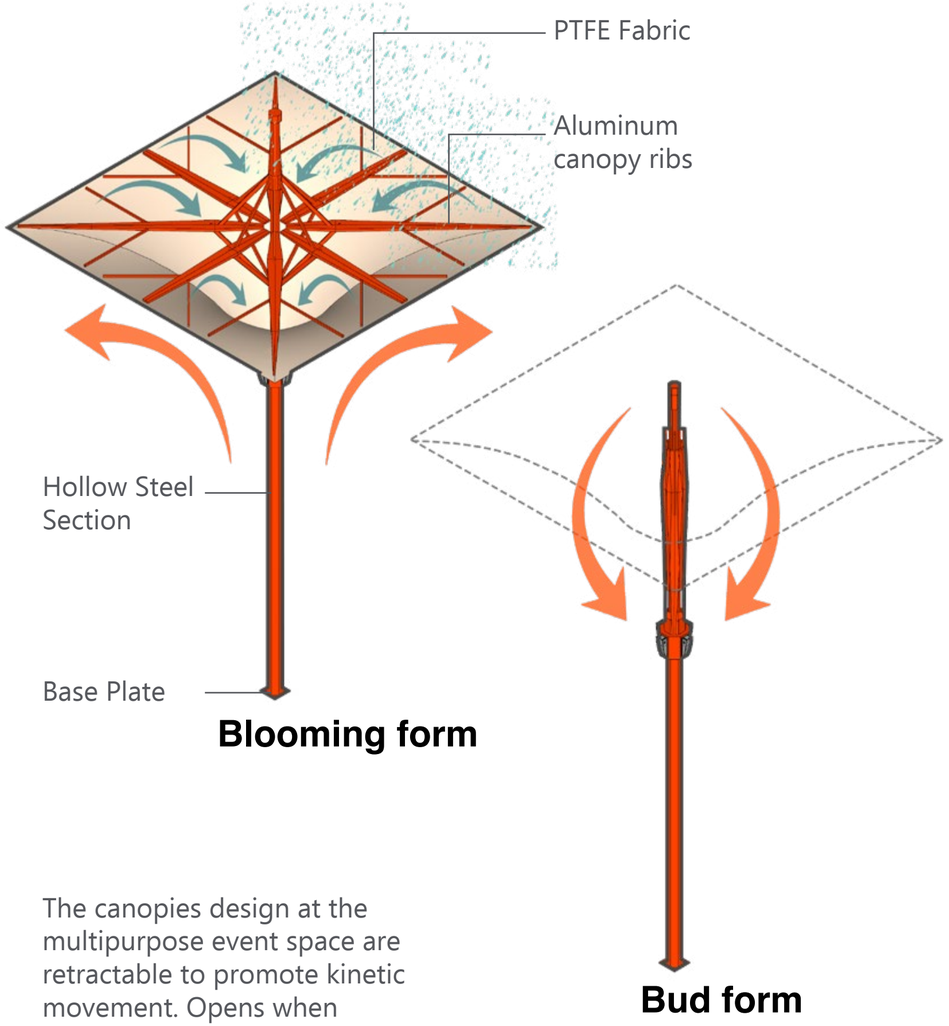
Filtering at the first stage

Provided that the site context is full of trees, which makes the first filtering stage challenging as fallen leaves will clog the gutter outlets. A solution of providing a large scale gutter guard that spans across the roof area which stops the leaves from entering the roof. Hence, the chances of clogging will be lowered and the smaller debris are filtered in within the system before sending it to storage.



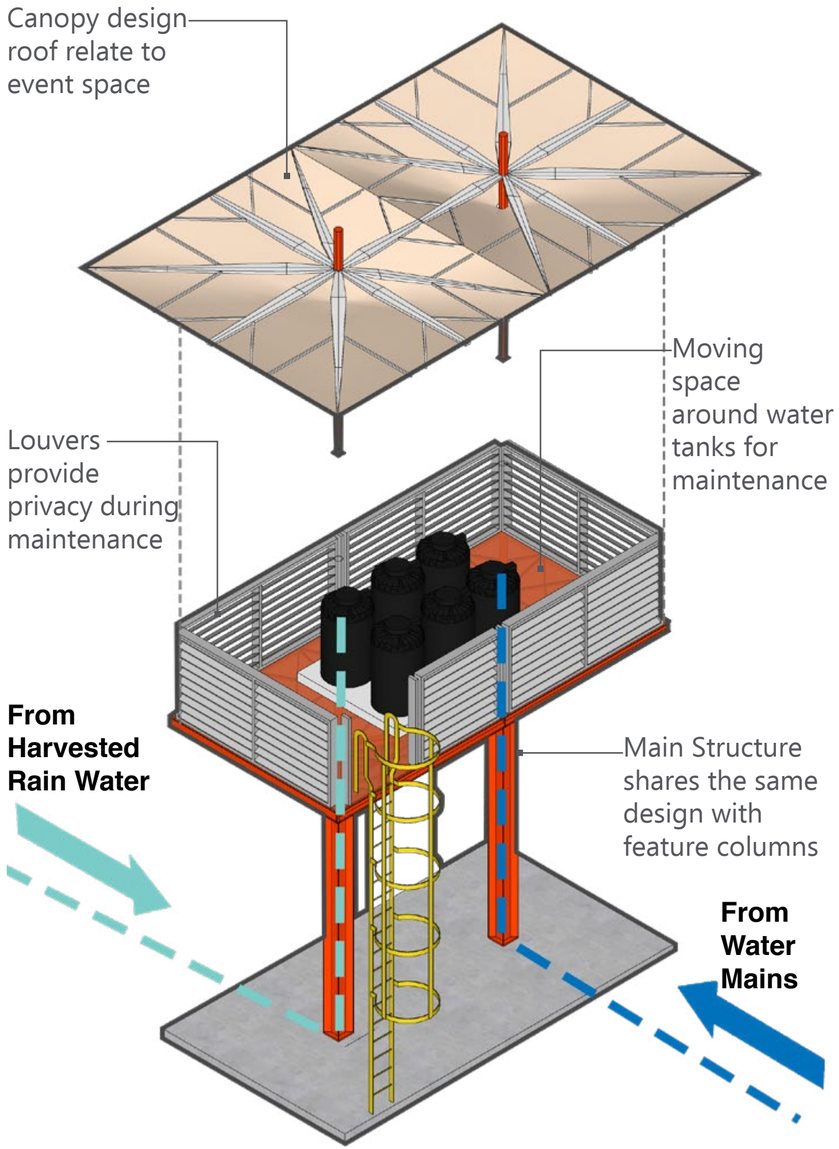

Perforated gutter guard
Gutter Guard layer
Joist
Fascia Frame
Roof
Ceiling
Cantilever frame
Column


RL + 7.20m
CL + 6.00m
L1 + 3.30m
GF + 0.15m
GL + 0.00m
1200
2700
7200
3150
Galvanized steel with gutter guard
Composite aluminum roof cladding
Insulation
Galvanized steel with perforated metal sheet weld on cantilever steel T frame
Cantilever steel T frame
Custom Hollow Steel Section
PVC rainwater downpipe
Mullion support plate
Laminated low E curtain wall
Aluminum brushed mullions
RC ground floor slab
PVC rainwater downpipe to leaves and debris filters

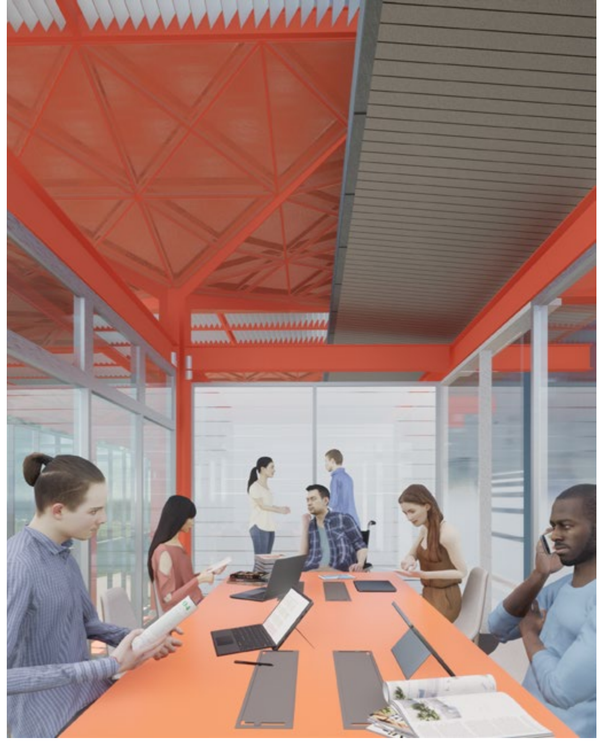


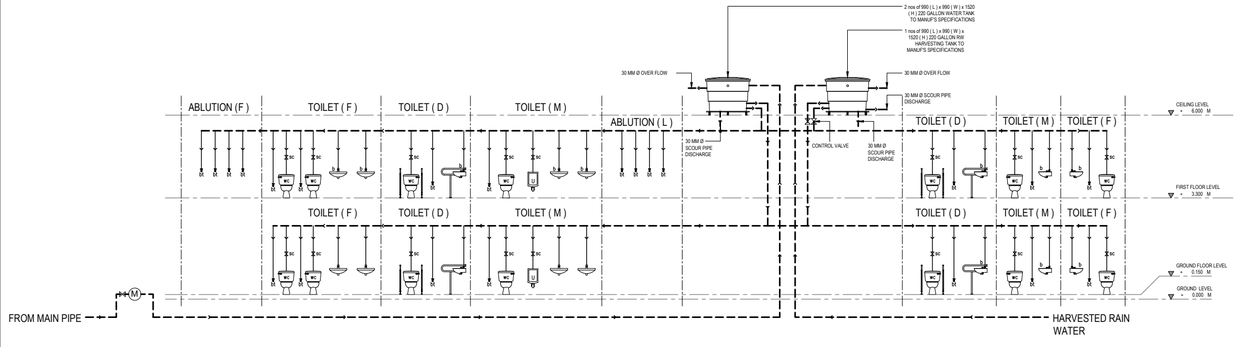
The canopies design at the multipurpose event space are retractable to promote kinetic movement. Opens when space in use or rain water harvesting; Closes when not in use

Canopy Diagram
scale NTS



Water Tower Exploded Diagram
scale NTS



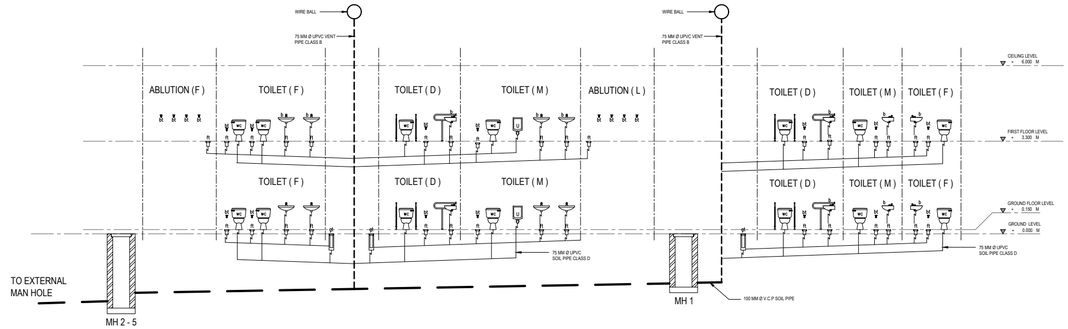


LEGEND

———	19 MM Ø CPVC PIPE	⋈	STOP CLOCK	WC	WATER CLOSET
- - - - -	25 MM Ø CPVC C PIPE	bt	BIB TAP		
Ⓜ	WATER METER	b	WASH BASIN		

Cold Water Supply Diagram

scale NTS

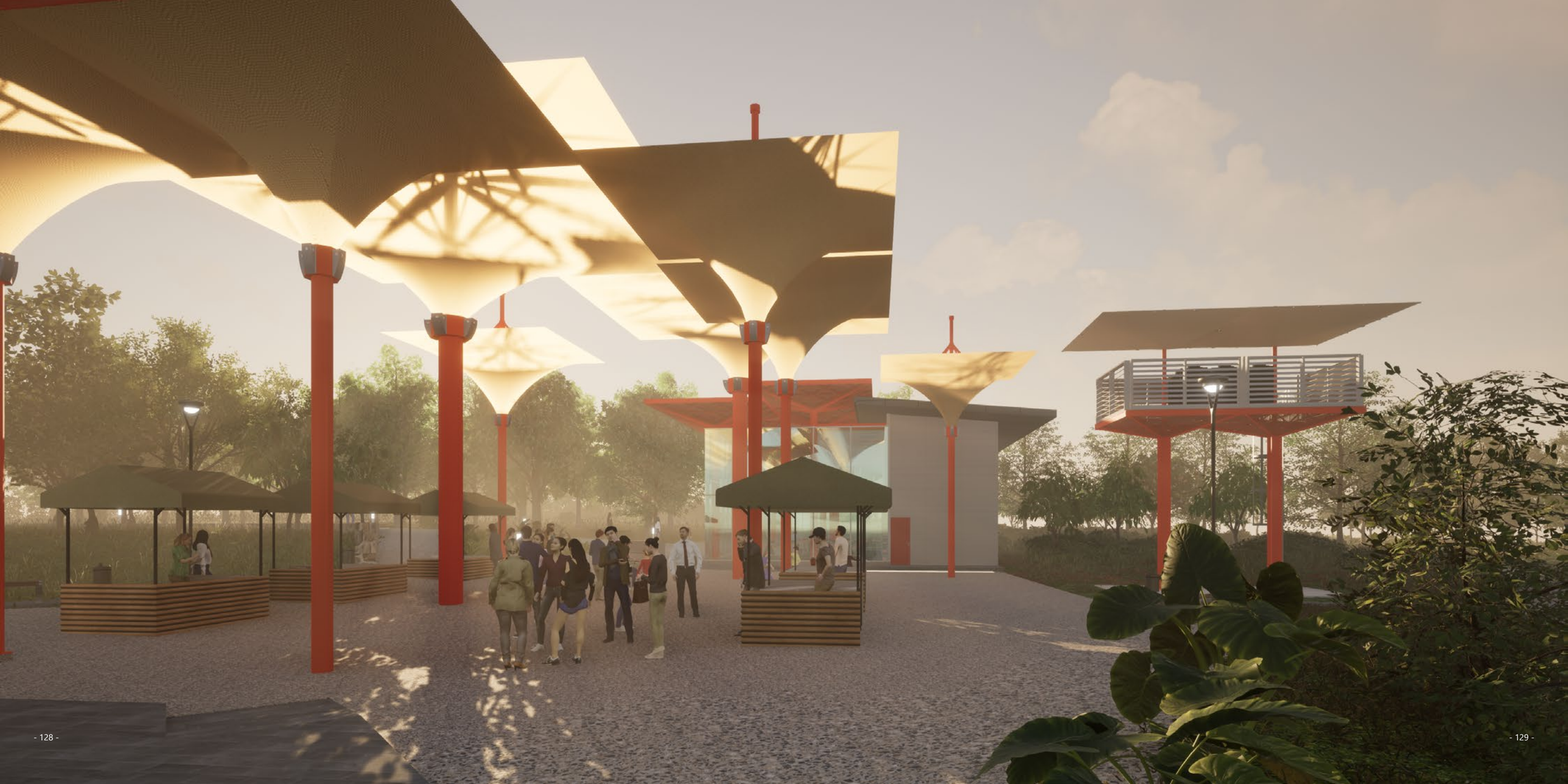


LEGEND

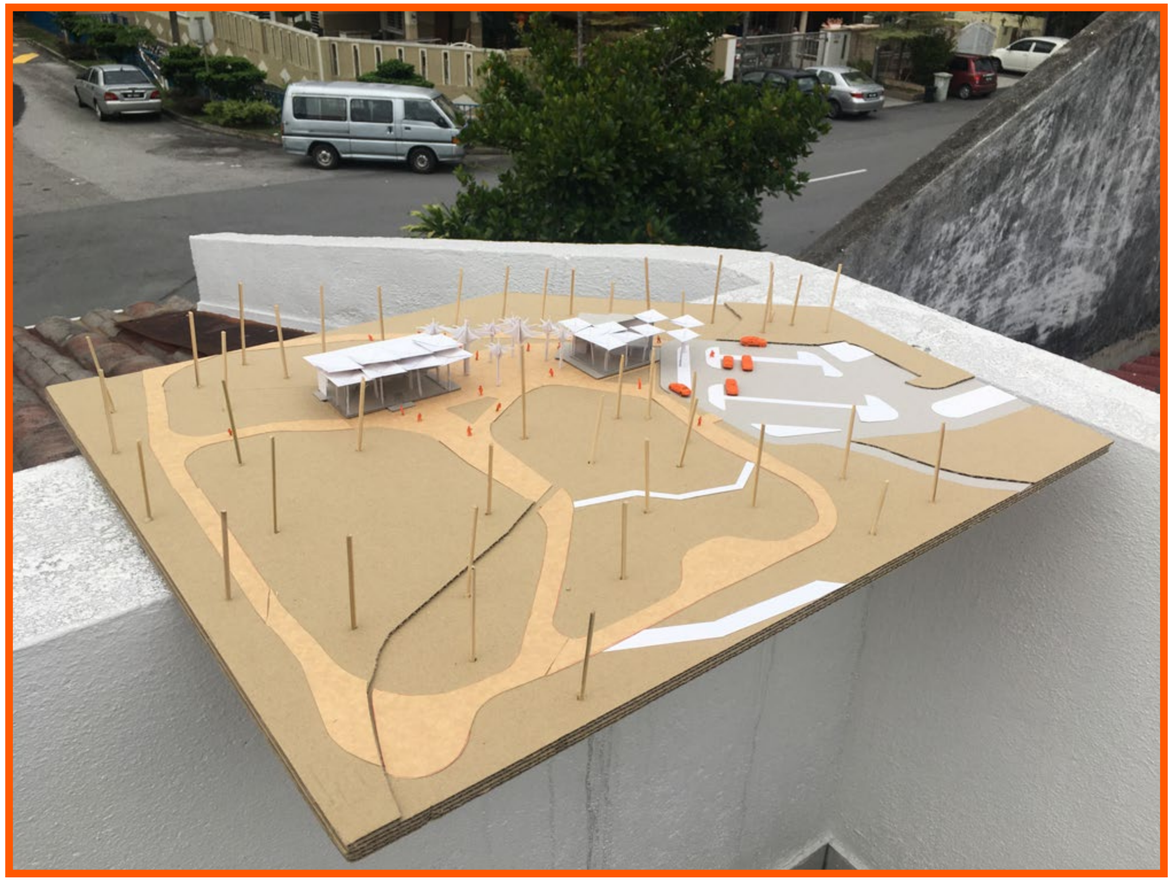
- - - - -	75 mm Ø UPVC VENT PIPE CLASS B	ft	FLOOR TRAP	b	WASH BASIN
———	100 mm Ø UPVC SOIL PIPE	gt	GULLY TRAP	WC	WATER CLOSET
———	75 mm Ø UPVC SOIL PIPE CLASS D	MH	MAN HOLE		

Sewerage Diagram

scale NTS



Physical Model Photos



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