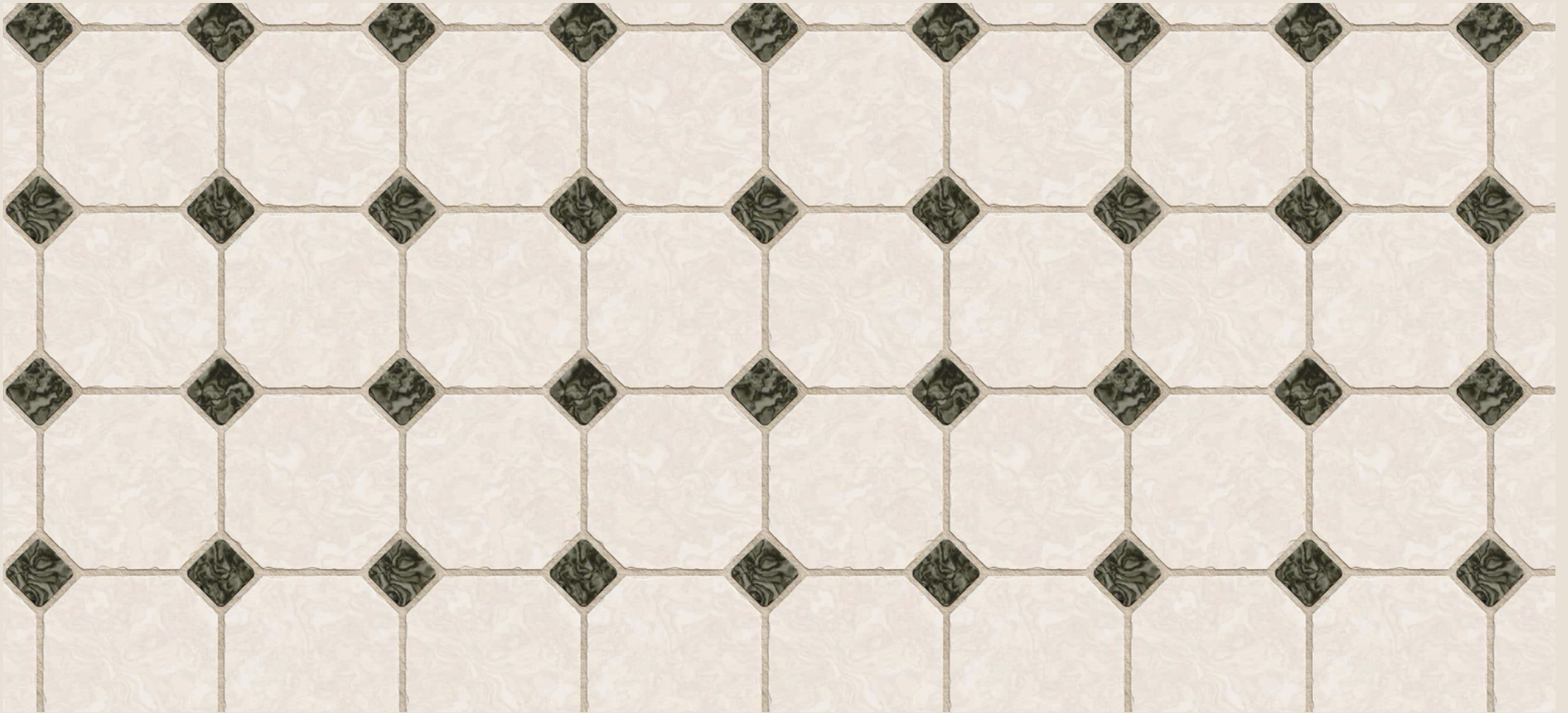


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GREEN STRATEGIES FOR BUILDING DESIGN

PASSIVE GREEN DESIGN STRATEGIES REPORT



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0364567

MR NIK SYAZWAN BIN NIK AB. WAHAN

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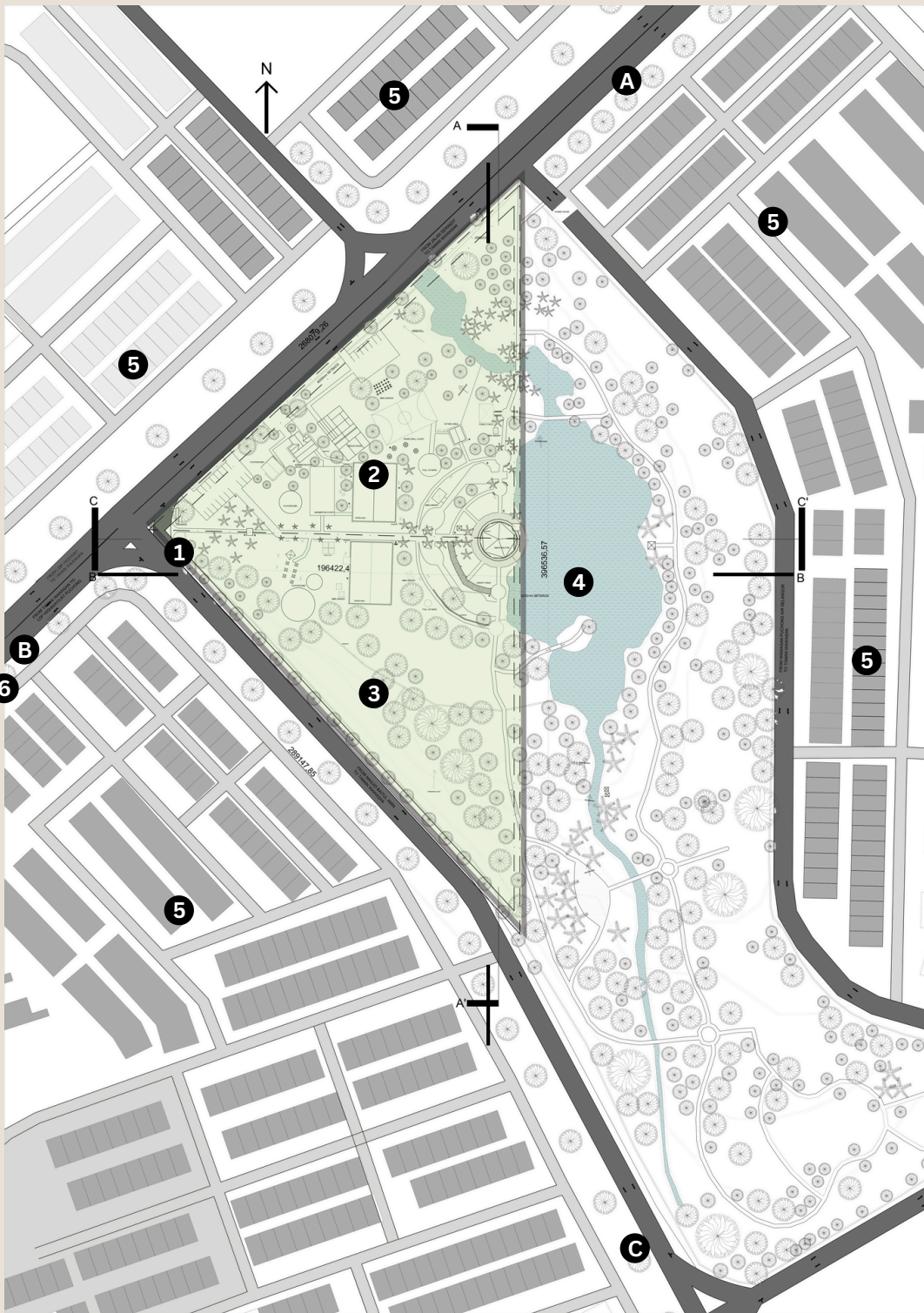
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MACRO SITE PLAN

Persiaran Wawasan, Taman Wawasan, 47100 Puchong, Selangor

3°02'01.0"N 101°37'27.9"E

Taman Wawasan in Puchong is a freehold **mixed residential and commercial** township developed by **Setia Promenade Sdn Bhd** (S P Setia) located strategically between Bandar Puchong Jaya and Bandar Puteri Puchong.

It has **strong connectivity** through **major highways** like LDP, KESAS, ELITE, and the North-South Highway, and is within walking distance to the Pusat Bandar Puchong **LRT station** on the Sri Petaling Line.

The township sits at about 49 meters above sea level with **mostly flat terrain**, making it ideal for development and comfortable living.

For selected study site, it is located at the **recreational centre** of Taman Wawasan which spans over **38,800 sqm**

LEGENDS

- Main road
- A From Jalan Serindit to Taman Wawasan
- B From LDP Highway to Taman Wawasan
- C From Baitul Amin Mosque to Taman Wawasan
- Secondary road : From Main road to Residential / Commercial area
- 1 Landmark
- 2 North site
- 3 South site
- 4 Water bodies
- 5 Residential areas
- 6 Approximate 1km from LRT Pusat Bandar Puchong

KAKILANG

ONE OF OUR OWN

Kakilang, meaning “one of our own” in Hokkien, is a community space rooted in the spirit of kinship and shared belonging. Inspired by the everyday magic of Taman Wawasan, it reflects how strangers become neighbours, and neighbours become friends — often by chance, through a walk in the park or a shared moment of rest.

This space is designed to nurture those chance encounters. Inviting, and layered with opportunities for interaction, *kakilang* becomes a vessel for connection — a place where people can come together and feel a sense of home.

Here, architecture supports the spontaneous: a conversation sparked, a smile exchanged, a memory made. More than just a recreational space, *kakilang* is a reminder that we are, in the end, one community — each of us, **one of our own**.





SITE PLAN

Kakilang sits within the southern part of Taman Wawasan Rekreasi in Puchong, Selangor. The park itself is home to a number of groups and communities, from professional woodball to casual yoga and taichi, Taman Wawasan is an integral aspect to the nearby residents' quality of life.

GROUND FLOOR PLAN



KOPITIAM CULTURE

A common social culture that evokes a sense of nostalgia amongst locals, bringing people together for a casual chat over a cup of “kopi beng”.



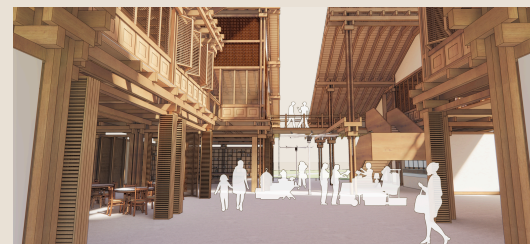
STORYTELLING CORNER & LIBRARY

Fostering intergenerational interactions of the elderly and youth with sessions of old uncle’s tales of exaggerated recollection.



PICNICS AND OUTDOOR EXERCISE

When the indoors aren’t enough, out in the park under the shade of a tree can be a choice. A family picnic or a break on raised decks, no need to sit on muddy dirt.



OPEN COMMUNAL EVENT SPACE

In the central heart of *Kakilang*, a wide open space perfect for the occasional pop-up market or community event welcomes all visitors.

FIRST FLOOR PLAN



MULTIPURPOSE STUDIOS

Tall, wide and full of warmth — the perfect indoor space for yoga or taichi.



CRAFTS WORKSHOPS

Curated workshops to cultivate passion for the local crafts, or simply a space for individuals to express creativity.



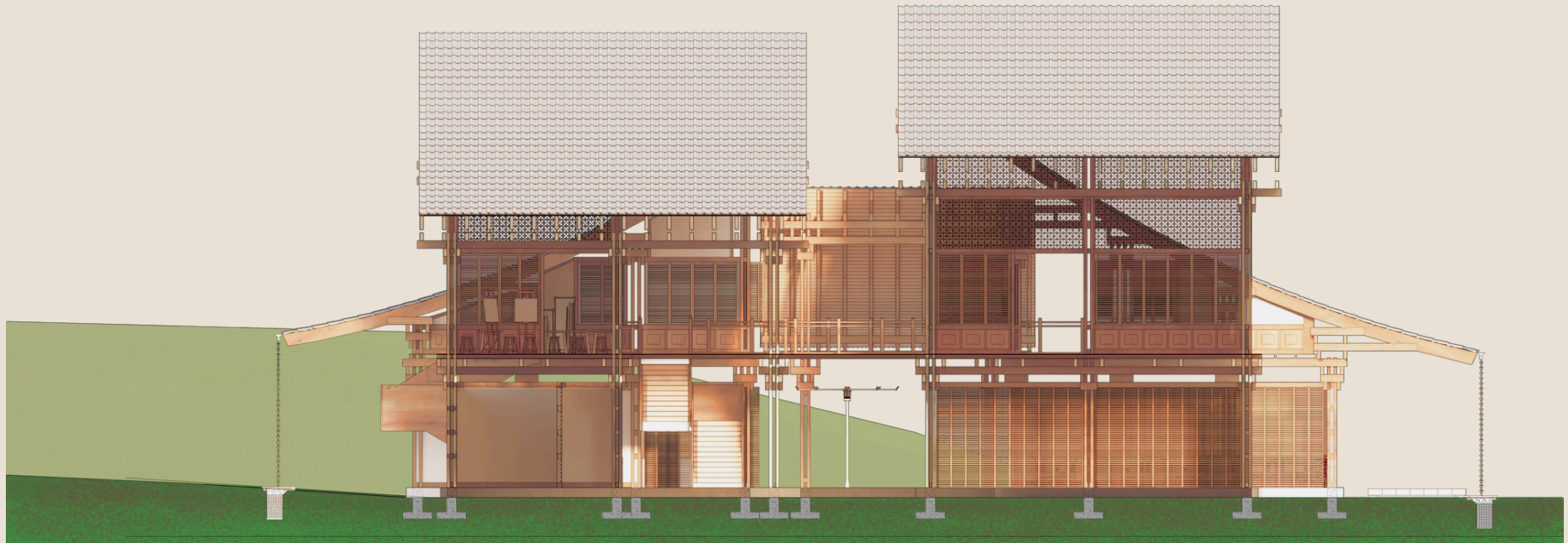
OPEN PATHWAYS

Open pathways with guardrails, that branch across the spaces on the first floor, allowing visitors to view ground floor activity from above.

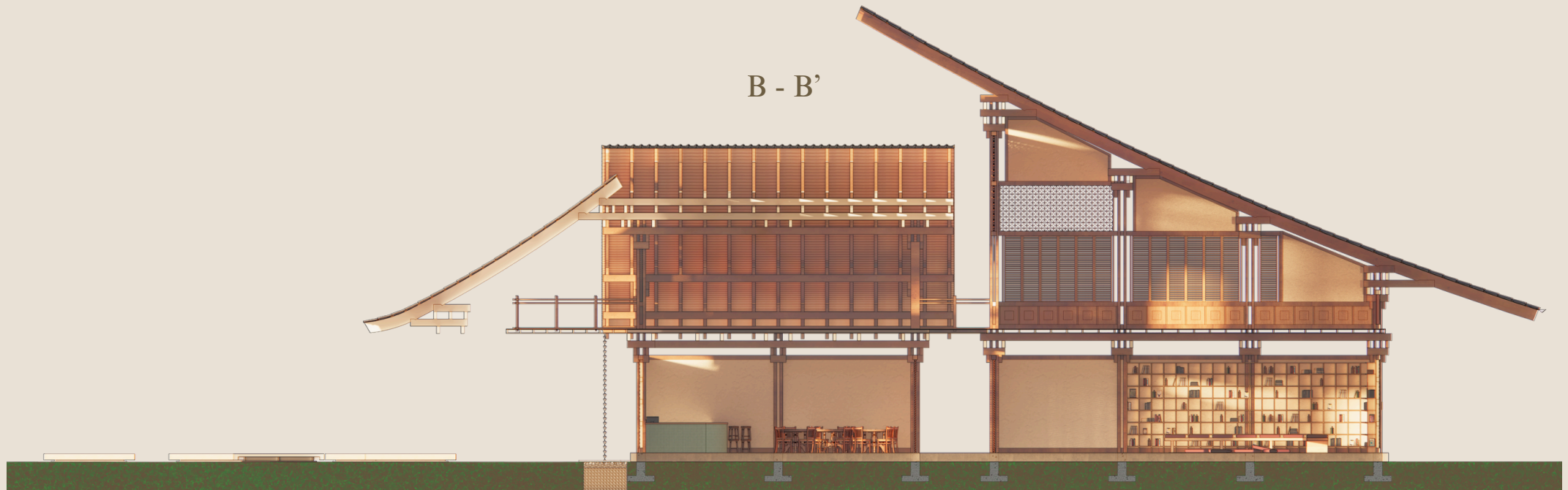


SECTIONS

A - A'

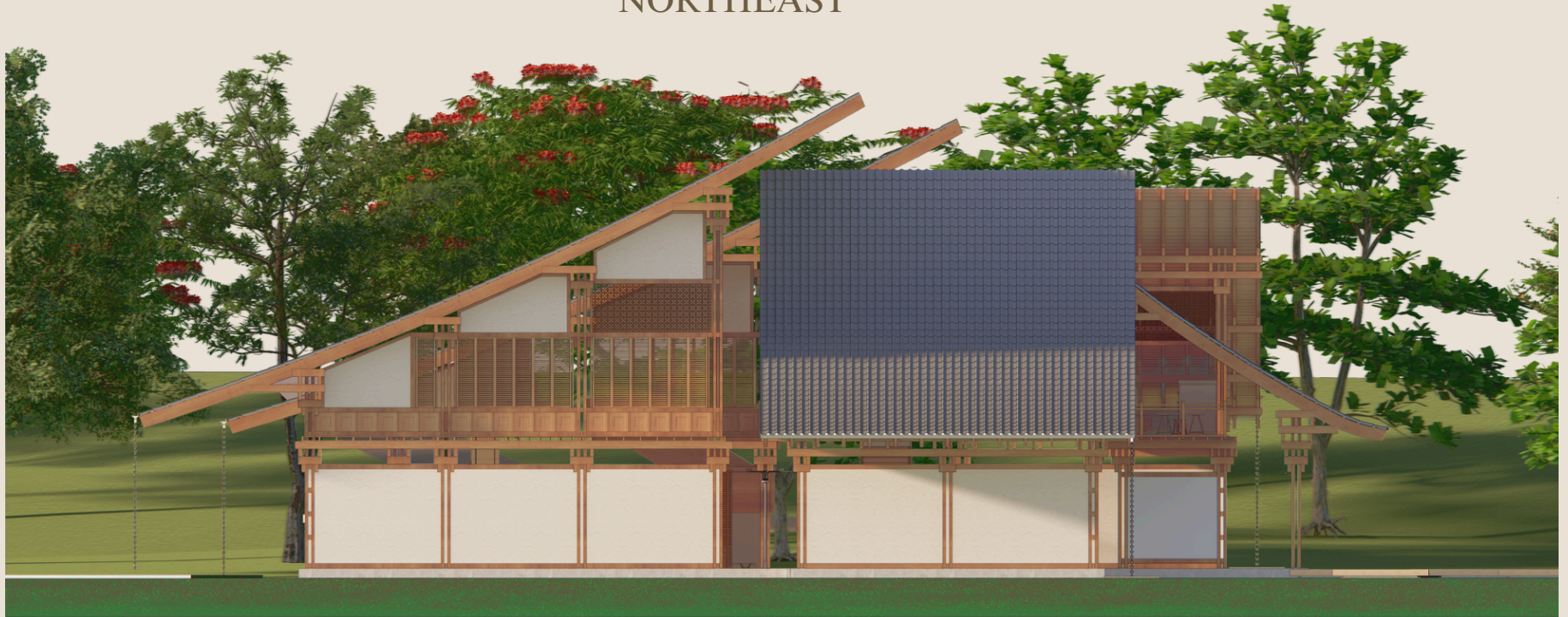


B - B'

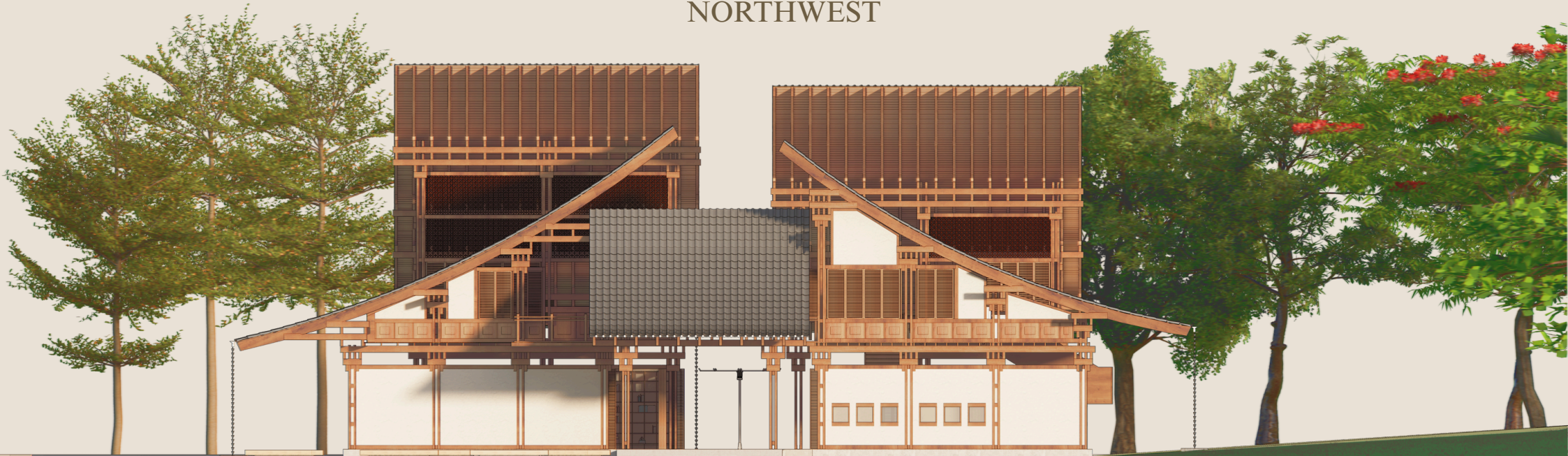


ELEVATIONS

NORTHEAST

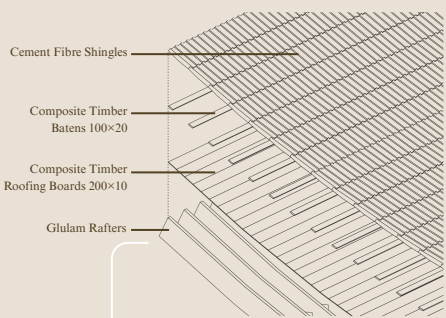
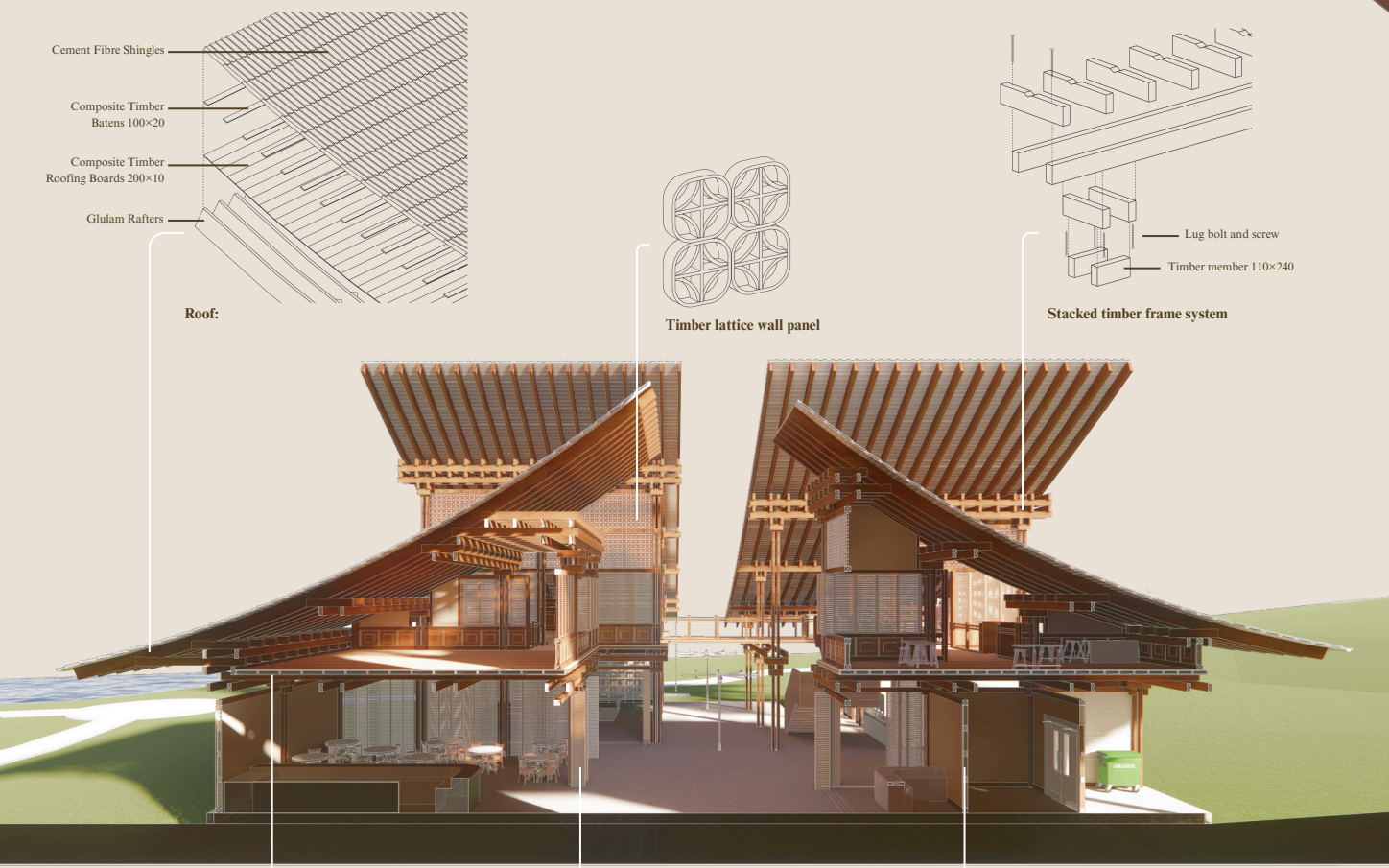


NORTHWEST



SECTIONAL PERSPECTIVE

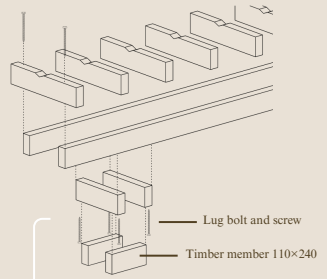
NOT TO SCALE



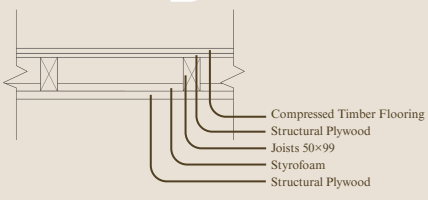
Roof:



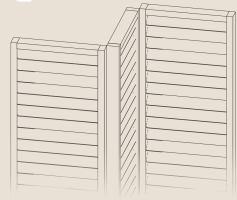
Timber lattice wall panel



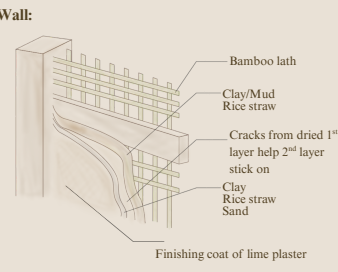
Stacked timber frame system



Floor:

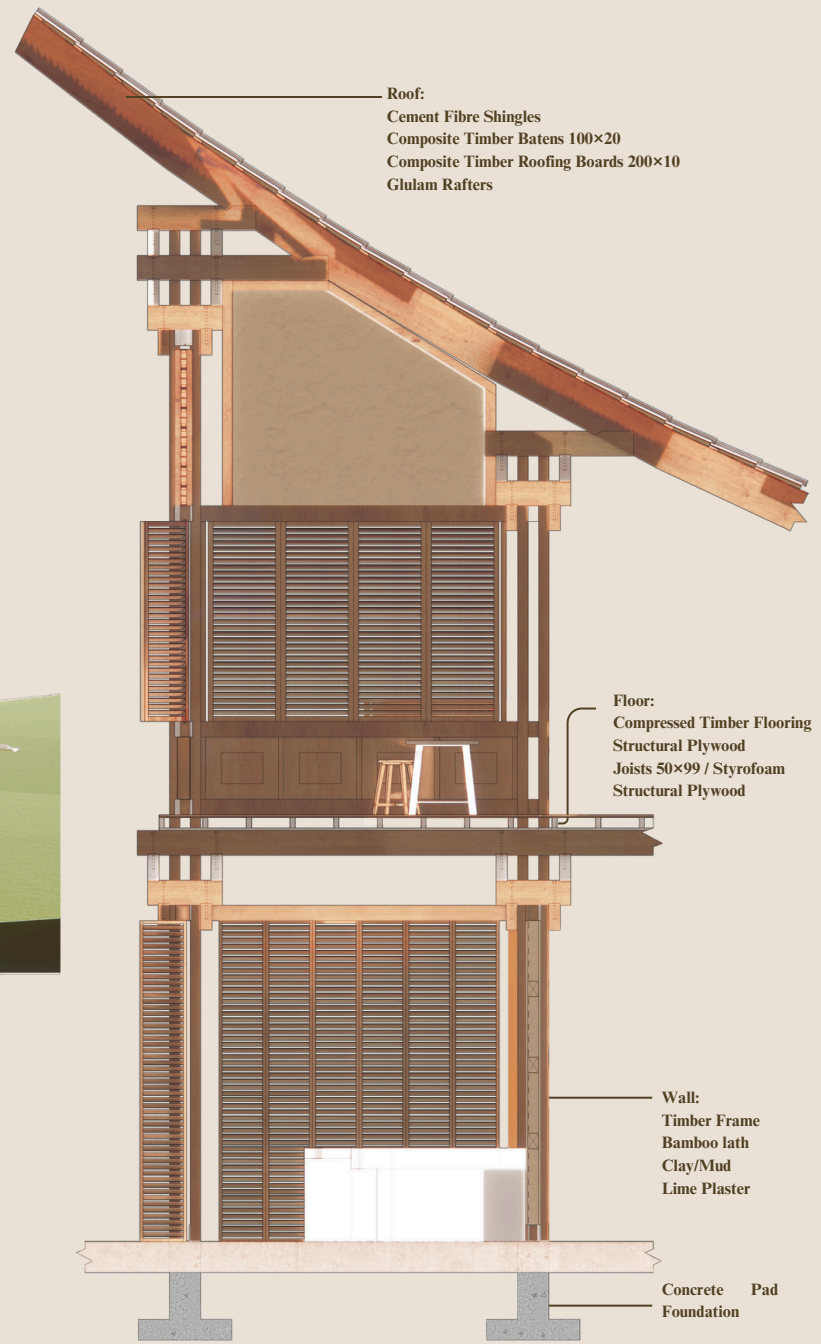


Timber bi-fold louvred doors



Wall:

FOUNDATION-TO-ROOF SECTION



Roof:

Cement Fibre Shingles
Composite Timber Batens 100x20
Composite Timber Roofing Boards 200x10
Glulam Rafters

Floor:

Compressed Timber Flooring
Structural Plywood
Joists 50x99 / Styrofoam
Structural Plywood

Wall:

Timber Frame
Bamboo lath
Clay/Mud
Lime Plaster

Concrete Pad Foundation

SITE PLANNING



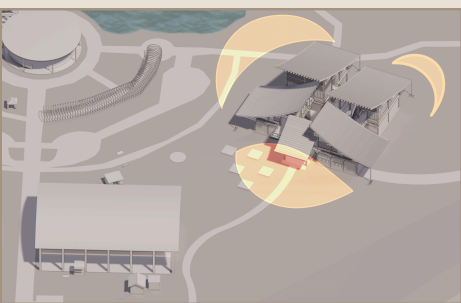
SUN PATH



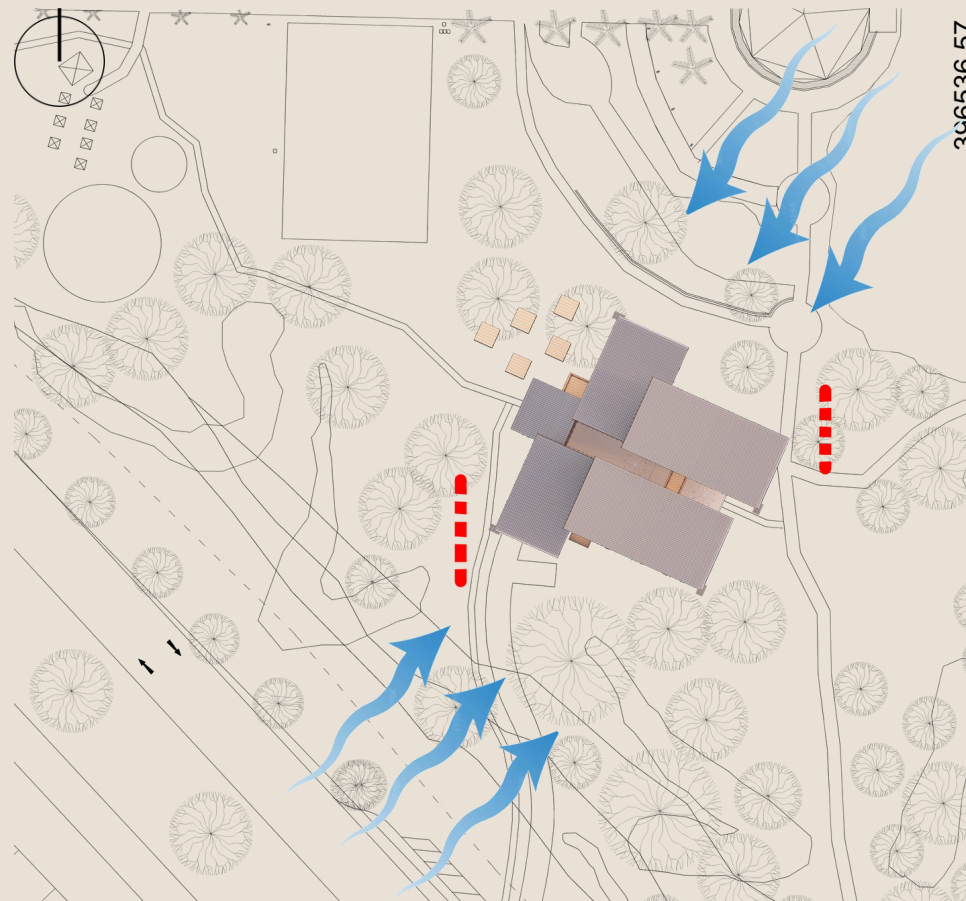
WIND DIRECTION



CIRCULATION



POTENTIAL VIEWS



BUILDING ORIENTATION

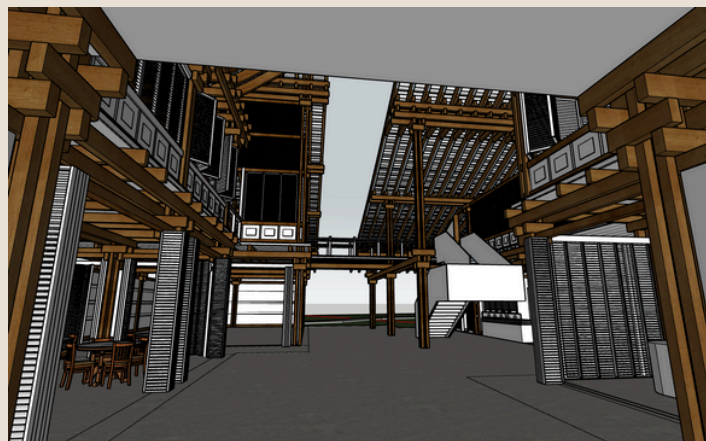
- shorter sides of facade are facing East and West, relative to the sun path, to reduce harsh sunlight glares into the building
- Winds during Northeast/Southwest monsoon seasons direct towards longer sides of facade for increased airflow and natural ventilation

ACCESSIBILITY FROM SITE POINTS

The building is strategically placed to divert the hotspot zones of activity in the central axis of the park to the south, where less activity occurs. Pathway circulation still allows for easy access from the main path to the building.

NATURAL LANDSCAPE

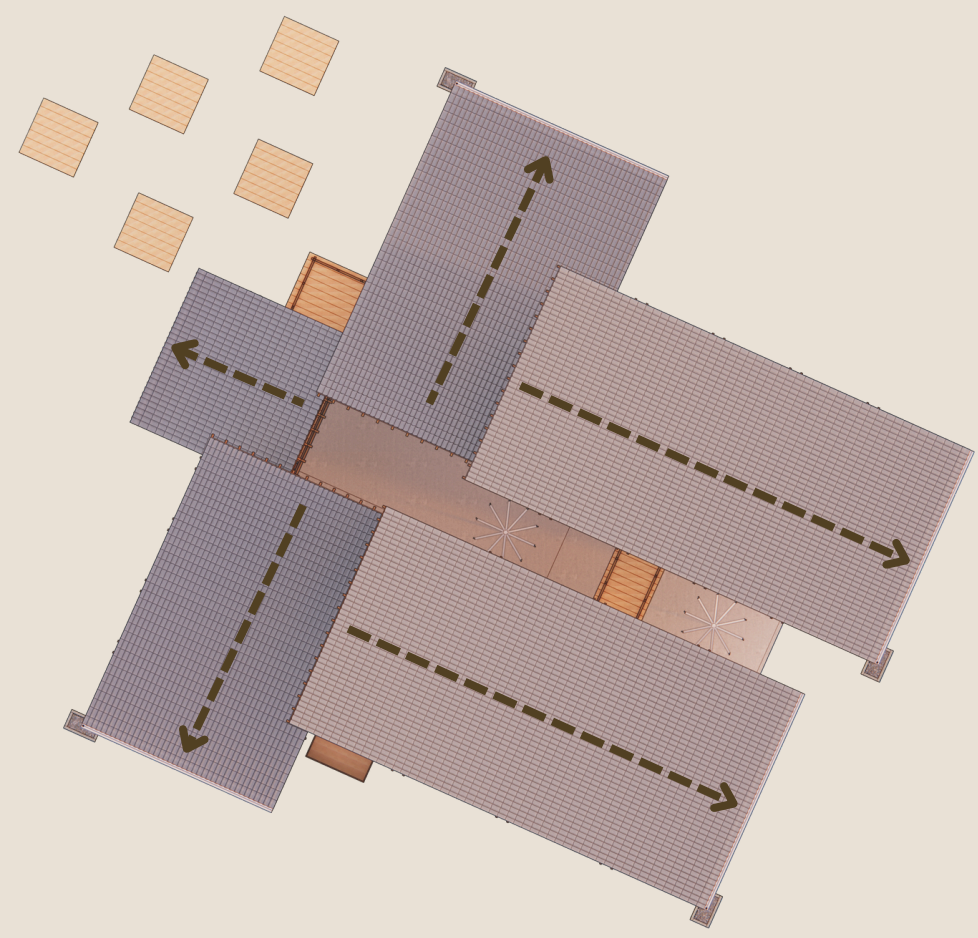
surrounded by the natural landscape of trees, helps with natural cooling and shading of the building



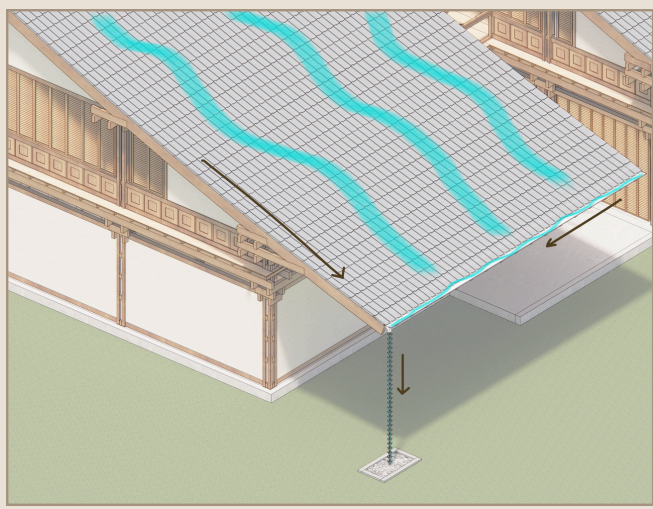
SPATIAL LAYOUT

cluster of spaces with modular/openable walls for flexible spatial experiences and adaptable usage along with cross-ventilation

ROOF LAYOUT

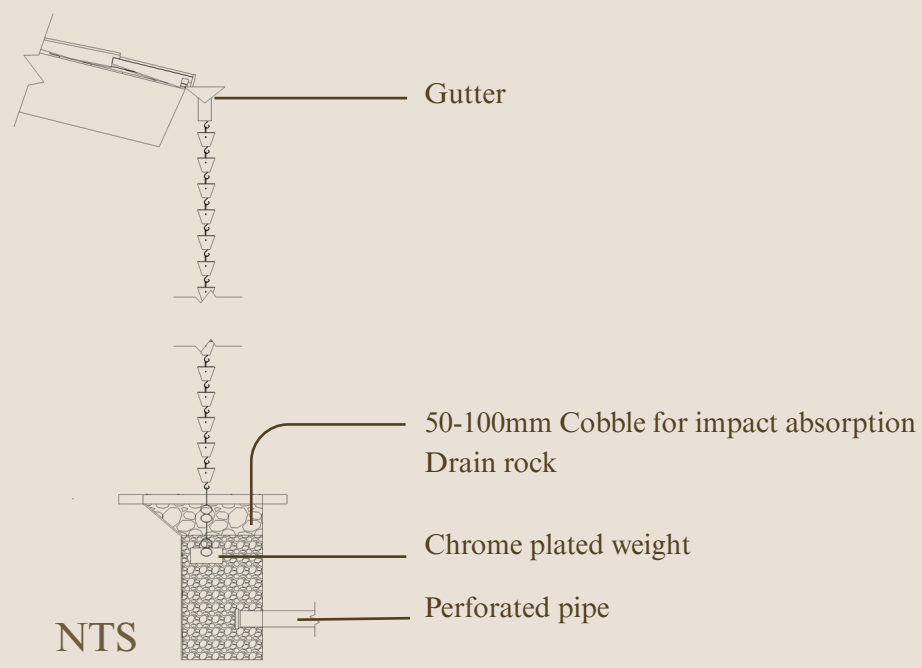


--> SLOPE DIRECTION



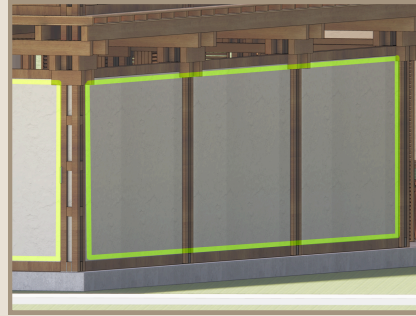
RAINWATER HARVESTING

The sloped tile roofs facilitate rainwater runoff, directing rainfall in the gutters that flow towards rainchains that lead into infiltration trenches of cobble and drain rock. The water is collected by pipes into a collective filtration tank underground for toilet use.

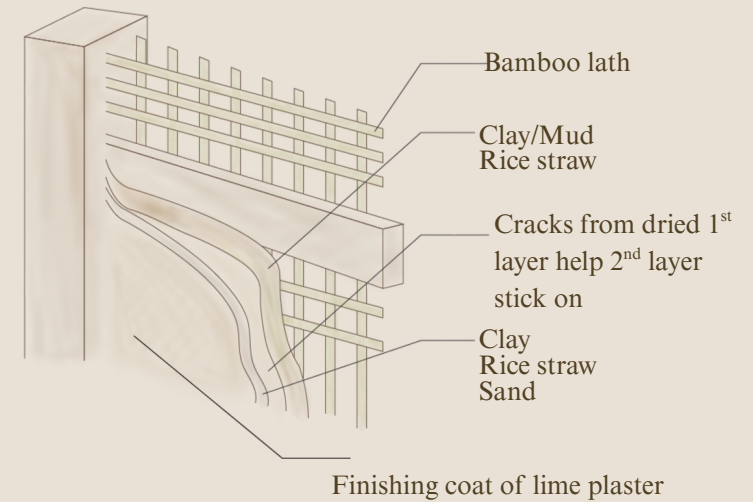


FACADE DESIGN

BREATHABLE WALLS



Exterior walls are made up of timber framed walls with a earthen clay/plaster infill



HUMIDITY REGULATORY PROPERTIES

Is breathable and self-regulates humidity by absorbing outside humidity then releasing it, making is mold-resistant.

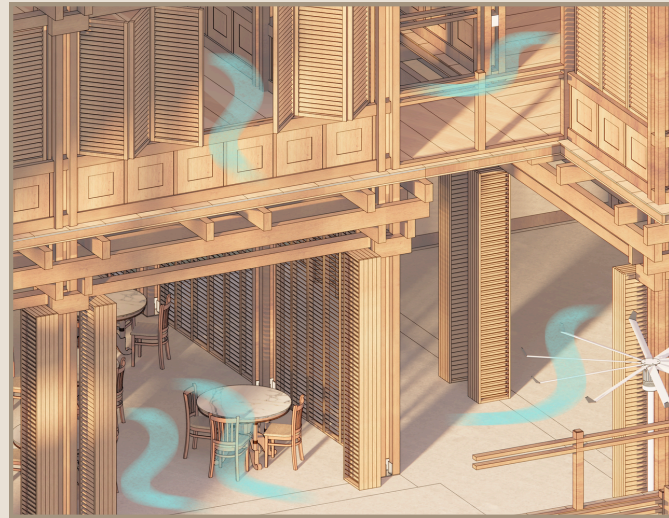
NATURAL COOLING

The earthen clay's thermal mass reduces daytime heat gain and also has natural cooling properties, helping in maintaining cooler indoor temperatures.

SUSTAINABILITY

The composition of the earthen clay wall is entirely low-carbon, biodegradable and can be made from locally sourced materials.

VENTILATION



CROSS VENTILATION

Modular louvred bi-fold doors/windows for the majority of interior walls aid in cross ventilation of spaces, allowing wind to flow through uninterrupted.

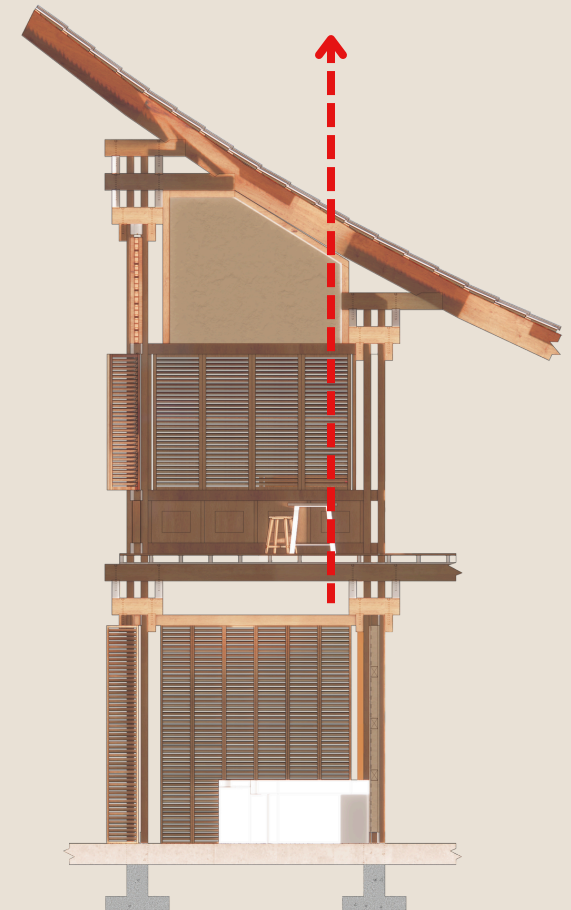
FENESTRATIONS

Clerestory openings along top of ground floor walls to allow warm air to rise out and for natural lighting.

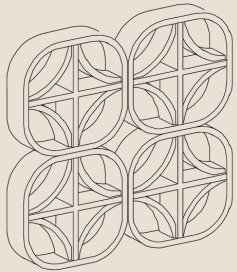


STACK EFFECT VENTILATION

- Double heighted space for the central communal event area, open air staircases and vertical voids to support vertical air movement
- warm air rises and exits through clerestories and roof level openings, drawing cooler air down.



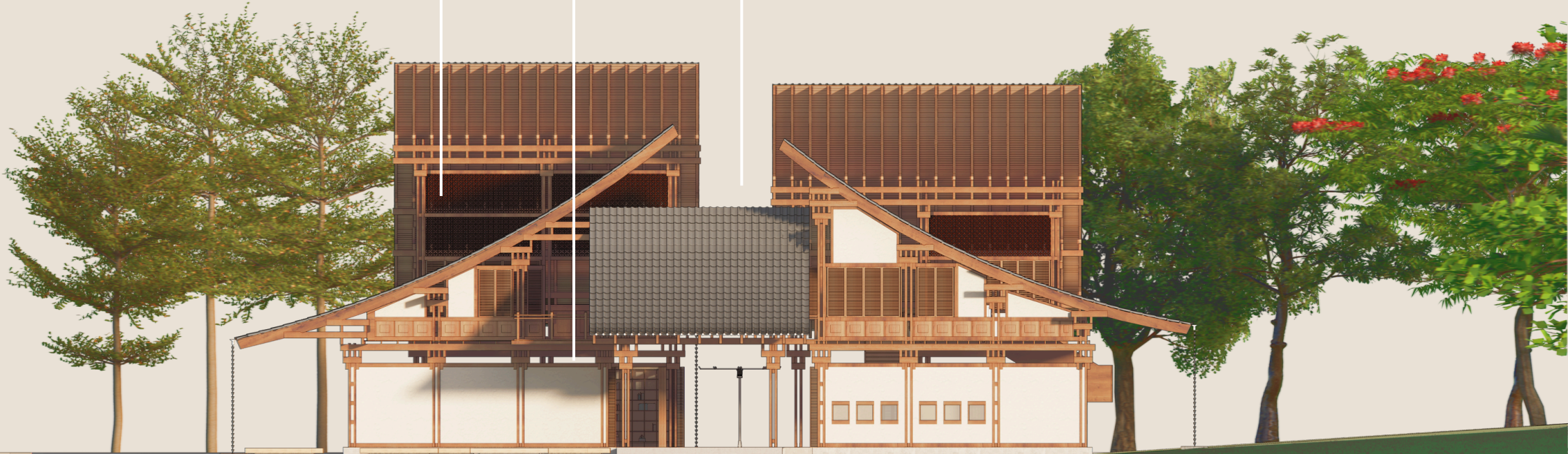
DAYLIGHTING



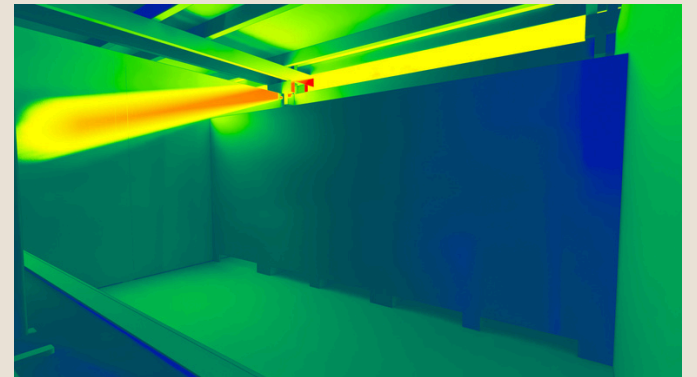
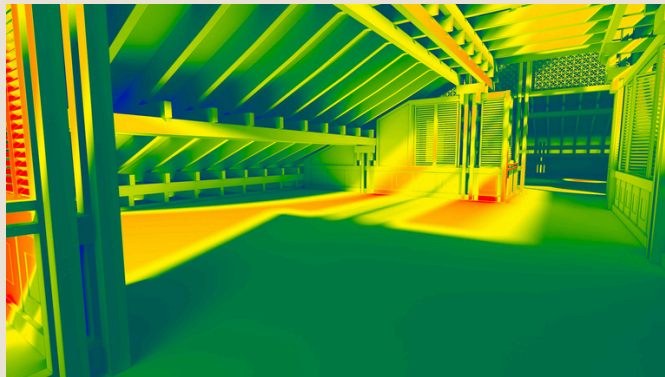
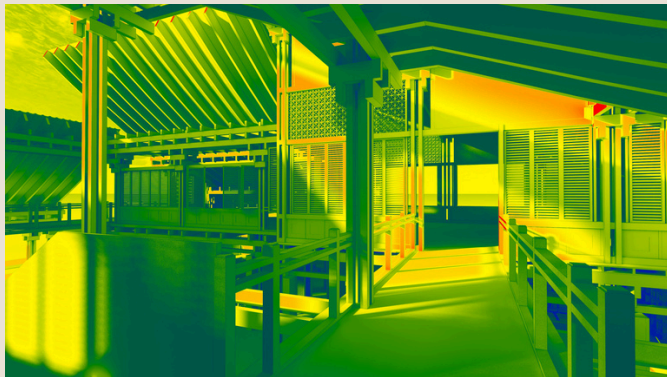
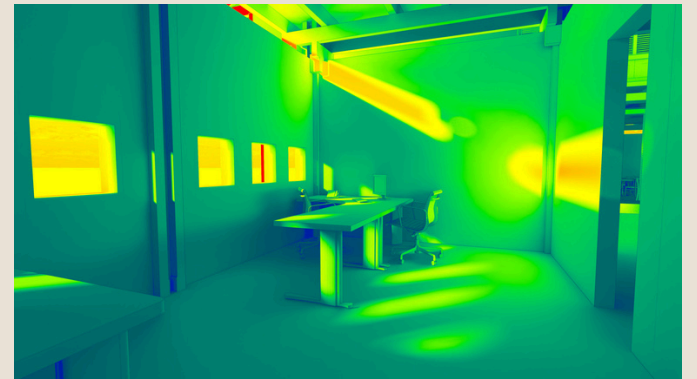
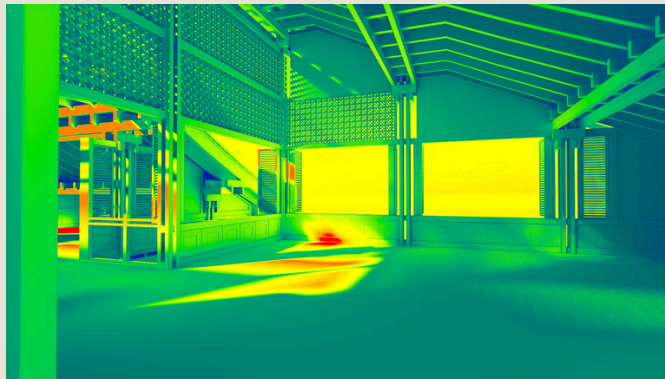
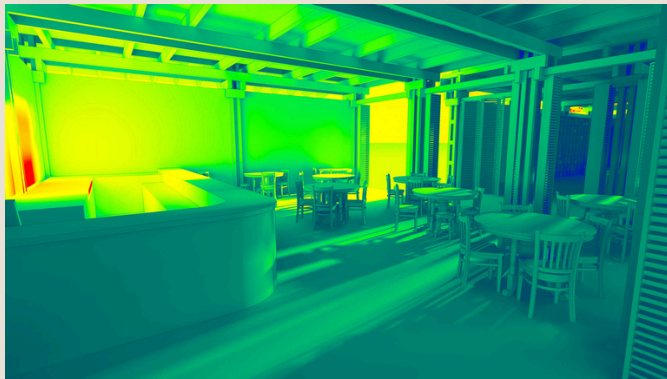
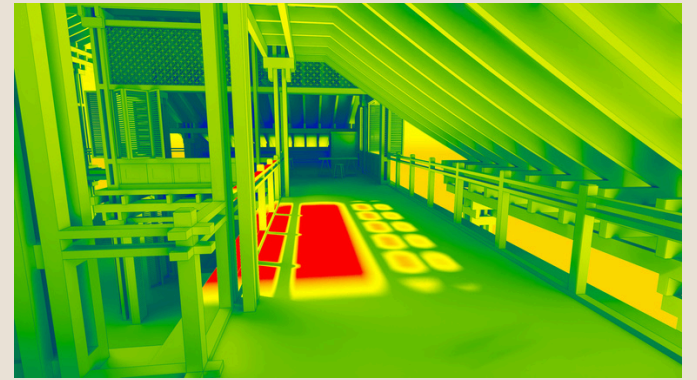
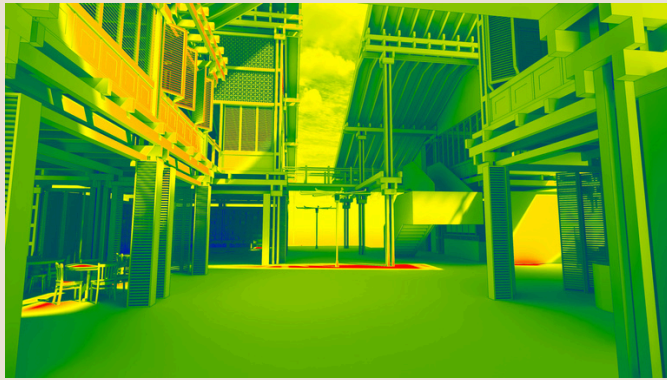
Timber lattice wall panel



- timber lattice wall panels on higher sections of first floor walls to allow daylight into building
- clerestory opening by top of ground floor walls to allow daylight to filter into ground floor spaces
- open atrium for central communal space allows for sunlight into the centre part of the community hub
- light coloured interiors (walls, timber) allow light to reflect and bounce into spaces more effectively, reducing the use of artificial lighting inside during daytime.



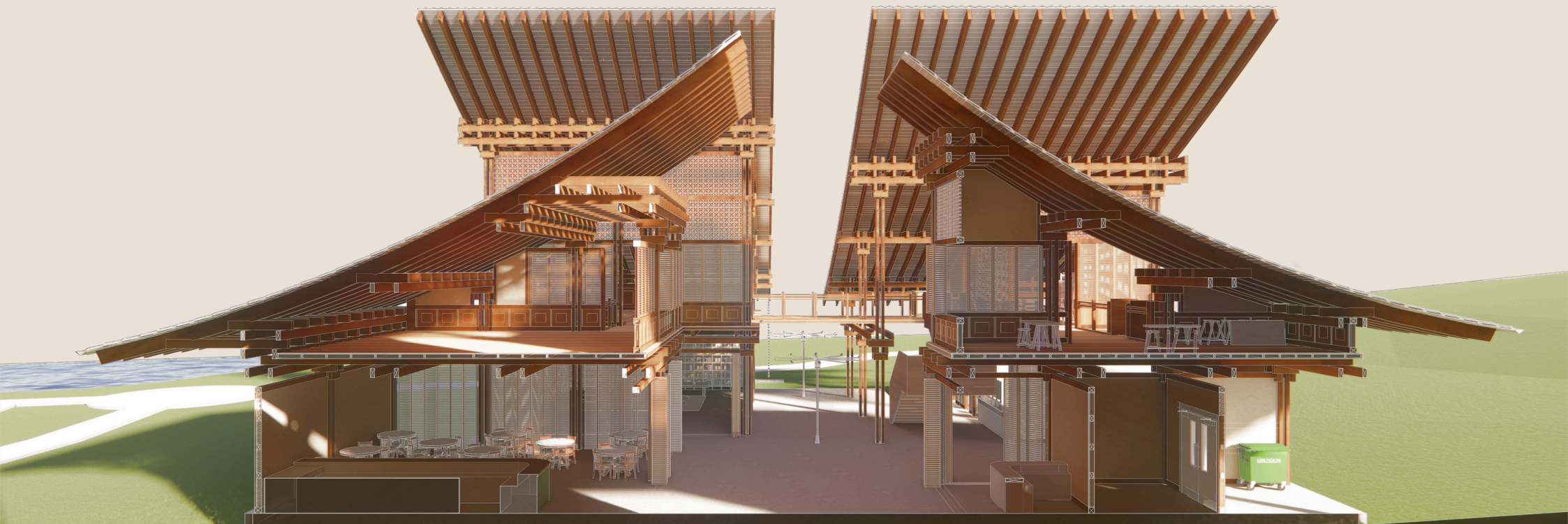
DAYLIGHT MAPPING



Kakilang is thoughtfully designed to provide the most comfortable and best experience to its users by using passive design strategies and careful spatial planning to ensure it focuses on the communities' daily needs. Located in a lush area, the hub blends into the natural landscape, creating a

The building's orientation takes advantage of natural light and prevailing winds, reducing energy consumption and enhancing comfort for its users. Large windows and perforated wall panels maximize daylighting, creating bright and inviting interiors while minimizing the need for artificial lighting. This design approach not only conserves energy but also promotes a healthier, more productive learning environment. Adjustable louvres and bi-fold windows and doors facilitate natural ventilation, allowing fresh air to circulate throughout the building and reducing reliance on mechanical cooling systems. Breathable and natural resource made walls of mud and clay allow humidity regulation, ensuring indoor spaces remain a controlled cool temperature without mold.

Overall, *kakilang* displays the use of innovative design strategies utilising locally recognisable methods and materials, further enhancing the sense of belonging to the local communities of Taman Wawasan. Yet through its use of passive design integration and practices, it actively reduces the environmental impact to the natural surroundings.



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