



Architectural sketches of a building, featuring circular and rectangular forms, sections, and elevations. The sketches are rendered in pencil and include various details and annotations.

INTEGRATED WITH ARCHITECTURAL DESIGN STUDIO PROJECTS

GREEN STRATEGIES FOR BUILDING DESIGN
(ARC61804)

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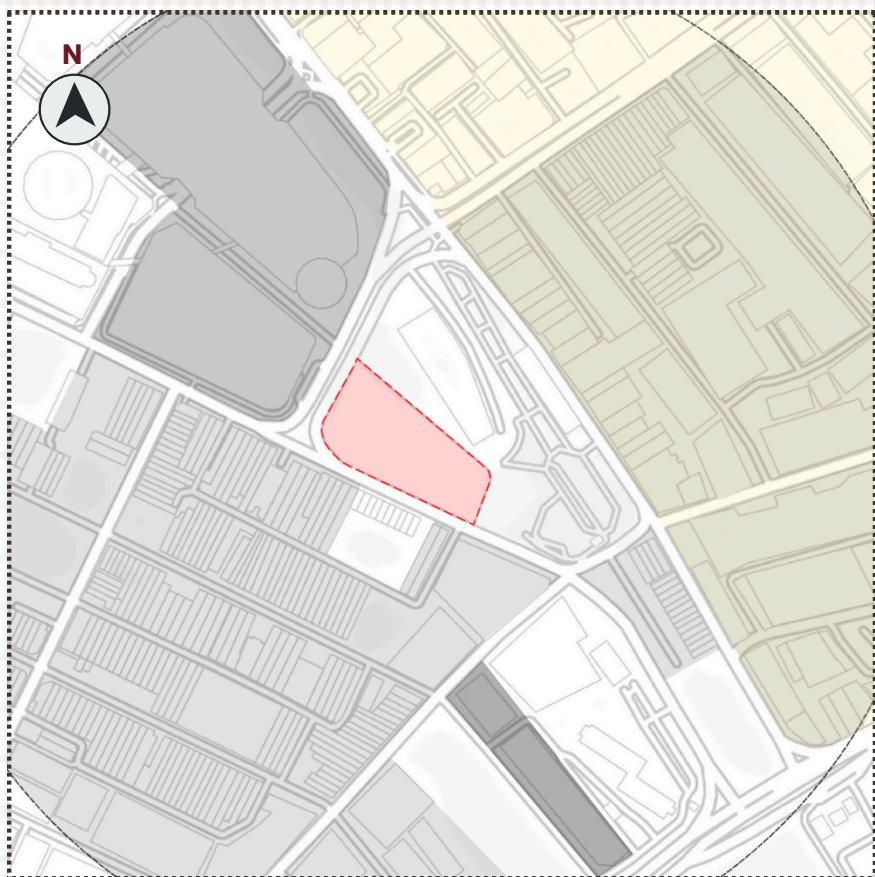
REFERENCES

The background is a detailed architectural site plan in a light gray, semi-transparent style. It shows a complex urban layout with various building footprints, streets, and green spaces. A prominent feature is a large, irregularly shaped building footprint on the left side. Another large, more rectangular building footprint is on the right. A winding path or road cuts through the center of the plan. The overall style is technical and precise, typical of architectural drawings.

01 SITE INTRODUCTION



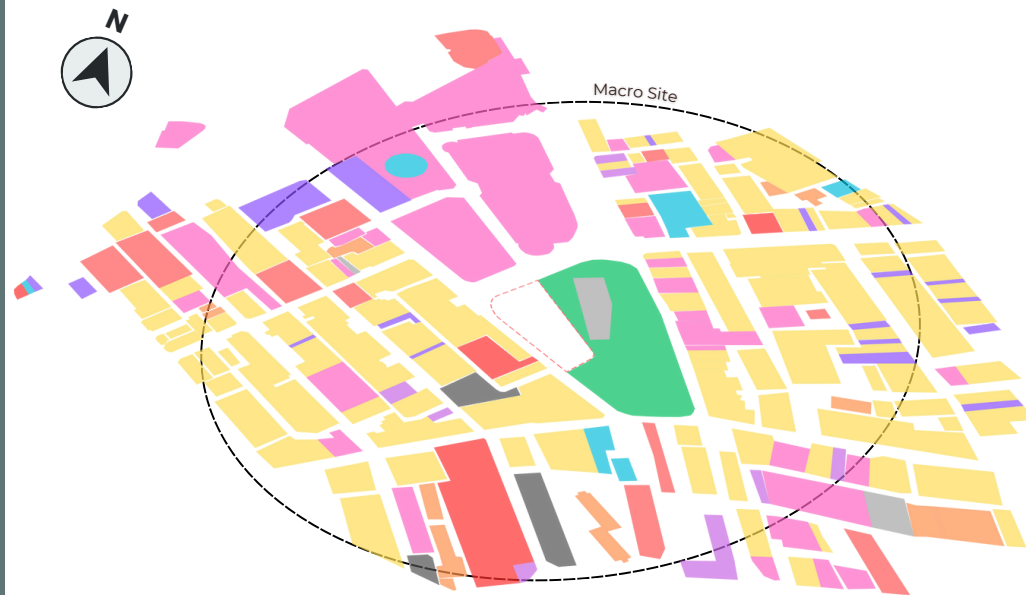
KEY PLAN - GEORGE TOWN, PENANG



SITE PLAN : JLN MAGAZINE, GEORGE TOWN

1.1 SITE

SITE ZONE MAPPING



Legend:

 Shophouses	 Abandoned	 Warehouses
 Commercial	 Parks	 Religious Building
 Parking Lots	 Hotels	 On-going Construction
 Institutions	 Residential	 Site Boundary

SITE CIRCULATION MAPPING



Legend:

 Primary Vehicular Paths	→ C.Y. Choy Street
 Secondary Vehicular Paths	→ Dr Lim Chwee Leong Street
 Tertiary Vehicular Paths	→ Tek Soon Street
 Bus Route	→ Carnarvon Street
	→ Pengkalan Weld
	→ Mcnair Street

ADDRESS

140, Jln Magazine, George Town,
10100, George Town Pulau Penang

BUILDING FUNCTION

Interactive Urban Third Place

SITE AREA : GLOSS FLOOR AREA

5700 sqm : 1897 sqm

BRIEF

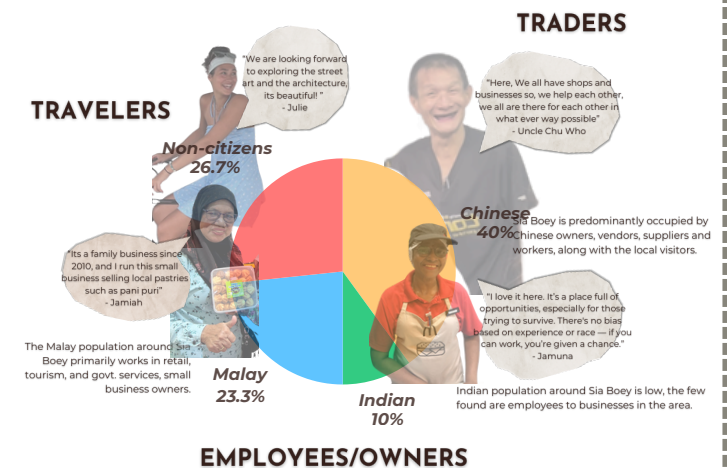
The project calls for Design an Urban Room in Georgetown as a vibrant "third place" fostering social, cultural, and environmental sustainability

The Project aims to reconnects communities, celebrates heritage, and enhances public space.

DESCRIPTION

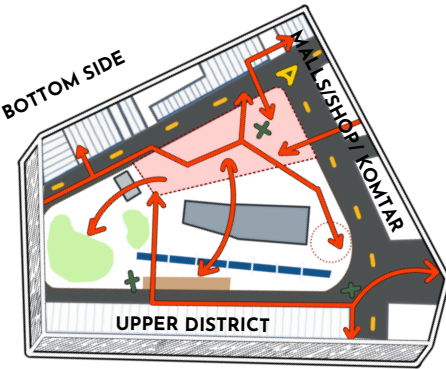
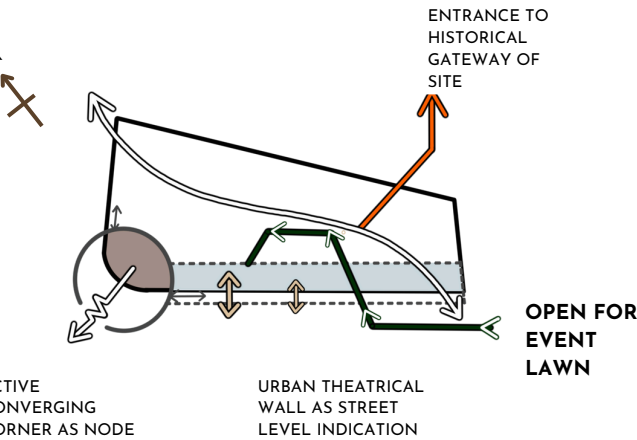
The project reimagines Sia Boey as an "urban room" – a civic space that stitches together the site's fragmented history and dispersed community roots. It serves as an incubator for educating future generations about their heritage while acting as an urban theatre, where travelers and locals meet through shared rituals, performances, and exchange. By fostering visibility and opportunity for small businesses, the design resists gentrification, supports local livelihoods, and strengthens the community's cultural fabric.

DEMOGRAPHIC

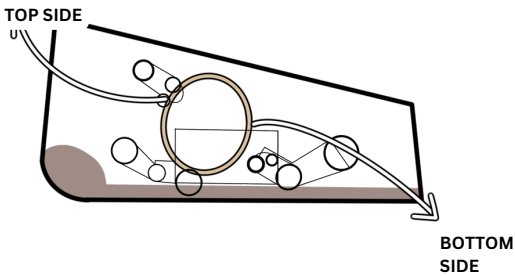


URBAN ROOM SITE PLANNING STRATEGIES

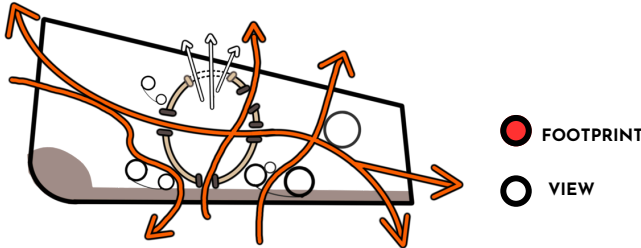
TOP& BOTTOM SIDE PHYSICAL CONNECTIVITY



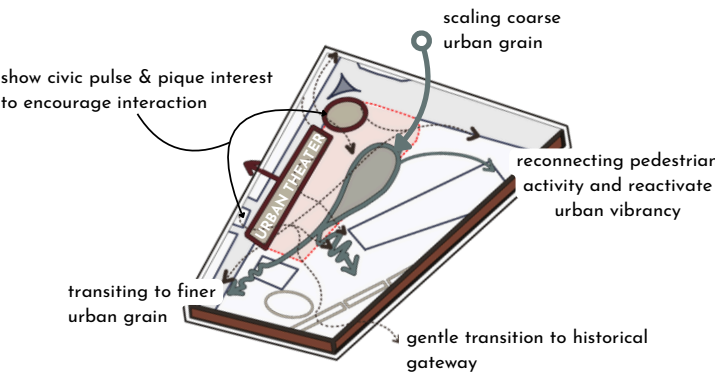
REDEFINING CIRCULATION & ENHANCE PHYSICAL FOOTPRINT CONNECTION



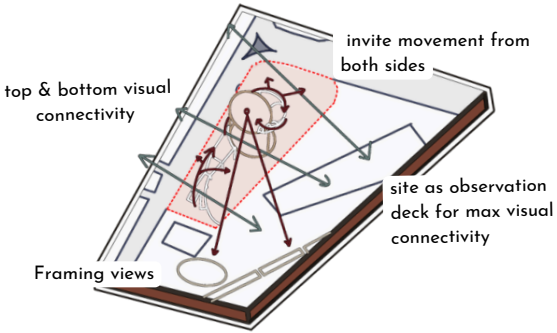
SILO HIERACHY & RYTHMN MAPPING



PHYSICAL & VISUAL PERMEABILITY ADJUSTMENT

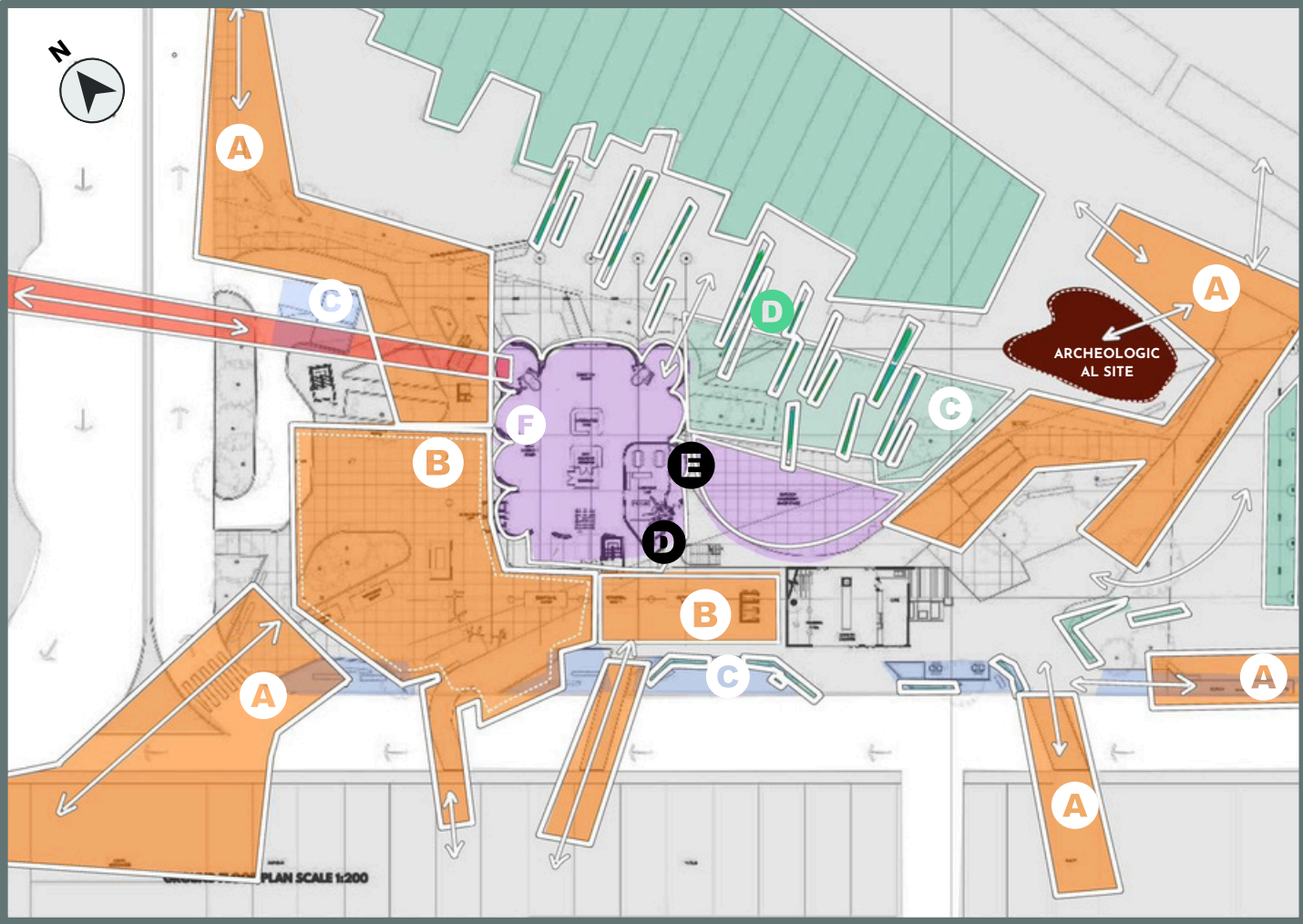


IGNITING CURIOSITY & BRIDGING URBAN SCALES TO HUMAN RHYTHMS



INTERLACING PERSPECTIVES, CIVIC TERRAIN OF MOVEMENT VISION, AND CONTINUITY

1.2 SITE CONTEXT PLANNING



A

LINKAGES TO SITE

SAFE ACCESSIBILITY FOR WALKING TO SITE OR TO SURROUNDING

BYPASS TO FUTURE HISTORICAL GATEWAY

B

ROTATIONAL TRADING BOOTH PLAZA FOR LOCAL TRADERS

PUBLIC AMMENITY

C

LINKING LANDSCAPE

FRAMING SITE

BUFFERING AREA

PUBLIC PARKING

D

AROMATIC LANDSCAPE

RICE BRAN COMPOST AREA

E

GASTRONOMY LAB

COMMUNITY MAKERSPACE

1.3 CLIMATIC ANALYSIS

Wind Rose

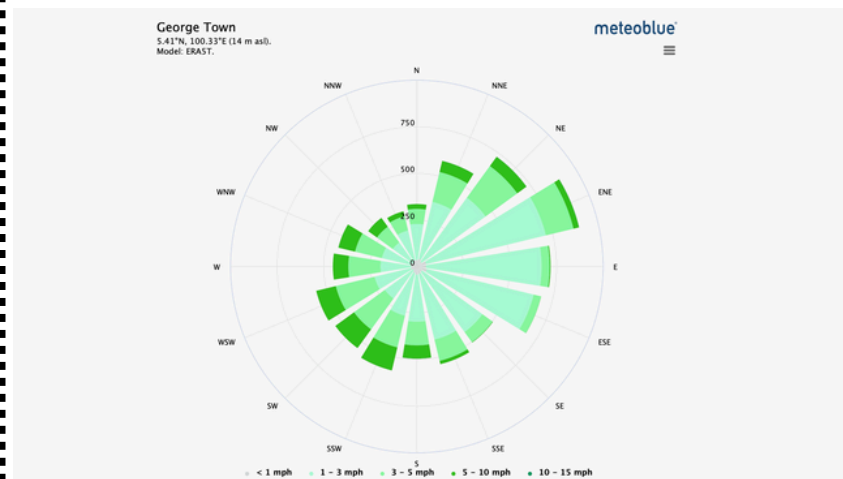


Figure 1.1 Wind Rose diagram by Meteoblue

Prevailing winds predominantly come from the east-northeast, providing favourable conditions for natural ventilation strategies and design. From the east-southeast, the site experiences moderate steady winds that can also be harnessed to enhance airflow.

Wind Speed

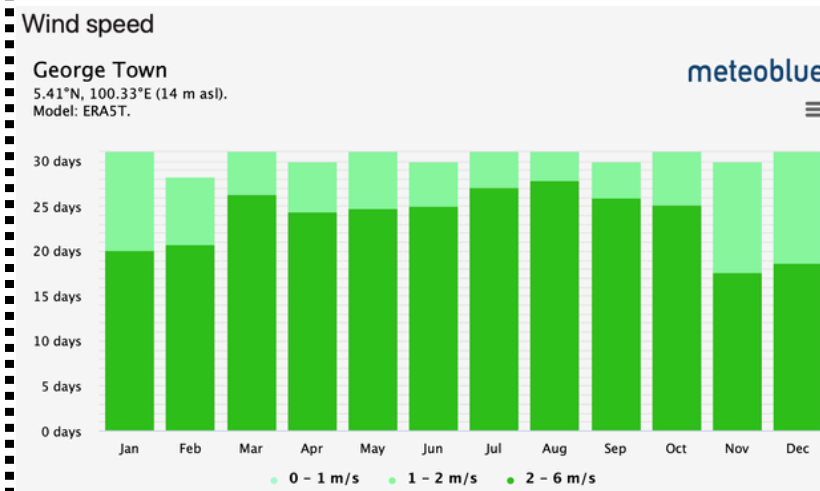


Figure 1.2 Wind Speed diagram by Meteoblue

The site experiences its highest wind speeds between July and August, driven by the southwest monsoon. During this period, wind speeds reach approximately 6 m/s, creating favourable conditions for harnessing natural ventilation.

Precipitation

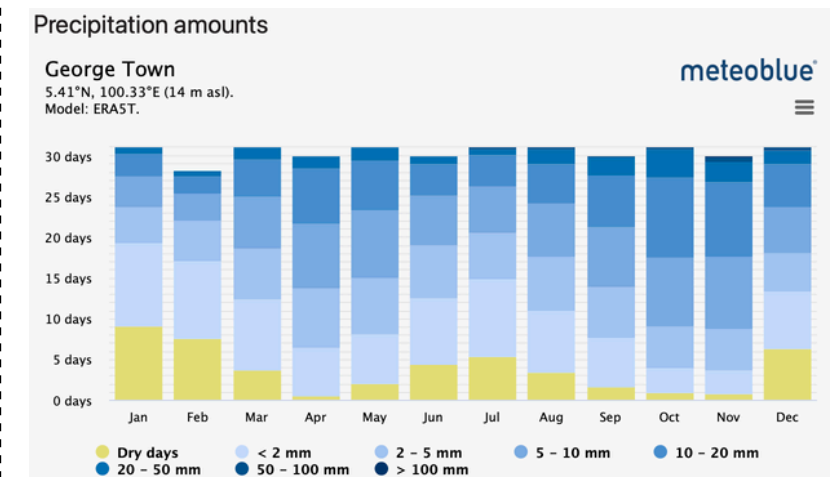


Figure 1.3 Rain Fall diagram by Meteoblue

The site receives substantial rainfall, averaging 200–350 mm monthly, with the wettest period in October and November due to monsoon activity. This rainfall should be considered in design strategies for stormwater management, drainage, and building protection to ensure durability and comfort.

Solar

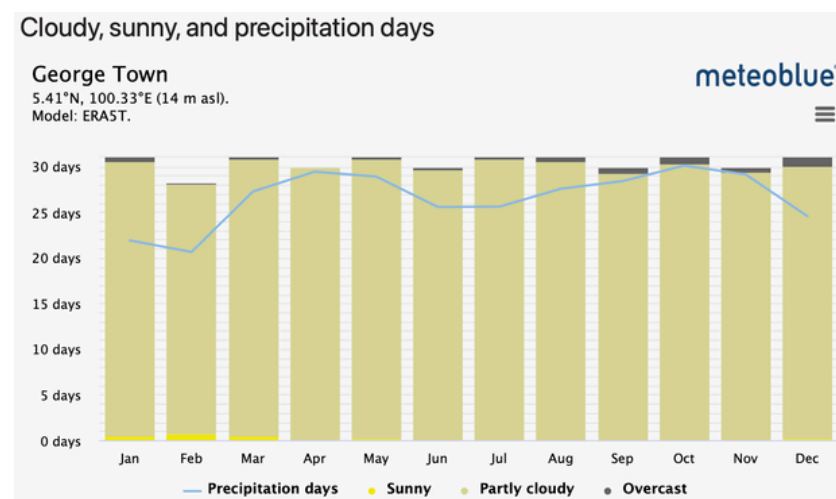


Figure 1.4 Weather Condition Chart by Meteoblue

The site experiences predominantly partly cloudy conditions throughout the year. Located within the tropical zone, George Town is subject to consistently warm temperatures and year-round solar exposure.

Region

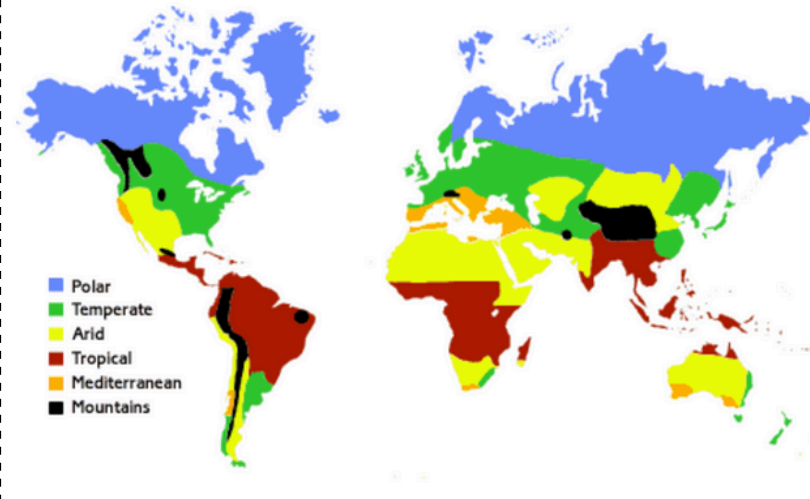


Figure 1.5 Climate Chart by UK Meteorological Office

George Town's tropical climate features year-round heat and humidity with little temperature variation. To maintain comfort and air quality, strategies to reduce heat gain and improve ventilation are essential.

Temperature

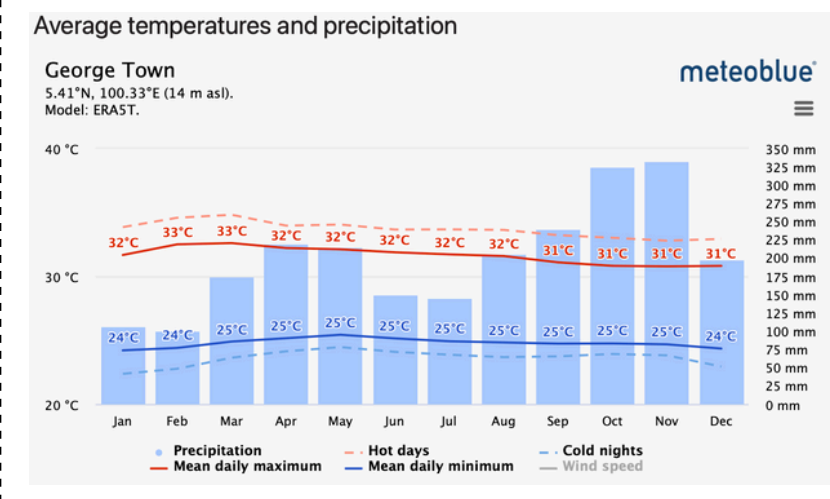


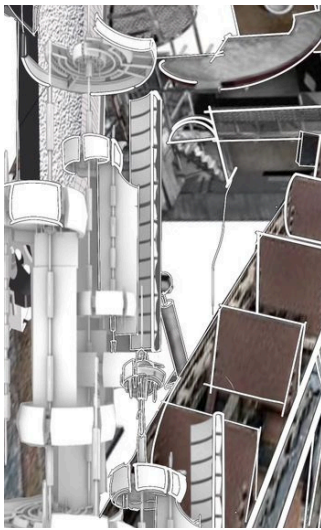
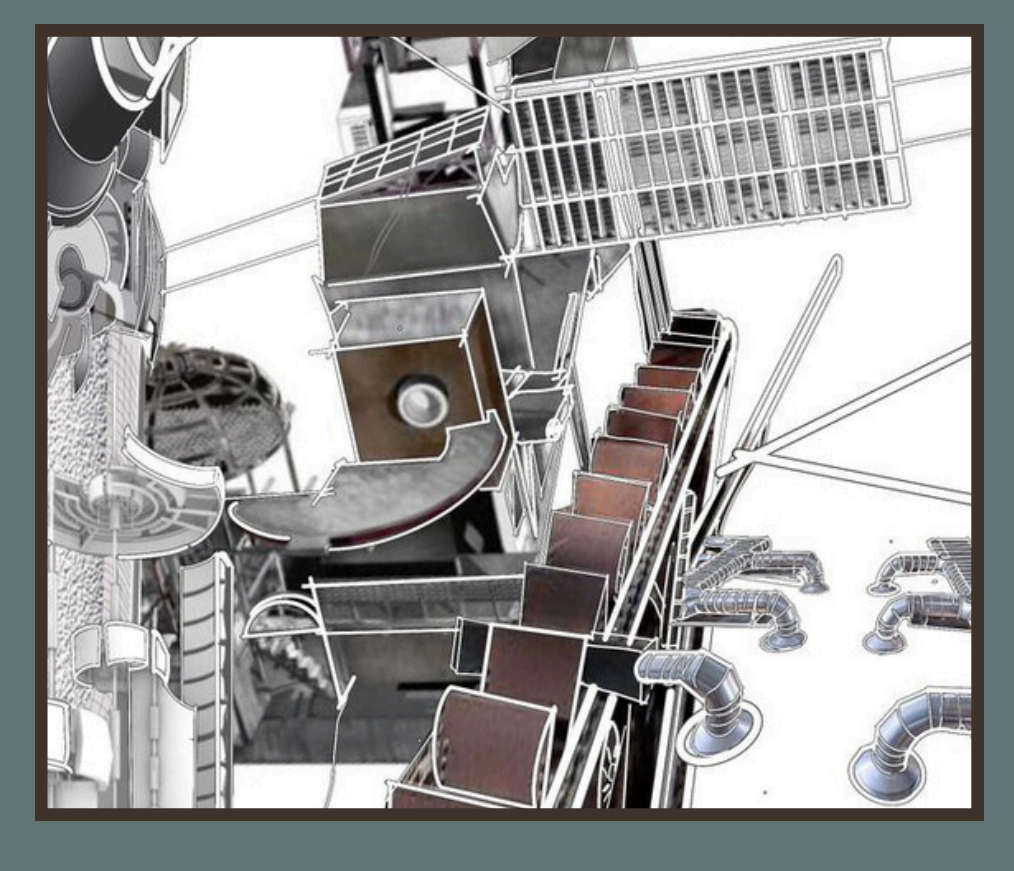
Figure 1.6 Temperature Chart by Meteoblue

The site has warm temperatures year-round, with highs up to 32°C and an average of 30°C. Since optimal comfort is around 25°C, passive cooling strategies, and reflective materials are required.

02 URBAN MILL

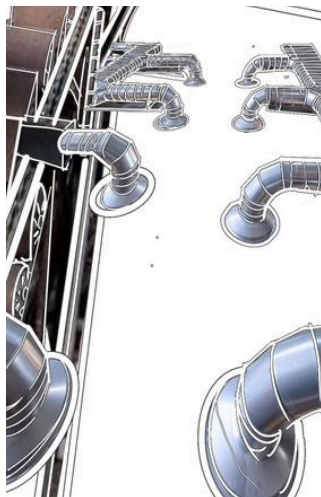
2.1 CONCEPT & DESIGN INTENTION

MILLING MACHINE AS AN URBAN THEATER



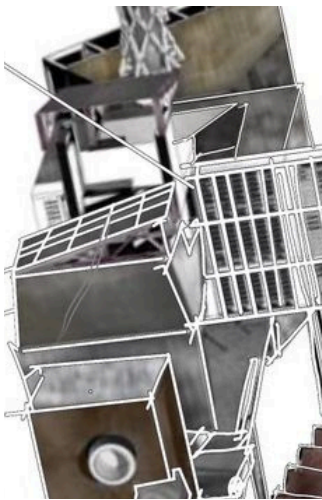
CIVIC ENGINE

The mill becomes a living stage, where the choreography of rice processing—husk separation, milling, and packaging—unfolds in full view. Exposed shafts, belts, and chutes act as performers within a layered civic architecture, turning ritual and labor into a shared cultural performance that bridges past and future.



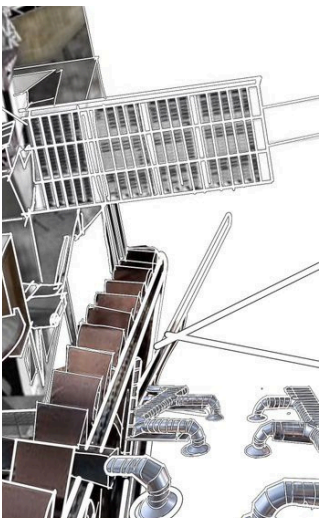
RICE FLOUR AS SPATIAL AND CIVIC MEDIUM

Flour is not just food—it's festivity. From kuih to pancakes and dumplings, it forms the basis of communal rituals, particularly among Penang's multicultural communities. The Urban Mill provides a shared medium for intergenerational and intercultural interaction, aligning with the site's role as a third space.



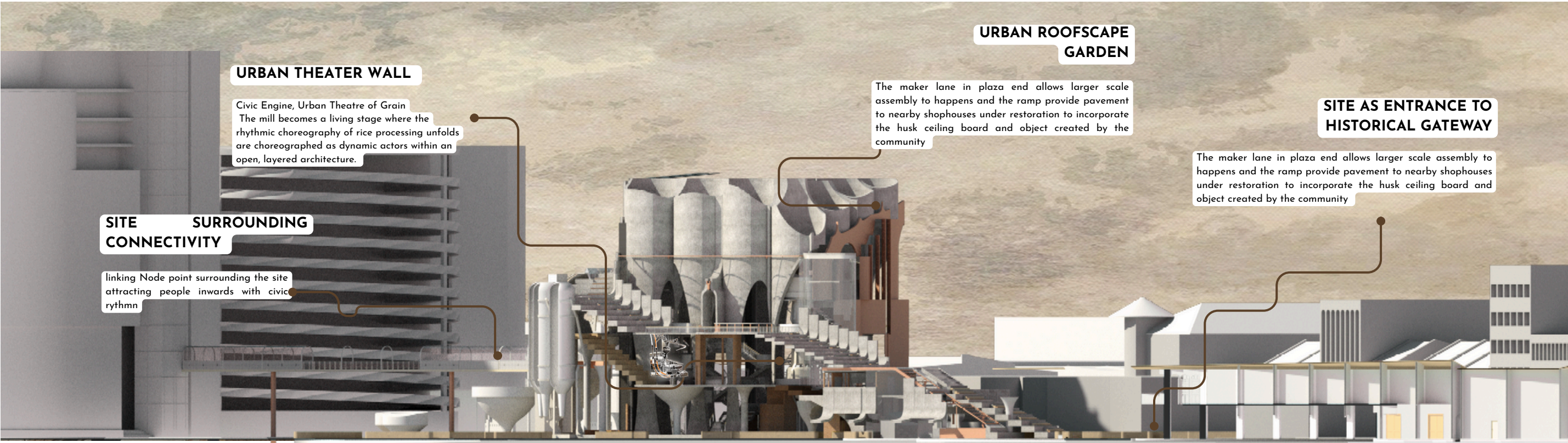
HYBRID SPACES

The mill becomes a living stage, where the choreography of rice processing—husk separation, milling, and packaging—unfolds in full view. Exposed shafts, belts, and chutes act as performers within a layered civic architecture, turning ritual and labor into a shared cultural performance that bridges past and future.



ADAPTIVE REUSE AS CIVIC REBIRTH

Flour is not just food—it's festivity. From kuih to pancakes and dumplings, it forms the basis of communal rituals, particularly among Penang's multicultural communities. The Urban Mill provides a shared medium for intergenerational and intercultural interaction, aligning with the site's role as a third space.



URBAN THEATER WALL

Civic Engine, Urban Theatre of Grain
The mill becomes a living stage where the rhythmic choreography of rice processing unfolds as choreographed as dynamic actors within an open, layered architecture.

SITE SURROUNDING CONNECTIVITY

linking Node point surrounding the site attracting people inwards with civic rhythm

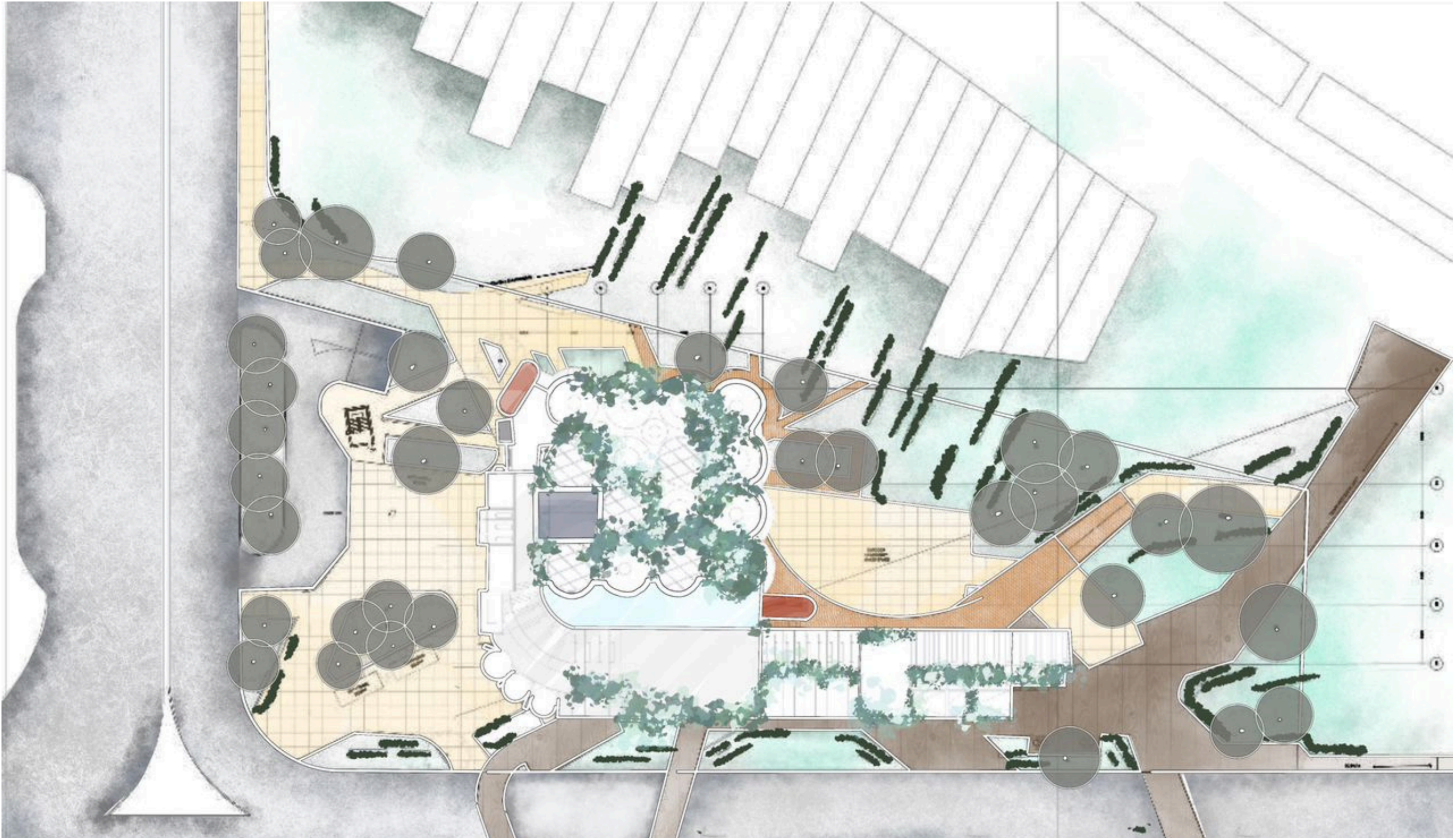
URBAN ROOFSCAPE GARDEN

The maker lane in plaza end allows larger scale assembly to happens and the ramp provide pavement to nearby shophouses under restoration to incorporate the husk ceiling board and object created by the community

SITE AS ENTRANCE TO HISTORICAL GATEWAY

The maker lane in plaza end allows larger scale assembly to happens and the ramp provide pavement to nearby shophouses under restoration to incorporate the husk ceiling board and object created by the community

2.2 ORTHOGRAPHIC



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SITE PLAN

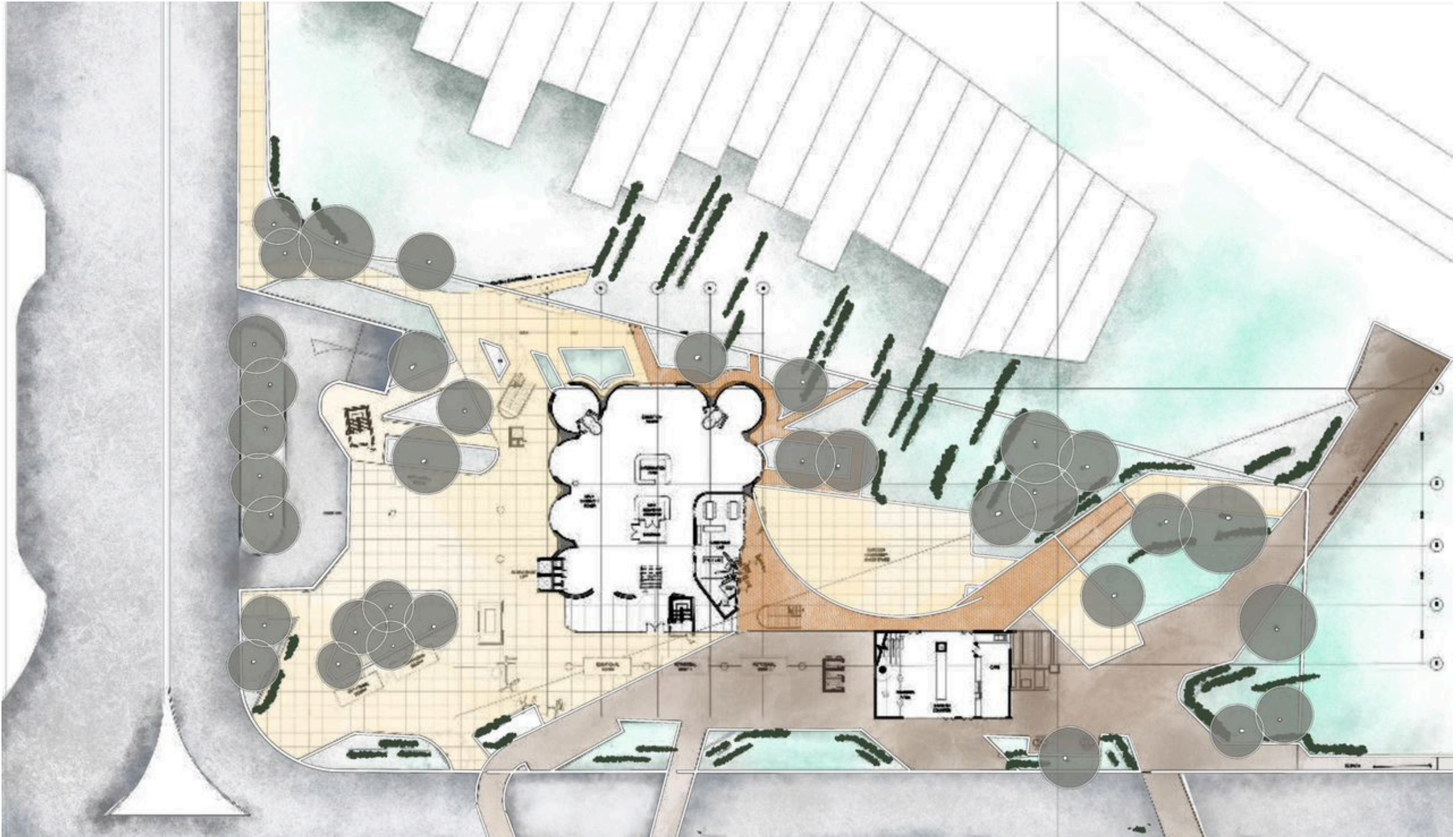
NTS

GS ASM2

TUTOR: MR. KHAIROOL

URBAN MILL

2.2 ORTHOGRAPHIC



ARC61804

GROUND FLOOR PLAN

NTS

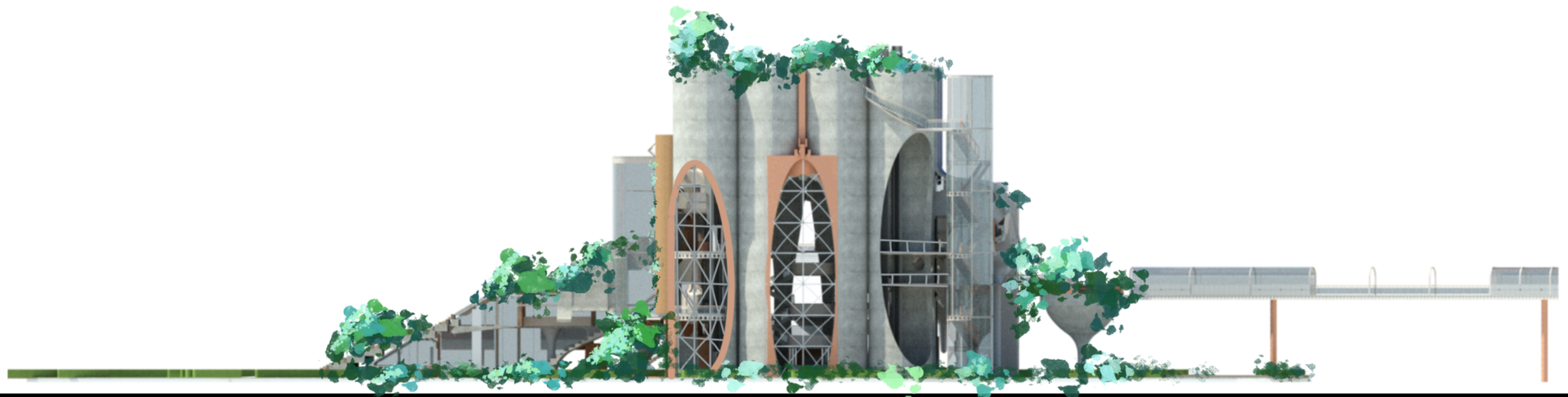
GS ASM2

TUTOR: MR. KHAIROOL

URBAN MILL



ARC61804	EAST ELEVATION	NTS	GS ASM2	TUTOR: MR. KHAIROOL	URBAN MILL	 TAYLOR'S UNIVERSITY <small>Wisdom · Integrity · Excellence</small>
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ARC61804	NORTH ELEVATION	NTS	GS ASM2	TUTOR: MR. KHAIROOL	URBAN MILL	 TAYLOR'S UNIVERSITY <small>Wisdom · Integrity · Excellence</small>
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ARC61804	SOUTH ELEVATION	NTS	GS ASM2	TUTOR: MR. KHAIROOL	URBAN MILL	 TAYLOR'S UNIVERSITY <small>Wisdom - Integrity - Excellence</small>
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ARC61804	WEST ELEVATION	NTS	GS ASM2	TUTOR: MR. KHAIROOL	URBAN MILL	 TAYLOR'S UNIVERSITY <small>Wisdom - Integrity - Excellence</small>
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ARC61804

SECTIONAL PERSPECTIVE

NTS

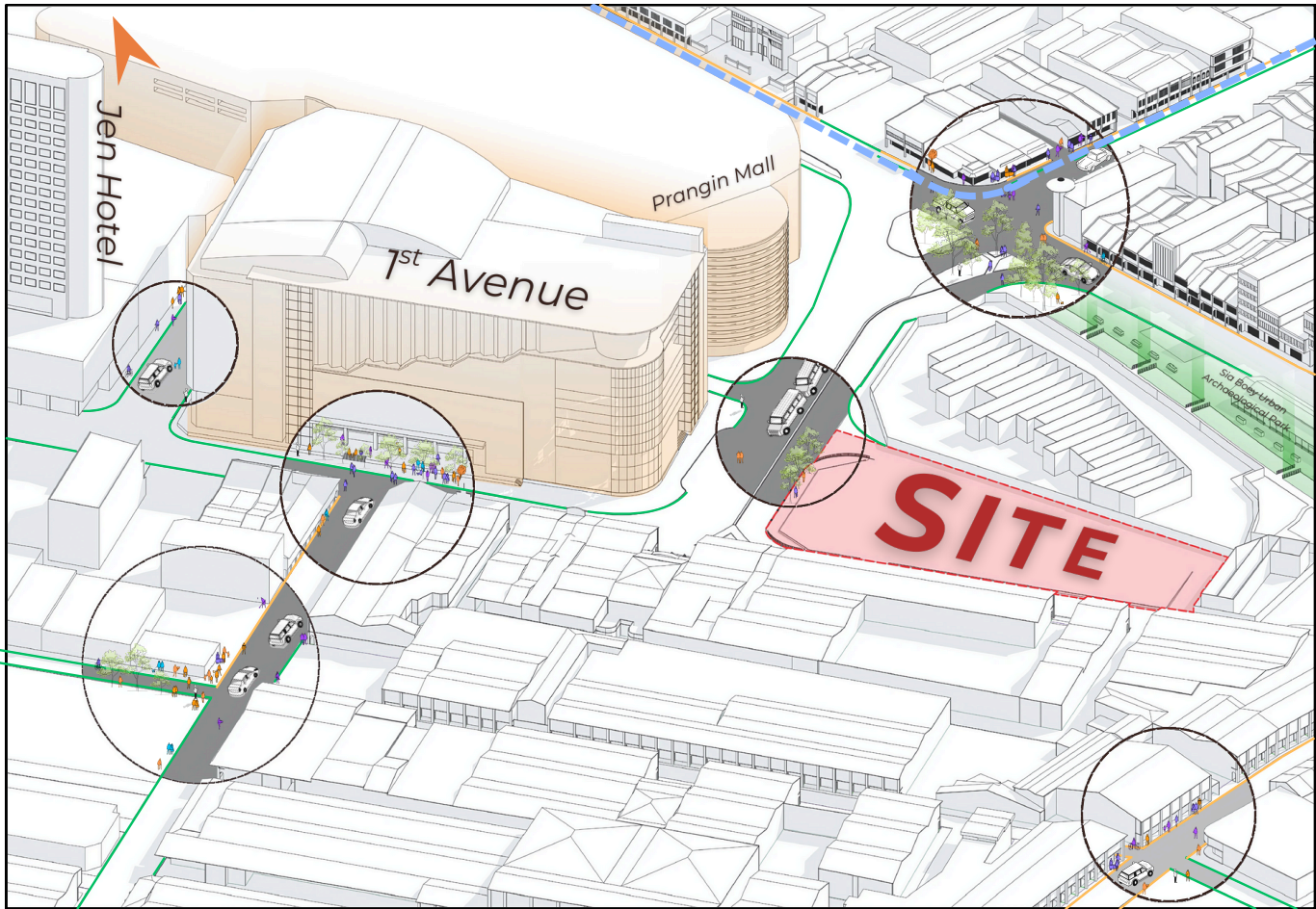
GS ASM2

TUTOR: MR. KHAIROOL

URBAN MILL

3.0 SITE PLANNING

3.1 SITE SELECTION



Legend:

Sidewalk / Pavements	Modern Retail Edges	Komtar
5-Foot Walkway	Transition To Heritage Edge	Optional Activity
Bus route	Historical Edge	Necessary Activity
Site Boundary		Social Activity

TRANSIT ORIENTED DEVELOPMENT (TOD)

TOD is integrated urban places designed to bring people together with easy walking, cycling and transit service which reduces carbon footprint.

PROJECT SITE CRITERIA

Low-Carbon Mobility Hub

Anchored by a future LRT hub and sustained by cycling, pedestrian flow.

Bus stops availability

Consist a bus stop 200 meters away from site and bus route is link to LRT in future plans

Mixed-use development

The Urban mill (project site) is a civic-productive hub where rice milling, cultural exchange, education, and sustainability intersect, serving as both marketplace and gathering space for the Sia Boey community.

PURPOSE

Cultural Heritage & Education

- Showcase rice milling as civic performance to reconnect with Penang's food heritage.
- Offer hands-on learning for younger generations about food systems, sustainability, and craft.

Economic and Social Sustainability

- Provide income opportunities for local vendors, farmers, and craftspeople.
- Prevent gentrification by anchoring community-driven economic activity.

Optimized Land & Mobility

- Integrate production, culture, commerce, and public space within a compact footprint.
- Revitalize underused land in the UNESCO buffer zone without displacing the existing community.

3.2 SITE CONTEXT

Prevailing wind

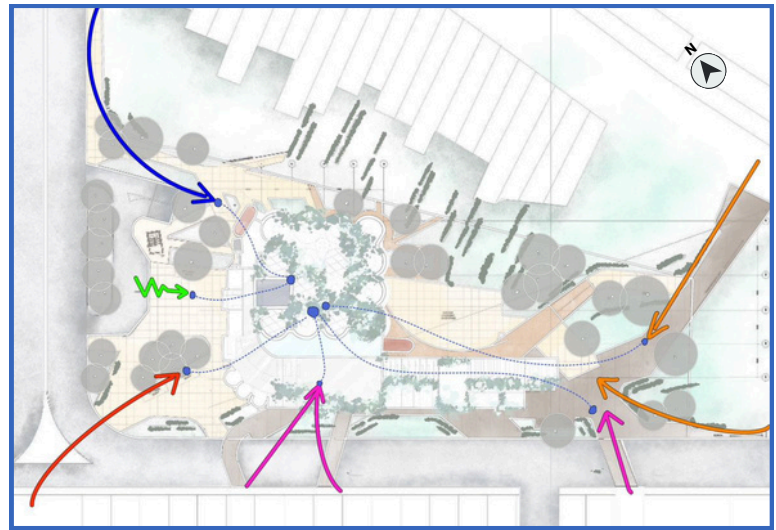


LEGEND

- Prevailing wind
- Partial enclosed facade

Prevailing coming from North & South-East. The building is design to enable these natural wind flowing through the structure, creating cross ventilation to rush out the hot air. Breathable & open layout concept is applied in the structure, with the supports of openable bifold shutter facade.

Human traffic



LEGEND

- footprint from topside
- footprint from plaza
- footprint from shophouses
- footprint from archeological park

The structure's entrances are oriented toward key gathering points, drawing people naturally into the building. By consolidating activities within a single, high-intensity hub, the design reduces overall land demand, curbing urban sprawl and supporting environmental sustainability. This approach also lowers per-capita resource consumption.

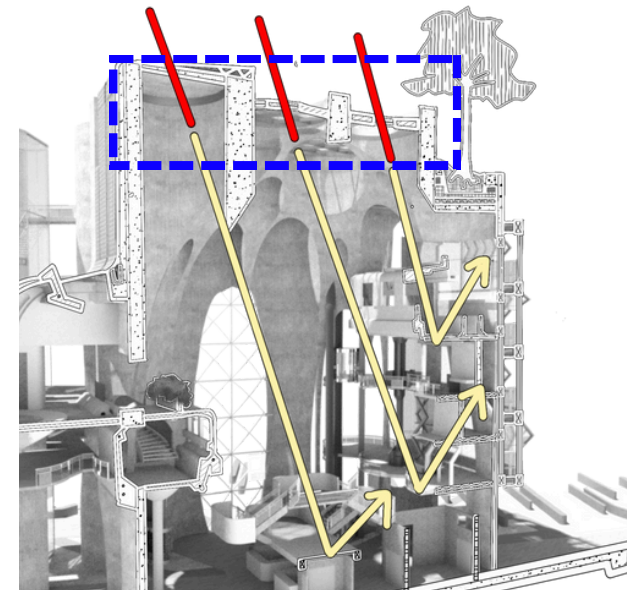
3.3 BUILDING LAYOUT STRATEGY

CLUSTERED & HIERACHY COMPOSITION

TRIPLE VOLUME SPACES - PROMOTE VENTILATION & DAYLIGHTING

LEGEND

- Harsh sun
- Filtered light
- Triple glazed skylight

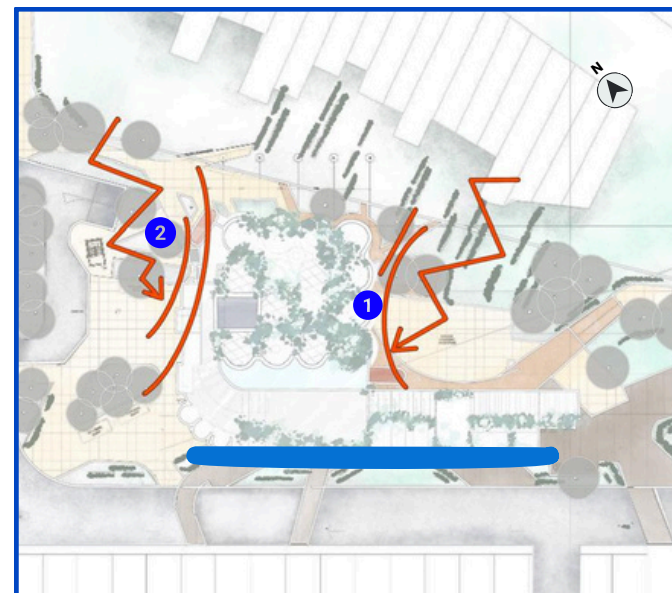


A triple volume space atrium is designed to allow wind & light penetration to deeper space (adjacent levels), providing sufficient light & ventilation for the work spaces (particleboard workshop /gastronomy lab & rice hulling). The greenroof filter harsh daylight, allowing soft daylight into the space. To be further discuss in 5.0.

ORIENTATION - SOLAR FACING FACADE

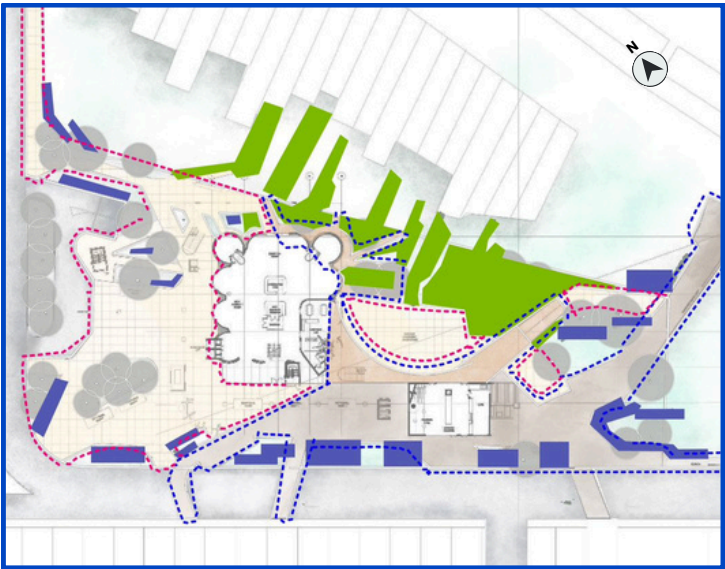
LEGEND

- 1) Double skin façade with bifold shutters
- 2) Aluminum Fin façade
- overhangs and triple glazed window



The building's shorter east and west facades are fitted with shading systems to reduce heat gain and glare. Along the longer sides, which avoid direct sun exposure, deep overhangs and triple-glazed windows provide expansive views of the urban wall theater while maintaining effective sun shading.

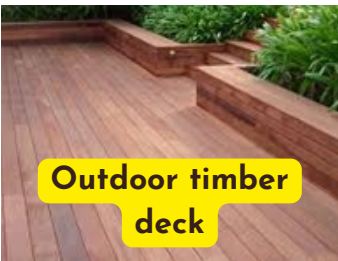
3.4 IMPERVIOUS SURFACES



LEGEND

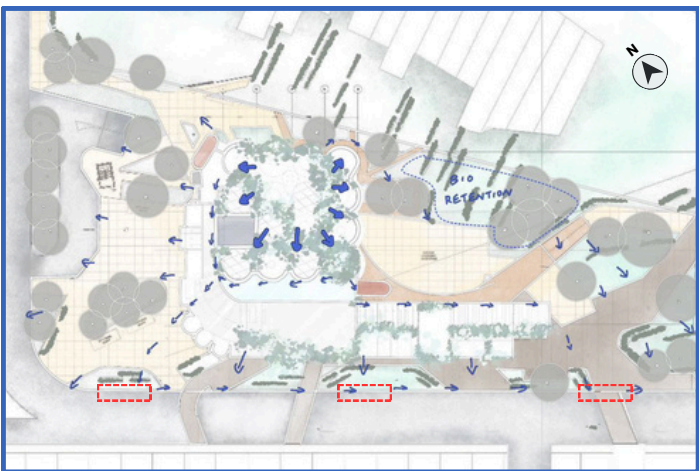
- Planter boxes
- Aromatic landscape
- Permeable turf block
- Outdoor timber deck

65% of the ground surface consists of permeable and green areas, reducing water runoff and enhancing groundwater recharge.



Landscapes further aid this process through natural absorption and filtration. Timber decking, installed with gaps between boards, allows rainwater to drain directly into the soil below, while turf blocks permit infiltration through their openings—both reducing runoff and supporting groundwater replenishment.

3.5 STORMWATER MANAGEMENT



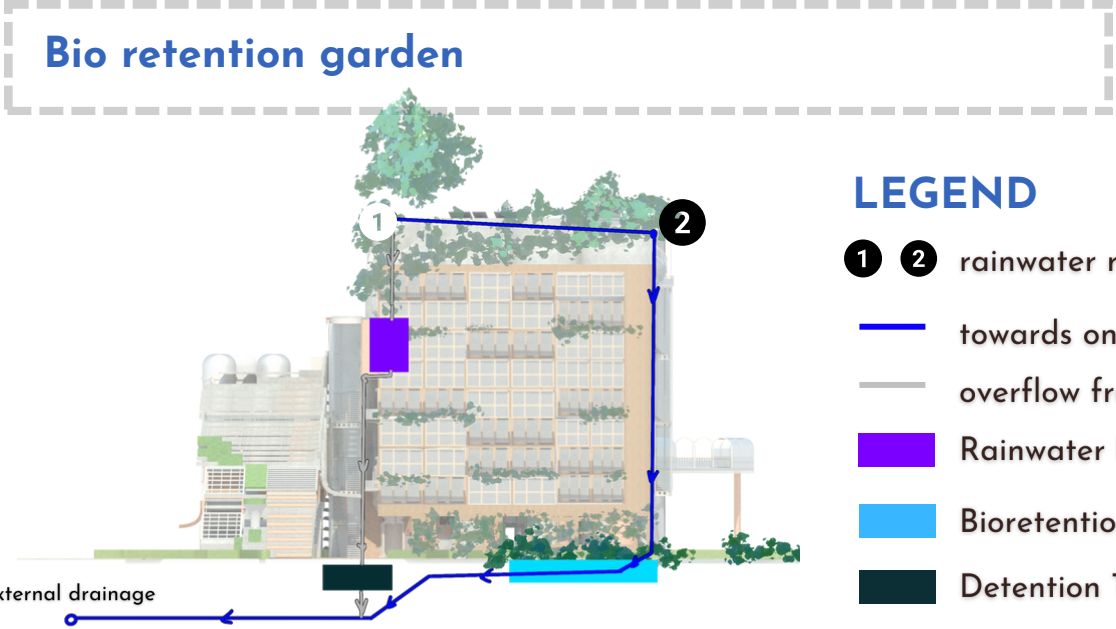
drainage pattern with site existing drain

LEGEND

- water runoff
- existing drain

The drainage directs to the existing stormwater drains and canals to preventing floods. Hence, rainwater harvesting & grey water recycling system are implemented . Grey water is filtered and stored in the tank. Excess water is channel out to the drain.

3.6 LANDSCAPE STRATEGIES

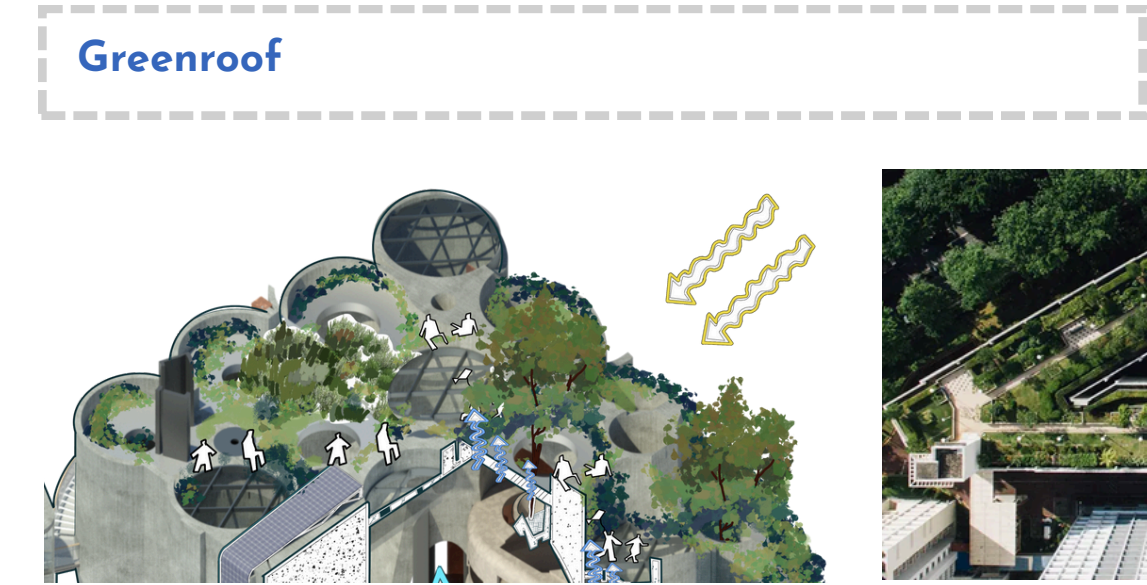


Bio retention garden

LEGEND

- rainwater runoff catchment area
- towards onsite water treatment
- overflow from Rainwater tank
- Rainwater harvesting tank
- Bioretention basin
- Detention Tank

The bio retention garden helps The remainder of rainwater runoffs flows from through a bioretention basin (simulated wetland) before entering sewers. This reduces erosion by slowing stormwater, filtering sediments, and stabilizing soil with vegetation



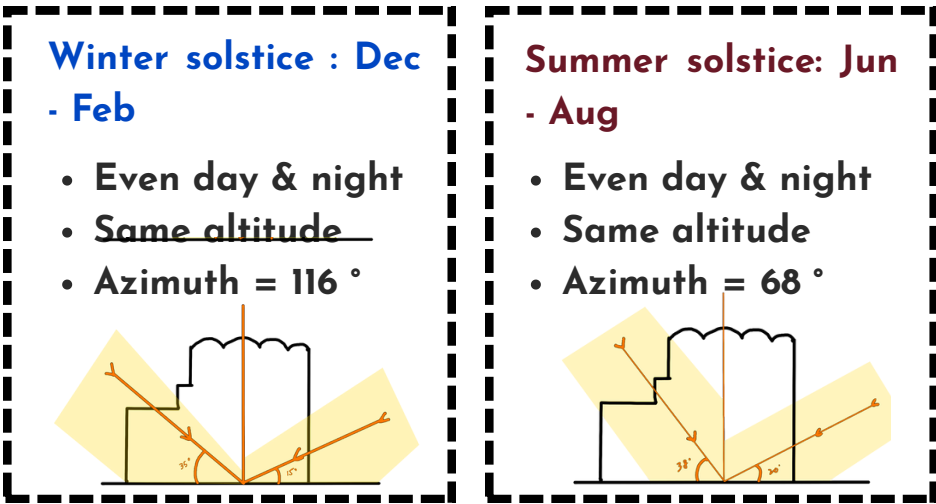
Greenroof

The Vegetation in Greenroof cools the surrounding air through evapotranspiration, lowering the heat island effect common in dense urban areas like Georgetown. The greenroof also helps with Rainwater Management which Retains and slows down stormwater runoff then Filters rainwater naturally before it enters drainage systems, reducing flood risk.

4.0 DAYLIGHTING

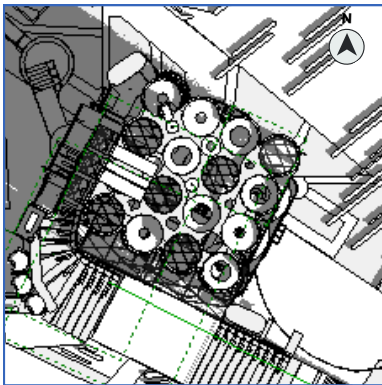
4.1 SUNPATH ANALYSIS

In the evening, low-angle sun is partially blocked by nearby commercial blocks, while mornings bring full-year sunlight exposure.



4.2 SHADOW ANALYSIS

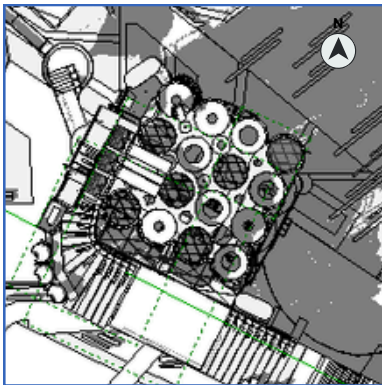
Winter solstice



Ensures sufficient, direct morning sunlight to promote natural illumination and warmth.

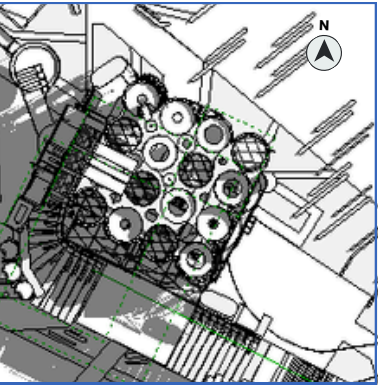


Overhead sunlight streams through the skylight, illuminating the space and creating a dynamic play of light and shadow.

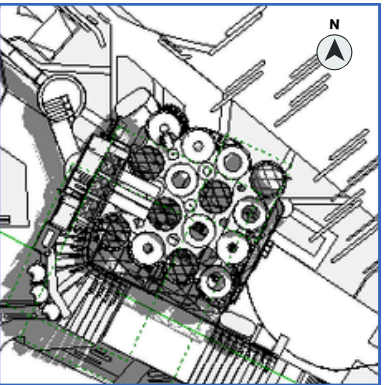


Building is partially exposed to West sun. (at the side low angle)

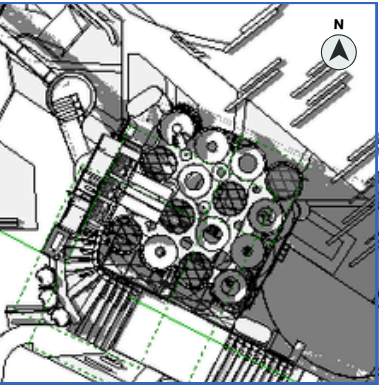
Summer solstice



Ample morning sunlight, softened by openable shutters and glazing window

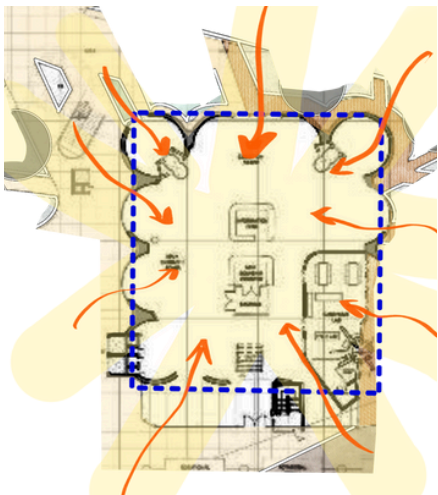


Sunlight enters through the skylight, with triple glazing blocking excess heat.



West-facing facade filters harsh sunlight through aluminium fins.

4.3 INTERIOR LAYOUT



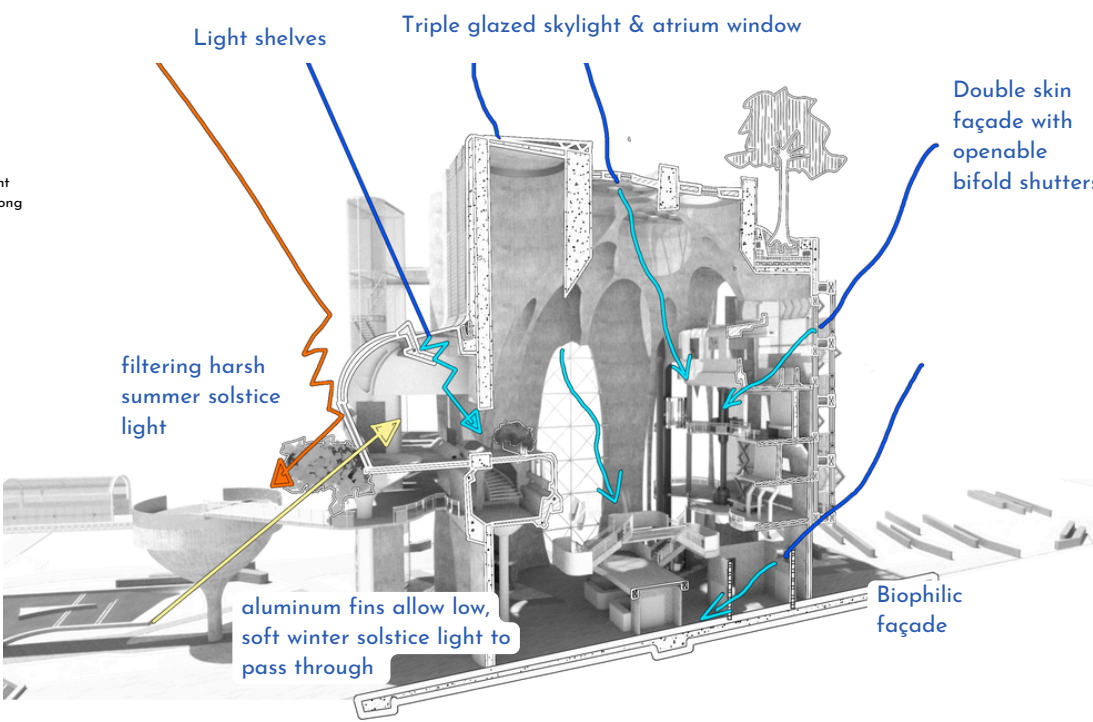
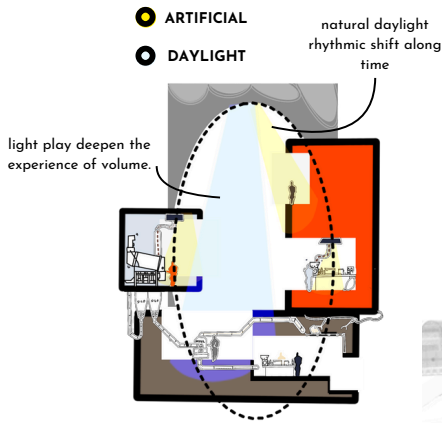
The open floor plan and permeable façade allow daylight to penetrate deep into the building. Operable bi-fold shutters enable users to control light levels as needed, while surrounding greenery filters and softens incoming light.

The atrium’s increased height functions as a series of light wells, channeling and dispersing sunlight across multiple floors, significantly reducing reliance on artificial lighting.

LEGEND

- Daylight
- Atrium
- Light penetration

4.4 FORM



- Summer sun
- winter sun
- Harsh Light
- Filtered light

LAYERED

The layering of corridor program spaces with a double-skin façade filters the harsh, glaring morning sun, ensuring comfortable visual conditions within the building’s core.

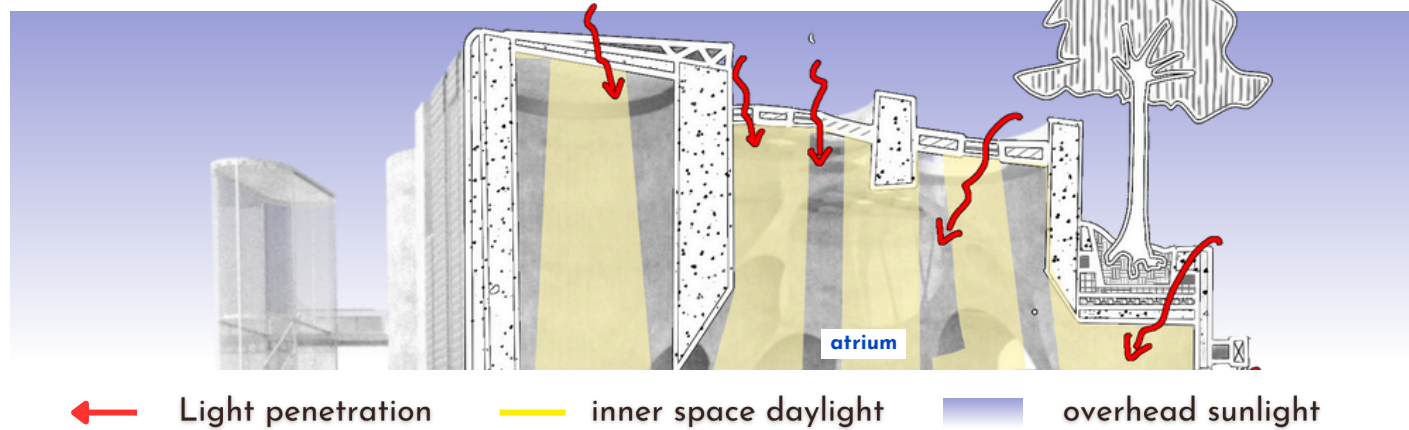
CARVINGS VOID

The silo’s curved, carved walls bounce light downwards into lower levels. The mix of open and glazed areas ensures daylight reaches different times of day without overexposure.

HIERARCY

The central portion of the building rises to its highest point to capture top light, serving as a natural spotlight that creates dynamic light play throughout the space.

4.5 TOP LIGHT ANALYSIS



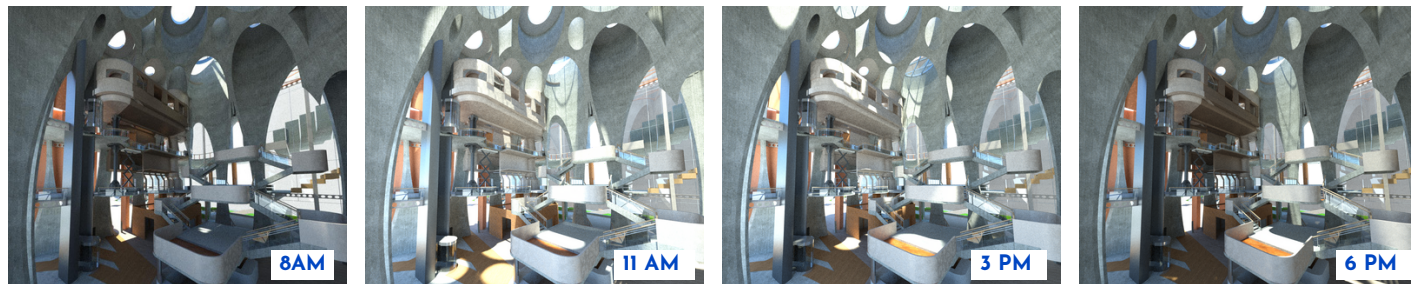
Silo Atrium

Balanced Light Capture

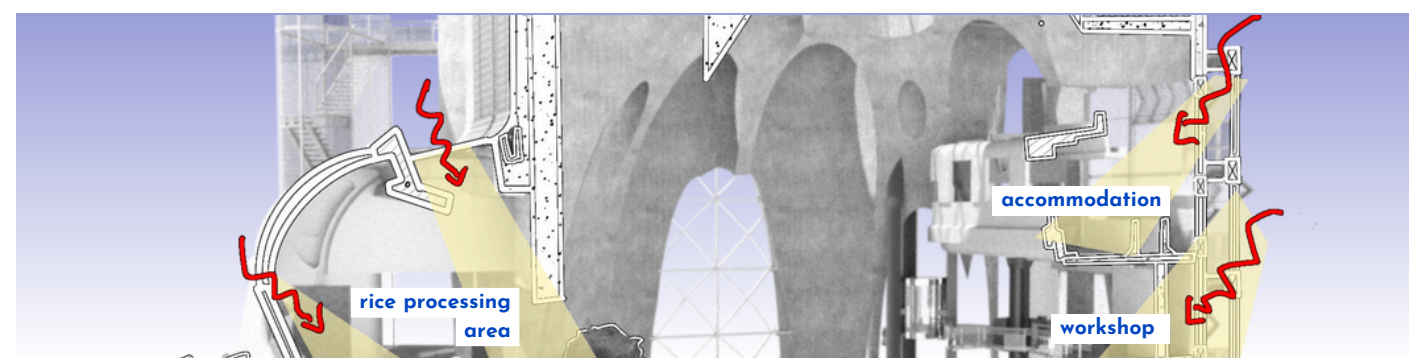
Glazed portions diffuse and filter sunlight, softening it for more even distribution in adjacent spaces.

Light shift **accord to sunpath from 8am - 6pm**, allow shifting sun angles to produce a dynamic play of light and shadow, giving the interior a changing character throughout the day

ATRIUM SKYLIGHT NATURAL DYNAMIC SPOTLIGHT BASED ON HOURS OF DAY (SIDE FACADE IS CLOSED FOR OPTIMAL VISUAL)



4.6 SIDE LIGHT ANALYSIS



Workshop station

Work station receives ample daylight through openable bifold shutter. When glaring, can be closed.

Gastronomy Lab

East sun is filtered through biophilic wall and brighten up the community space.

Open floor plan & atrium enable deep light penetration.



4.7 FENESTRATION

TRIPLE GLAZED SKYLIGHT

Daylight entry & provide even daylight to illuminate atrium & working spaces (core of building)

GREEN ROOF

reducing heat transfer into the building with shading & evapotranspiration create temperature difference and Enhanced Stack & Cross Ventilation

LIGHT SHELVES

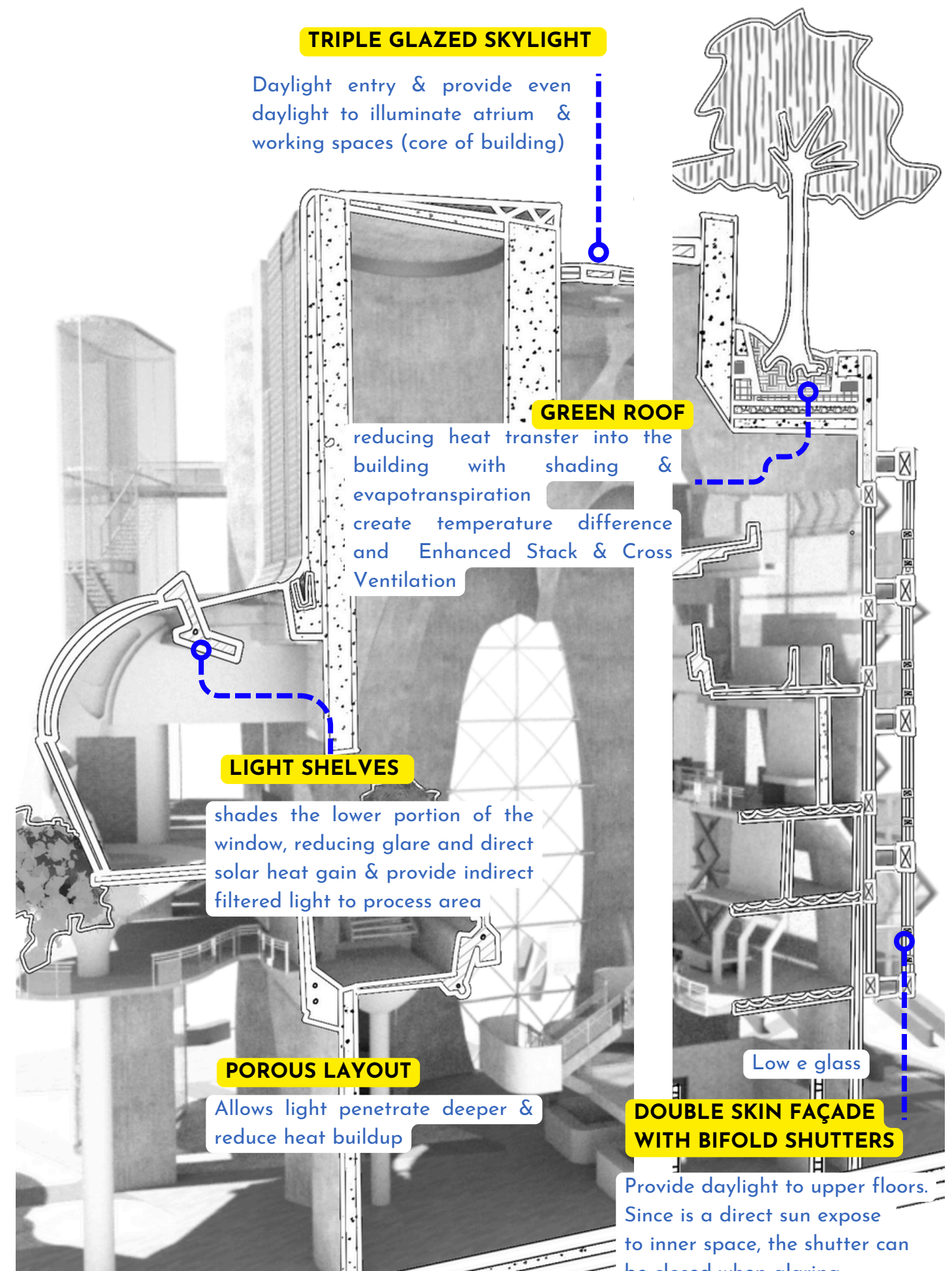
shades the lower portion of the window, reducing glare and direct solar heat gain & provide indirect filtered light to process area

POROUS LAYOUT

Allows light penetrate deeper & reduce heat buildup

DOUBLE SKIN FAÇADE WITH BIFOLD SHUTTERS

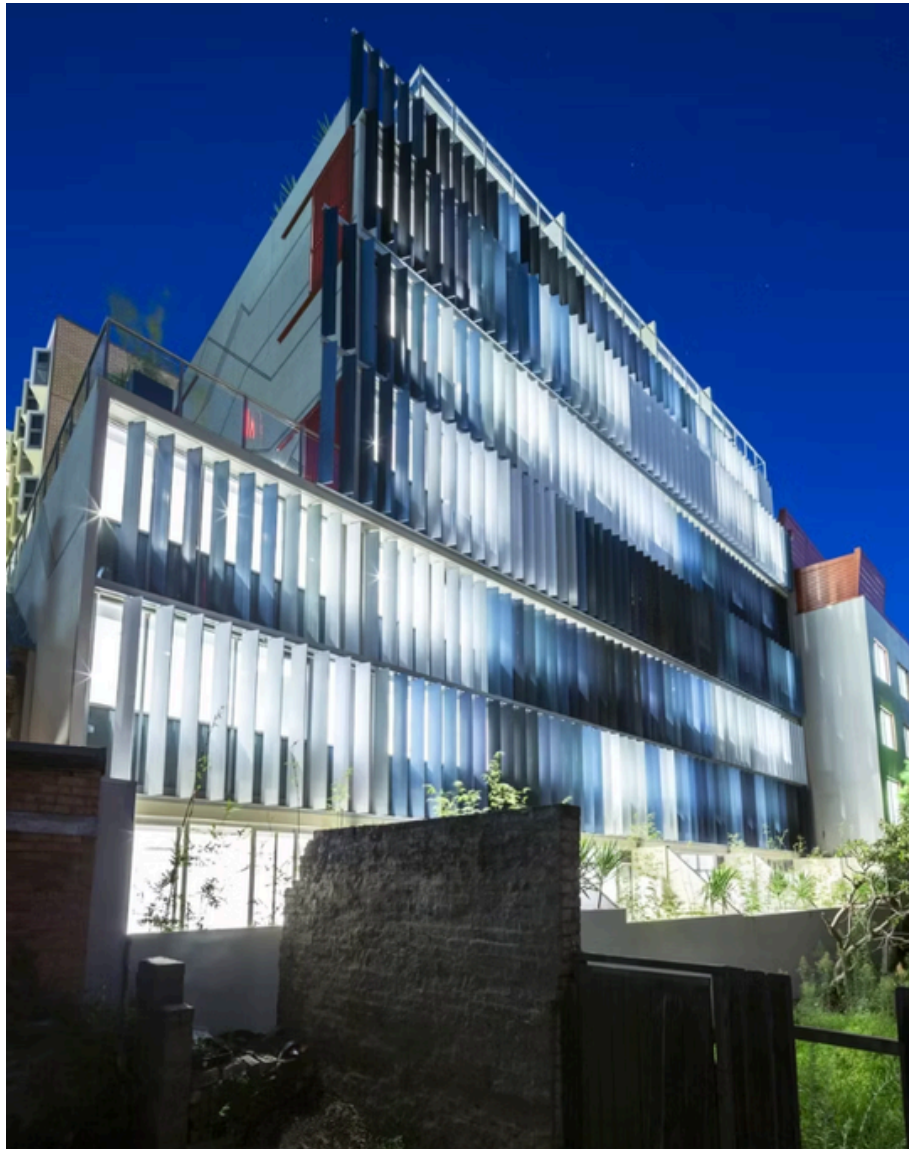
Provide daylight to upper floors. Since is a direct sun expose to inner space, the shutter can be closed when glaring



5.0 FACADE DESIGN

5.0 FACADE PRECEDENTS

ALUMINIUM ARCHITECTURAL FINS

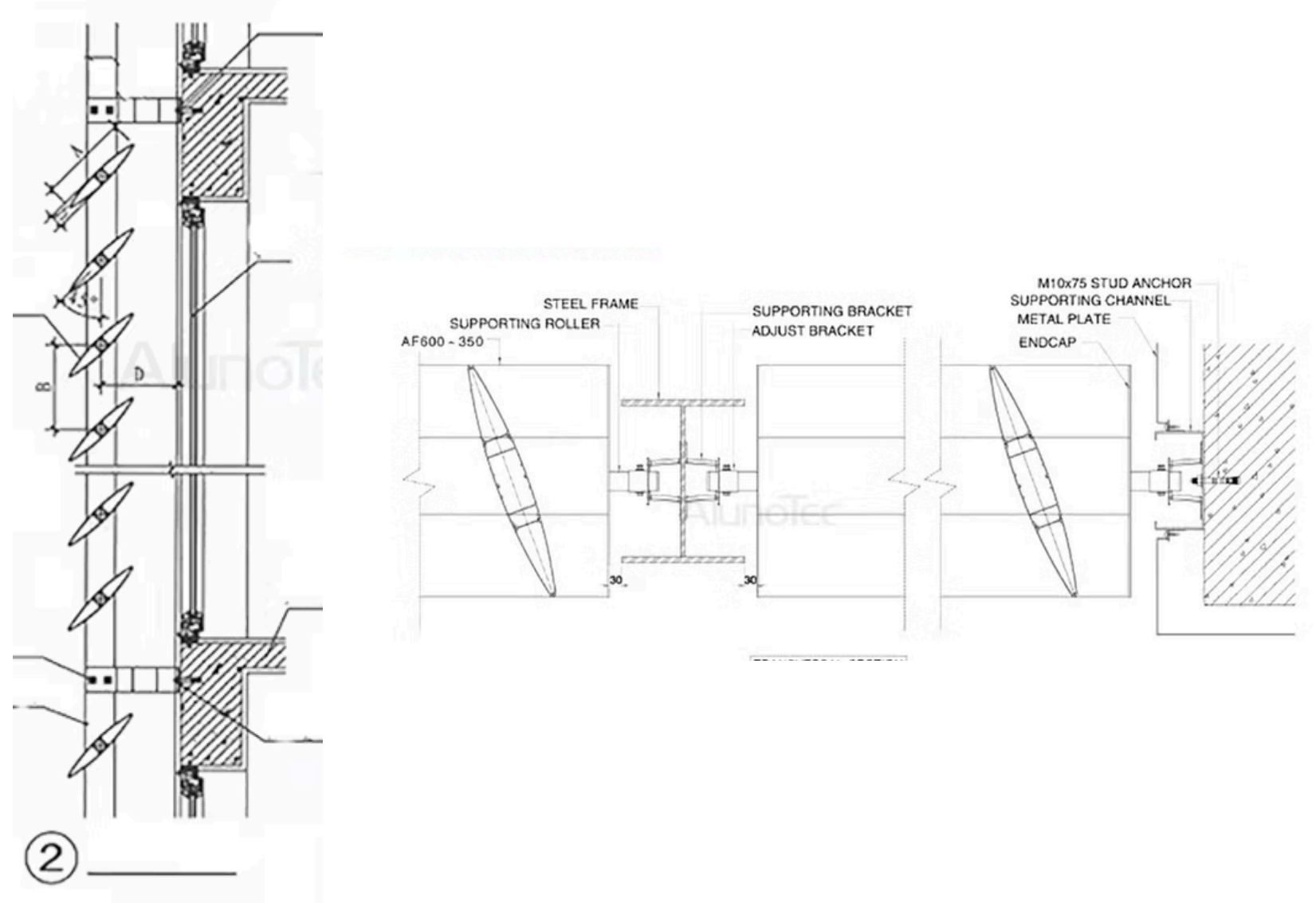


Name of building : Eden Art Wall

Function : Residential

Location : Sydney, Australia

Architect : Tony Owen Partners



This façade system is designed to block high-angle summer sun while allowing lower-angle winter sunlight to penetrate deeper into the interiors, improving natural lighting and reducing heat gain. Constructed from aluminium—which resists corrosion, remains dimensionally stable, and performs well in humid, dusty environments—it is a durable choice for a rice processing area, where long-term exposure to moisture and airborne particulates demands robust, low-maintenance materials.

ADVANTAGES

- Seasonal Solar Control - Blocks high-angle summer sun to reduce heat gain, while allowing low-angle winter sunlight for natural warmth and daylighting.
- Material Durability - Aluminium resists corrosion, is dimensionally stable, and withstands humid, dusty conditions in rice processing environments with minimal maintenance.

DOUBLE SKIN FACADE WITH BIOFOLD SHUTTER WINDOW

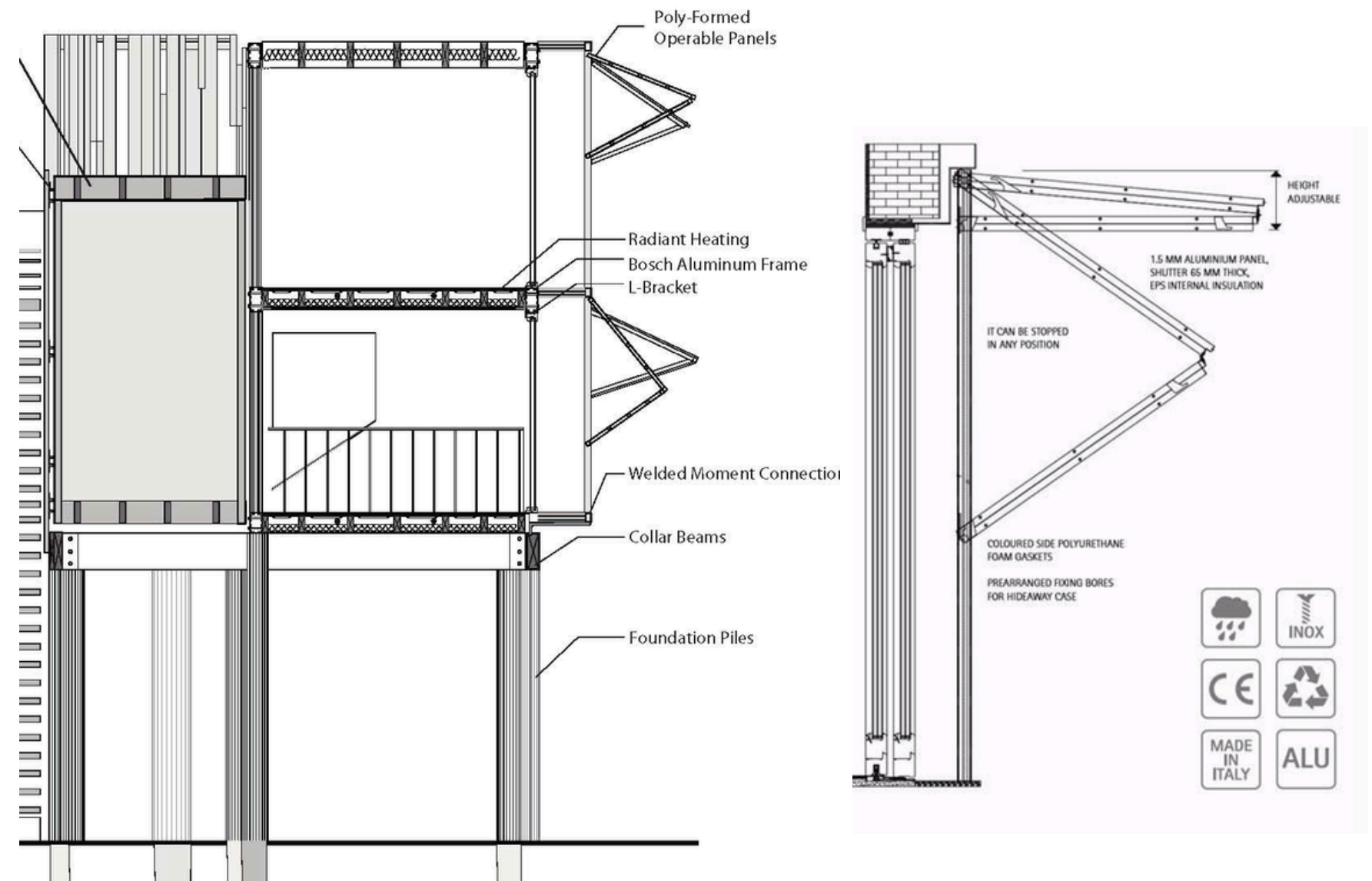


Name of building : Loblolly house

Function : Residential

Location : Taylors' Island

Architect : Kieran Timberlake



The façade system is designed for adaptability—able to open or close in response to changing weather, inviting natural ventilation and daylight to permeate the interior. On upper levels, its operability enhances stack ventilation, drawing fresh air through the carved atrium and out through higher openings. This approach reinforces the design's intent to harmonise with nature, creating a luminous, breathable civic space at the heart of the Urban Mill.

ADVANTAGES

- Climate Responsiveness : adapting to sun, rain, or wind conditions in real time, as well as the level of ventilation. Reduces heat gain during harsh sun and maximises ventilation
- Daylighting Control : Allows adjustable daylight entry, from full exposure to filtered light which Reduces glare and maintains comfortable interior brightness.

5.1 ROOF

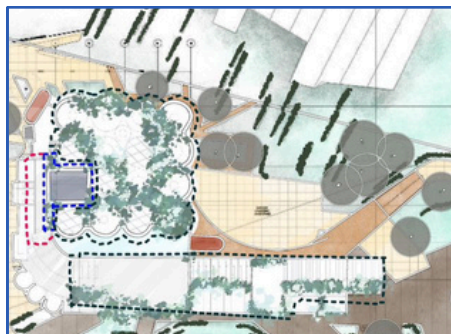
SAWTOOTH ROOF



- Optimised Daylighting : The sloped glazing faces can be oriented away from direct harsh sun, Reduces glare and evenly illuminates large interior spaces like hulling areas
- Large-Span Suitability : Works well for wide, column-free interiors, perfect for production floors, exhibition halls,

PV PANEL - IBC SOLAR PANELS

Malaysia's tropical climate, with abundant year-round sunlight, offers ideal conditions for photovoltaic panels, enabling the Urban Mill to harness consistent solar energy as part of its integrated passive and renewable design strategy.



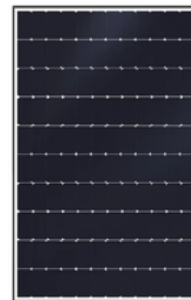
--- Solar Panel

--- Sawtooth roof

--- Green Roof

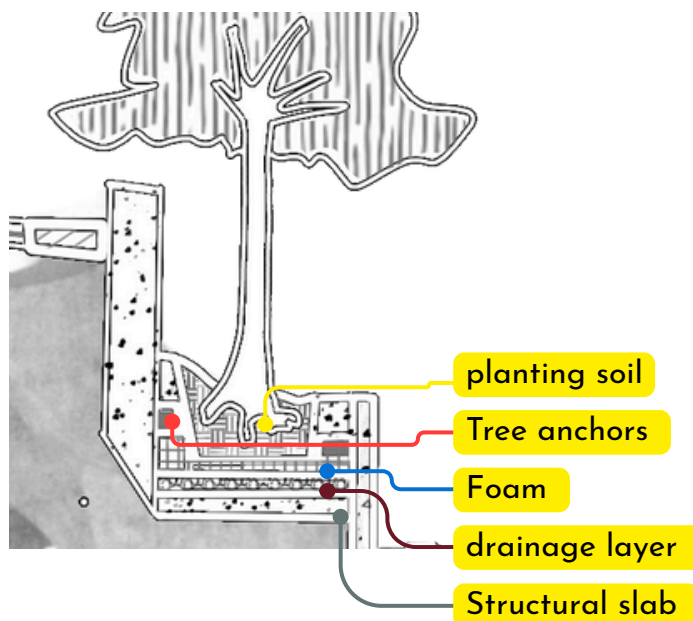


SBB Cell Module



IBC Module

GREEN ROOF



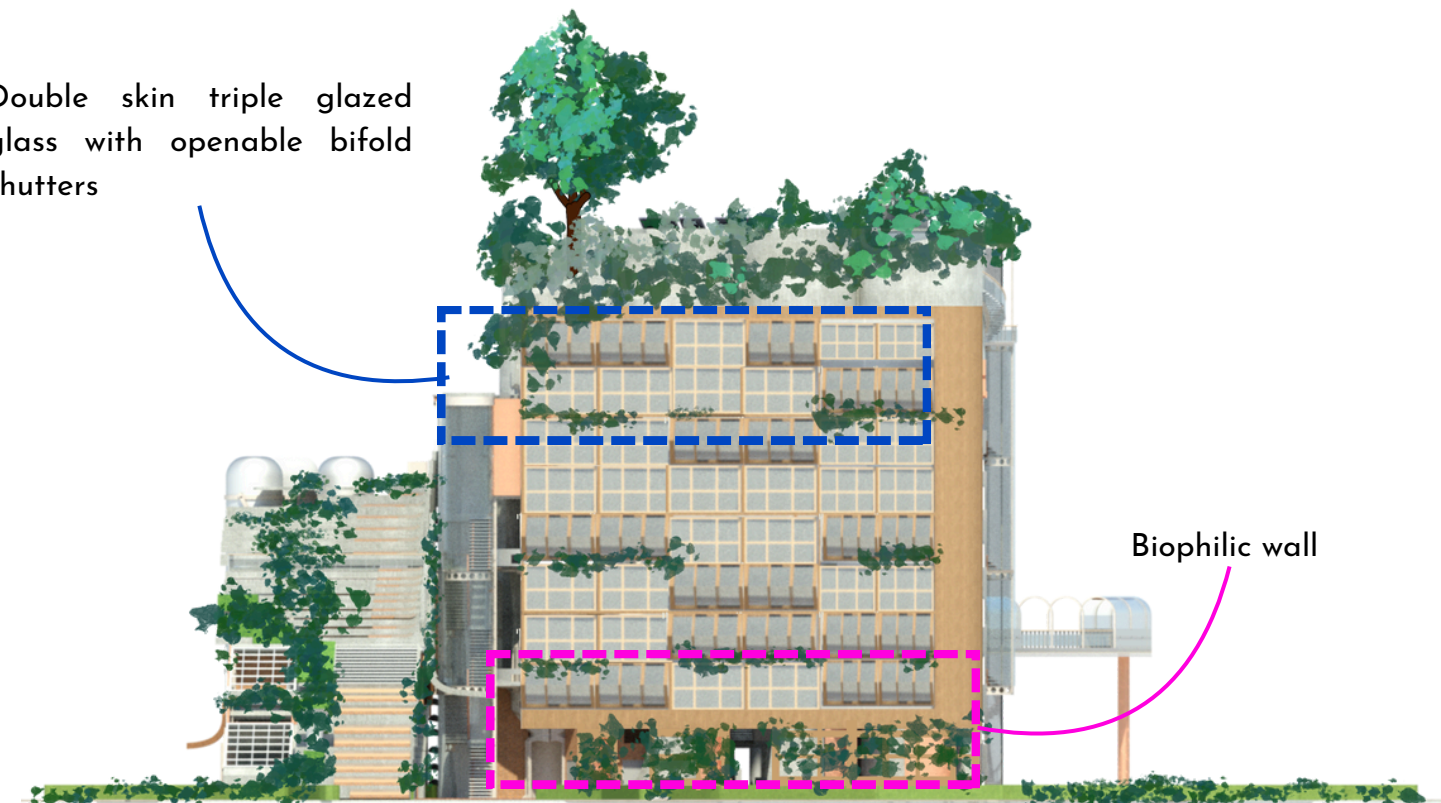
- The soil and vegetation layer act as thermal shield , reducing heat transfer into the building. Lowers roof surface temperature by absorbing less heat than bare concrete or metal.
- Urban Heat Island Mitigation : Vegetation cools the surrounding air through evapotranspiration, lowering the heat island effect common in dense urban areas like Georgetown.
- Public green platform for cultural or leisure activities, making the roof part of the civic experience.

5.2 ELEVATION

WEST ELEVATION

On the west façade, a double-skin, triple-glazed bifold system allows users to manually adjust daylight for daily activities, while the glazing reduces glare and heat gain. The biophilic green wall at GF also helps in evapotranspiration cooling

Double skin triple glazed glass with openable bifold shutters



WEST ELEVATION

Unlike the east and west elevations, the north and south façades receive minimal direct sunlight. To maintain transparency for the urban theater, only overhangs and a triple-glazed glass façade are used.



5.3 MATERIAL

Concrete



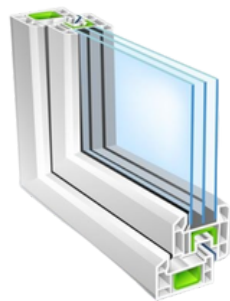
Structural Strength & Durability

- Performs well in Malaysia's humid, tropical climate without warping or corroding. Withstands wear from high foot traffic and industrial use.

Thermal Mass for Passive Cooling

- Absorbs heat during the day and releases it slowly at night, moderating indoor temperature fluctuations.

Glass



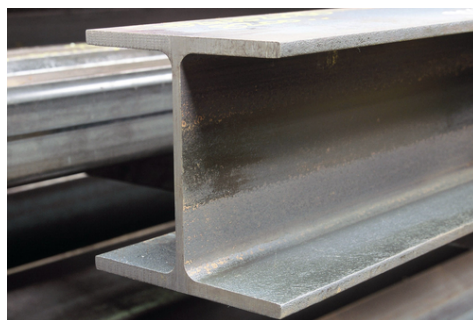
Climate-Responsive Performance

- High-performance glazing (low-E, fritted, or tinted) can filter harsh tropical sunlight, reduce heat gain, and control glare.

Material Contrast & Modern Heritage

- Provides a crisp, contemporary counterpoint to the solidity of concrete and corten steel, reflecting the project's balance between industrial heritage and modern sustainability.

Hot-rolled structural steel



Structural Adaptability

- Works well with cantilevers, mezzanines, and open atrium spaces.

Long-Term Durability

- With proper protective coatings (e.g., galvanising, weathering steel), it withstands Malaysia's humid tropical climate and coastal air.

Clear Protective Coat Weathering steel cladding panel



Low maintenance

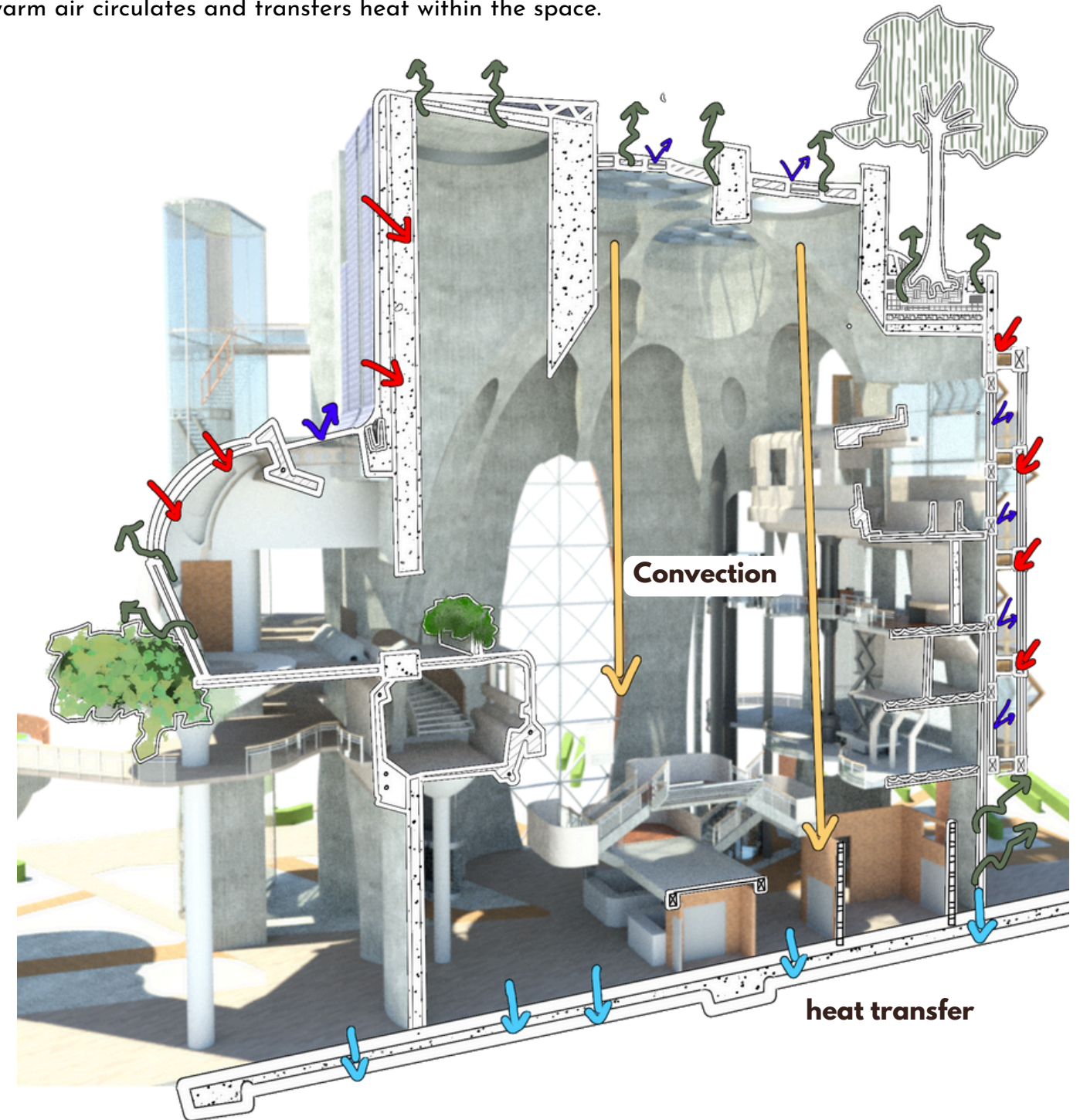
- No need for repainting if the patina forms properly.

Industrial heritage aesthetic

- Rusted, earthy tone aligns with your rice-mill and silo narrative

5.4 THERMAL ANALYSIS

The interior primarily heats up through convection, where warm air circulates and transfers heat within the space.



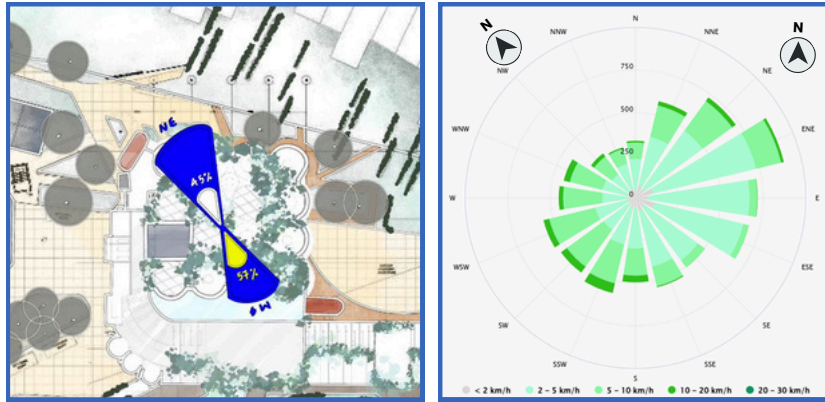
LEGEND

← Heat gain ← Evaporation ← Heat transfer ← Reflected heat

The open porous layout reduces heat retention by allowing air to flow freely throughout the space. This natural airflow, combined with well-positioned ventilation openings, facilitates the removal of hot air and promotes a cooler, more comfortable indoor environment.

6.0 NATURAL VENTILATION

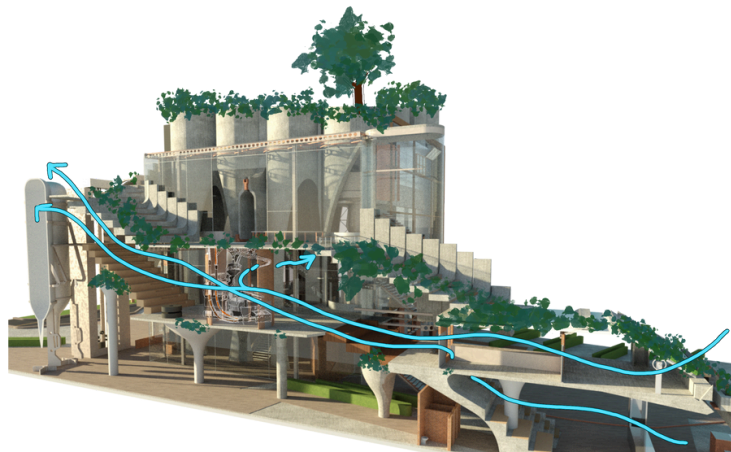
6.1 WIND PATH ANALYSIS



Based on the windrose data at a mean wind speed of ~6-8 km/h, as much as 57% of the time, wind comes from the Southwest, while over 45% of the time, wind comes from the Northeast.

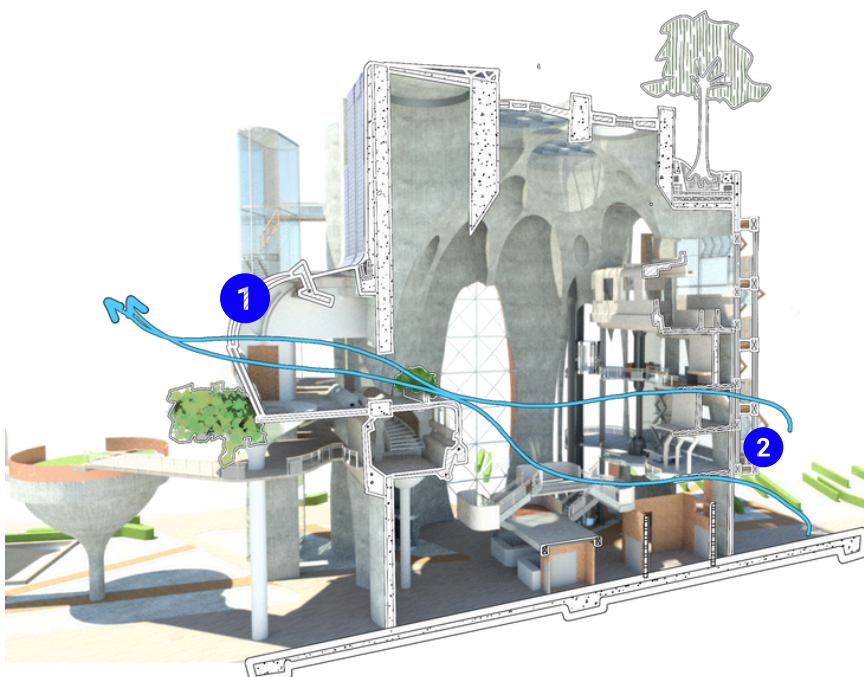
6.2 VENTILATION STRATEGIES

Open layout - cross ventilation



The building features a porous design with minimal internal barriers, allowing air to flow freely throughout the space. This seamless layout promotes effortless cross ventilation, as breezes enter from one side and exit through the opposite, naturally cooling the interior environment.

Openings & shutter - stack ventilation



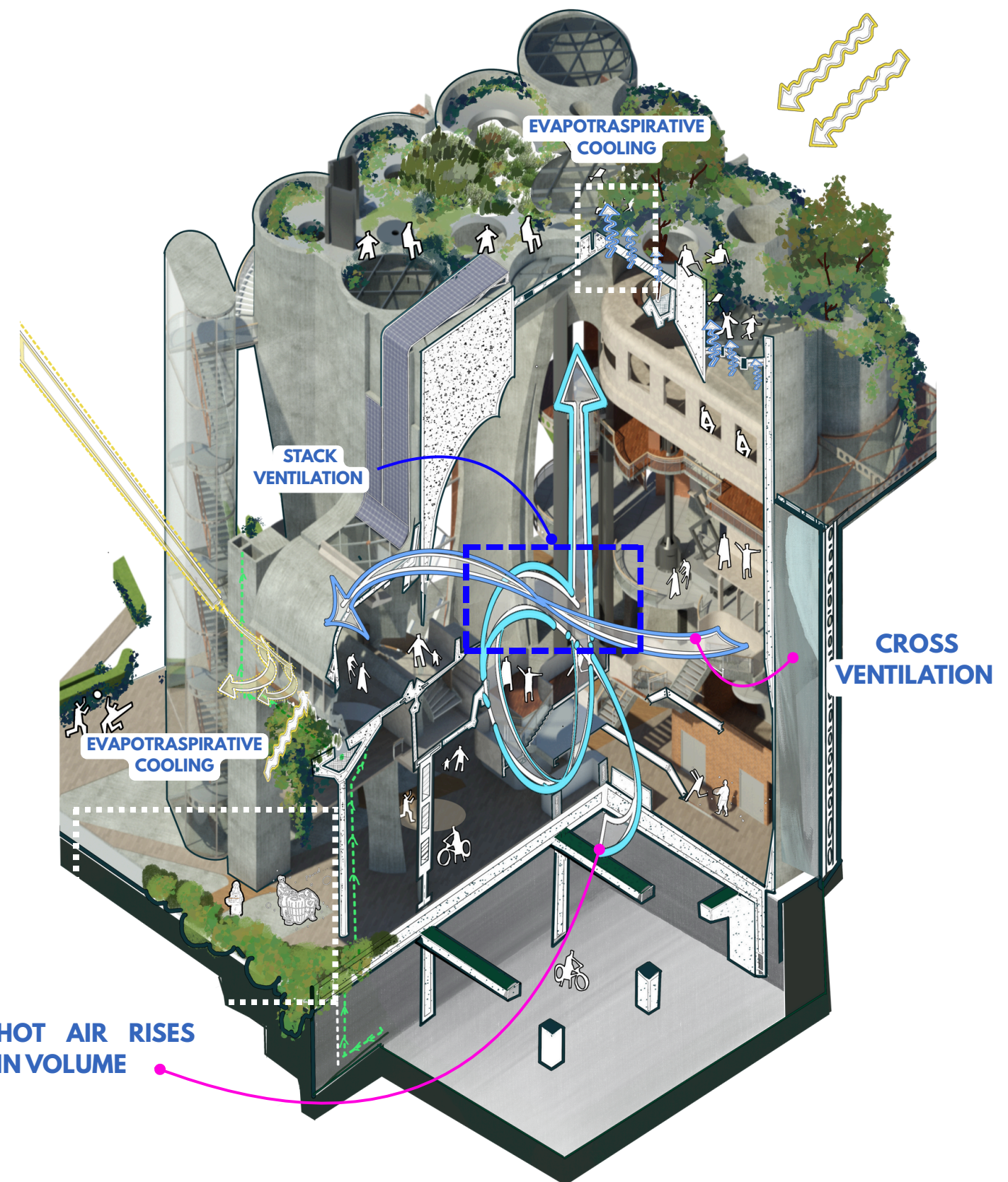
1 Vent & Windows

Openings on the upper floor of the west building facilitate the escape of hot air through stack ventilation. These openings can be closed during unfavorable weather conditions, such as rain or intense sunlight, to protect the interior.

2 Bifold Shutters

Cool air enters through the shutters on the east side at lower levels, while warm, rising air escapes through the higher openings on the west side.

6.3 VENTILATION ANALYSIS

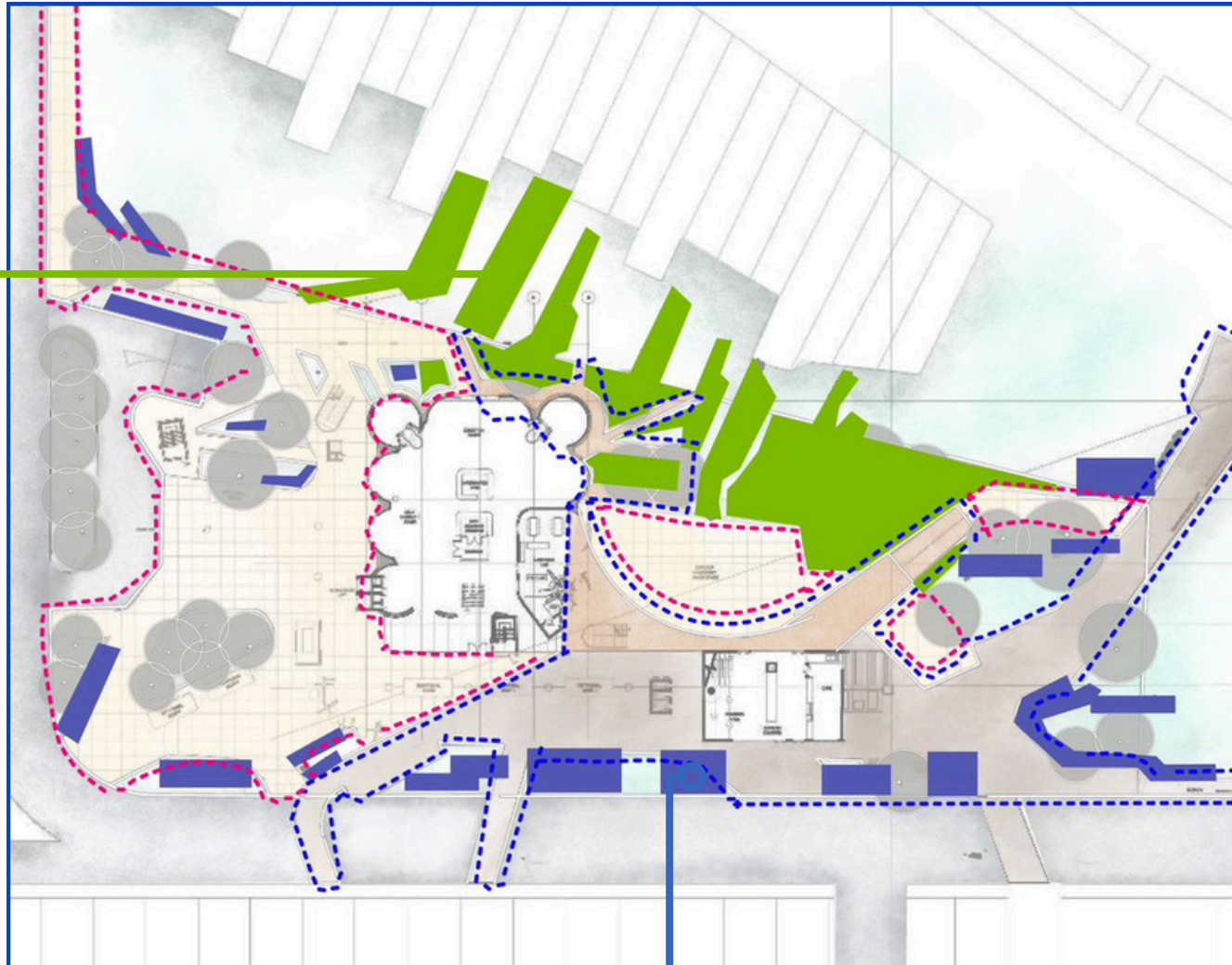


Exchange of hot and cool air is facilitated by the urban green roof, which enhances evaporative cooling. The biophilic wall further cools the interior, encouraging hot air to rise and exit the building.

7.0 LANDSCAPE STRATEGY

7.1 PLANTATION

As part of the Urban Mill's sustainable loop, plantings will include aromatic herbs to support culinary use and traditional kuih making.



Pandan (Pandanus amaryllifolius) - Signature fragrance and green coloring for kuih seri muka, kuih talam, and onde-onde.



Screwpine Flower (Bunga Kantan) - Adds a floral aroma to savory kuih or accompaniments.



Lemongrass (Cymbopogon citratus) - Infuses kuih and syrups with fresh citrusy notes.



Marigold (Tagetes spp.) - Moderate root spread; also repels certain soil pests.

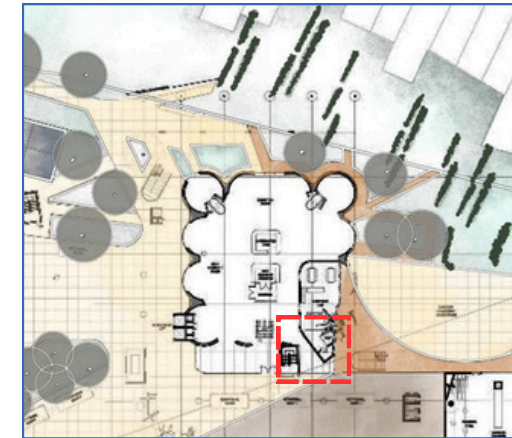


Black-eyed Susan (Rudbeckia hirta) - Perennial with strong root structure for soil retention.

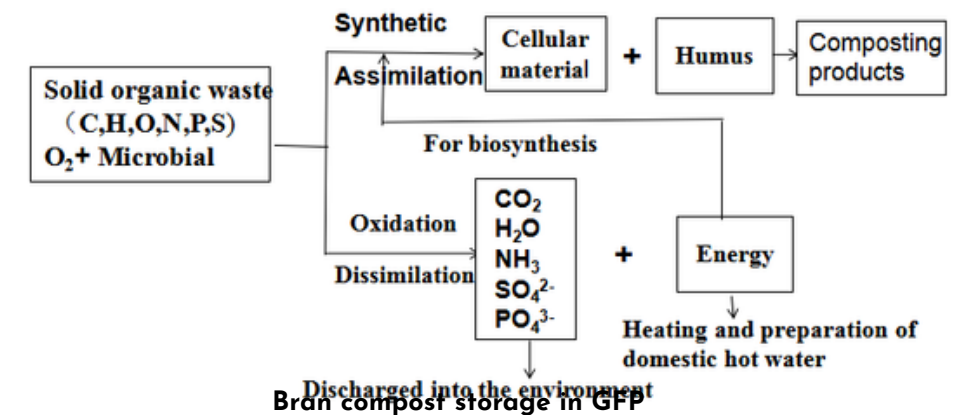


Blanket Flower (Gaillardia spp.) - Drought-tolerant, roots help bind sandy soils.

7.2 AEROBIC COMPOSTING



Rice bran compost storage



flow diagram of aerobic compost process

As the Urban Mill processes raw rice, it generates rice bran, and with its gastronomy lab and kitchen, additional organic waste is produced. This waste is ideal for aerobic composting, a process where oxygen-loving bacteria, fungi, and other microorganisms break down organic matter into nutrient-rich compost. The resulting compost enhances soil health in gardens, landscaping, and agriculture, reducing reliance on chemical fertilizers and supporting healthier, less-polluted ecosystems.

7.3 RICE BRAN AS COMPOST ACCELERATOR

Bokashi bran is a specially treated blend of wheat and rice bran that has been inoculated with EM-1®. It's then used as a compost accelerator in a Bokashi composting bin which amends poor soil, including potting soil. It replaces the missing fungi and microbes that plants need to grow healthy and strong.



Rice bran mixture with kitchen waste



Support the circular loop

Since rice bran is a by-product of raw rice processing, using it as compost for landscaping and green roofs helps close the sustainability loop.



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(Note: Duplicate entry to #1, but included here as this counts as a separate extraction.)

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