



SELECTED ARCHITECTURE WORKS
2023 - 2025



NG SIKAI

I am a Graduate of Diploma In Architecture in Nanyang Polytechnic. I joined NYP Architecture to be able to develop my interests further in Architecture and Design. Other than my design course, I also am a subcommittee member of NYP Student's Union and was involved in the planning and execution of multiple NYP events. I also do urban sketching to practice my freehand drawing skills, and play chess to improve my analytical and strategic thinking.

EDUCATION

Diploma In Architecture
Nanyang Polytechnic
2023 - 2026

GCE 'O' Levels
Admiralty Secondary School
2019-2022

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AWARDS

DIRECTOR'S LIST
Diploma in Architecture
Y1S2 AY2023/24,
Y2S2 AY2024/25
Edusave Award 2023
UNSDG Hackathon 2024 Winner
Design For Change 2023
URA CUBE 2023

EXPERIENCE

Environmental Designer Intern
@ Atelier Ten (Asia) Pte. Ltd.
Sept 2025 - Feb 2026

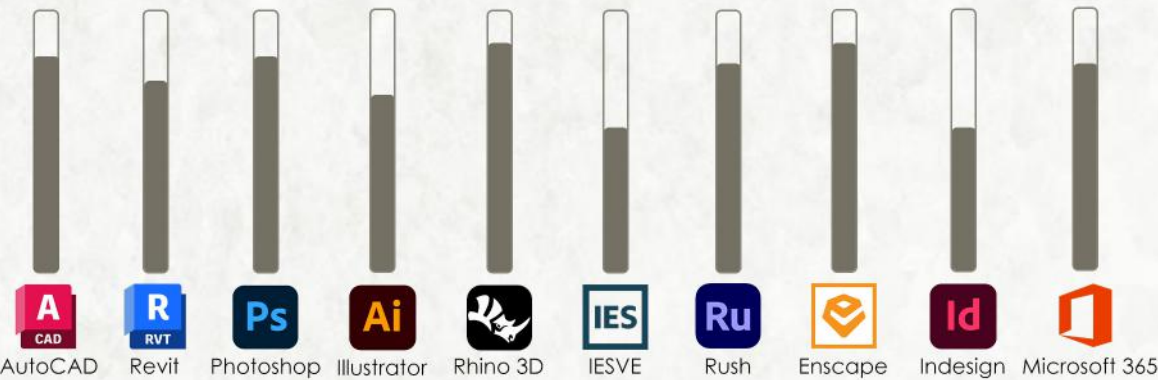
INTERESTS

Urban Sketching
Playing Chess
Event Planning
Graphic Design

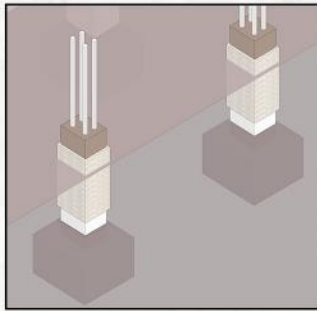
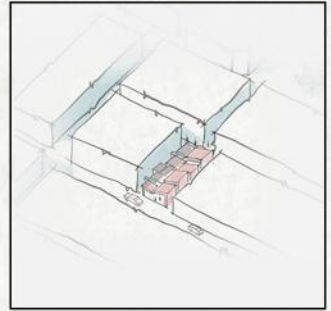
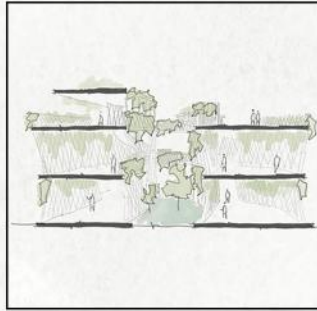
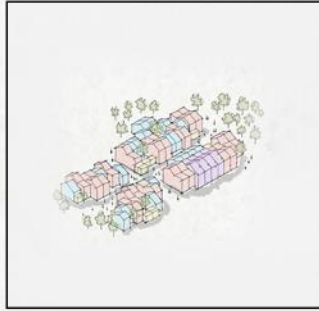
LANGUAGE

English (Written & Spoken)
Chinese (Spoken)

SKILLS



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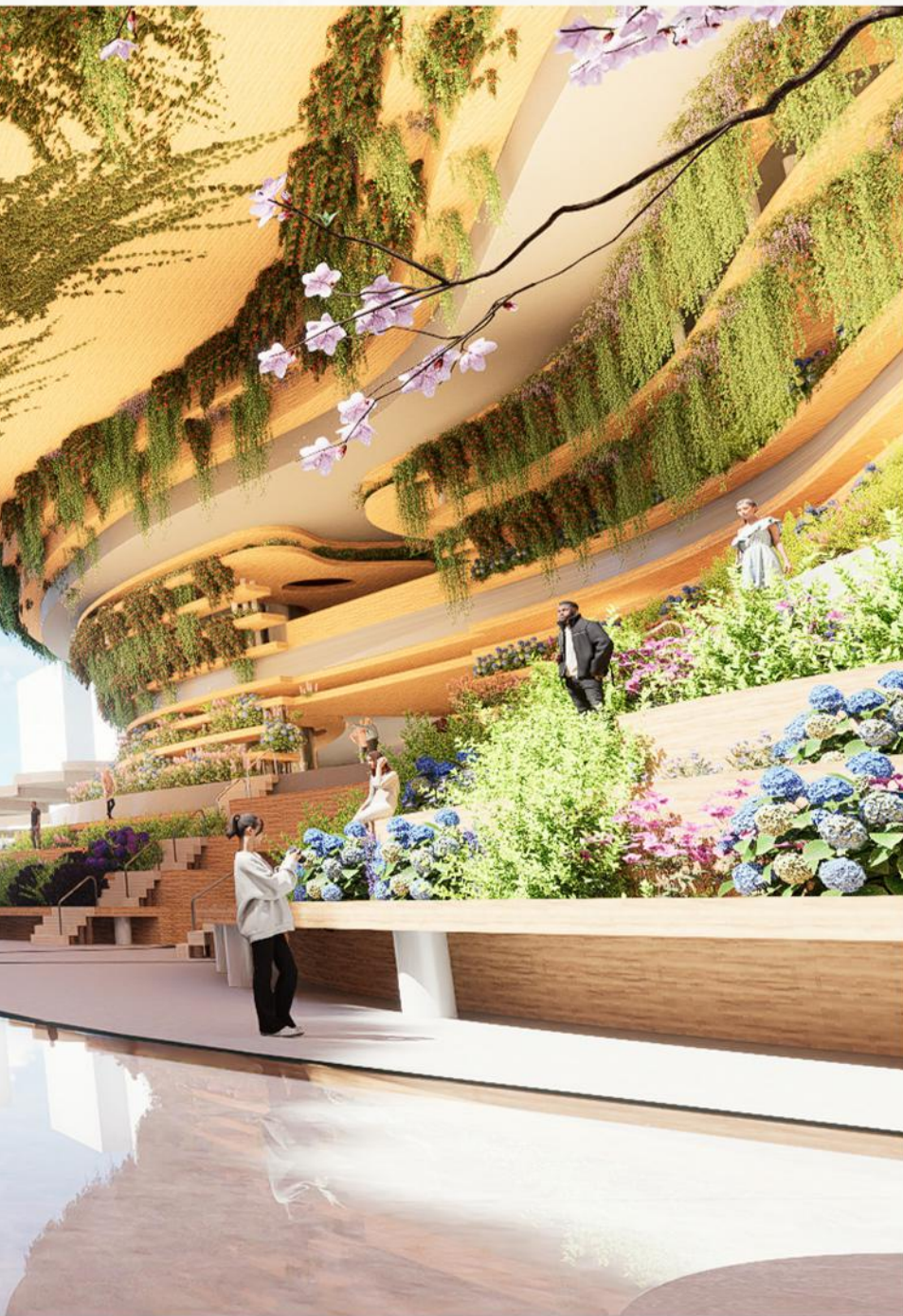
EXTERNAL WORKS

TURM-MUSH-MESH

URA CUBE 2024

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FUTURE TENSE

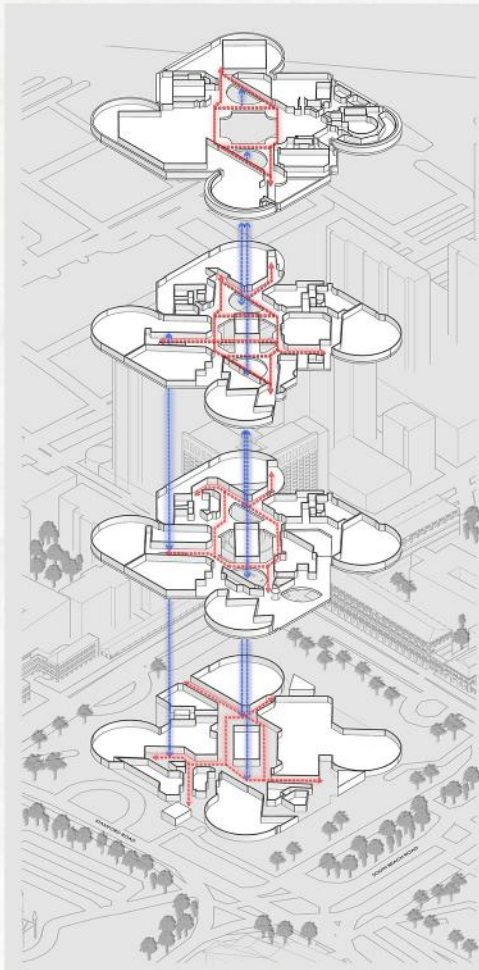
DESIGN FUTURES STUDIO

This Adaptive Reuse Proposal reimagines Raffles City not just as a transient commercial hub, but a future oriented landscape of slowness and tactility. The design concept explores various forms of terracing, together with the regenerative potential of horticulture, Future Tense transforms the mall into a place where people reconnect with the environment and the present moment. Through a sequence of spatial experiences, it offers a new form of urban experience and mindset: One rooted in Presence, Regeneration and Mindfulness.



HARVESTING PRESENCE IN A HURRIED CITY

Raffles City is at the heart of commerce, transit, and history, where trains run underground, workers move above, retail thrives in constant movement, and curated for speed. However, in a place designed for maximum efficiency and accelerated movement lies a quiet absence, **time is spent, but rarely felt**. In this lies the question - What would it mean to slow down at the heart of the city, and can the future of Raffles City provide places for the **now to be enough**?



SITE ANALYSIS - MOVEMENT vs PAUSE

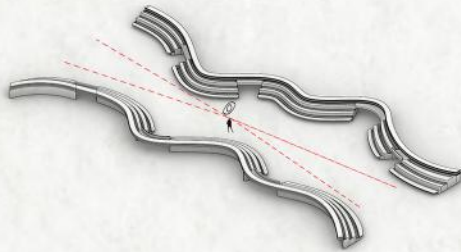
Site Analysis suggest that people move quickly through these spaces not just because of efficiency, but there is **little that encourages them to pause**.

Circulation paths **function like funnels**, like guiding people through predefined routes.

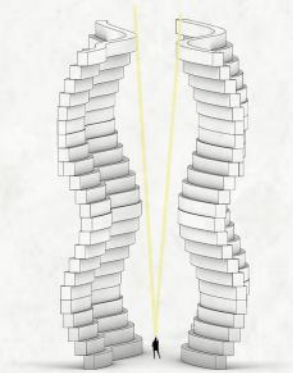


HISTORICAL DEVELOPMENTS

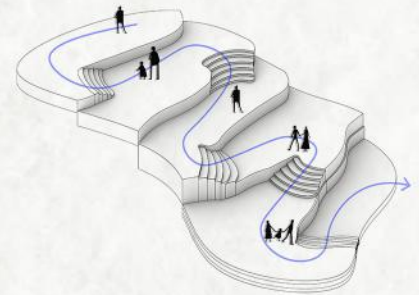
Surrounding Raffles City has various historical buildings, such as St. Andrews Cathedral, and Raffles Hotel, to open itself up to. This can provide opportunities to strengthen the symbolic and physical connection between Raffles City and these older developments.



VASTNESS



VERTICALITY

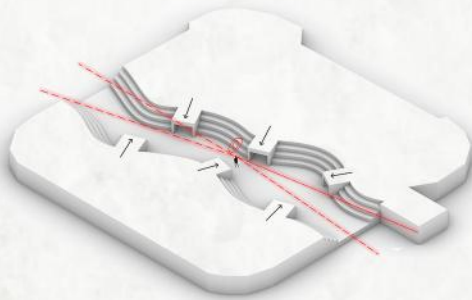


MEANDER

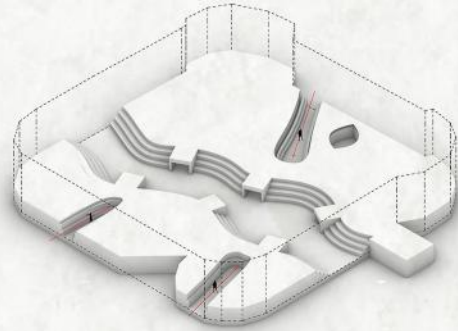
DESIGN CONCEPT

Through the design language of terracing, various forms and iterations of terracing aim to slow people down through vastness, scale, and intimate connection between oneself, others and the environment.

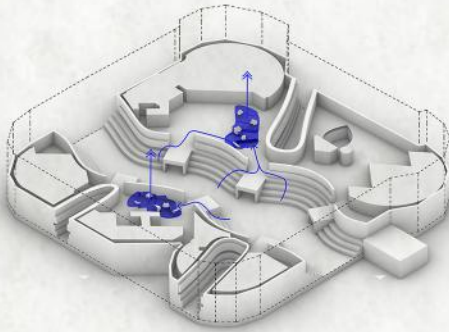
FORM DEVELOPMENT



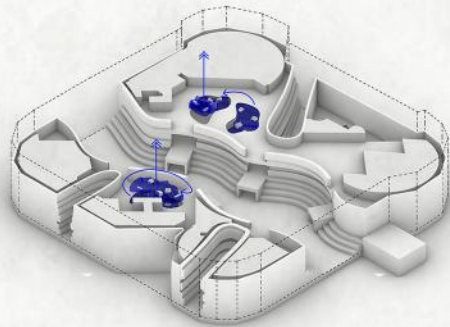
VASTNESS INTERVENTION



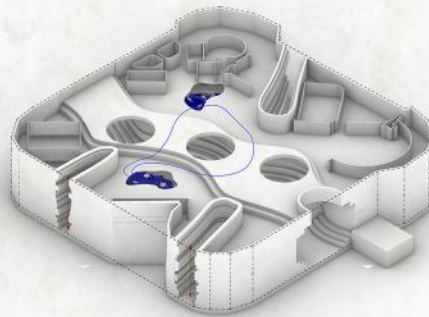
VERTICAL, NARROW ENTRANCES



REFORMED CIRCULATION



MEANDERING TERRACES



CLOSING THE LOOP

HORTICULTURAL PROGRAMMES



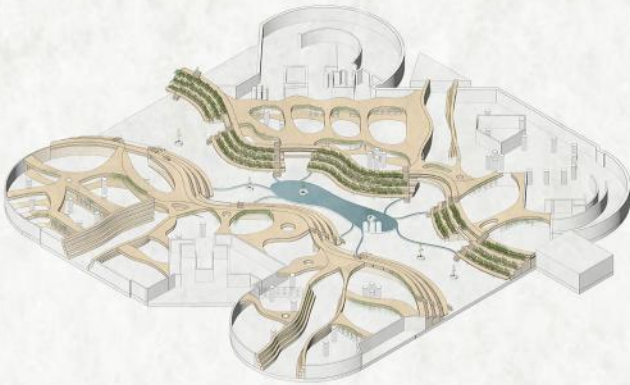
TERRACE-TO-TABLE

Horticultural activities such as plant cultivation, farm-to-table cooking, and flower art encourages people to slow down, observe and enjoy present moment. The plants and flowers people have grown are returned to the shopping mall, creating a cycle of care and appreciation for the ecology and environment.



PROPOGATION LAB

DESIGN GROWTH



GROUNDWORK



EMERGENCE

The reconstruction is done in phases, which provides sufficient time for people to explore, be comfortable in the space, and to notice changes in the environment, while also providing enough time for plants and flowers to be grown fully before starting the regenerative cycle.



GROWTH ARCHIVE



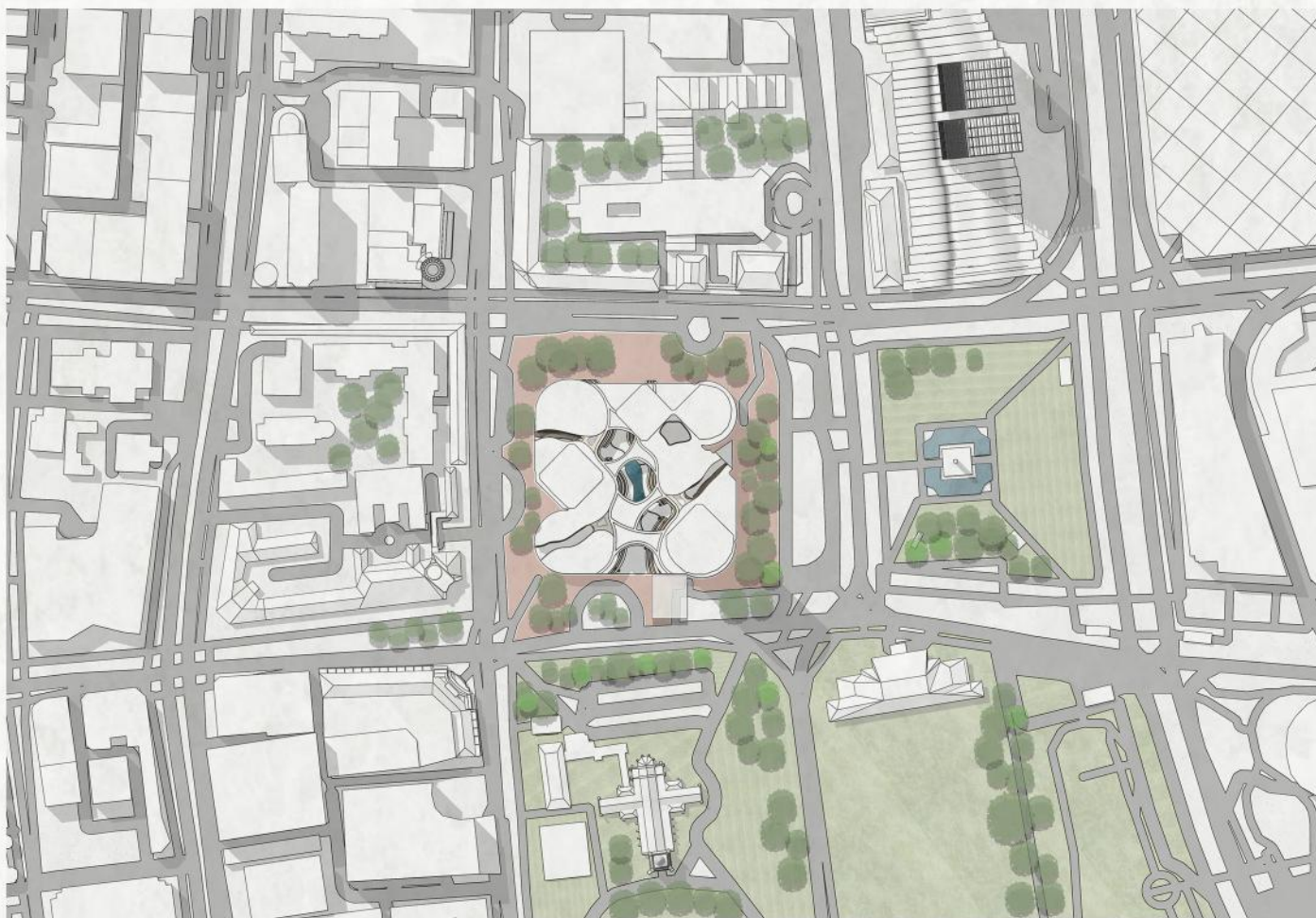
FLORAFORM LAB



BLOOM



CROWN



FUTURE TENSE, RAFFLES CITY
SITE PLAN





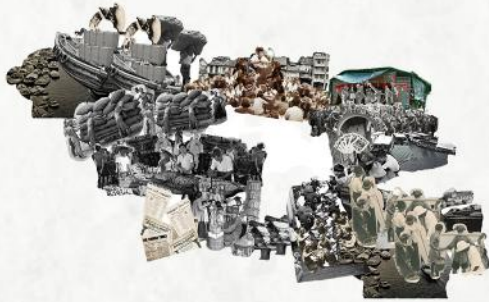
SECTIONAL PERSPECTIVE @ FUTURE TENSE





CULTURAL ENTREPOT, DESIGN IN CONTEXT STUDIO

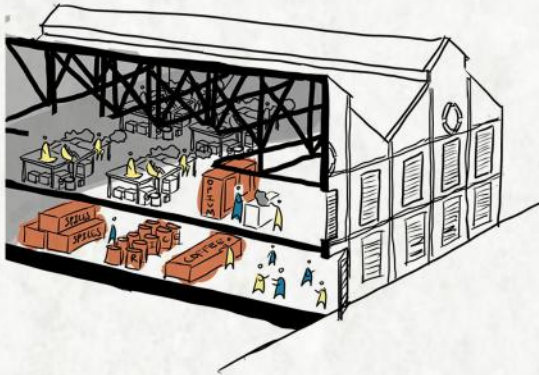
Once a vital artery of trade, serving as a key hub where goods, cultures, and ideas were exchanged, Singapore River has evolved beyond commerce into a center for cultural interaction, shaping Singapore's diverse identity. This cultural hub aims to reflect that rich history of exchange, blending heritage with modern experiences. Designed as a place for performances, food, and community activities, the architecture serves as a bridge between past and present, honoring the river's legacy while creating new opportunities for connection and cultural exchange.



NARRATIVE

Singapore River was the source of a bustling entrepôt, where goods, cultures, and ideas were shared and exchanged. Over time, it evolved as a dynamic hub of exchange — not only in material trade but also in the sharing of diverse cultures and traditions. The Genius Loci aims to be the driver and inspiration for this Cultural Hub.

MAPPINGS OF THE PAST



Coolies smoking in an opium den disguised as a Warehouse



Merchants trading goods with interested Customers



Food Vendors selling food at a street market along the river



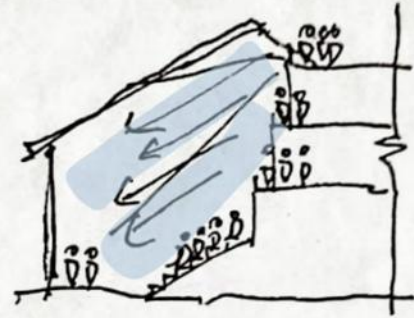
People watching Chinese Wayang by the River

CONCEPT SKETCHES

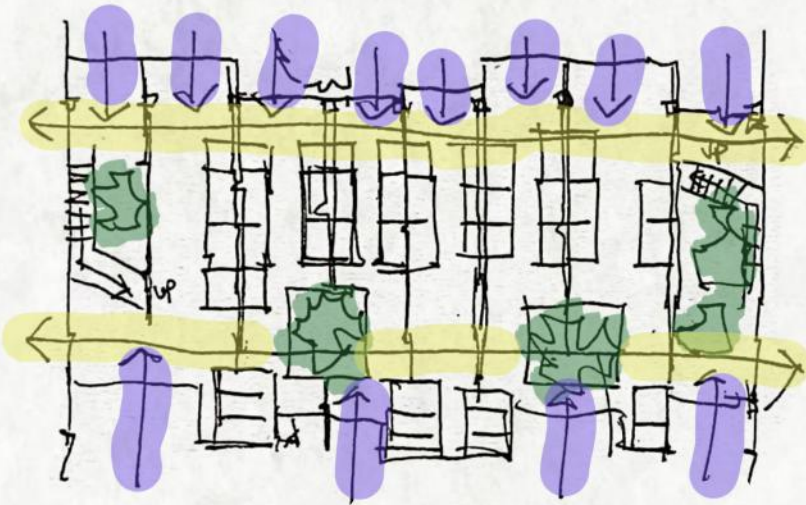
The Design Concept takes inspiration from the Singapore Shophouses, which were the building typologies of the Singapore River facilitating the trade of goods and cultures.



FOOD STALL ELEVATION



PERFORMANCE SECTION

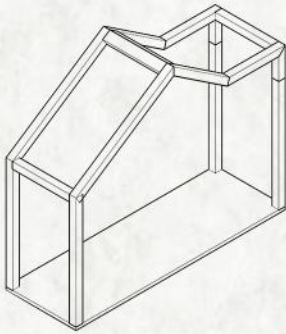


FOOD STALL PLAN

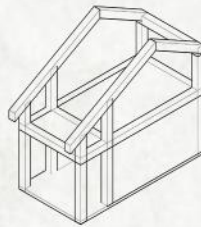


FIVE FOOT STALLS

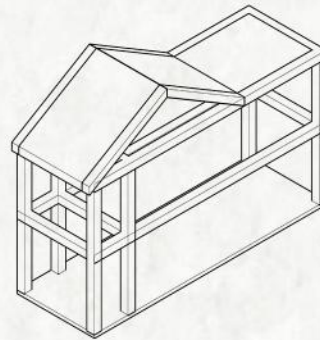
SHOPHOUSE ITERATIONS



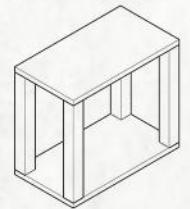
PERFORMANCE SHOPHOUSE



HALF SHOPHOUSE

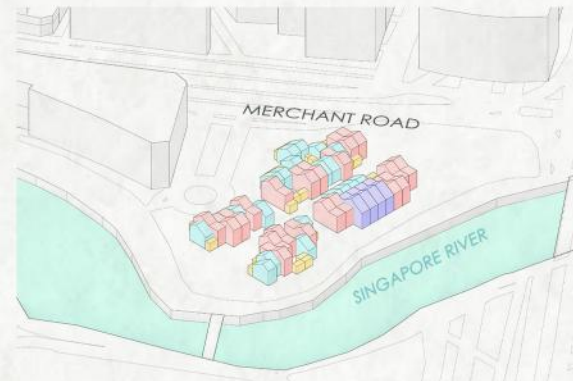
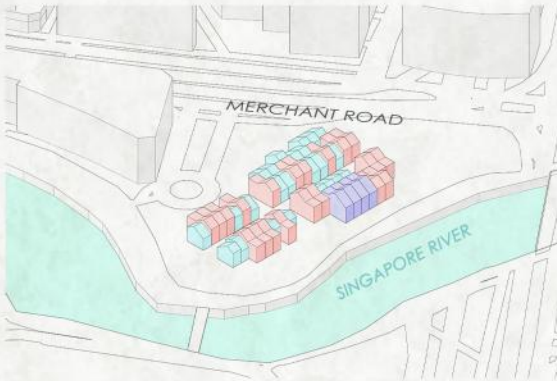
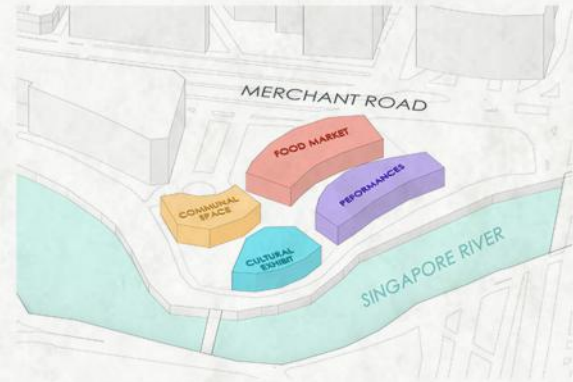
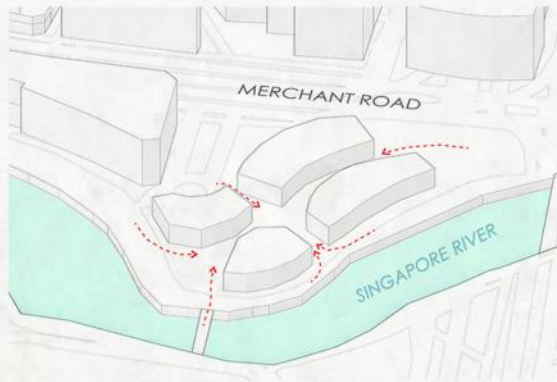


SHOPHOUSE
SKELETON



FIVE FOOT WAY
CONNECTOR

FORM DEVELOPMENT





PERFORMANCES



COMMUNAL GATHERING



ARTISAN MARKETS



FIVE FOOT STREET



EXPLODED AXONOMETRIC





POROUS ARCHIVES, BIOMIMICRY DESIGN STUDIO

This design proposal for Ang Mo Kio Public Library draws inspiration from Biomimicry and Regenerative Design. The concept takes the mechanism of a moss capsule - Opening and Closing - informing both the facade and structural expression of the library. This system creates a semi-open environment which encourages porosity, enhances natural comfort, and provides a unique aesthetic - allowing the building to breathe, whilst fostering a nature-integrated spaces for learning and gathering.

DESIGN CONCEPT: MOSS CAPSULE



CLOSED

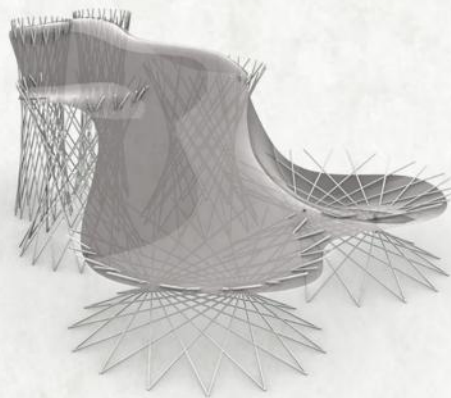
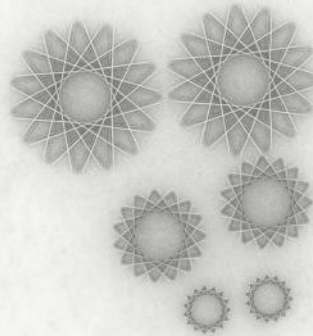
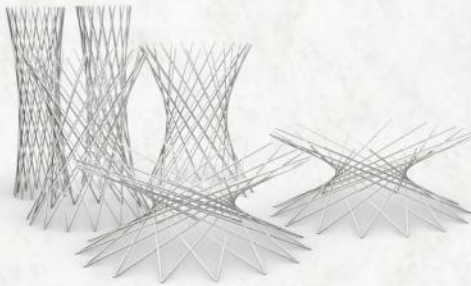


SEMI-OPEN



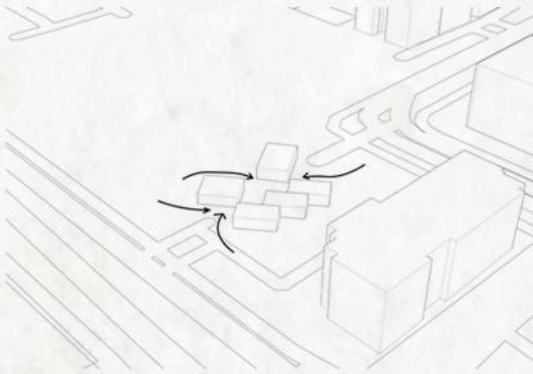
OPEN

This Biomimicry Design Concept is explored through the various stages of the moss capsule from when it is closed, semi-open and fully open. It then combined altogether using multiple stick models to create an abstract form.



The characteristics of the Moss Capsule such as its Opening and Closing systems, as well as its porosity to its environment aim to be the design drivers for the Biomimicry Design.

FORM DEVELOPMENT



CREATING MULTIPLE ACCESS POINTS
FOR POROSITY INTO LIBRARY



ANGLING SPACES TO VIEWS
AND VENTILATION



ATRIUM TO DISIPATE HEAT AND
OPEN TO NATURAL LIGHTING



OPEN STRUCTURAL COLUMNS
WITH GREENERY



NATURE EXHIBITION



LIBRARY



OUTDOOR COURTYARD

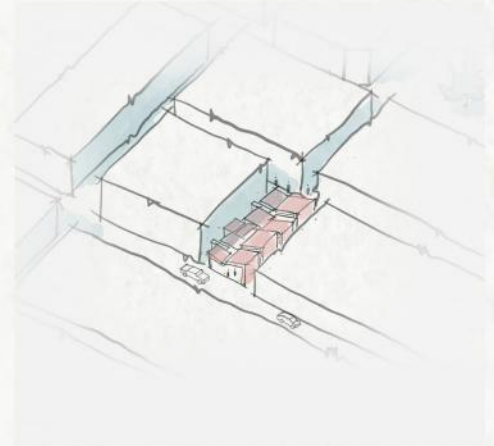


URBAN FARM



EXPLODED AXONOMETRIC

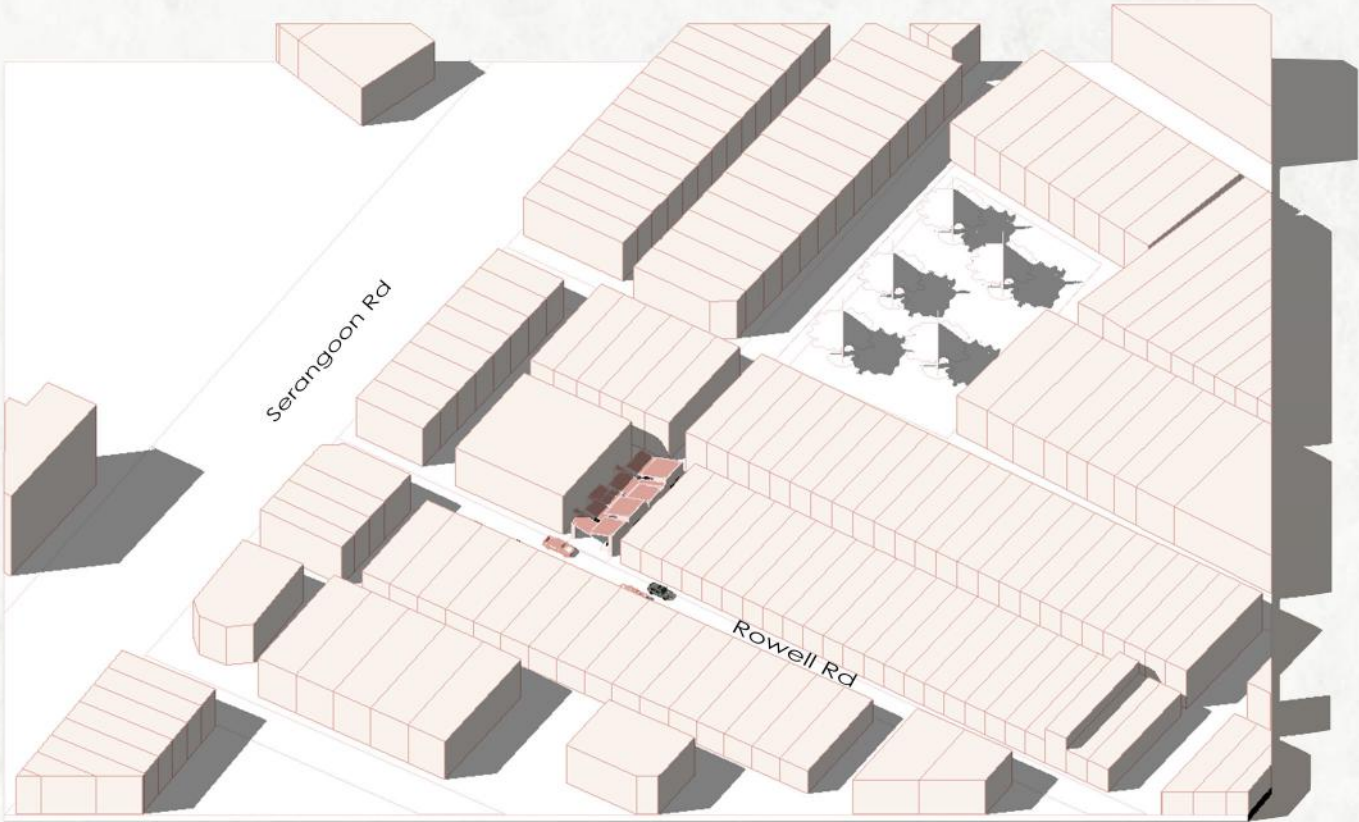




HIDING IN AN IN-BETWEEN ALLEY, DWELLING DESIGN STUDIO

Hidden along Rowell Road at Little India, this bar restaurant transforms its alleyway into a place of contrast of concealment and exposure. Nooks are carved into the edges of the alley, providing hidden resting spots for workers. In contrast, elevated open dining areas celebrate the presence of diners in the vibrancy of the neighbourhood. This results in a layered spatial experience - retreat and reveal - within one of Singapore's most animated districts.

SITE CONTEXT: ROWELL ROAD @ LITTLE INDIA



SUN PATH



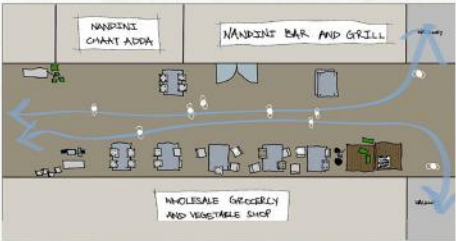
WIND DIRECTION



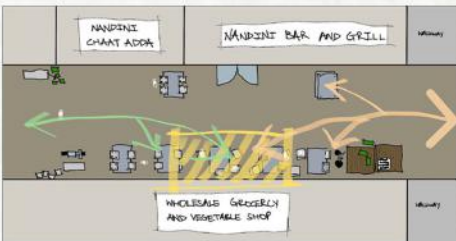
PEDESTRIAN ROUTES

BEHAVIOURAL STUDIES & MAPPINGS

CLOSED RESTAURANT



Passersby Mapping

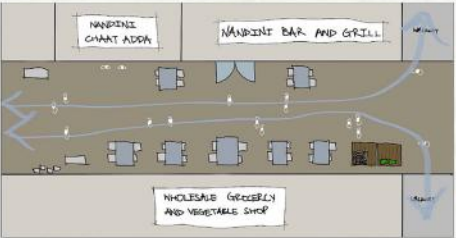


Workers Mapping

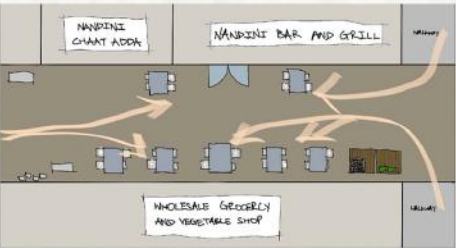
WHEN STORE IS CLOSED:

When the restaurant is closed, observational studies show that the alley is disorganised and messy. Workers tend to sit at specific spots to smoke, destress, and chat with their friends.

OPEN RESTAURANT



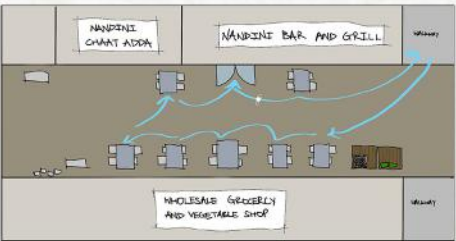
Passersby Mapping



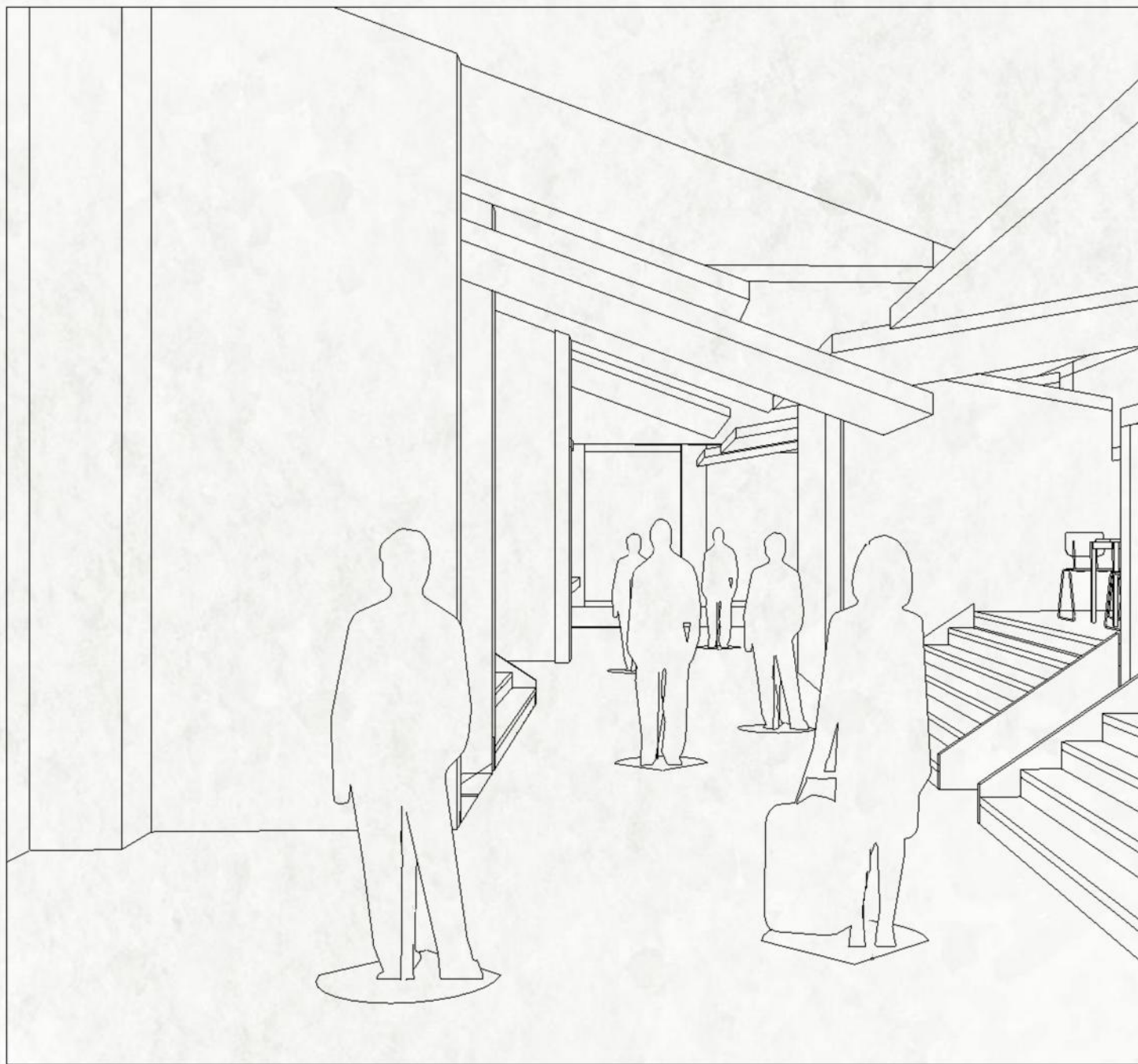
Workers Mapping

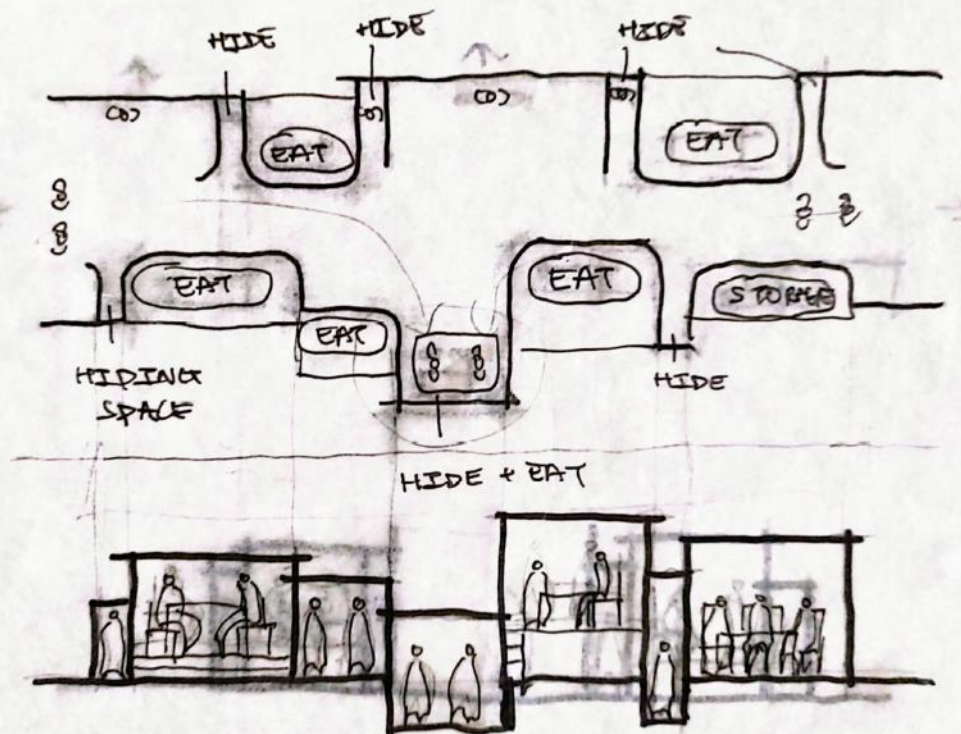
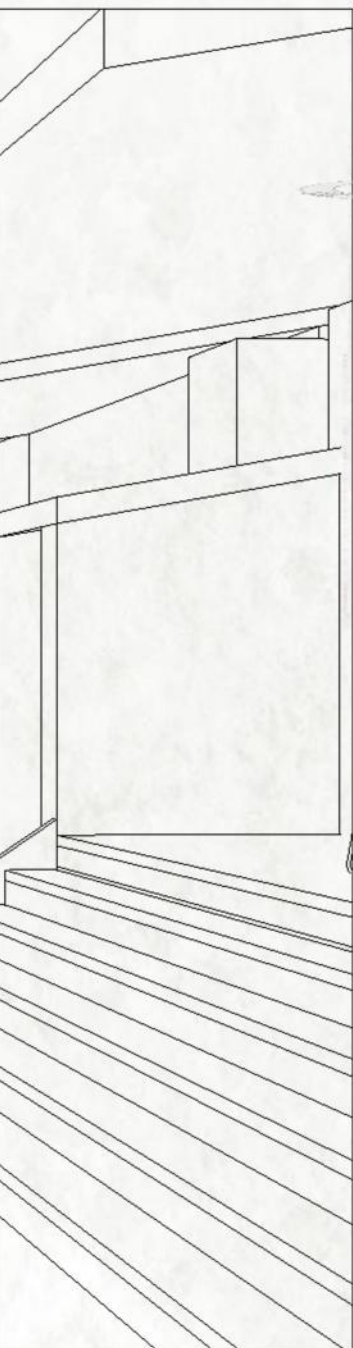
WHEN STORE IS OPEN:

When the restaurant is open, observational studies show that the alley is clean and organised. Workers tend to sit at specific spots to smoke, destress, and chat with their friends.

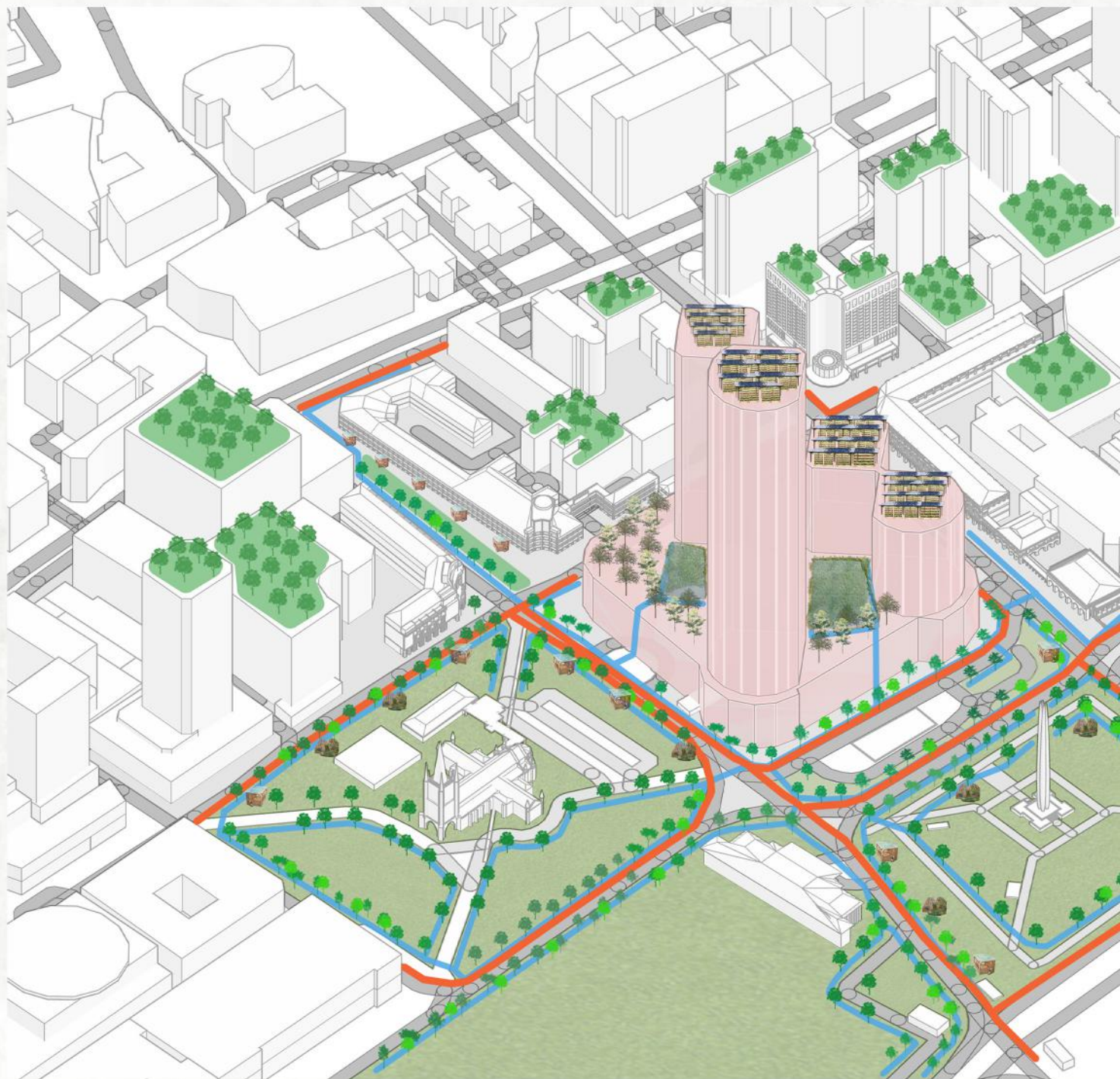


Shopkeeper Mapping





The Dwelling Design is able to create a unique, contrasting experience that creatively blends openness and concealment, while being able to cater to different user groups.





 SOLAR PANEL INTEGRATED
ROOF GARDENS

 SEDUM ROOF WITH WATER
COLLECTION POOL

 RAFFLES CITY VERTICAL
ROOF FOREST

 GREEN RELAX PODS

 ROAD CONVERTED PARK
CONNECTORS

 NATURAL STORM DRAINS

URBAN DESIGN PROPOSALS, CENTRAL BUSINESS DISTRICT

These Urban Design Proposals aim to reimagine the Central Business District to more than just for economic activity. By integrating Placemaking and Regenerative design interventions using Raffles City as the focal point, it aims to revitalize the underused spaces of the district, simultaneously restoring and enhancing the ecological ecosystem to introduce and enhance the symbiotic relationship between people and nature.



ROAD CONVERTED PARK CONNECTORS

Converted Roads to park connectors can reduce overall carbon emissions and improves air quality in the district, simultaneously supporting active mobility with the use of bicycles to get to their destination. These PCN Networks can be easily integrated with public transport to reduce overall carbon emissions, as well as Green Pods to generate activities.



GREEN RELAX PODS

Natural stormwater drains can help to mitigate stormwater runoff and prevents flooding in the districts, while the surrounding greenery helps to cool the microclimate near the streets, keeping the place cool and comfortable to walk around.



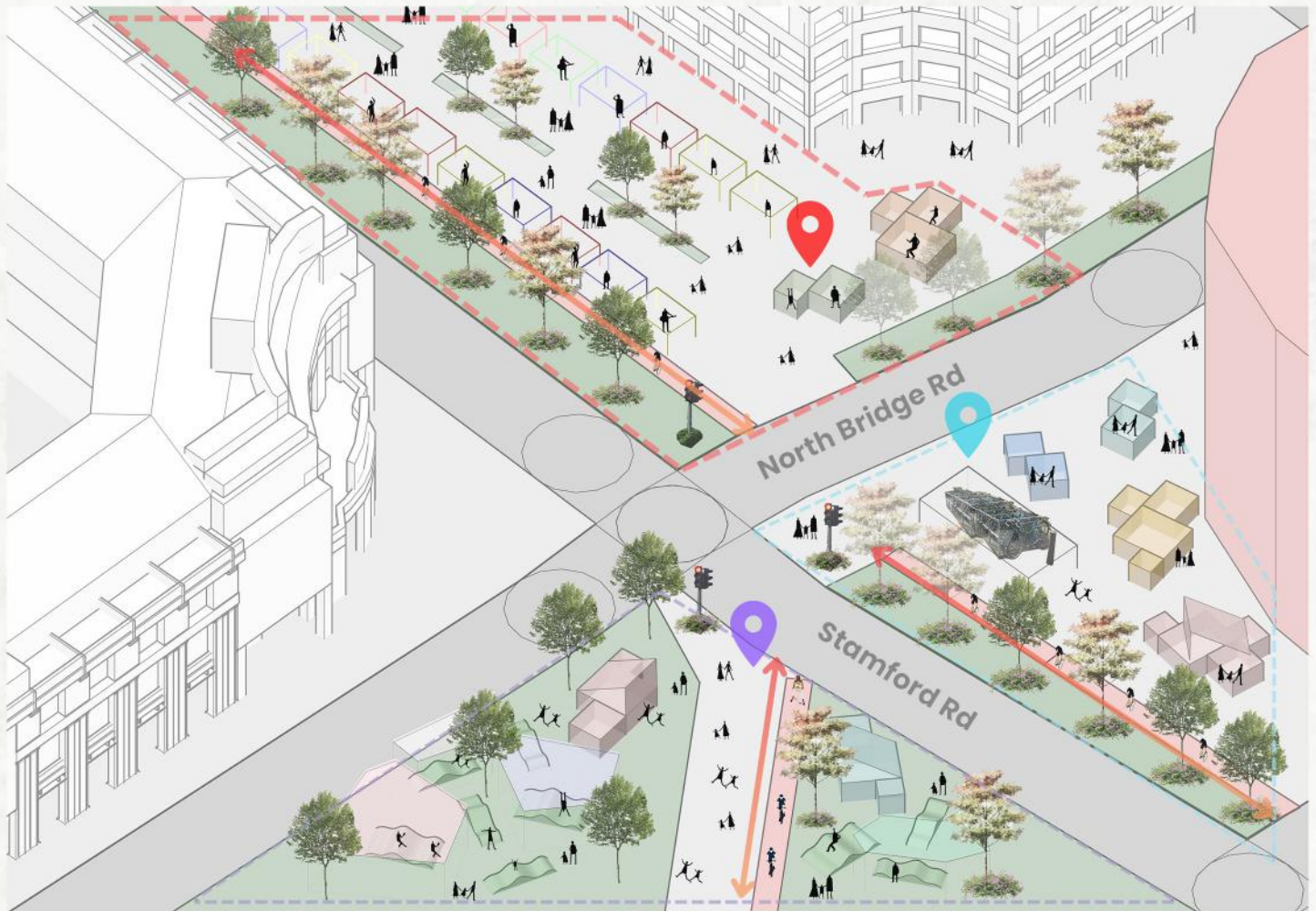
NATURAL STORM WATER DRAINS

Natural stormwater drains can help to mitigate stormwater runoff and prevents flooding in the districts, while the surrounding greenery helps to cool the microclimate near the streets, keeping the place cool and comfortable to walk around.



WATER COLLECTION POOL WITH SEDUM ROOF

The sedum roof water collection pool allows Raffles City to collect rainwater which can be distributed to the greenery surrounding the developments through the natural stormwater drains. The forest rooftop can also provide comfortable resting pockets for workers during their breaks or after work whilst supporting ecology around the district.



-  **Temporary Activation Zones**
-  **'Park and Play' Zones**
-  **Co-designed Landscaping**
-  **Bicycle Paths**

PLACEMAKING STRATEGIES

These placemaking strategies takes advantage of the underused streetscapes, road intersections, and open green areas to enhance and boost the liveliness of the Central Business District. It is also integrated with the existing cycling paths to encourage active mobility around the Central Business District.



CO-DESIGNED LANDSCAPING SPACES

Creating Co-designed spaces with the public fosters a sense of belonging and ownership with locals, while also encouraging social interactions with one another, making the place more enjoyable.



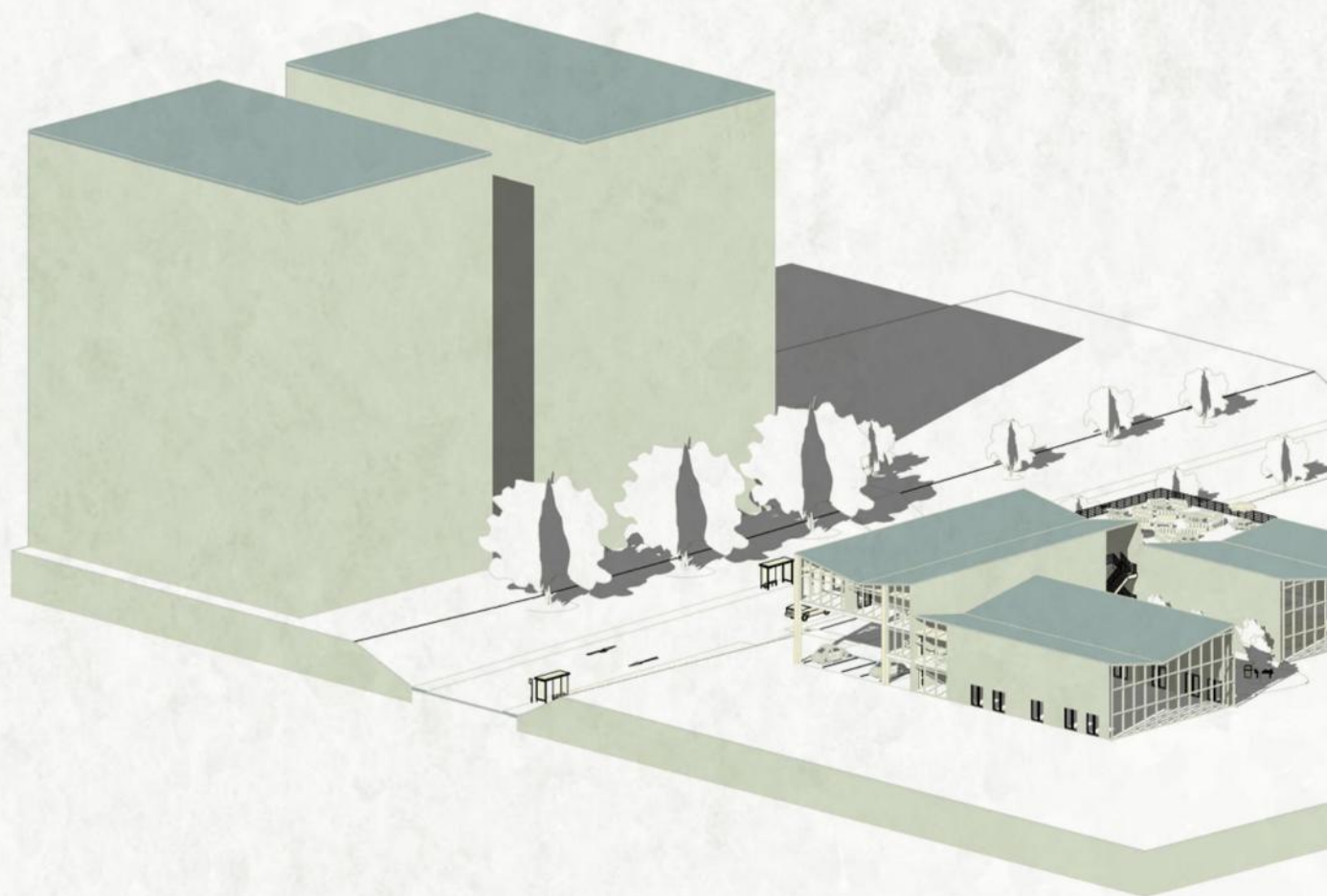
'PARK AND PLAY' ZONES

Creating bike friendly infrastructure and combining it with play areas encourage people to not just linger and socialize around the area, but also encourages them to cycle to and around the district, making it enjoyable.



TEMPORARY ACTIVATION ZONES

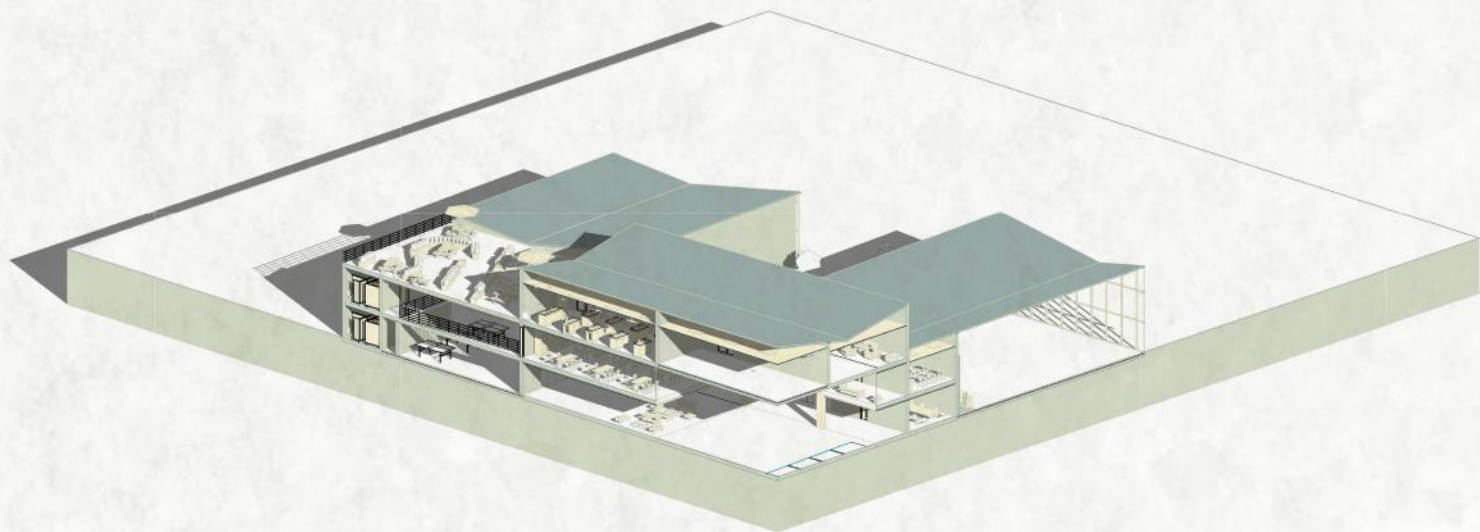
Activating underused spaces such as the walkways for pop-ups encourages people to linger around and facilitate social interactions, while also providing space for non-market activities such as arts and culture, making the place more enjoyable.





BIMM PROJECT, MODERN CONTEMPORARY COMMUNITY CENTRE

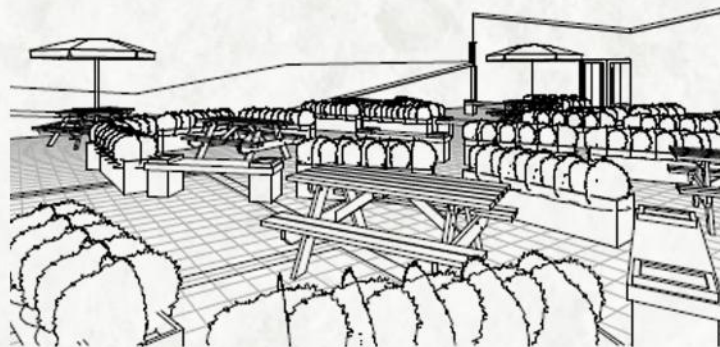
This Modern Contemporary Community Center (CC) allows people to use facilities such as a reading and studying lounge, participate in recreational activities such as badminton and basketball, or to help in community services such as voluntary work. It will also provide education and enrichment classes, health and wellness classes, and lifelong learning opportunities for everyone.



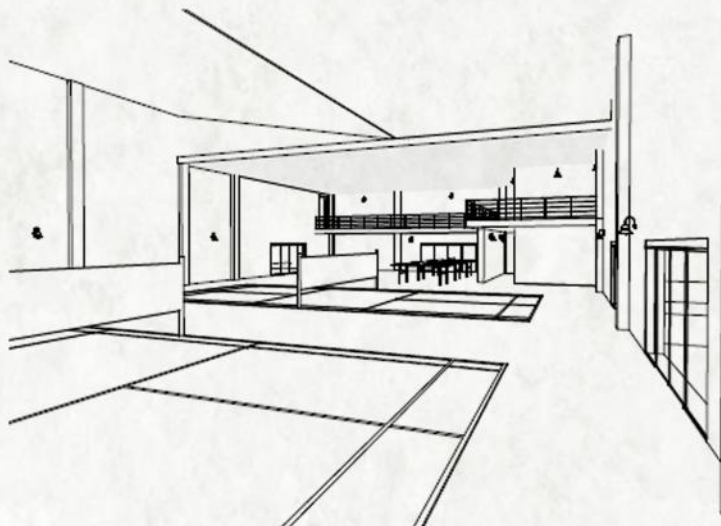
SECTION CUTAWAY



STUDY LOUNGE



ROOF GARDEN



SPORTS HALL



COOKING STUDIO





RESIDENTIAL AI VISUALISATION, BISHAN LOFT

This project renovates a 90 sqm condominium at N18 Suites @ Bishan Loft, Singapore, into a sustainable, elderly-friendly, and contemporary home. It prioritizes low-energy living aligned with Singapore's Green Agenda and Universal Design standards, featuring a landscaped garden area and a mural art wall. AI Rendering Software is used to visualise the home's spatial design.



LIVING ROOM



KITCHEN





MASTER BEDROOM

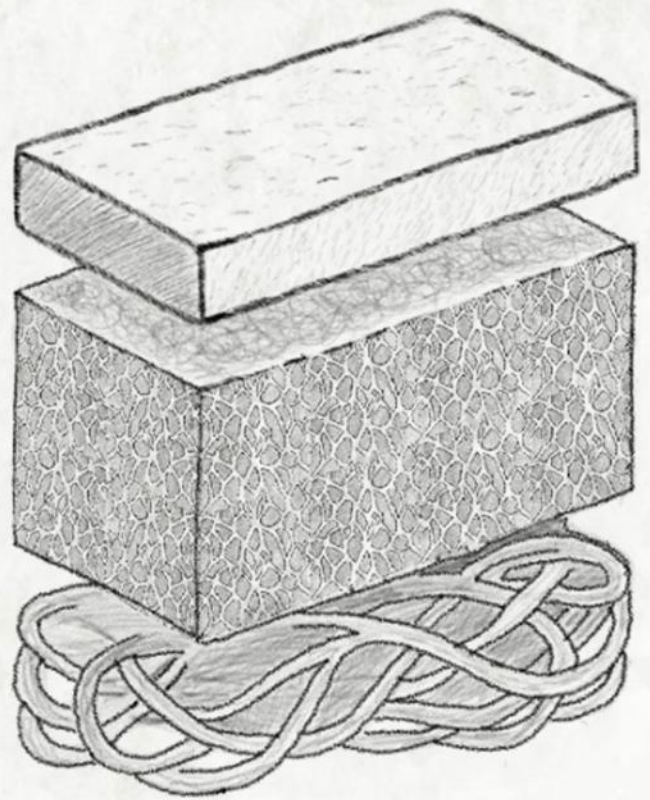
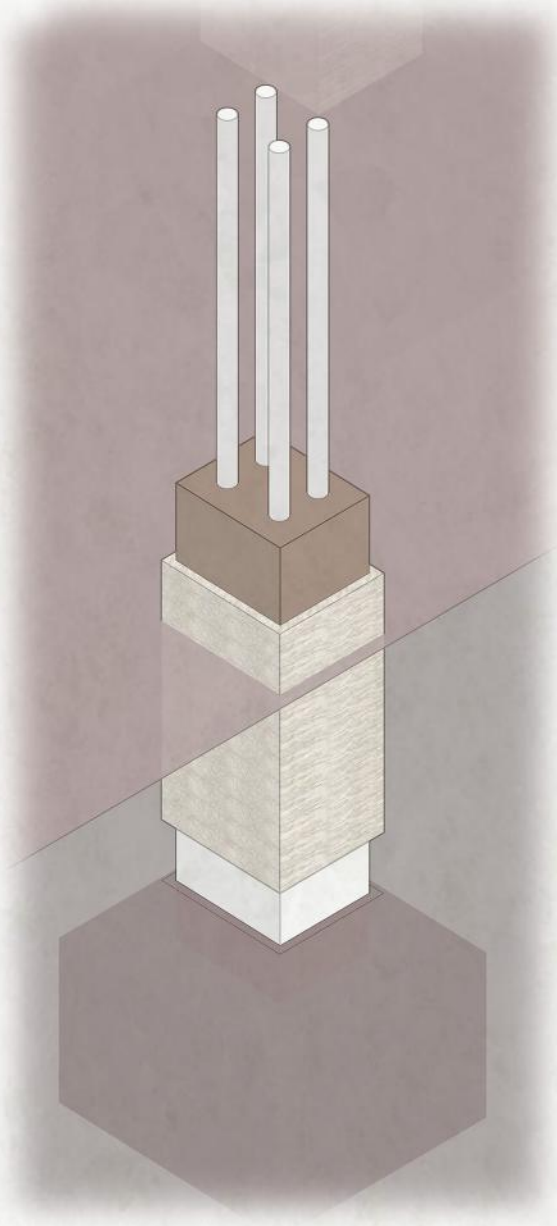


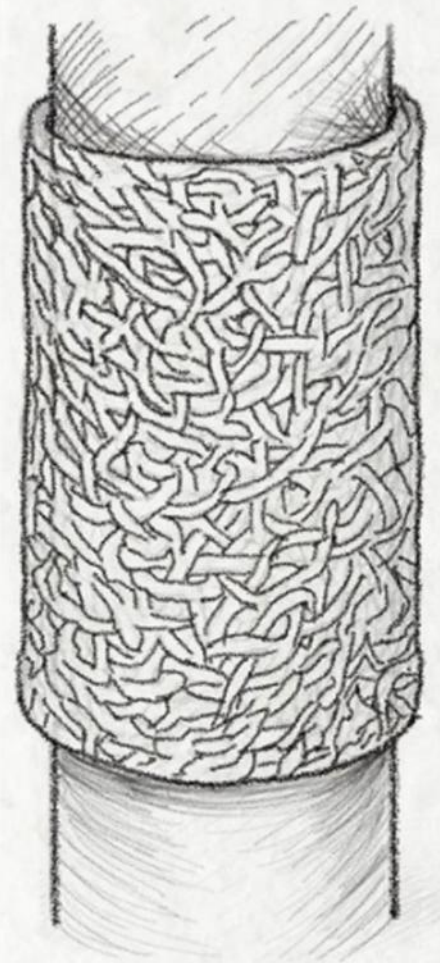
OUTDOOR GARDEN



FLOOR PLAN

The Apartment features an open-plan layout for easy movement, curtain walls in the living room for natural daylight, and a dedicated wall for mural art. A balcony garden enhances outdoor living, while spacious bedrooms ensure comfort and accessibility.





TURM-MUSH-MESH,

MYCELIUM RESEARCH &
PRODUCT PROPOSAL

Our Industry Project investigates Mycelium's potential in the built environment, focusing on its use as a termite-resistant mesh. While exploring unmarketed applications, the research assessed the feasibility of mycelium-based termite resistance through literature reviews, interviews, and experiments. Findings conclude that, with current technology, a functional mycelium mesh is not yet viable—though future biotechnological advances may unlock its potential.



Scan here to View Report



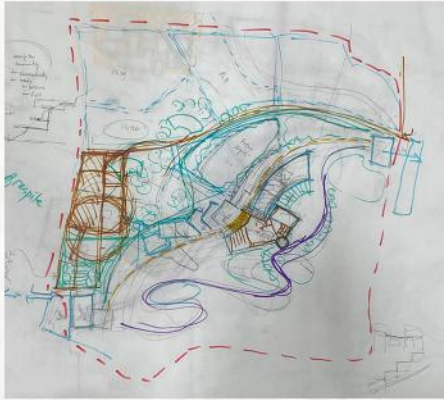


URA CUBE 2023, JURONG BIRD PARK

Our team's strategy integrates agritech into Singapore's industrial landscape, aligning with food resilience and industrial goals. Balancing technology and recreation, repurposing existing facilities with mobility and environmental focus, symbolizes a sustainable convergence of industry, nature, and innovation. Our final proposal is to provide an oasis that offers respite from work & industrial surroundings at Jurong Bird Park. AI Rendering Software is used to generate and visualise the overall proposal.



AI VISUALISATIONS



'HAY IN A NEEDLE STACK'

This proposal reimagines Jurong Bird Park as a surprising convergence of nature, innovation, and community, where agritech reshapes the future from within a high-tech urban fabric. Aligned with Singapore's food resilience goals, the design embeds AI-driven R&D, educational zones, and F&B spaces into a terrain of repurposed infrastructure, terrace hills, and park connectors. By integrating recreational elements into the industrial core, it invites the public—especially younger generations—to rediscover the value of agriculture through unexpected encounters. Mobility networks enhance access, while nature restoration offsets development, blending old and new transport modes and conserving landmarks like waterfalls and amphitheaters. Guided by personas and grounded in sustainability, the project aims to create a layered, dynamic environment where the humble "hay" of food production becomes visible, vital, and valued amidst the "needle stack" of industry.



SITE MODEL PROPOSAL





Astungkara Way, Bali

URBAN SKETCHES, PERSONAL WORKS

In my free time, I enjoy exploring the world around me through urban sketching. Urban Sketching has helped me with my visualization skills while also teaching me to be patient and observant to my surroundings.



NEW BAHRU



BUKIT TIMAH RAILWAY STATION





SULTAN MOSQUE



FORT CANNING PARK



CHINESE GARDEN

 - END - 