

PORTFOLIO

YEOWZHIWEIMICHAELAUGUSTINE

MAY 2019



Currently completing his Masters Thesis in the Singapore University of Technology and Design (SUTD), Michael Yeow's interests lie in the field of aural architecture, shaping relationships between people and the auditory landscapes of space created by the built and natural conditions. Michael is also concerned about the environmental impacts of architecture and urban planning, and open to designing for the circular economy. Design computation and digital fabrication are some of the tools that he uses to experiment and work towards these design intentions.

When Michael decides not to spend the weekend in school to prepare for an insane amount of submissions, he heads back home to spend his precious time playing computer games and reading books, the latter being an affair of gaining more architectural knowledge.



YEOW ZHI WEI MICHAEL AUGUSTINE | 杨志伟

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Areas of Interest:

Aural Architecture, Urban Planning and Regeneration, Computational Architecture, Architectural Lighting, Point Cloud Modelling

EDUCATION

Singapore University of Technology and Design

Bsc. Architecture and Sustainable Design
(May 2015 - August 2018)

Zhejiang University

Asian Leadership Programme 2016
(May - August 2016)

Catholic Junior College

A-Level Qualifications
(January 2011 - November 2012)

EXHIBITIONS

PARKing Day 2015

Perspective Art Installation
Parking Lot at Horne Road

Makerfaire 2016

Interactive Wall Fabrication Team
SUTD Library

Endemic Textures

Featured Academic Projects
SUTD Library

COMPETITIONS

iLight 2018 Institutional Installation

The Butterfly Effect
(Esplanade Green)

URA My Ideas for Public Spaces 2017

Suspended Origami Installation
(Multiple Possible Indoor Locations)

CTBUH Student Competition 2017

Educational and elder care mixed development
(Lower Pierce Reservoir)

WORK EXPERIENCE

BHATCH Architects

Architectural Assistant
(September - December 2018)

Future Cities Laboratory - Cooling Singapore

Graphic and Urban Designer
(May - August 2017, February - June 2018)

Singapore University of Technology and Design

Teaching Assistant and Student Helper
ASD Term 5 Teaching Assistant
(February - April 2018)

SOFTWARES

Modelling Tools

Rhino, Grasshopper, Autocad, Sketchup, ANSYS
Fluent, Fusion 360, 3DS Max, Design Builder,
CloudCompare, i-Simpa, Unreal Engine

Graphical Tools

Photoshop, Illustrator, InDesign, Premiere Pro

Administrative Tools

Microsoft Office (Word, Powerpoint, Excel)

PROFICIENCIES

Languages

Spoken and Written English and Mandarin

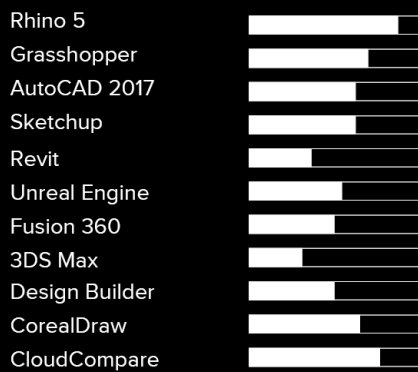
Hardware Skills

Metalworking, Woodworking, Laser Cutting,
Handcutting, CNC Milling

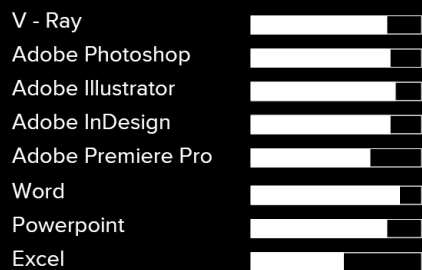
Aesthetic Touches

Drawing, Sketching, Piano, Violin, Guitar

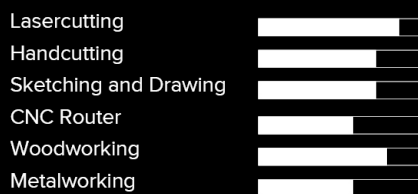
Modelling Software



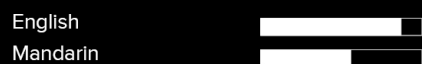
Other Software



Hardware

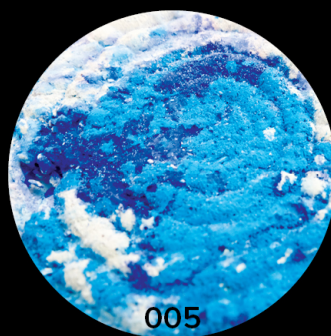
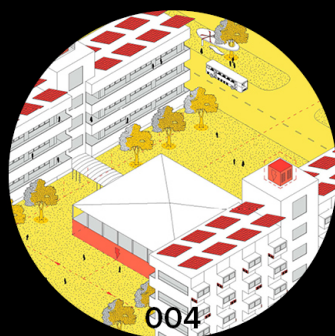
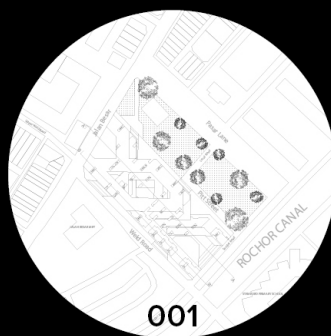
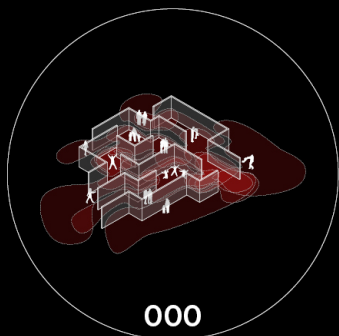


Languages

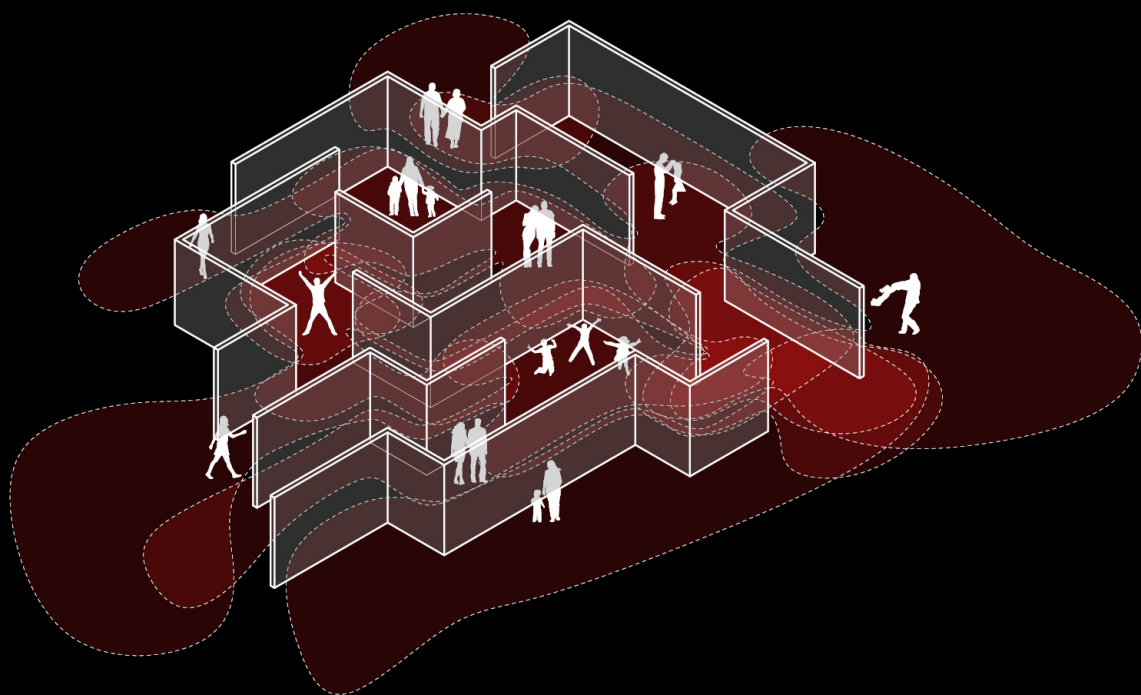


CONTENT

- 000 | **AURAL ARCHITECTURE** | Acoustic Public Space
- 001 | **THE STITCH** | Low-Rise High Dense Housing
- 002 | **INFUSED ECOLOGIES** | Brani Island Revitalisation
- 003 | **PARK@BIDADARI** | Urban Metabolism Hub
- 004 | **VISUALISATIONS** | Cooling Singapore Work
- 005 | **MISCALLENEOUS** | Fabrications//Drawings//Photos



000



AURAL ARCHITECTURE

YEAR: 2019 (ONGOING)

MENTORS: CHRISTINE YOGIAMAN
KENNETH TRACY

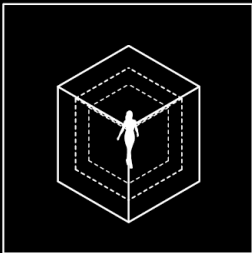
The geometrical and material aspects of surfaces that define our built environment often serve to enhance the visual composition of architecture and the experience we see. However, if given the opportunity to dictate and control the manner in which we experience the sounds of our surroundings, our perception of space changes.

The thesis would like to propose the design of aural architecture through the control of soundscapes by manipulating the geometrical and material properties of surfaces and volumes that we define as key elements of our built environment. demographics living on each floor.

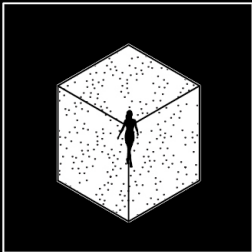
The next few pages are some of the material generated based on the research surrounding the key topics of aural architecture. A final thesis book and physical deliverables will be produced.

KEY DESIGN STRATEGIES

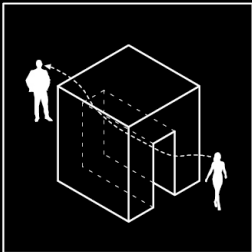
SIZE



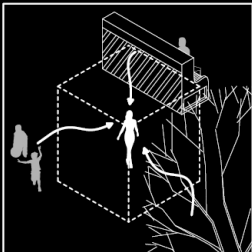
TEXTURE



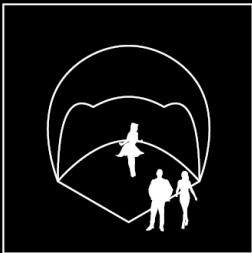
NAVIGATIONAL



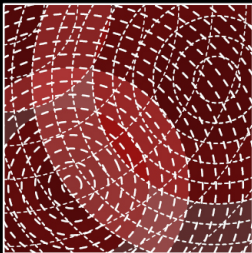
ASSOCIATIVE



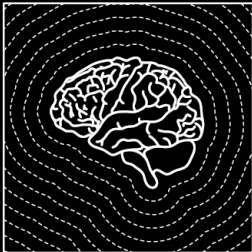
MUSICALITY



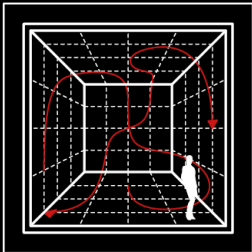
INTENSIFICATION



MEMORY



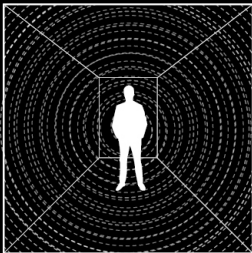
EMBODIMENT



ATTENTION

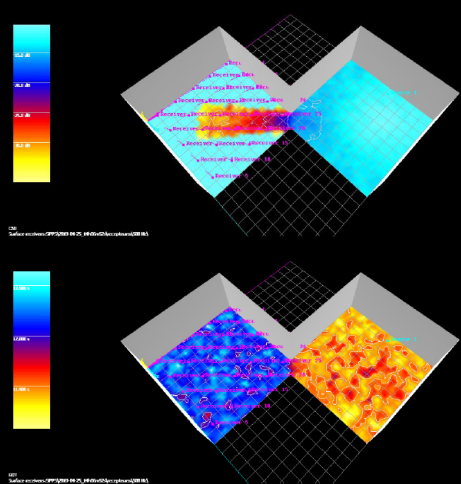


ILLUSION

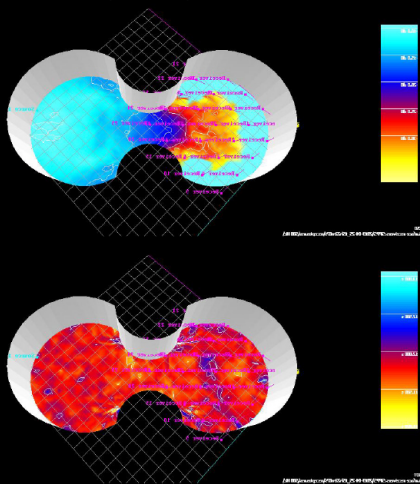


ACOUSTIC STUDIES

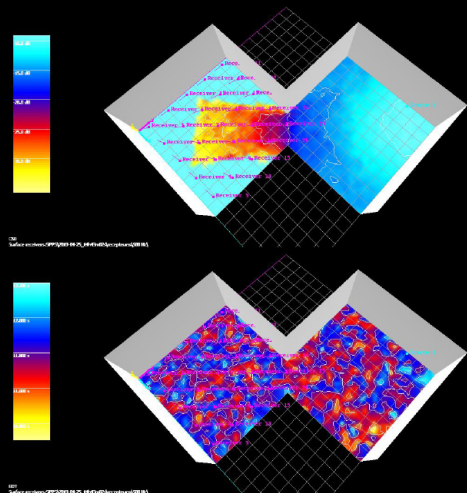
10X10M Rooms Adjacent



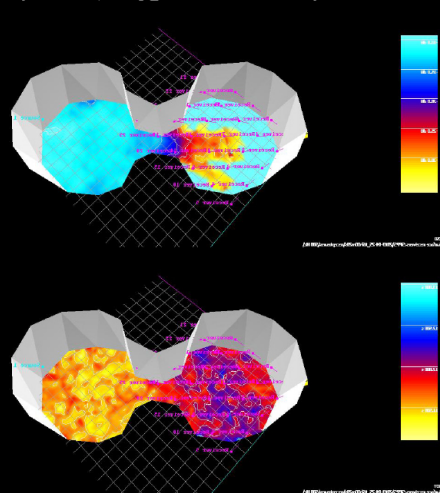
10X10M Rooms Adjacent
(Circular)



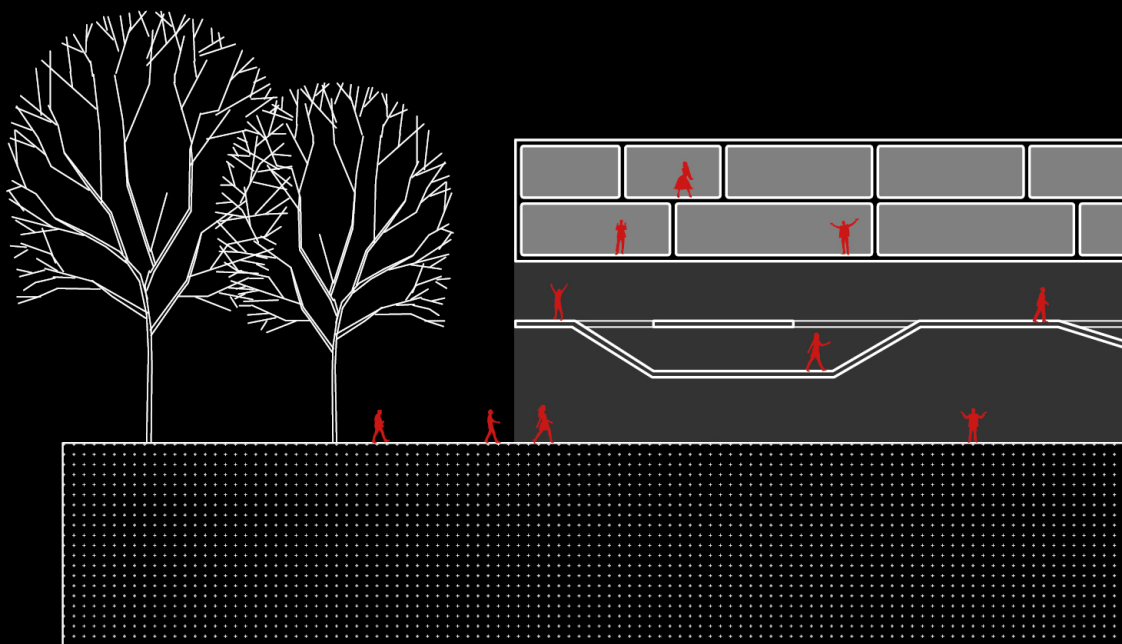
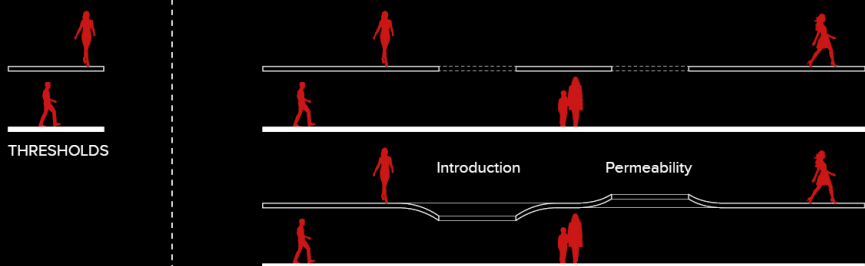
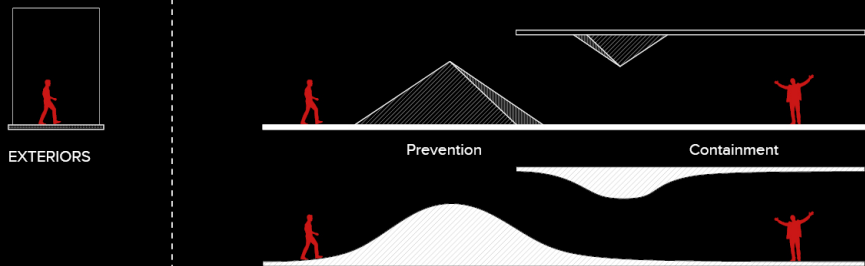
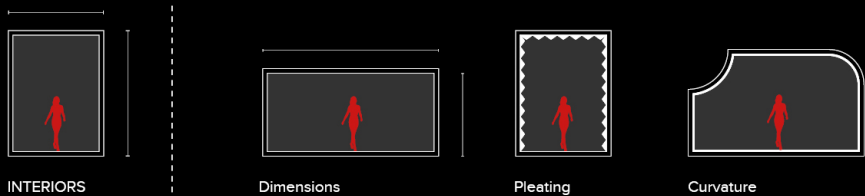
20X20M Rooms Adjacent



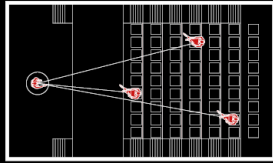
20X20M Rooms Adjacent
(Circular, Polygonised Surfaces)



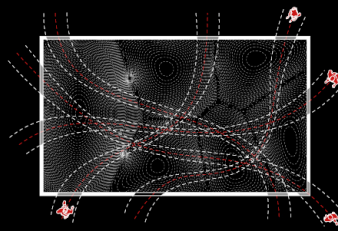
CONCEPTUAL DIAGRAMS FOR DESIGN



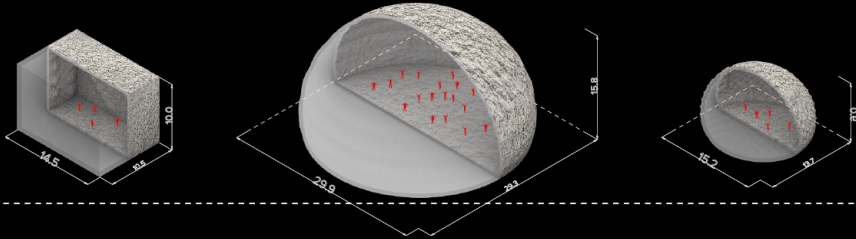
Conventional Theatre



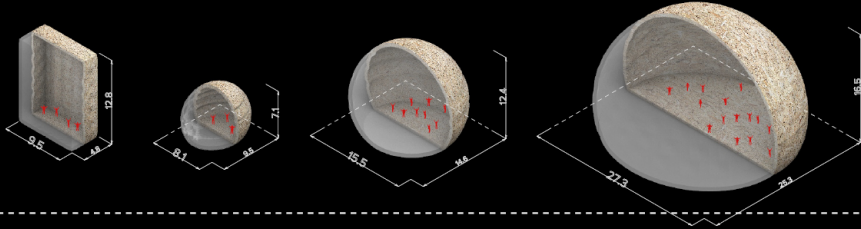
Proposed Intervention



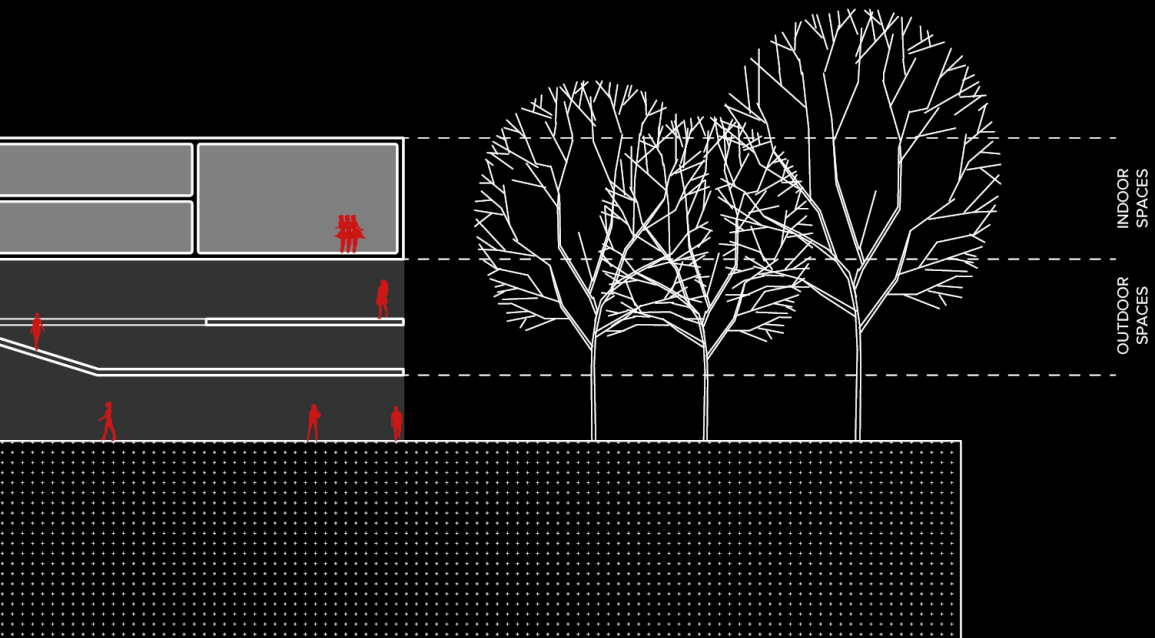
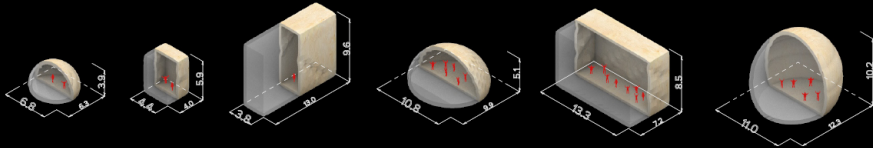
ACOUSTIC PLASTER
0.55 Absorption Coefficient



STRANDBOARD
0.35 Absorption Coefficient



PLYWOOD FINISH
0.01 Absorption Coefficient



001



THE STITCH

YEAR: 2017

MENTORS: TREVOR RYAN PATT

The shophouse districts of Jalan Besar and Kampong Glam have been distinctively separated by rapid redevelopment of the spaces in between. HDB blocks and shopping malls now tower over the remnants of heritage and physically reject the history of the area.

The blur between private and public realms in housing typologies of today have been eliminated because of various political and security agendas, yet creating a collection of households rather than a bonded community. The project explores the implementation of courtyard apertures found in shophouses into a mid-rise housing typology, shared between adjacent units to promote social interaction between neighbours, binding the community in an intangible way. Formal strategies of shaping and sculpting plates of each floor caters to the daily activities of residents of different demographics living on each floor.

DEMOGRAPHIC ANALYSIS



LAVENDER



LITTLE INDIA



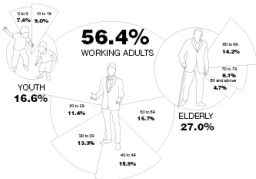
FARRER PARK



SUNGEI ROAD



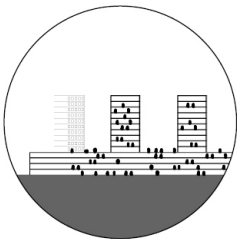
KAMPONG GLAM



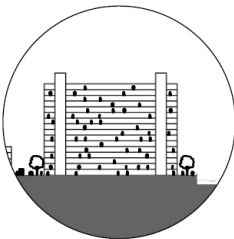
HISTORICAL PRESERVATION



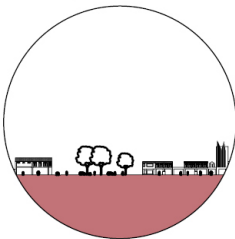
AA' | Rochor Centre



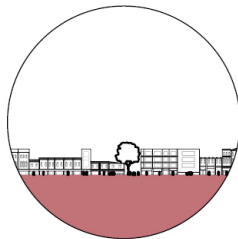
BB' | Block 29



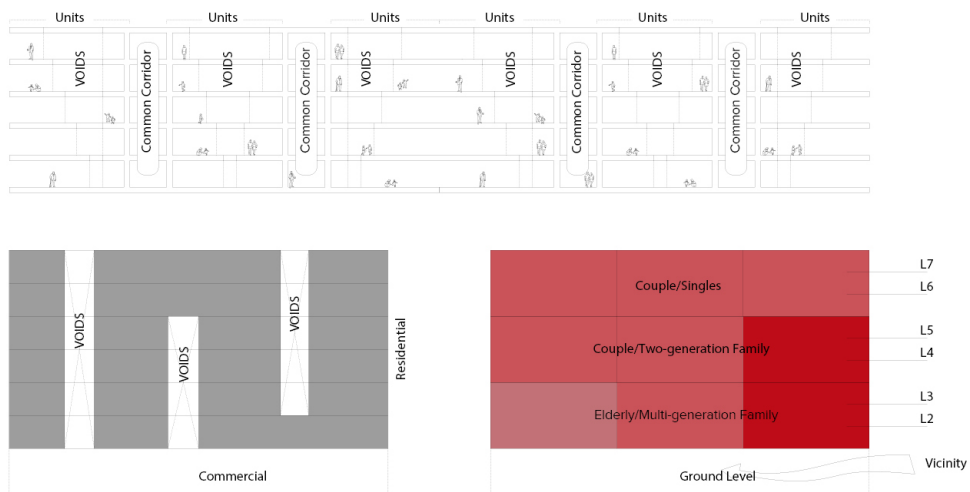
CC' | Little India



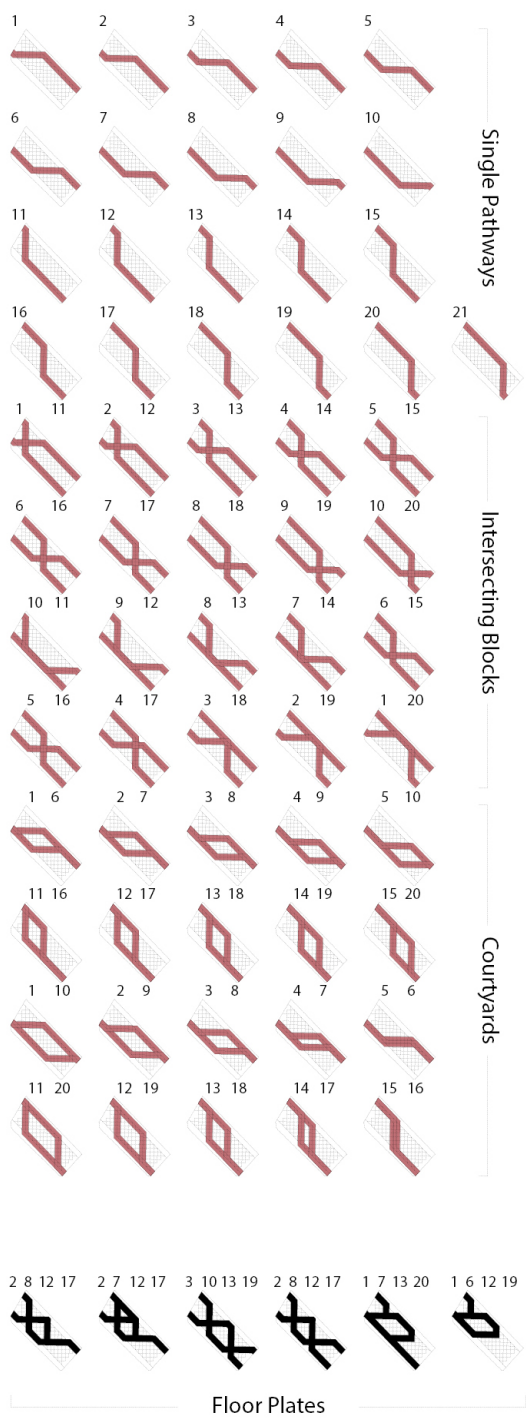
DD' | Kampong Glam



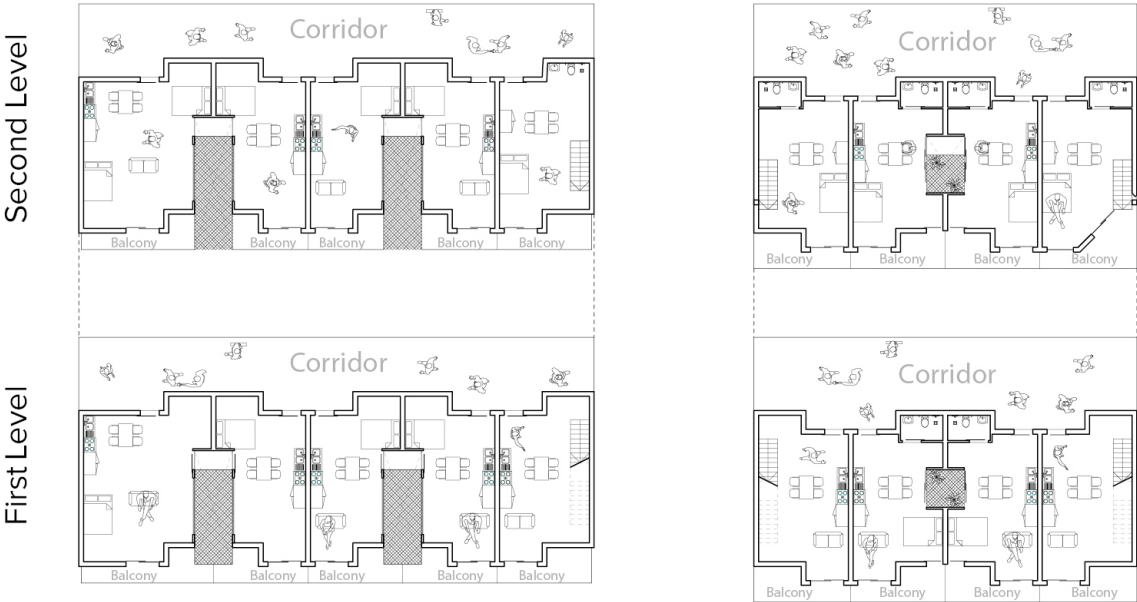
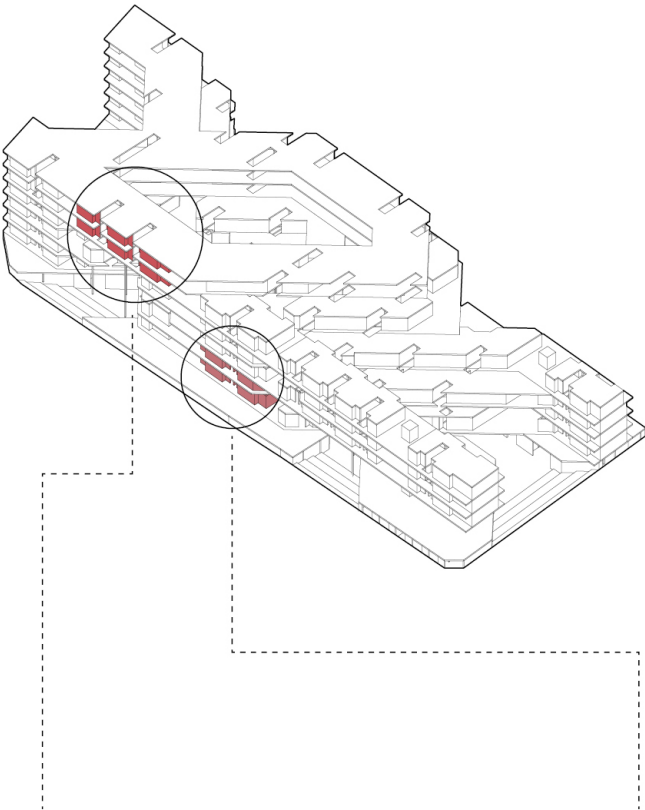
CONCEPT DIAGRAMS

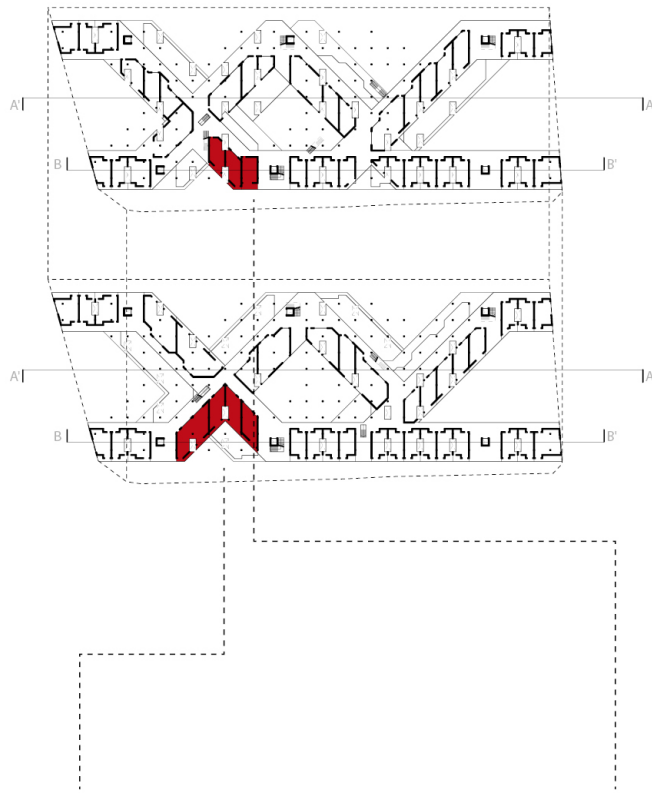


FLOORPLATE GEOMETRY ITERATIONS

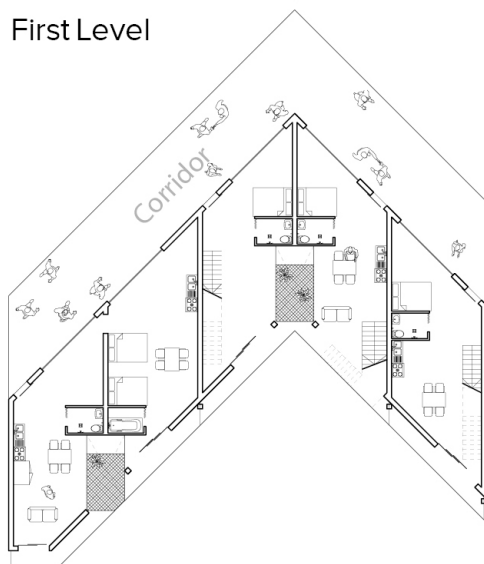


SELECTED UNIT PLANS | 1:400

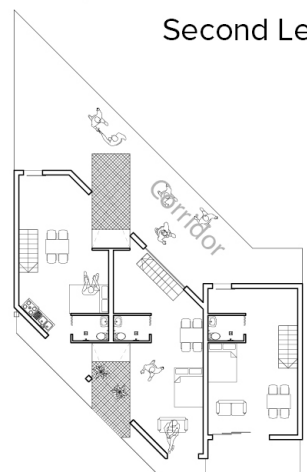




First Level

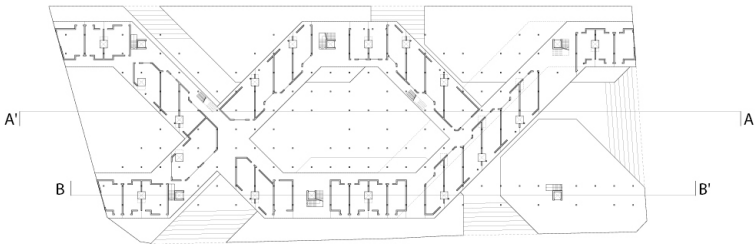


Second Level

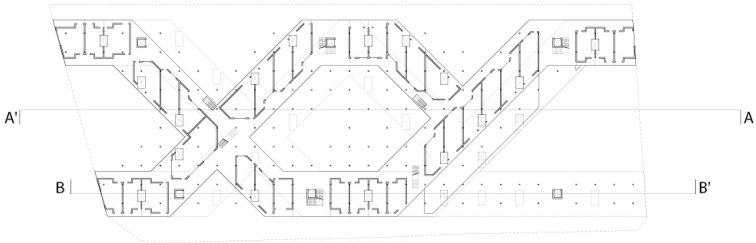


FLOOR PLANS | 1:2000

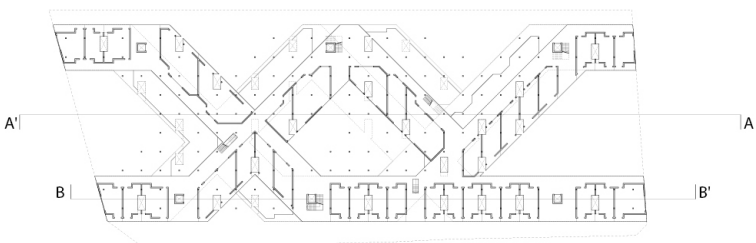
First Floor



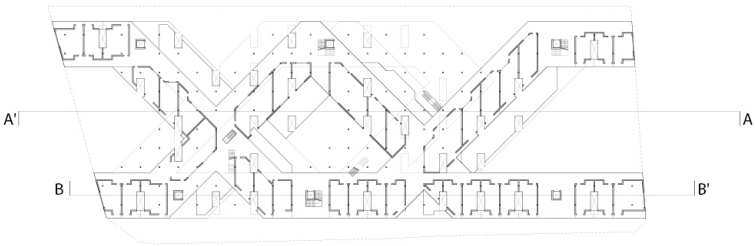
Second Floor



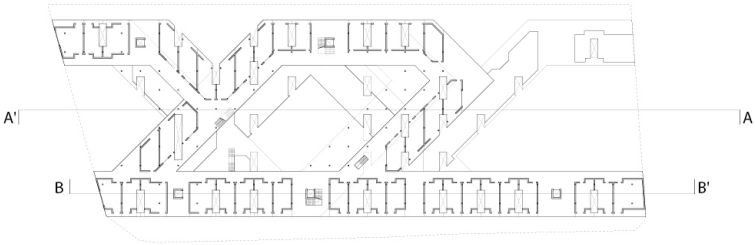
Third Floor



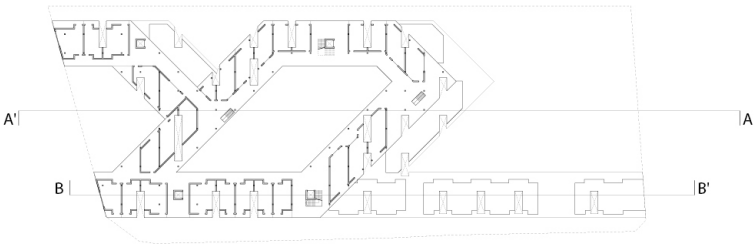
Fourth Floor



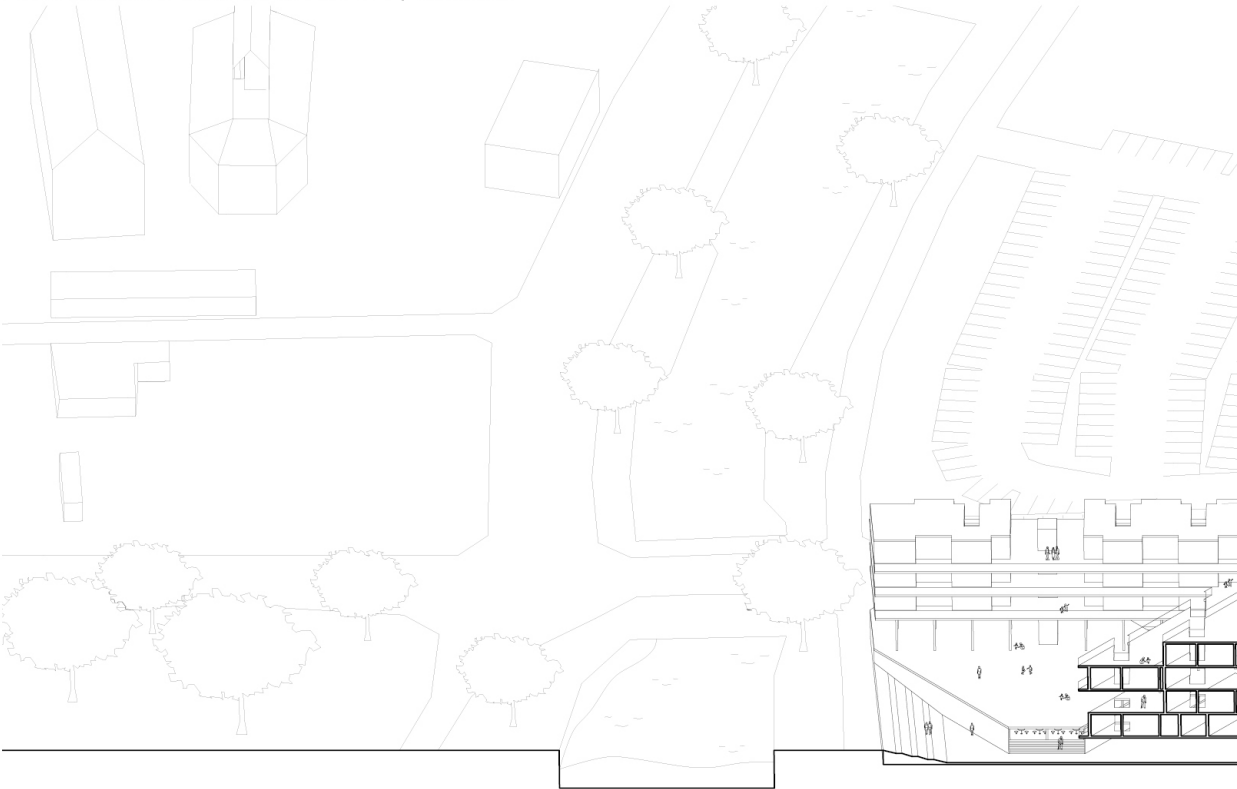
Fifth Floor

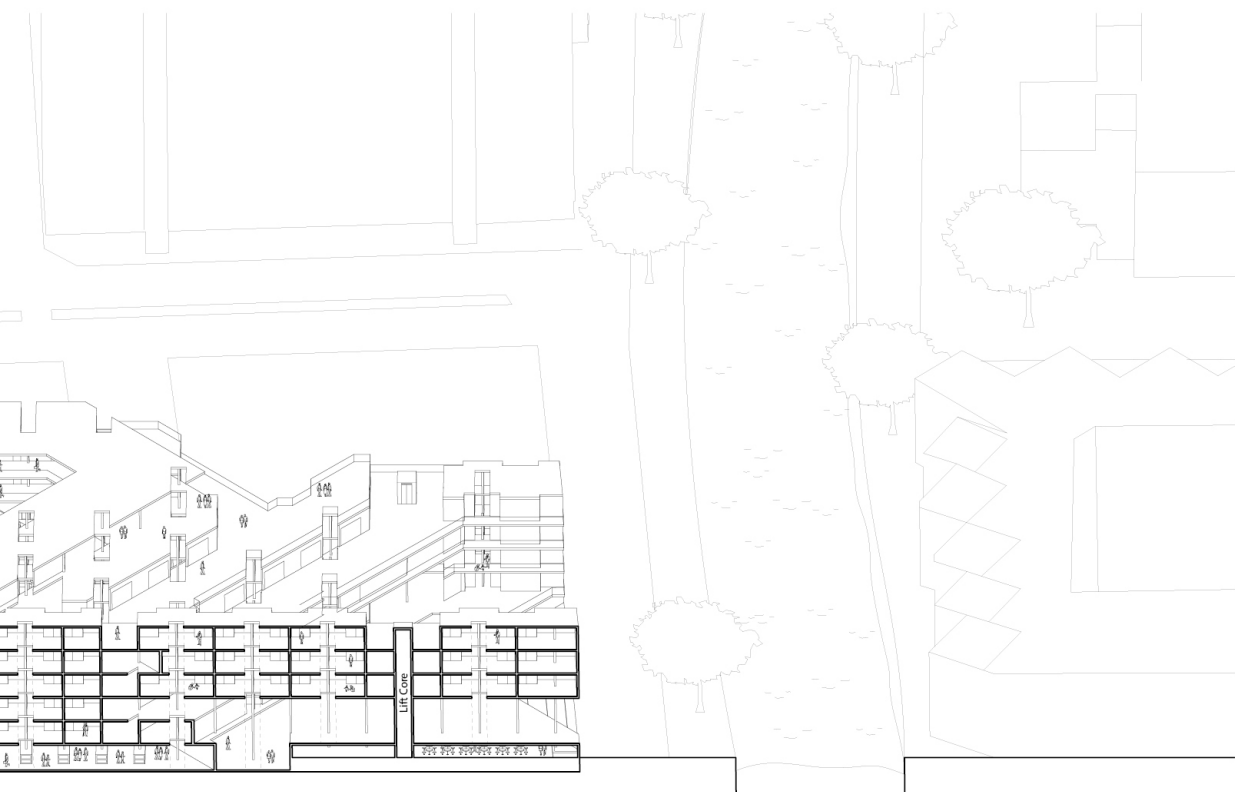
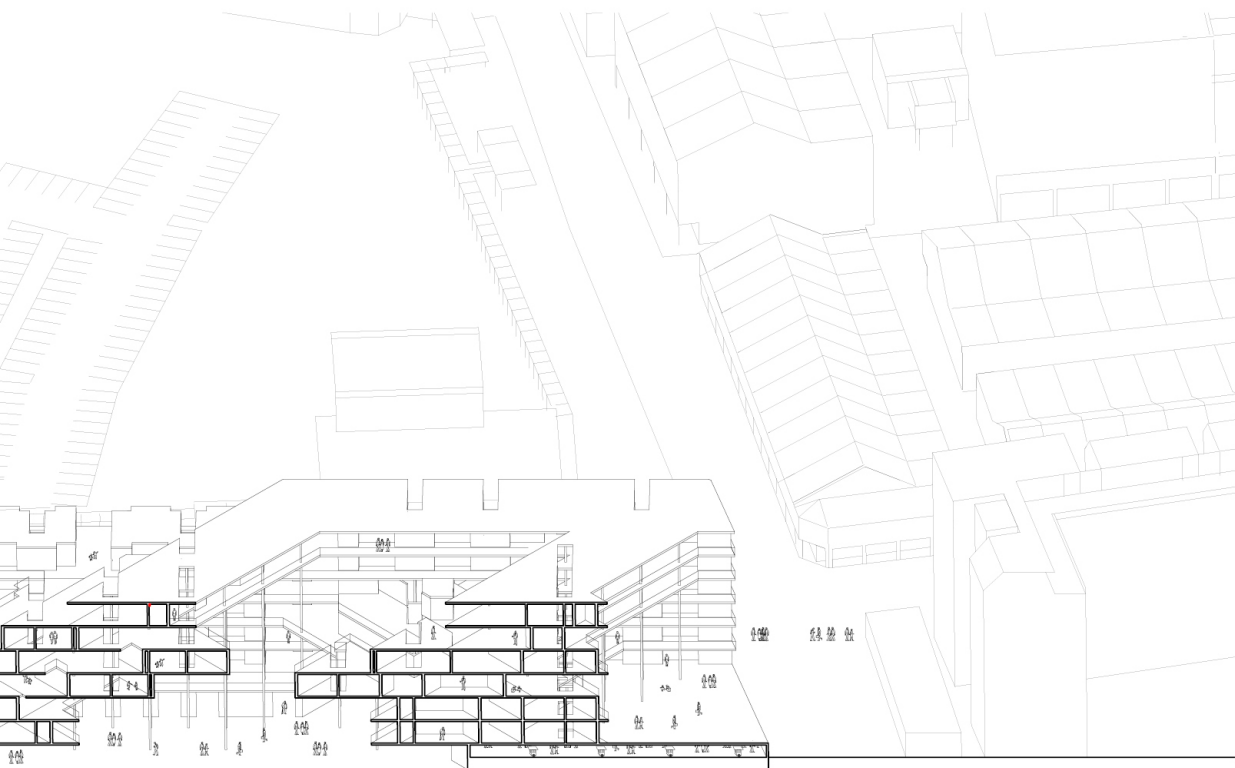


Sixth Floor



ACONOMETRIC SECTIONS | 1:2000

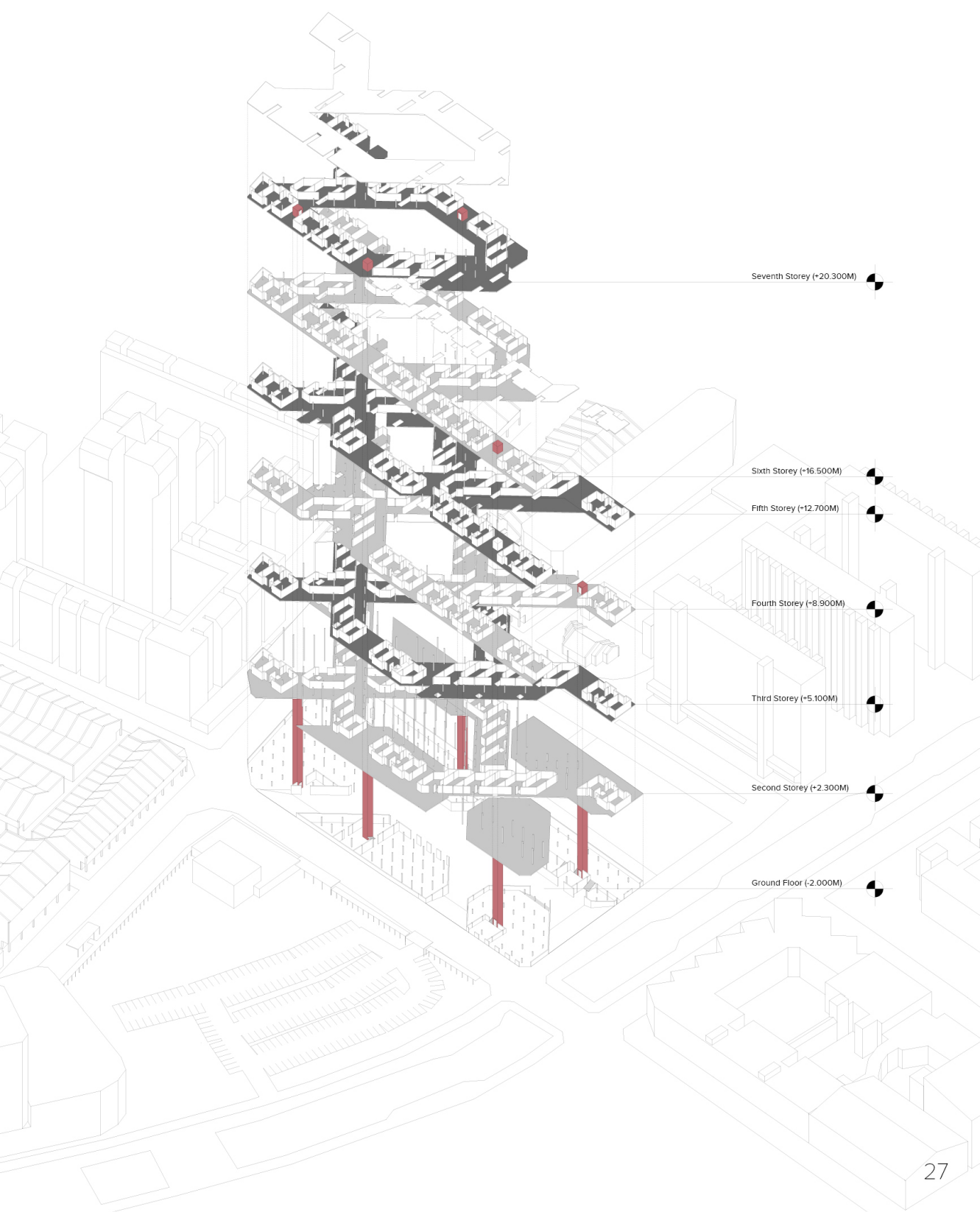


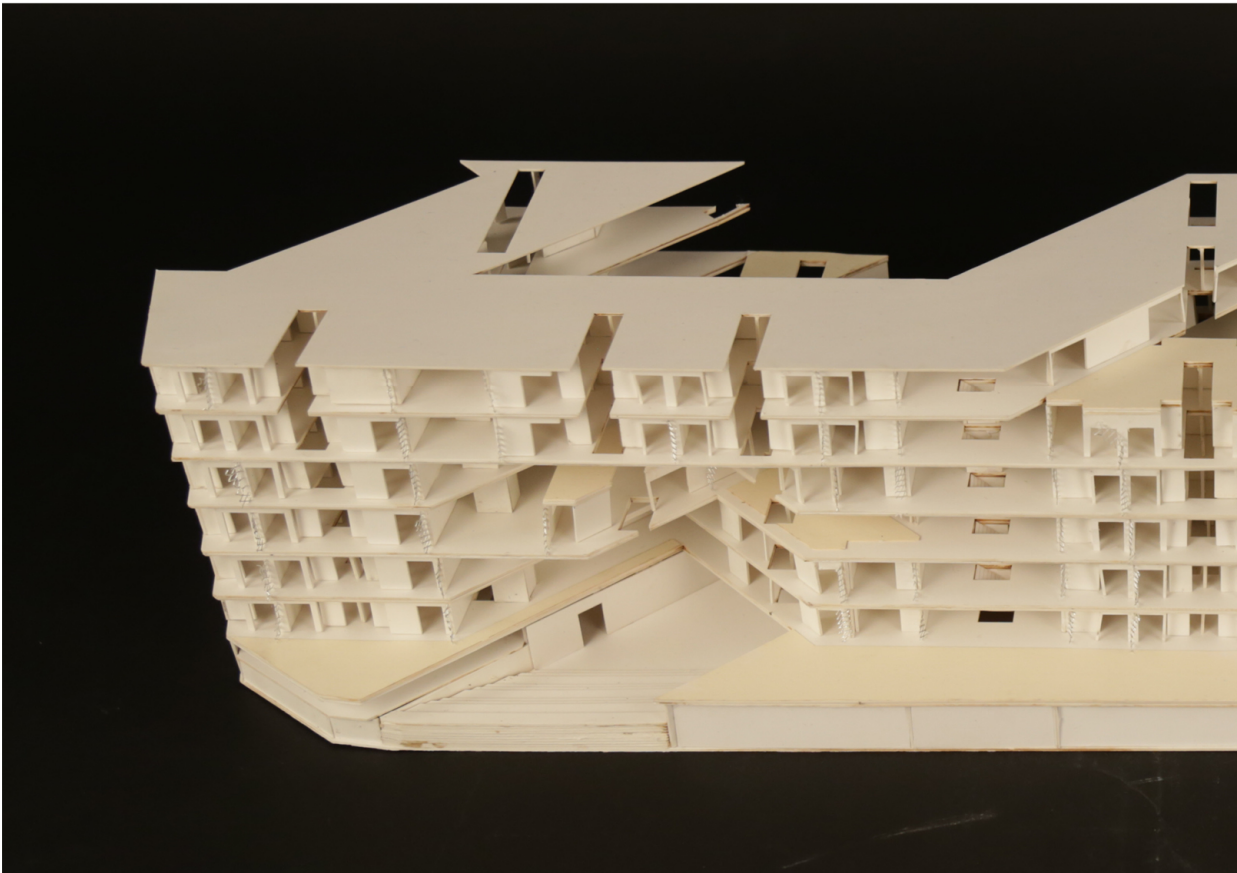
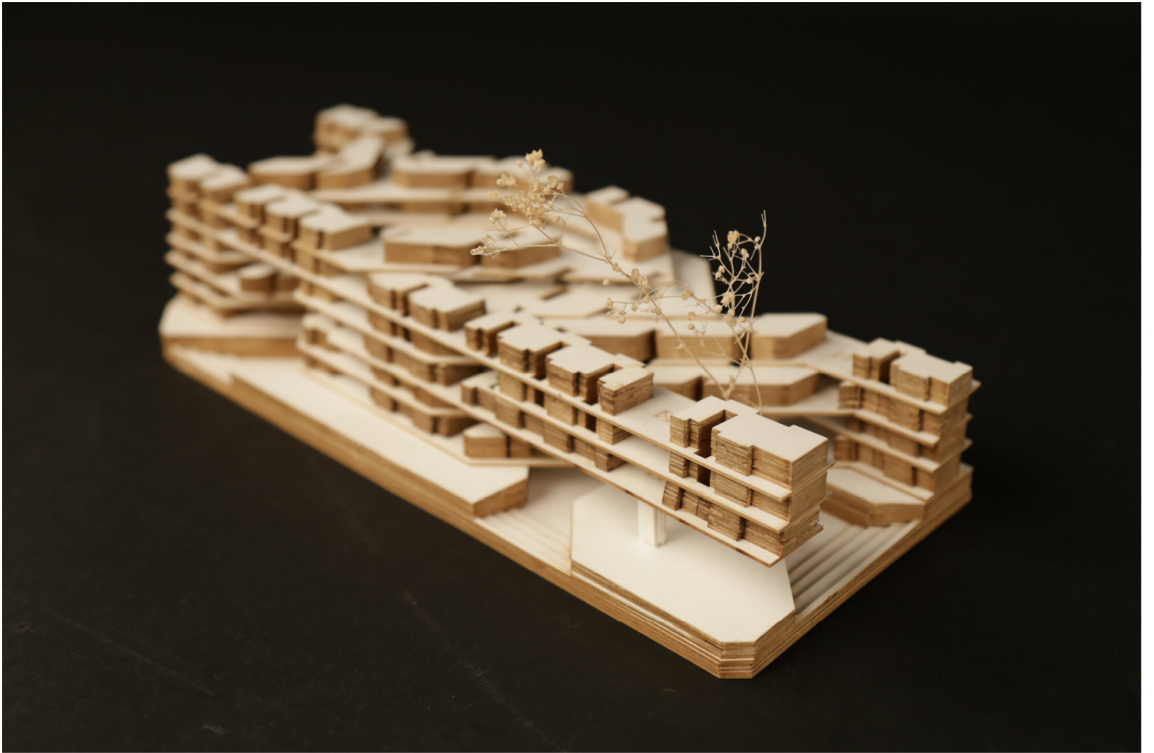


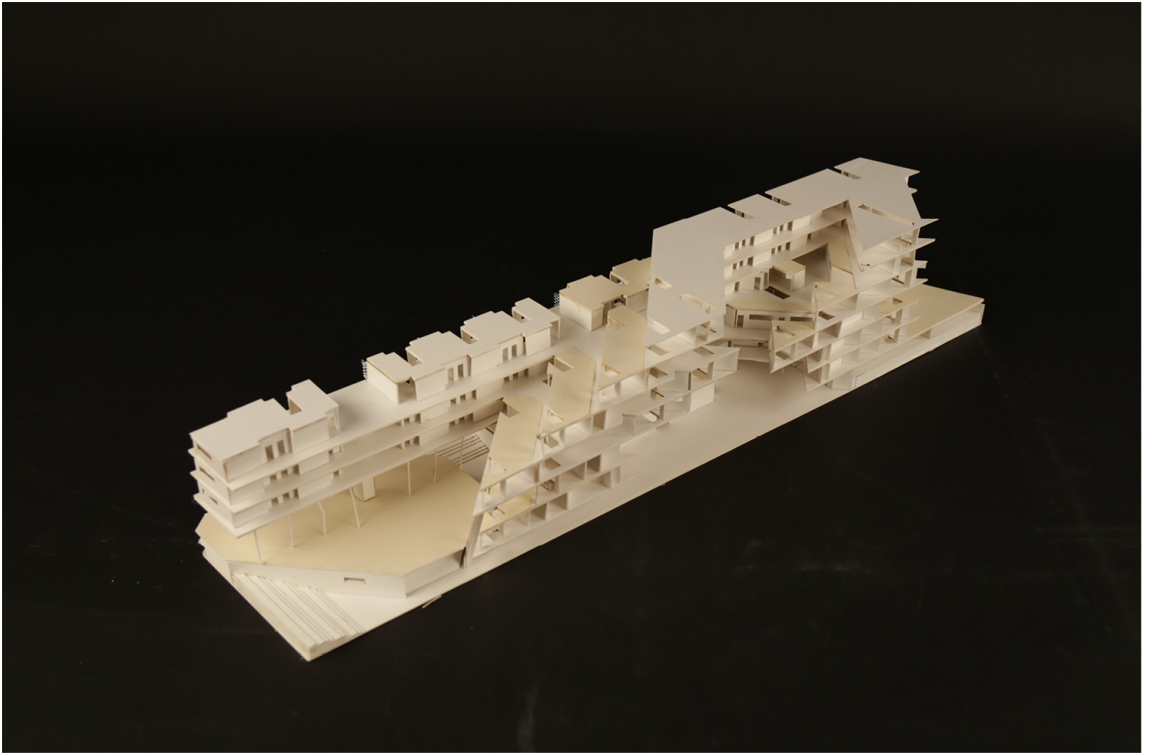
INTERIOR AND EXTERIOR RENDERS



EXPLODED AXONOMETRIC







002



INFUSED ECOLOGIES

YEAR: 2019

MEMBERS: ZAYAR LIN, MICHAEL YEOW

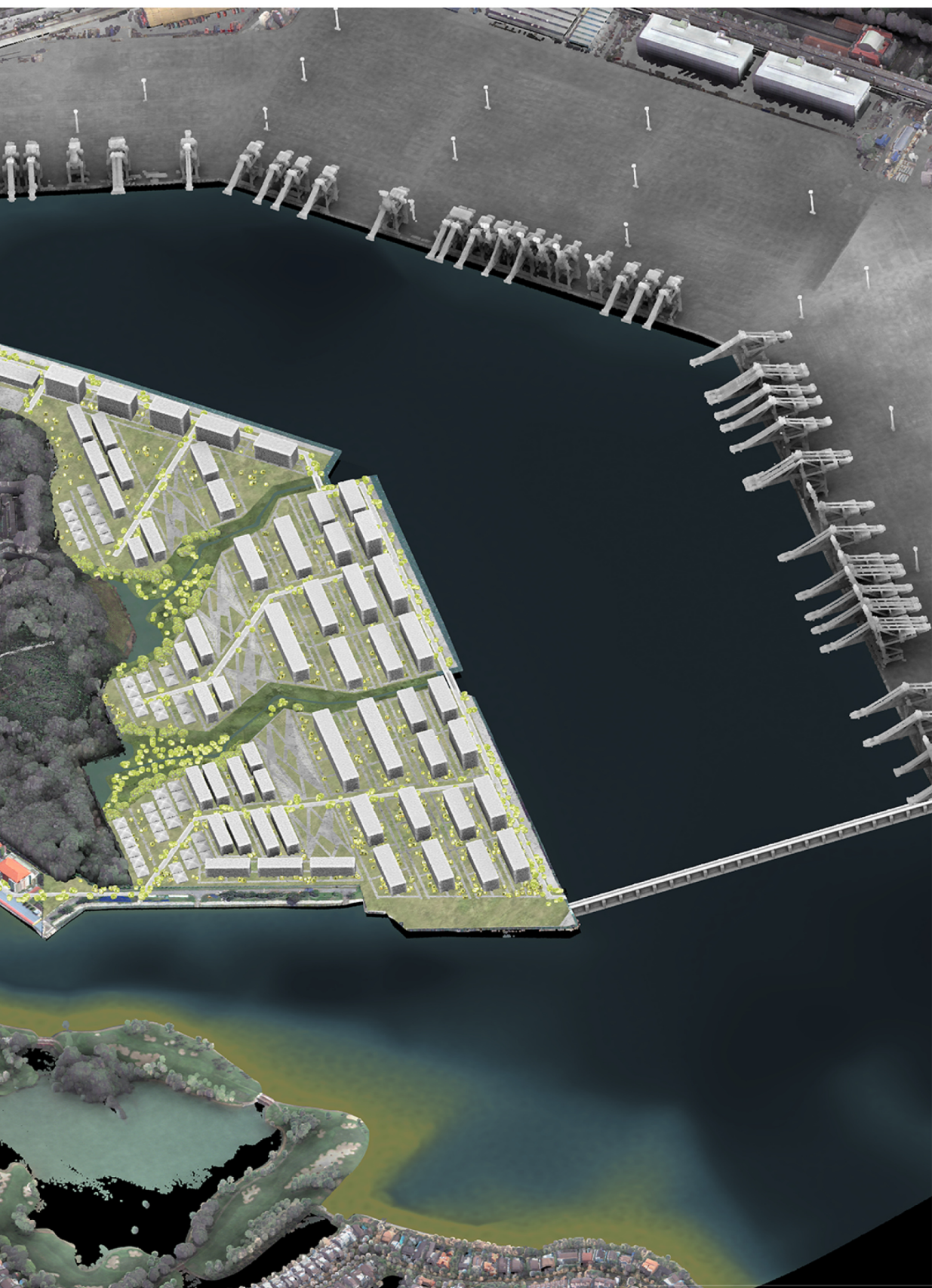
MENTORS: PHILIPP URECH

The port at Tanjong Pagar is stipulated to be moved to Tuas. As a result, the development of the vacated land has become a key topic of discussion. Amongst these areas is Pulau Brani, an island we normally pass off as the scenery along our way to Sentosa, which possesses rich history and potential for future development.

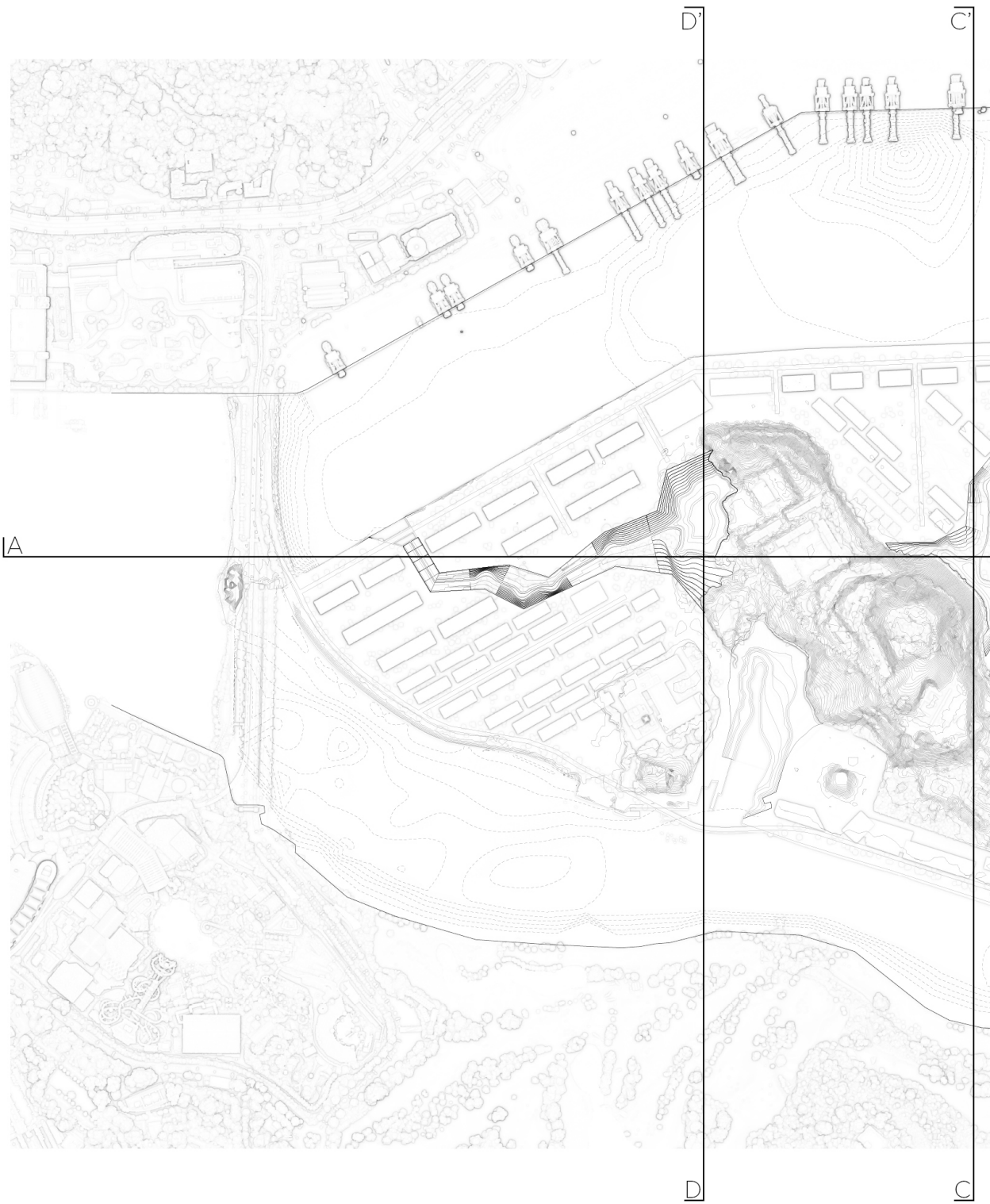
Pulau Brani, from an aerial view, can be considered as a patchwork of two entities; a central hill of greenery with inserted low-rise developments, and the concrete jungle and platforms that enclose this green entity. Our team wished that an intermingling of these two bodies could be further explored in the landscaping of the vacated island through the carving of water channels that could create spaces of interaction between people and the ecologies introduced.

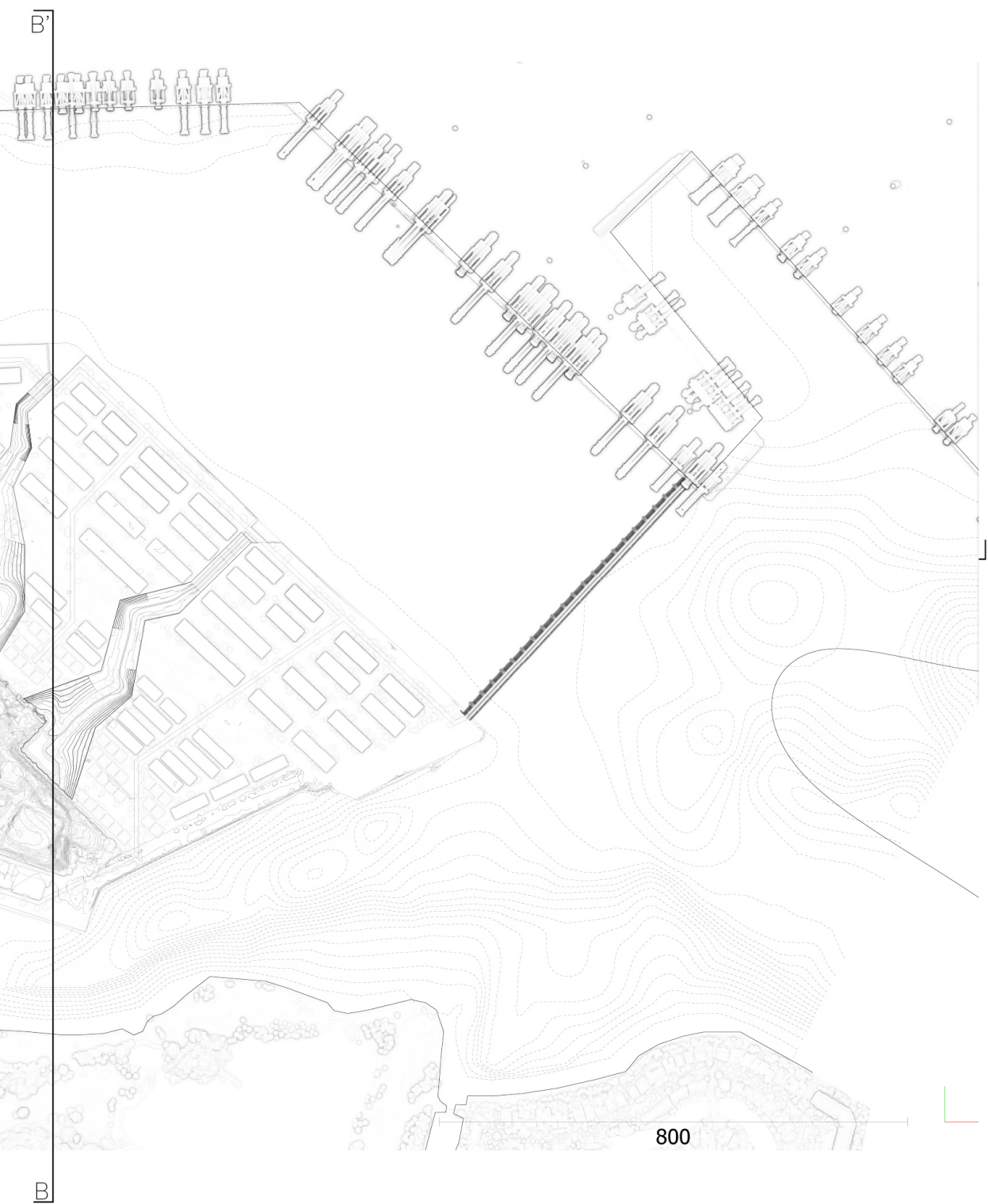
OVERALL AXONOMETRIC PLAN

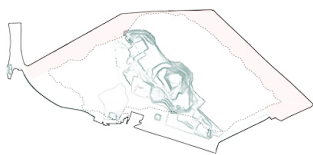




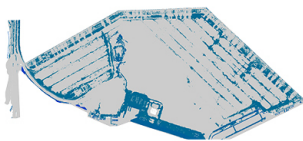
OVERALL PLAN



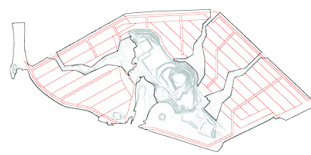




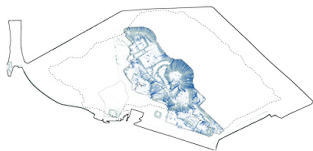
1. Identify Existing Structures



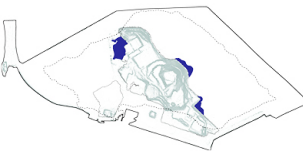
2. Pinpoint Drainage



3. New Island Drainage



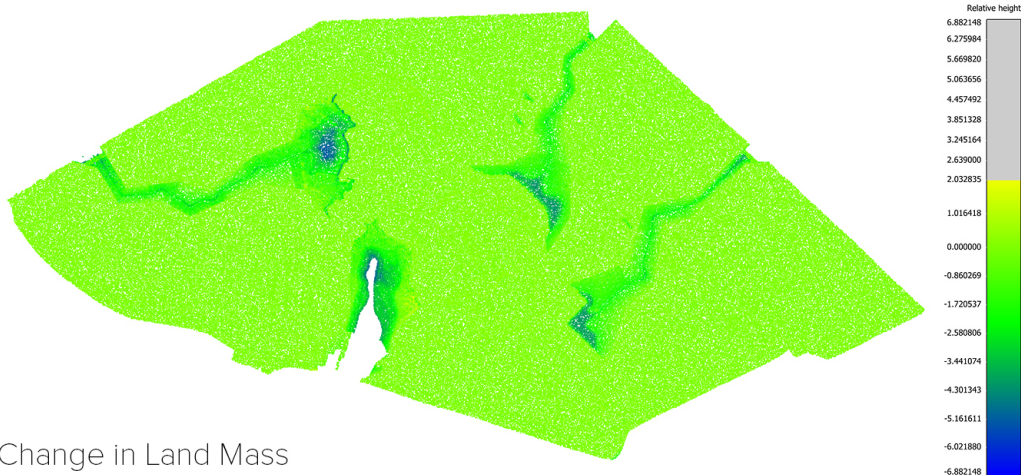
4. Analyse Water Runoff



5. Design Water Catchments



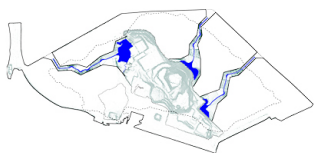
6. Highlight Canal Branching



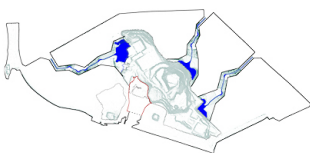
Change in Land Mass



Section AA'



7. Landscape around Canals



8. South area to edit



9. Re-landscape South area



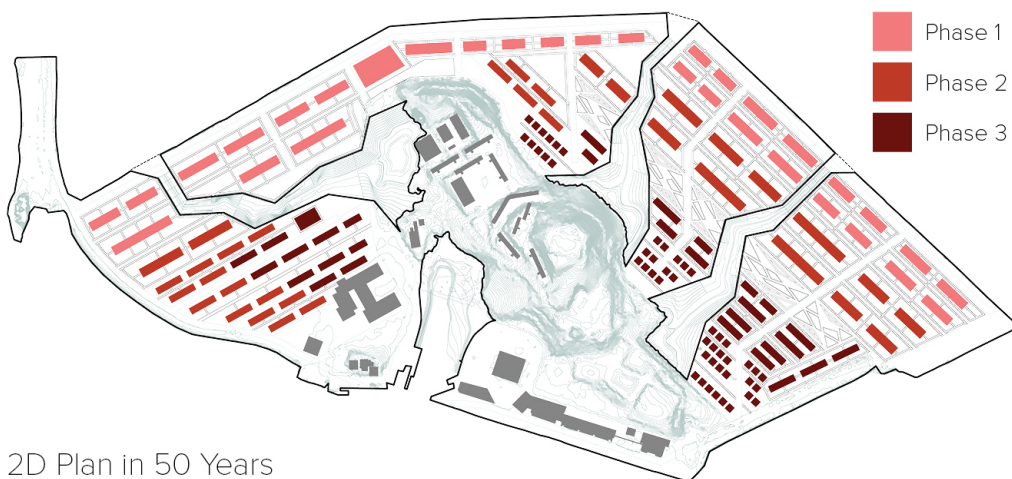
10. Phase 1 Buildings (10 Years)



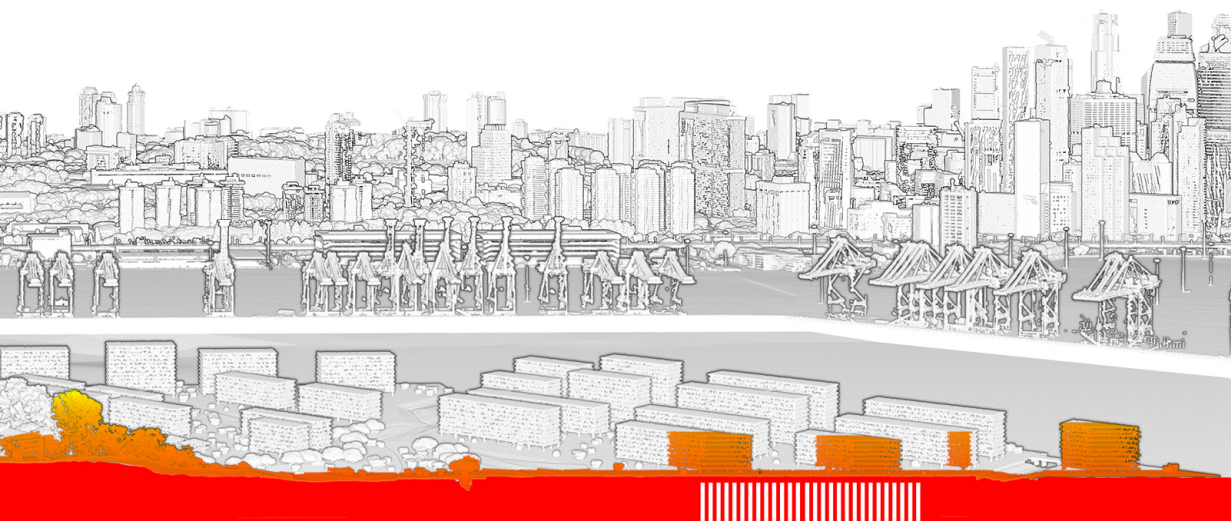
11. Phase 2 Buildings (20 Years)

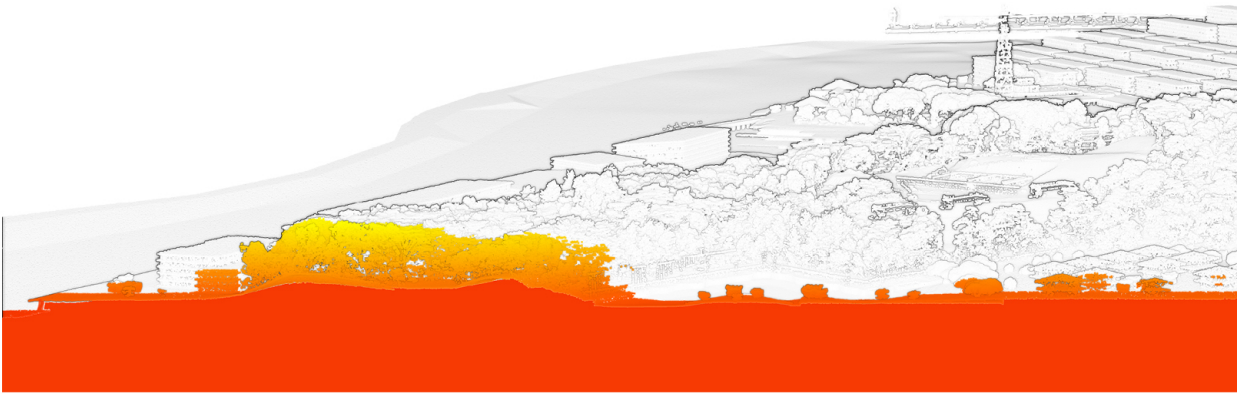


12. Phase 3 Buildings (50 Years)

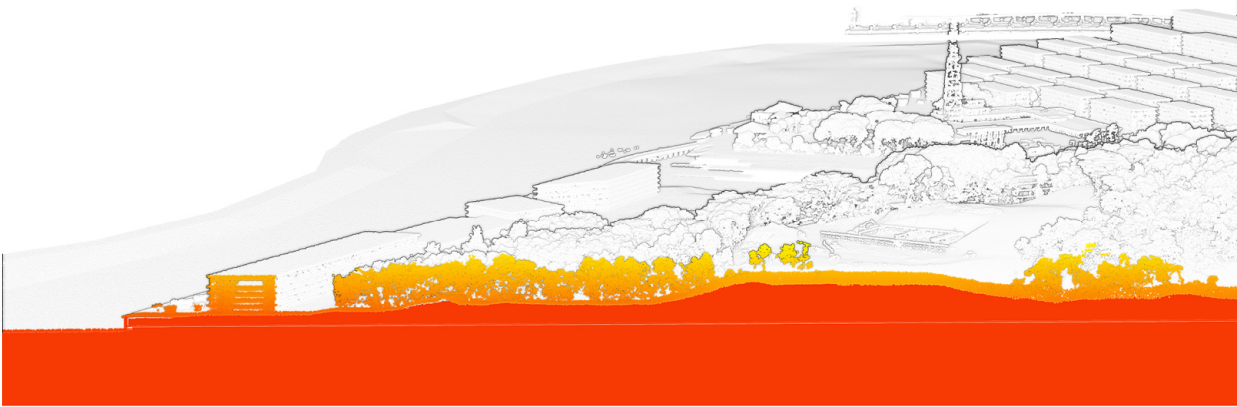


2D Plan in 50 Years

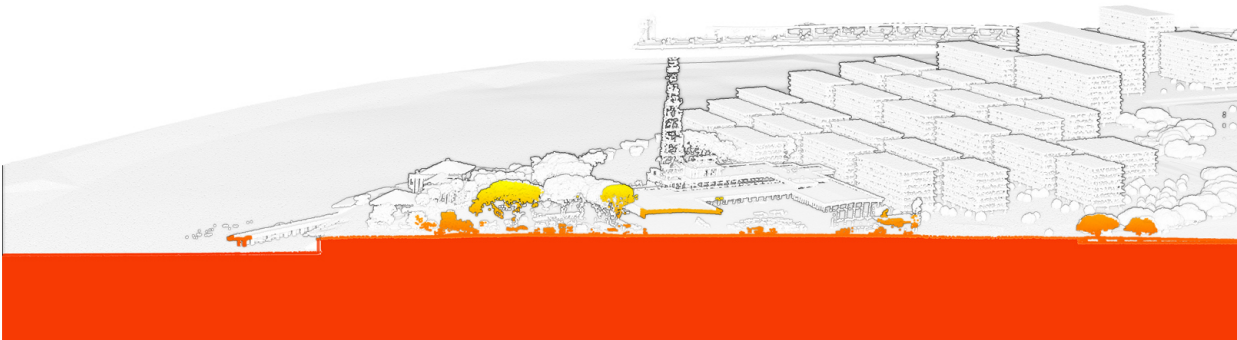




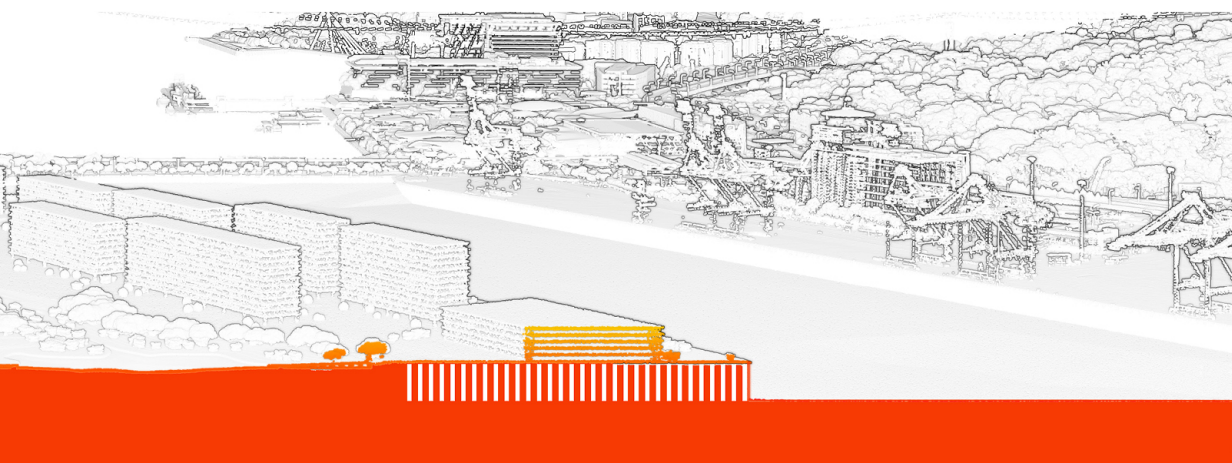
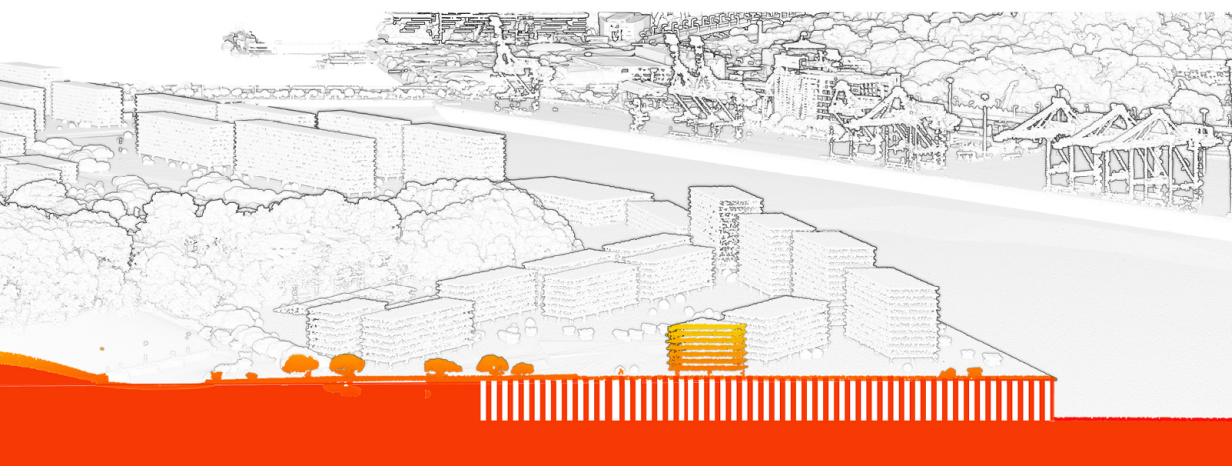
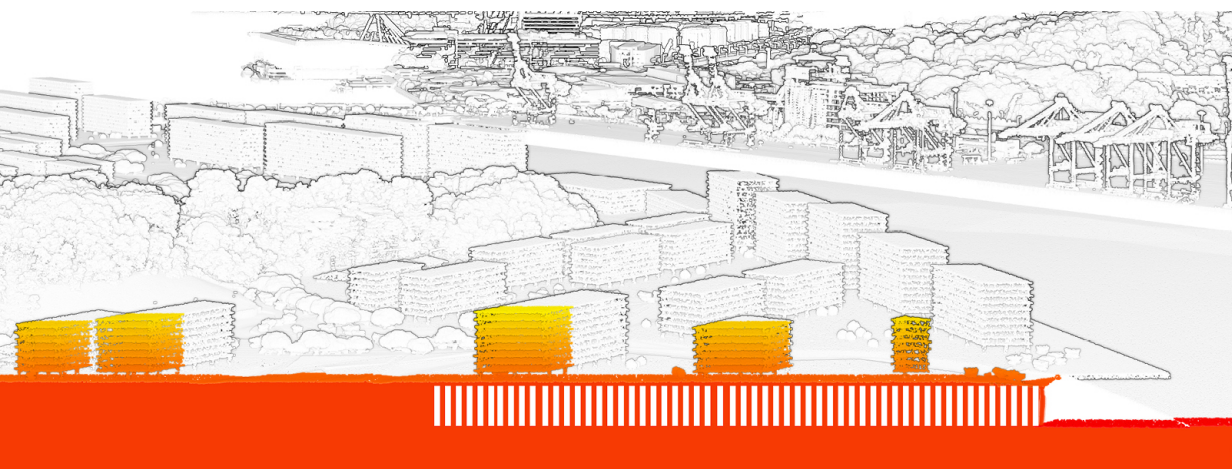
Section BB'



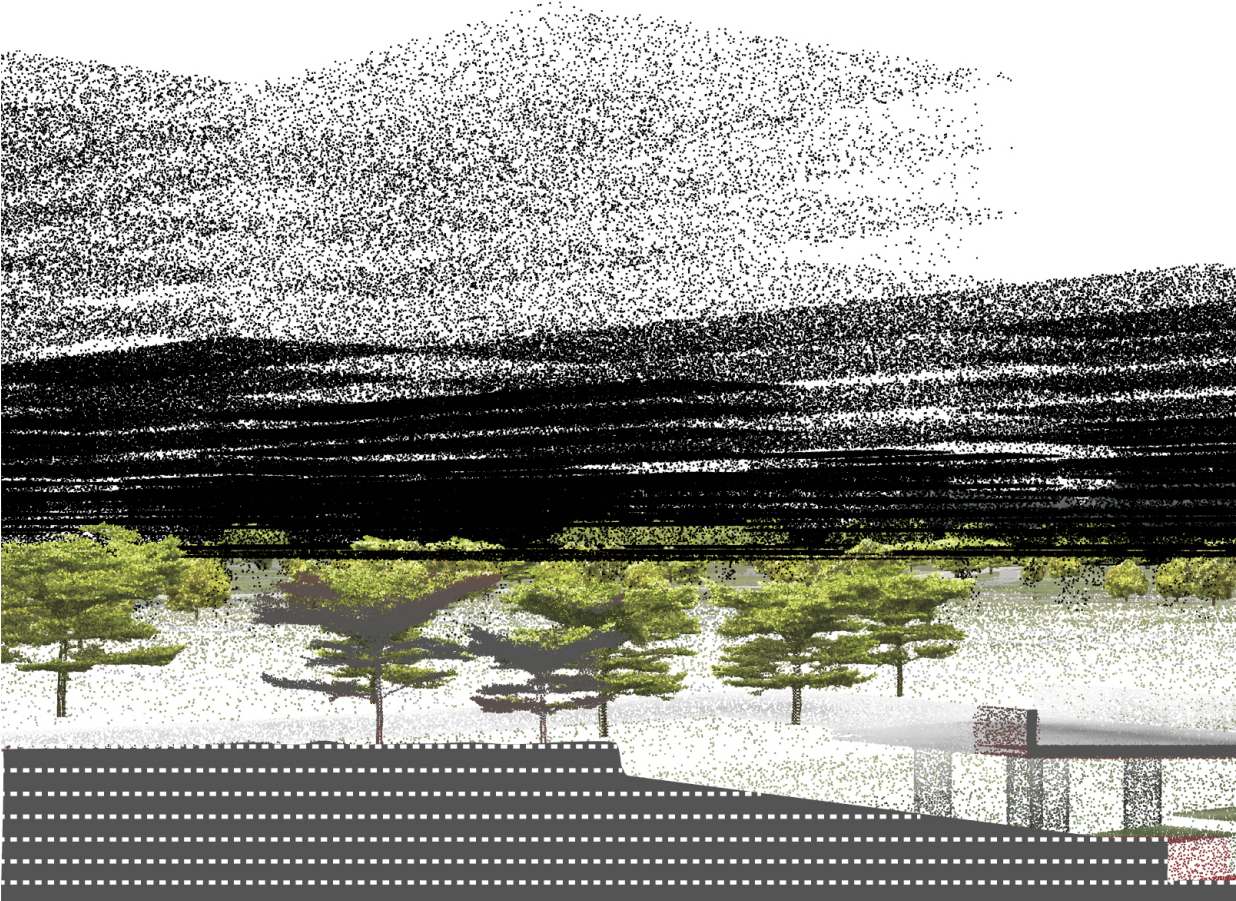
Section CC'



Section DD'



SITE A | River Mouth



Piloti

Road

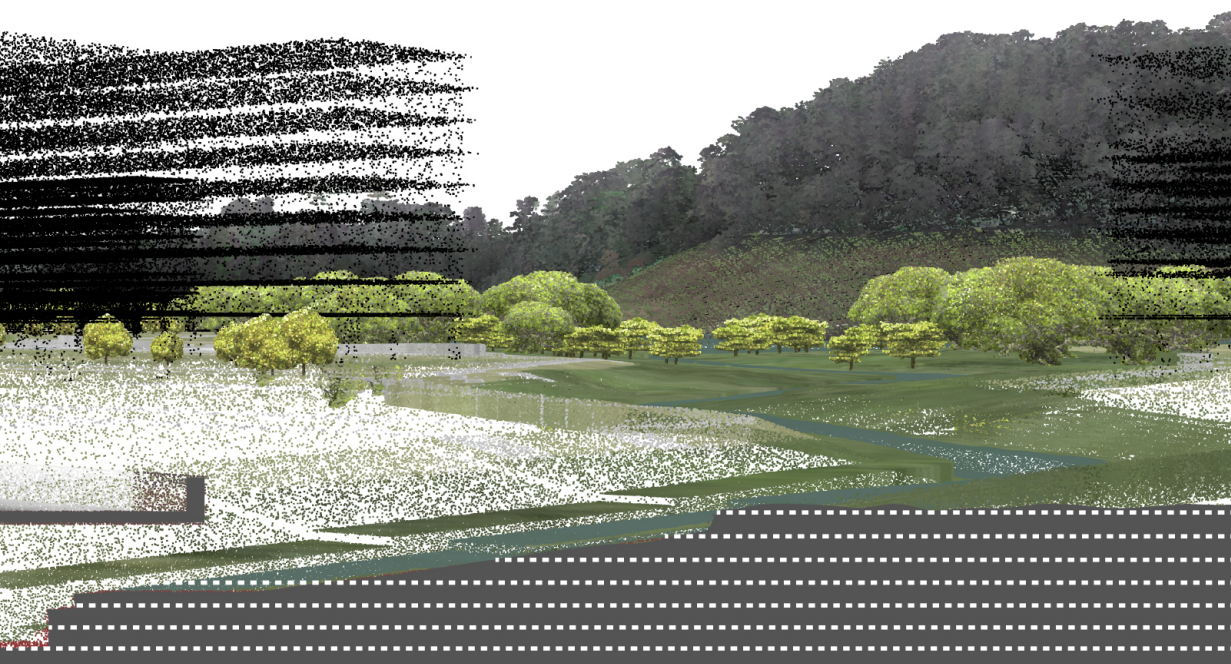
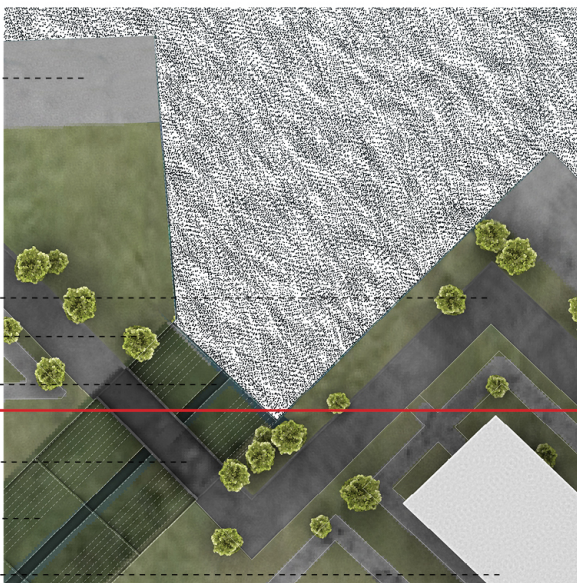
Madagascar Almond

Canal

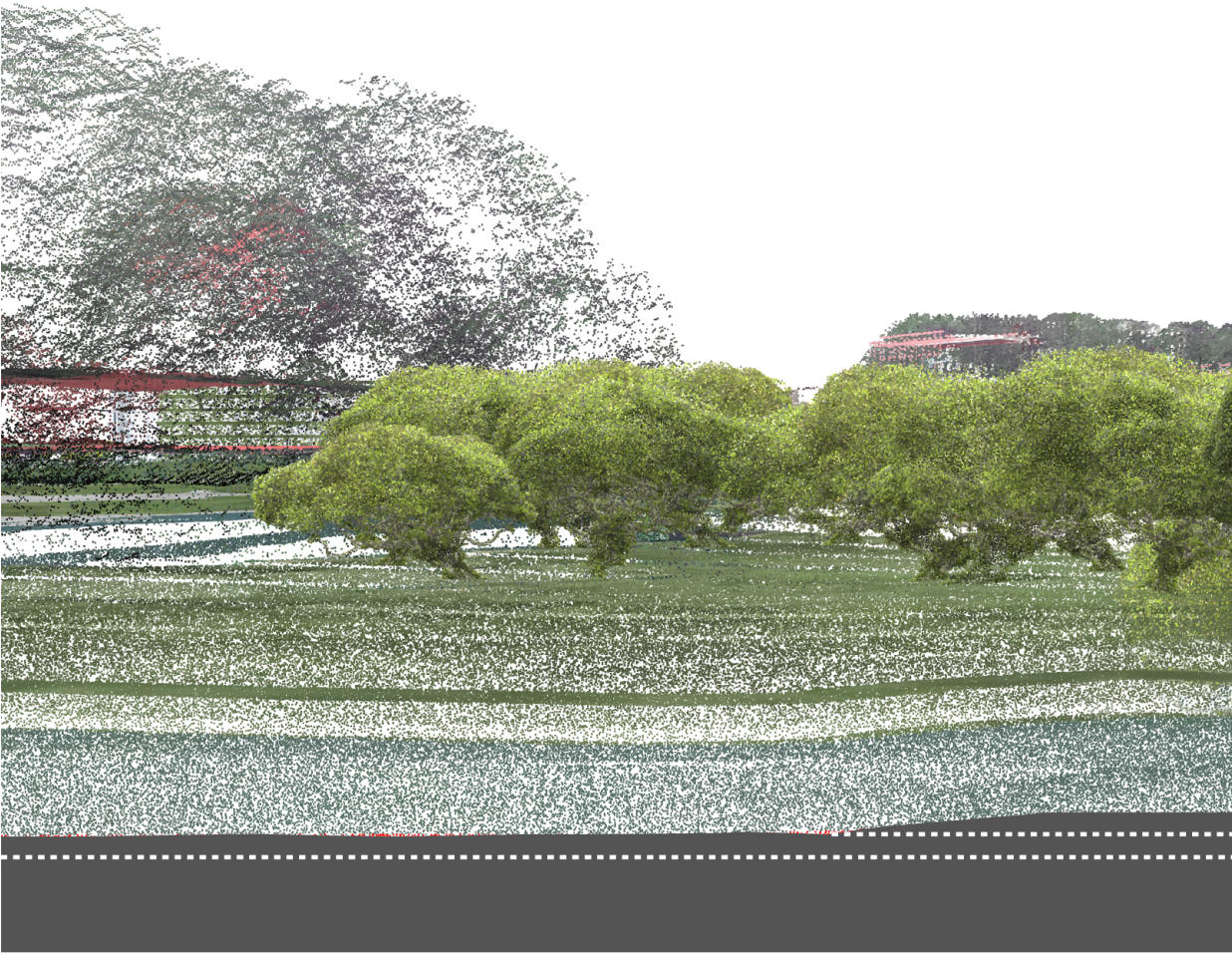
Bridge

Slopes

Residences



SITE B | Water Catchment



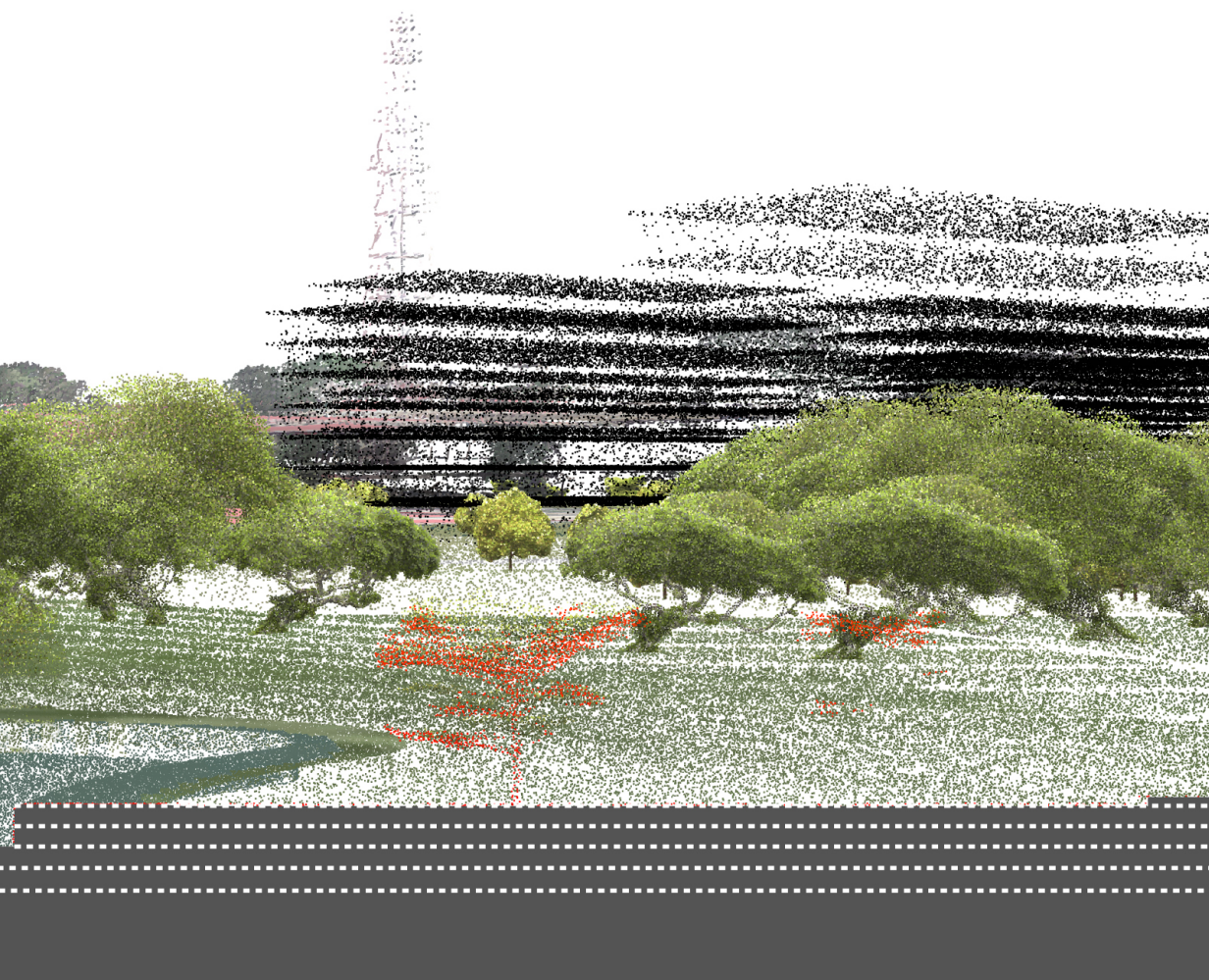
Madagascar Almond

Lake

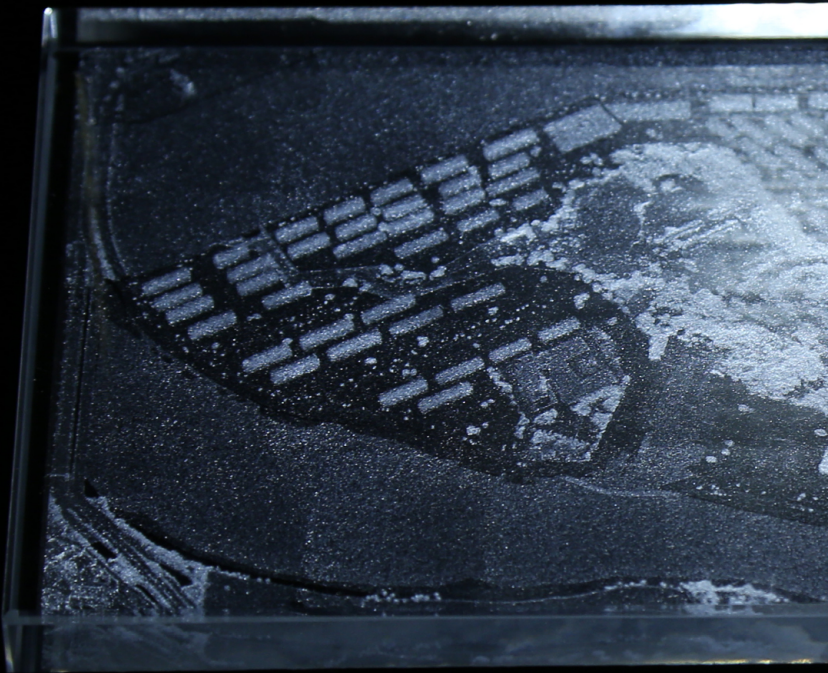
Walking Pathway

Terraces

Frangipani



GLASS MODEL OF PLAN







PARK@BIDADARI

YEAR:	2018
MEMBERS:	RACHEL LOW, JEREMY CHANG RACHEL LEE, CHEN JING, MICHEL SIM, MICHAEL YEOW
MENTORS:	BIGE TUNCER, NAGARAJAN RAGHAVAN, CPG CONSULTANTS

Urban Metabolism is an up-and-coming discourse in architecture, designing buildings and cities that ensure inputs and outputs flow within cyclical processes, reducing waste of resources and creating sustainable cities.

Tasked with designing an urban metabolic hub within the upcoming HDB estate in Bidadari, our team took the project further by redesigning the entire landscape of the ground, informed by programmatic and climatic needs that subsequently directed the formal expressions of the built enclosures within the park. These decisions were made with the desire to create a learning environment for visitors to understand the importance of urban metabolism and how they can contribute.

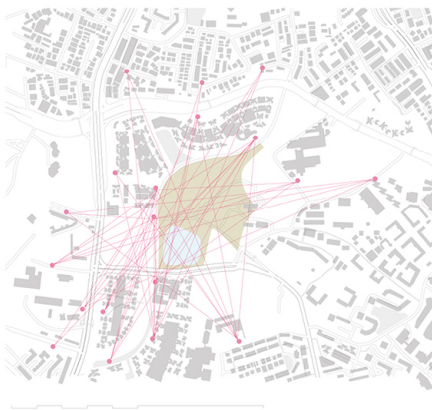
SITE STUDY AND SPECULATIONS



Programmatic Distribution



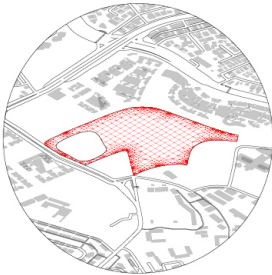
Resource Flows



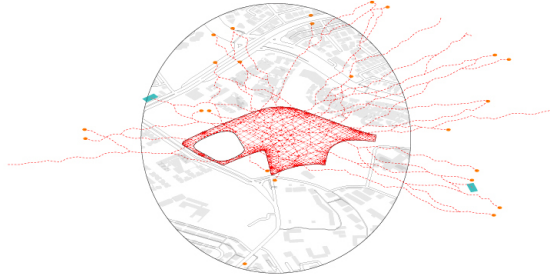
Possible Resource Hubs

DESIGN CONSIDERATIONS AND STRATEGIES

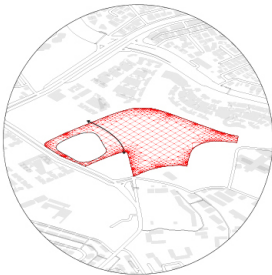
CONSIDERATIONS AND DESIGN INPUTS



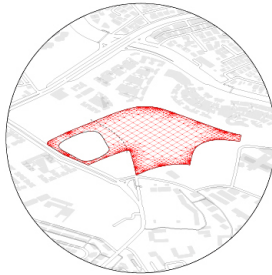
Original Landscape



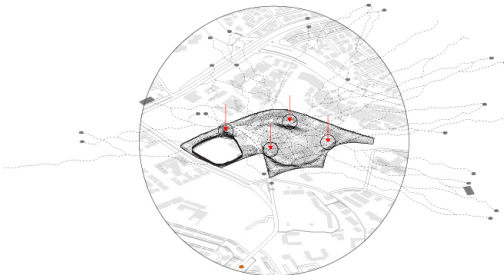
Circulation Flows



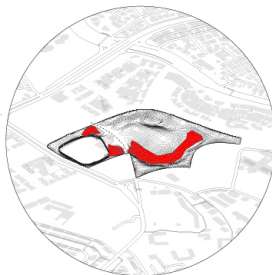
Heritage Trail



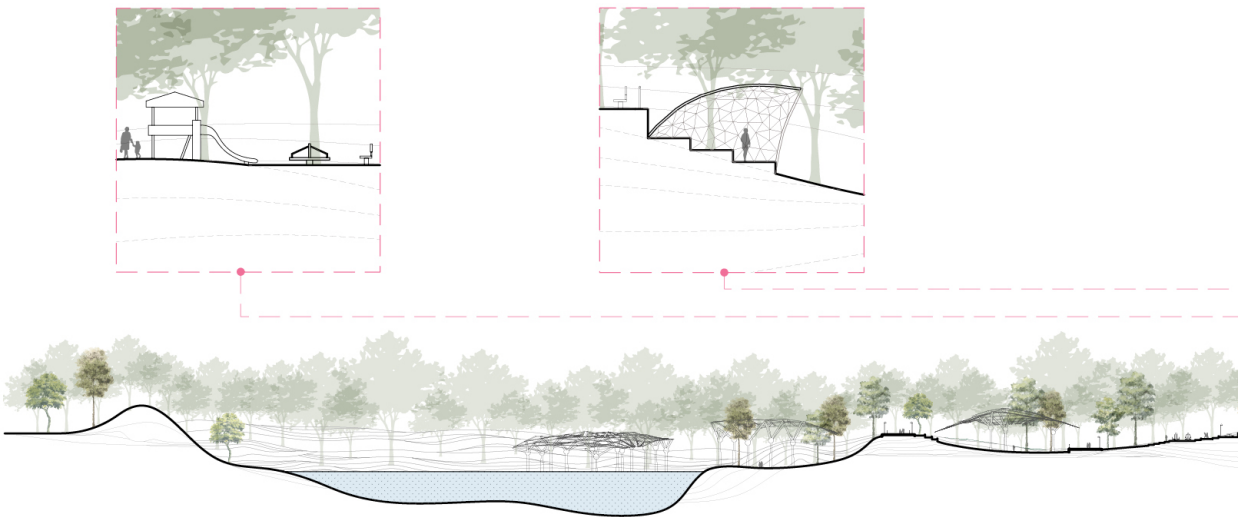
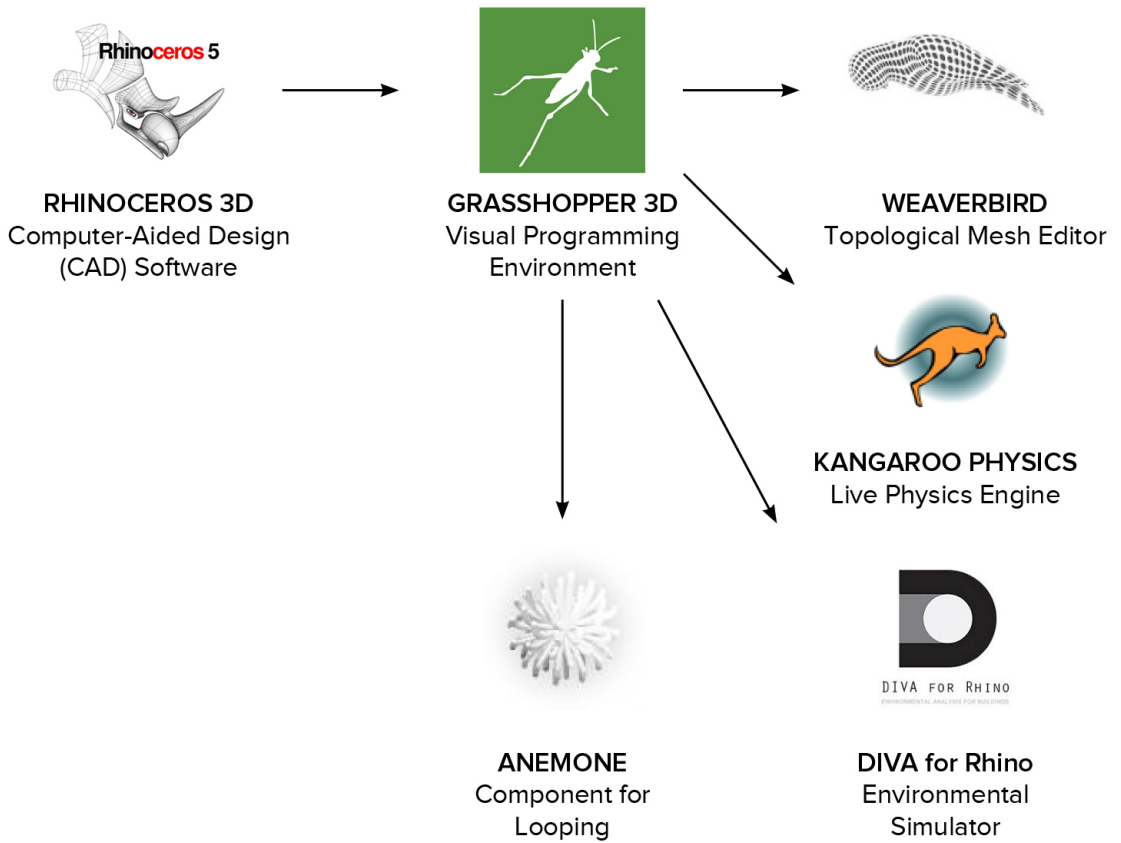
Program Locations



Generated Landscape



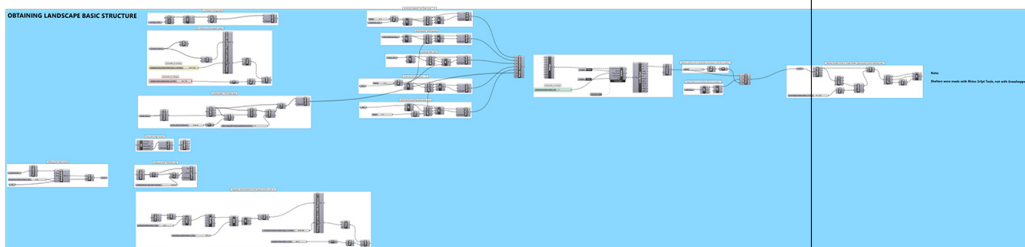
Shelter Form
(Inversion of Topography)



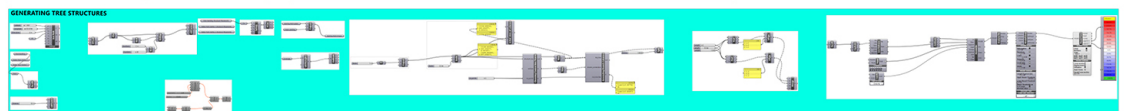
Long and Closeup Sections

GENERATING TOPOGRAPHY
(Kangaroo Physics, Weaverbird)

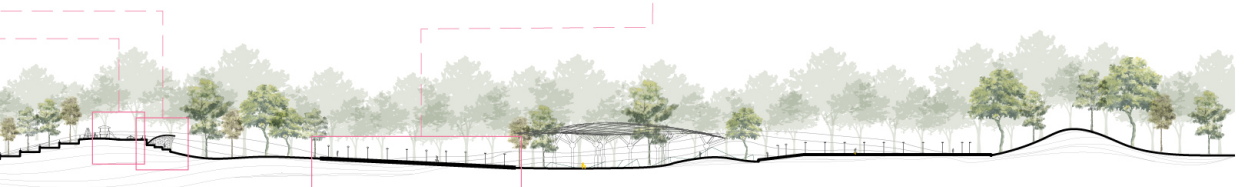
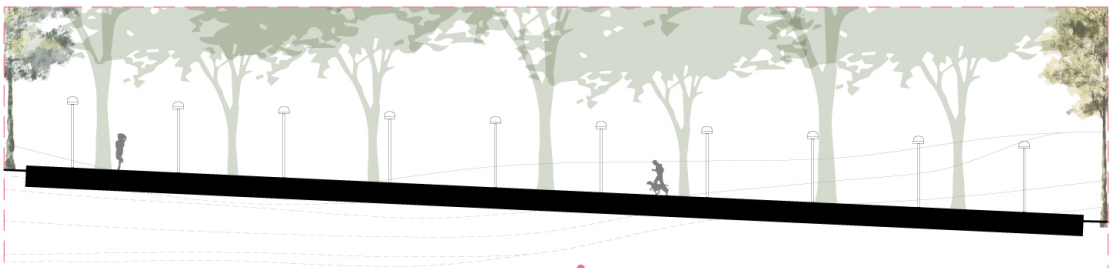
WATER-RUNOFF SIMULATION
(Anemone)



← OBTAINING FLOOR PLATES



GENERATING ROOF AND STRUCTURAL ELEMENTS
(DIVA, Weaverbird)





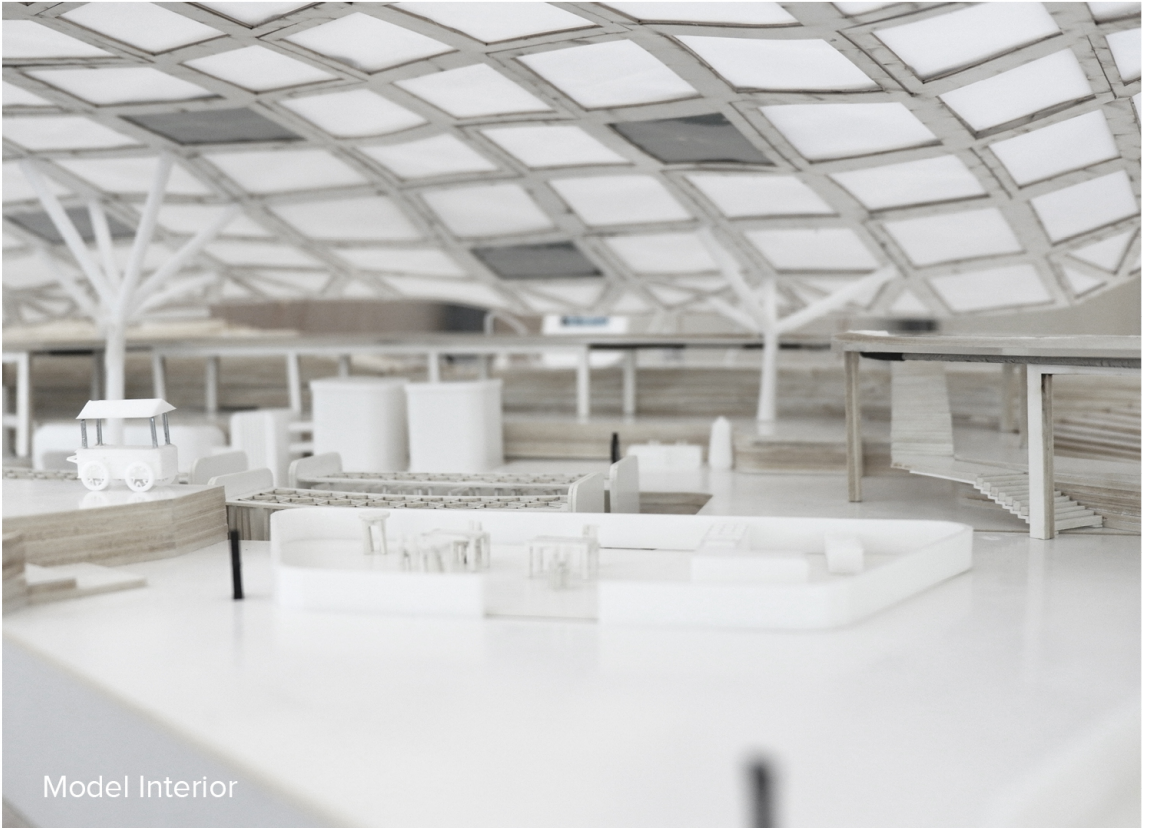
Interior Perspective



Aerial Perspective



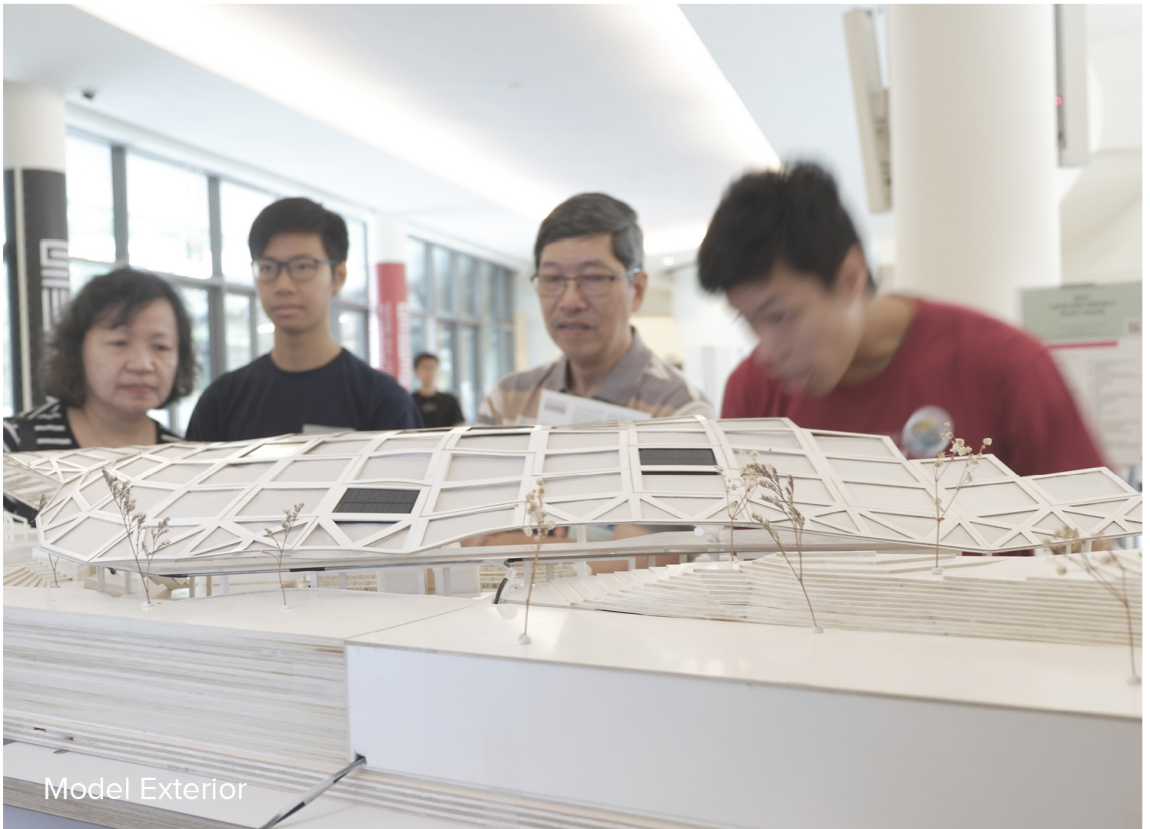
Viewer's Perspective



Model Interior



Model Interior

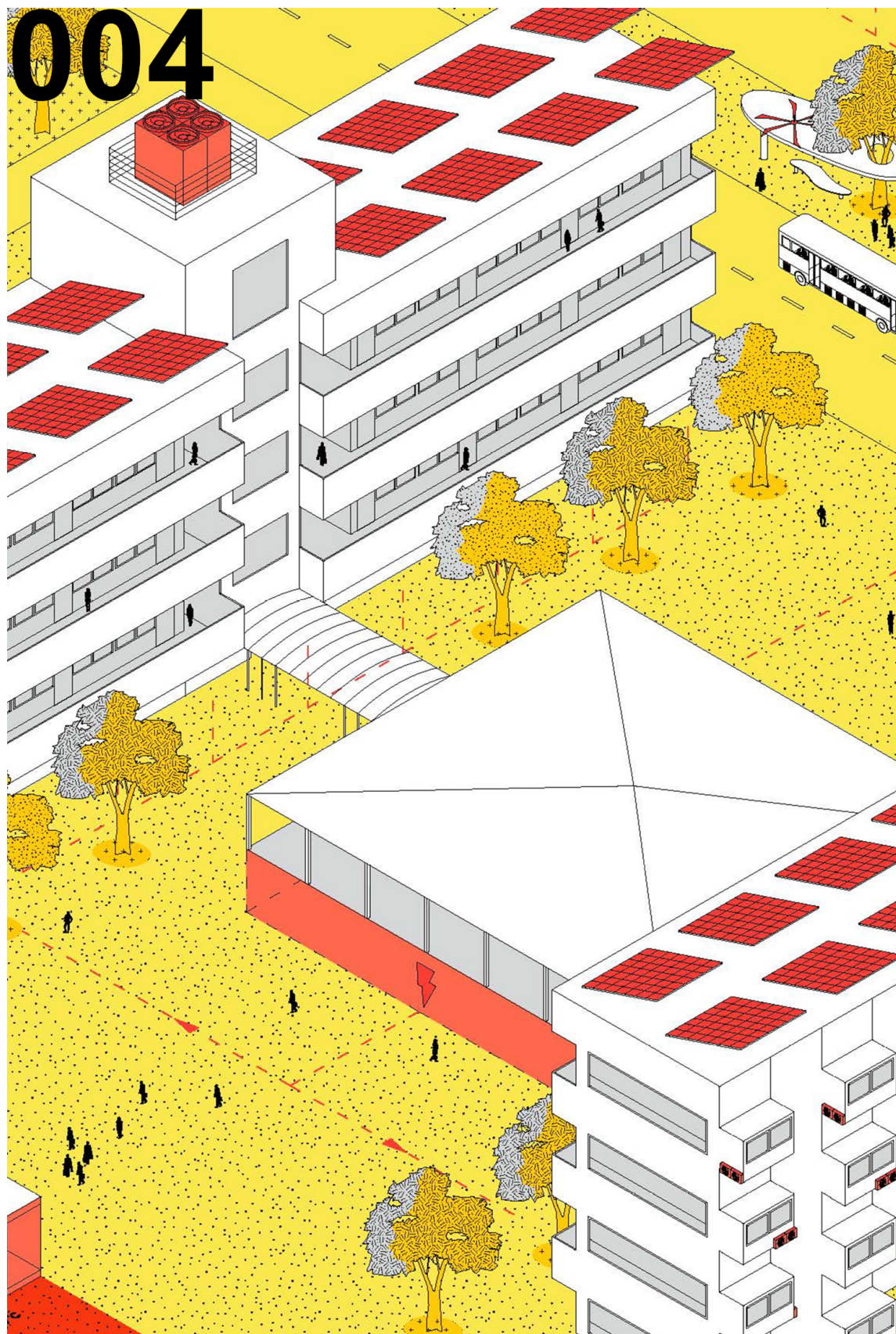


Model Exterior



Model Exterior

004



VISUALISATIONS

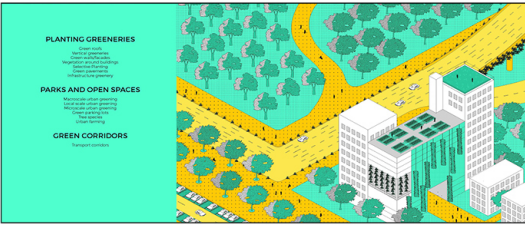
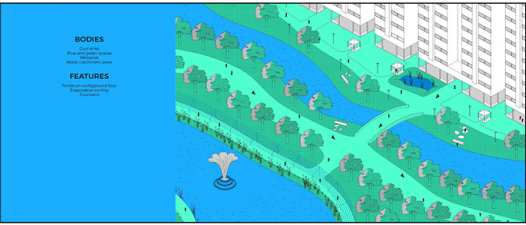
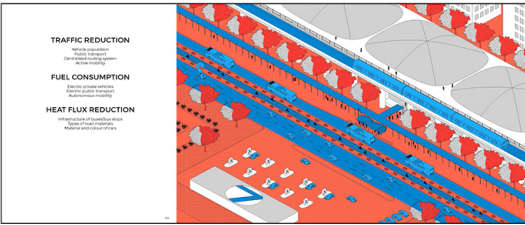
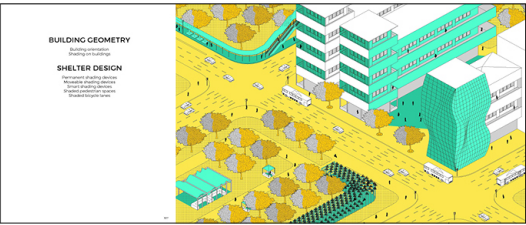
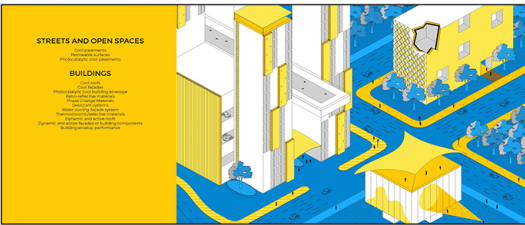
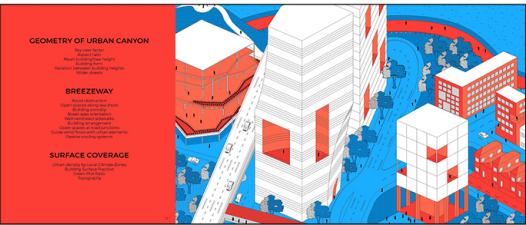
YEAR: 2017

MENTORS: LEA RUEFENACHT

The summer of 2017 was spent working for Cooling Singapore, an inter-CREATE project involving various universities within the CREATE Tower. Many of the proposals and works of the researchers in Cooling Singapore aimed to inform people of the impact of the city on our climate, including the Urban Heat Island (UHI) effect and the decreasing outdoor thermal comfort that Singapore is experiencing.

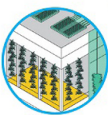
Cooling Singapore organised workshops with government agencies and published catalogues to achieve their goals, and I was able to support them with graphical illustrations and renders that were included in their publications and workshop materials. The following images are a selected series of works from the stint with Cooling Singapore.

MITIGATION STRATEGIES PUBLICATION



Making it cooler

A team involving academics and policymakers are studying how to make Singapore's outdoor environment cooler. The Straits Times looks at some of the areas they have identified to achieve this.



VEGETATION
Green roofs and vertical greenery are some ways of using plants to prevent sunlight from heating up buildings.



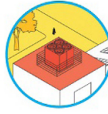
TRANSPORT
Singapore's transport sector is one of the biggest producers of heat on the island. Boosting public transport use, or promoting active mobility like walking or cycling, could help.



MATERIAL AND SURFACES
Using light-coloured surfaces or reflective materials on roads, roofs and building facades could reduce the effect of sunlight heating up urban areas.



WATER BODIES AND FEATURES
Ponds on roofs or on ground floors could help prevent the overheating of urban surfaces.



ENERGY
Energy consumption contributes to the urban heat island effect. Lowering this through the use of energy-efficient equipment, such as air-conditioners and refrigerators, could help.



SHADING
It is not just trees that can provide shade. Researchers have suggested that shading devices, such as canopies, blinds or shutters, can be installed outside or inside, on or around the building envelope.

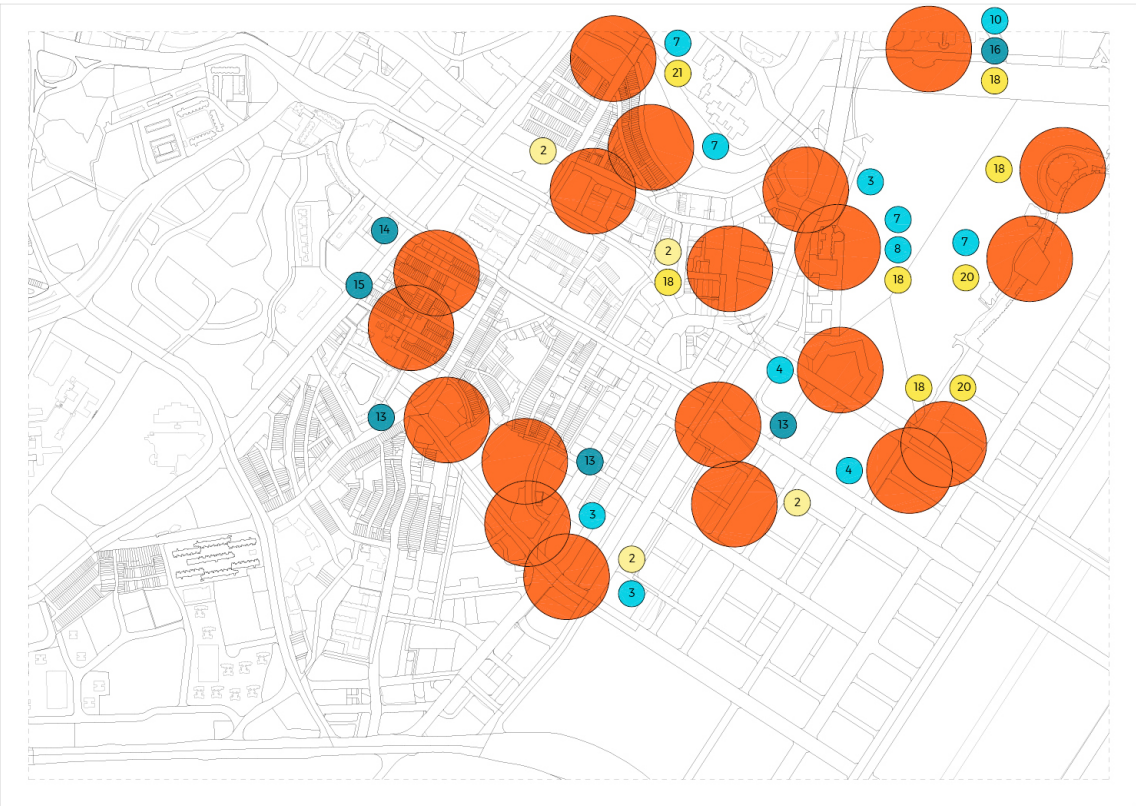
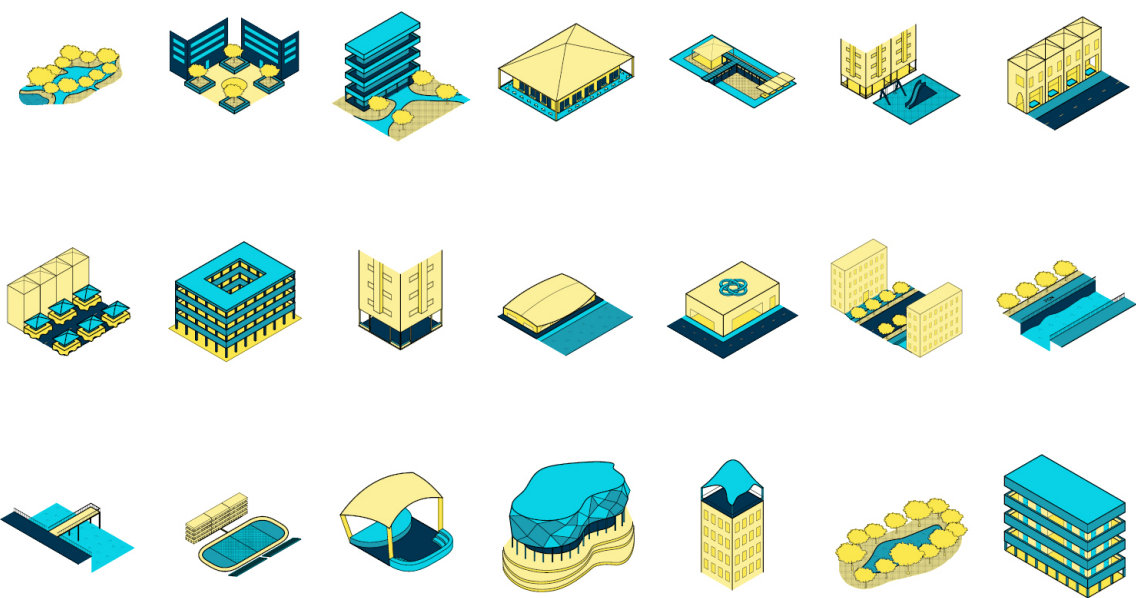


URBAN GEOMETRY
This essentially refers to the way buildings and urban structures are arranged. Varying building heights and building forms can, for example, improve wind capture.

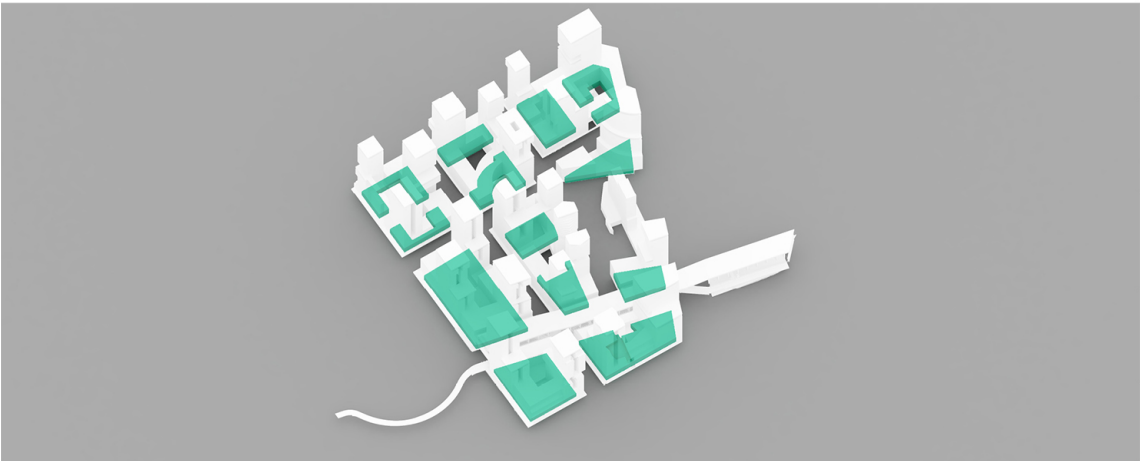


SOURCE AND ILLUSTRATIONS: COOLING SINGAPORE PHOTOS: ST FILE STRAITS TIMES GRAPHICS

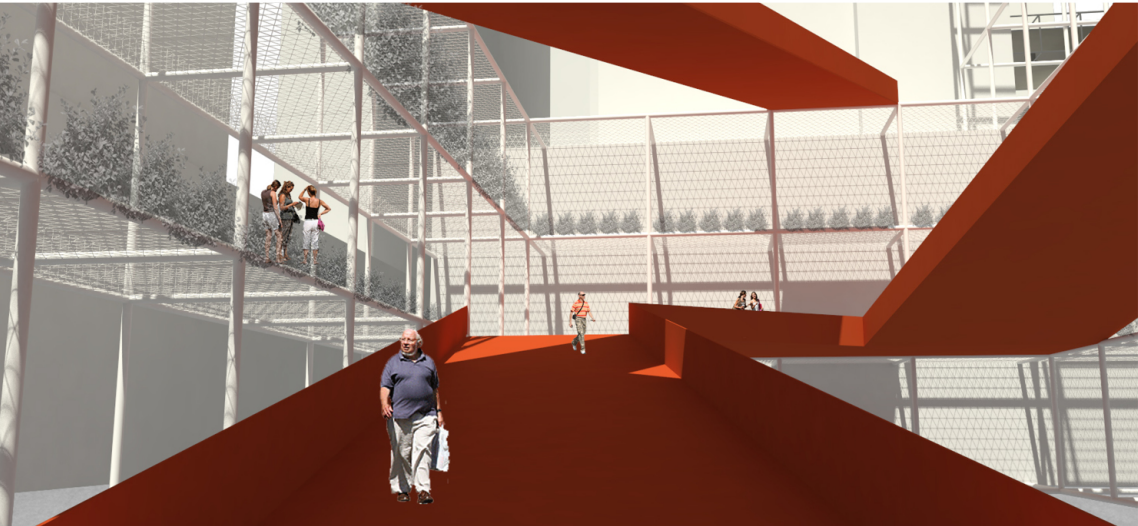
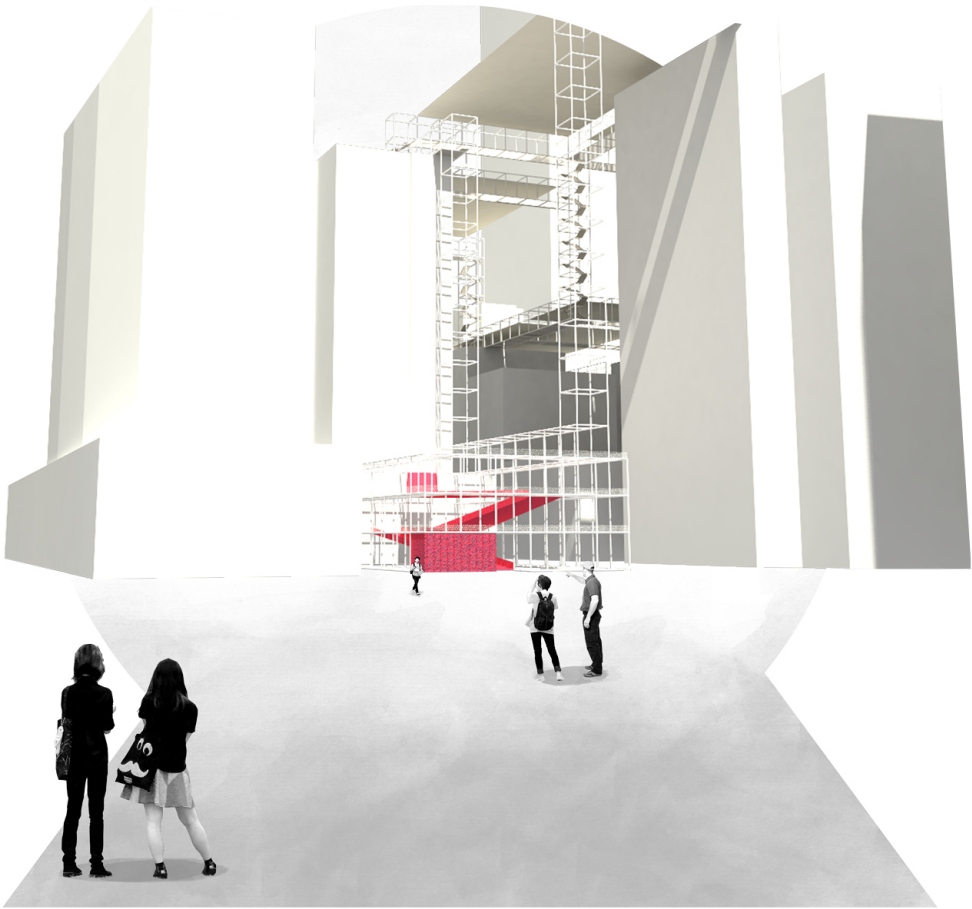
PUBLIC SPACE TYPOLOGIES



JURONG LAKE DISTRICT CONCEPTUAL ALTERATIONS



CONCEPTUAL PUBLIC SPACE



005

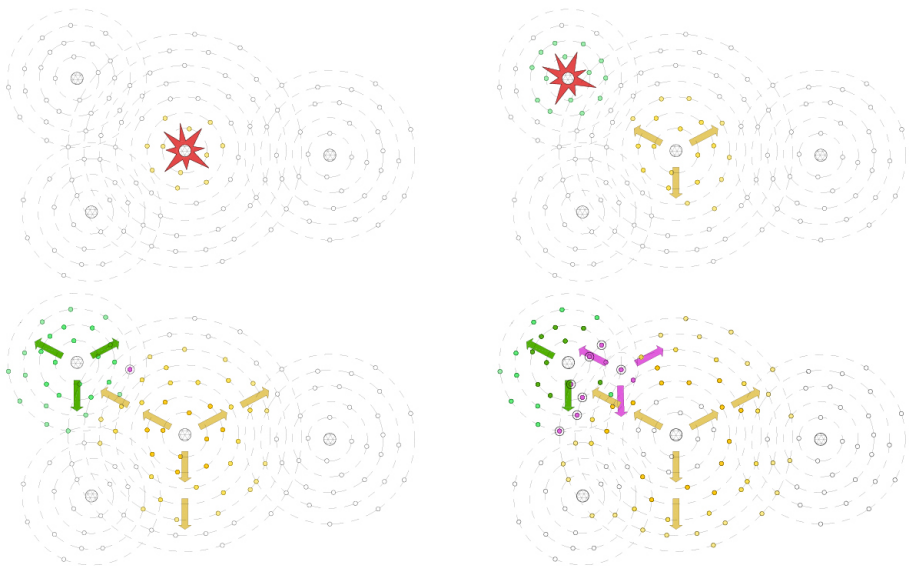


MISCELLANEOUS

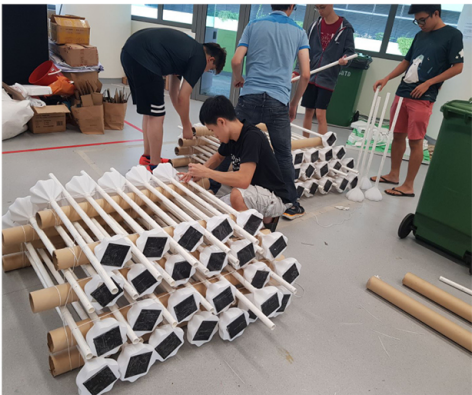
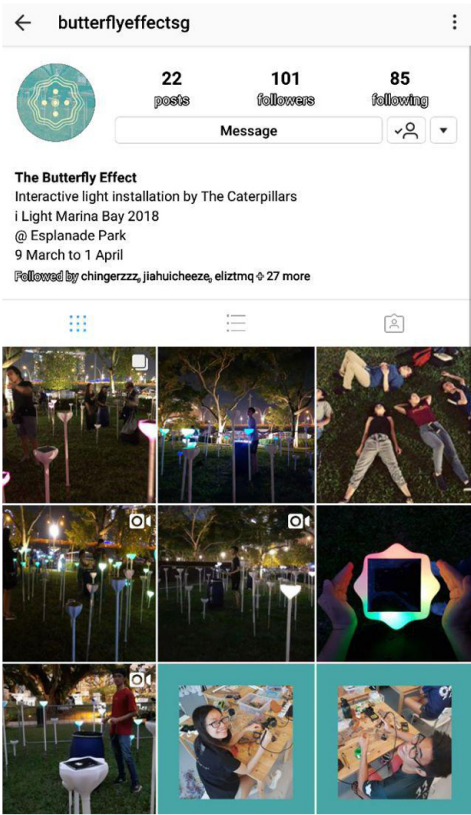
I have had the privilege of taking on numerous opportunities during the course of my undergraduate studies, learning and growing beyond the studio. Overseas trips, small jobs and even the weekends have allowed me to dwell into smaller passions, such as photography, improving my skills and knowledge whenever possible.

Fabrication projects, past drawings and photos of study trips are some of the various items displayed in the next few pages. They store memories of places, thoughts and feelings that continue to provoke yet spur me on in this learning journey.

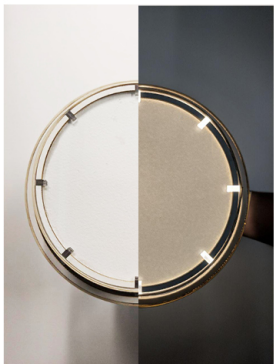
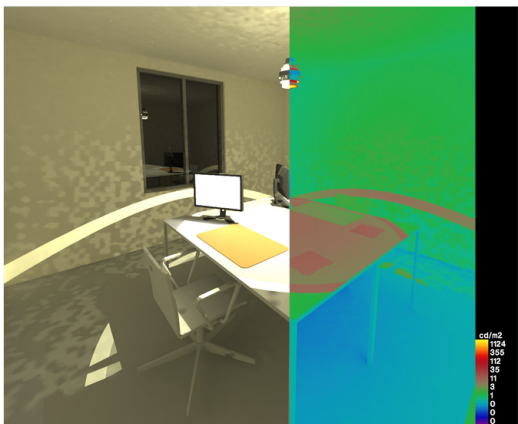
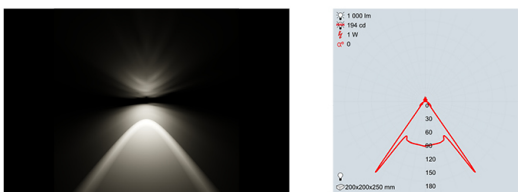
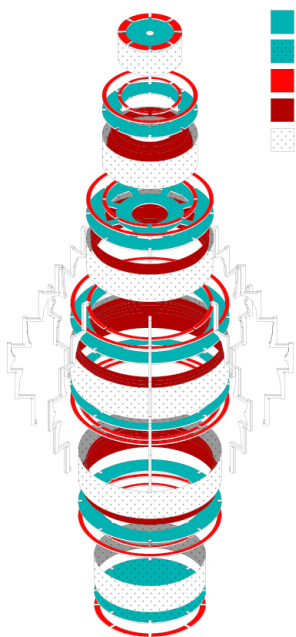
ILIGHT 2018 SUBMISSION AND CONSTRUCTION
THE BUTTERFLY EFFECT | THE CATERPILLARS



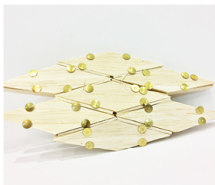
ILIGHT 2018 SUBMISSION AND CONSTRUCTION
THE BUTTERFLY EFFECT | THE CATERPILLARS



DAYLIGHTING STRATEGIES
LAMP DESIGN

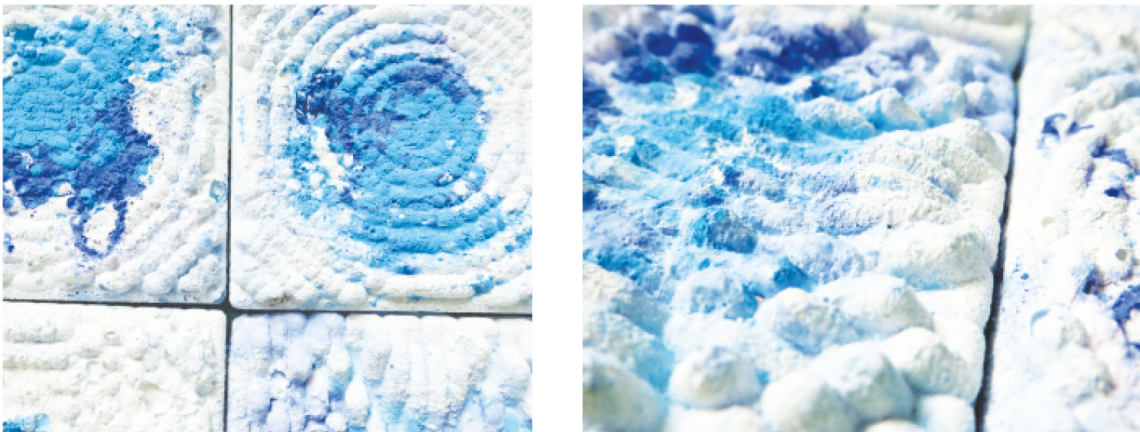
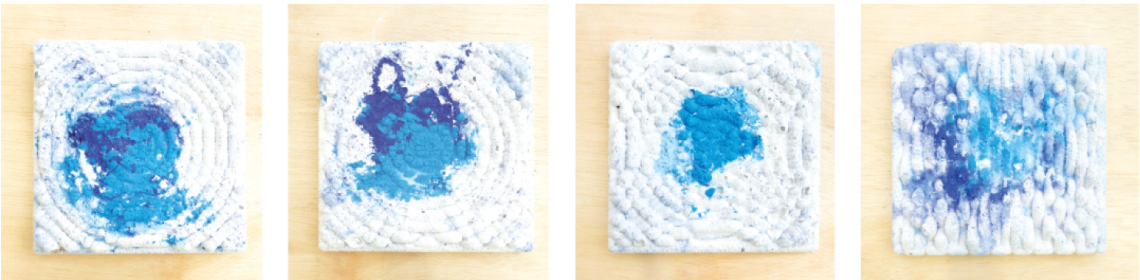
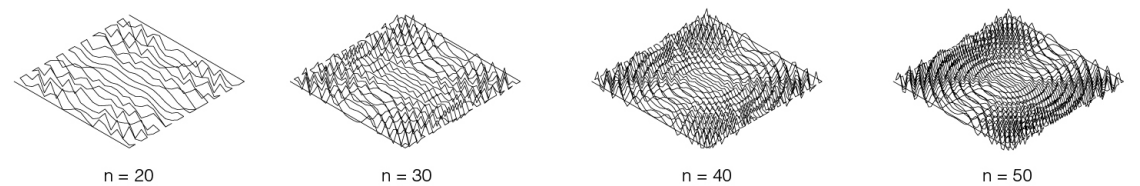
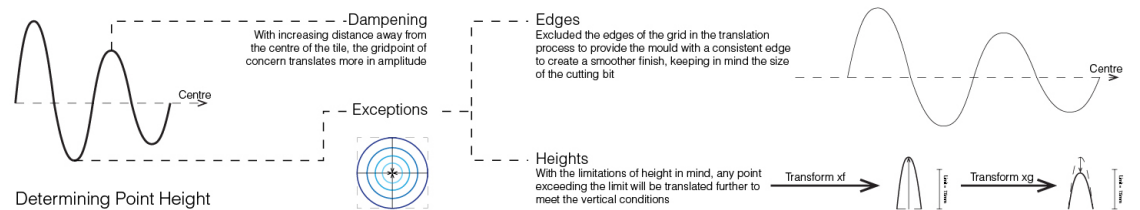
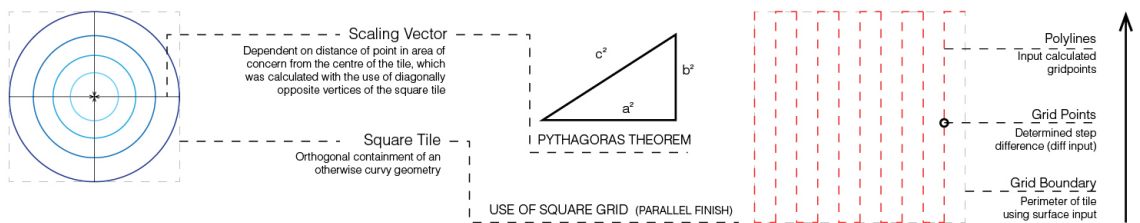


DIGITAL FABRICATION
BRIDGE DESIGN

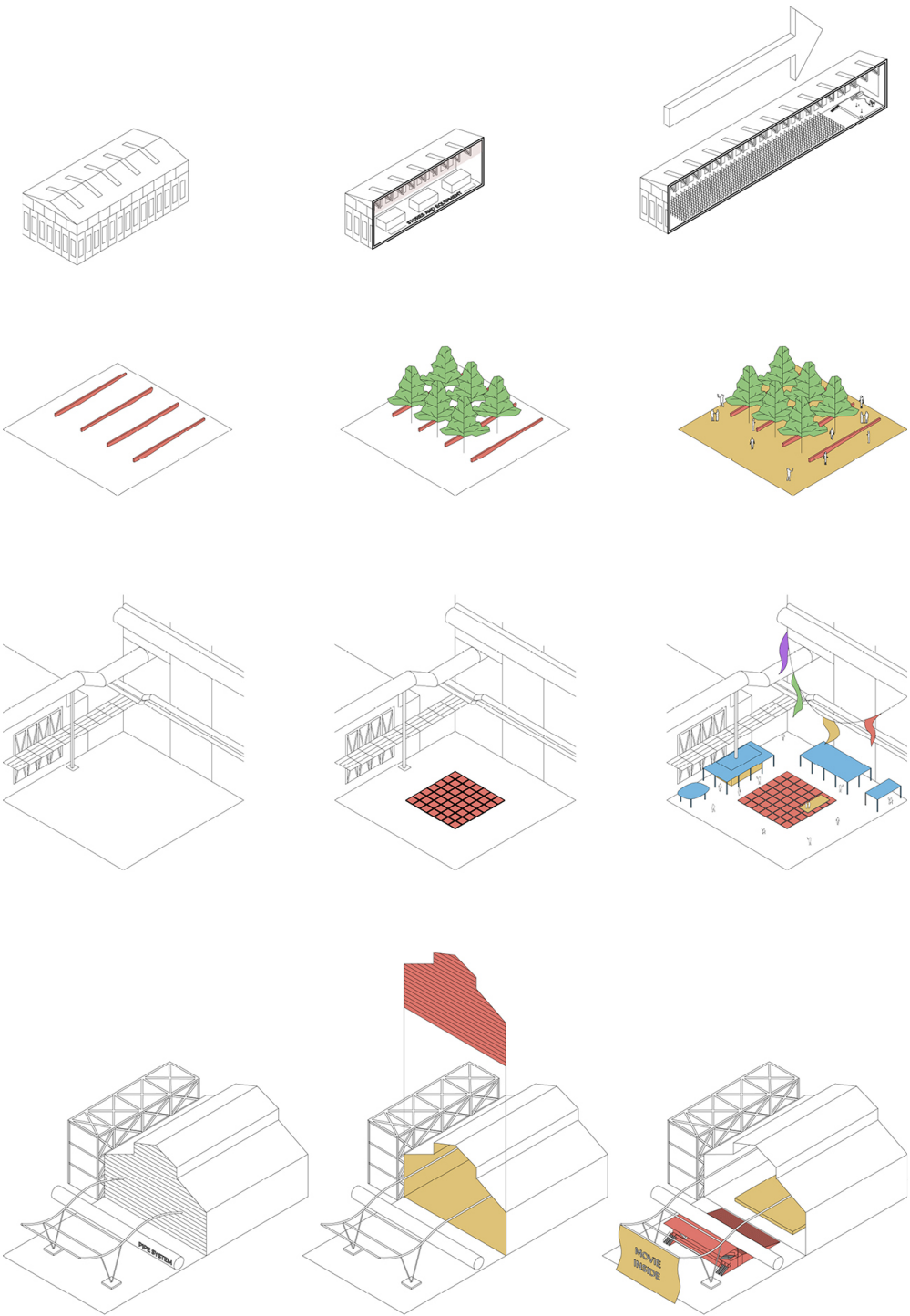


DIGITAL FABRICATION

TILE DESIGN EXPLORATIONS

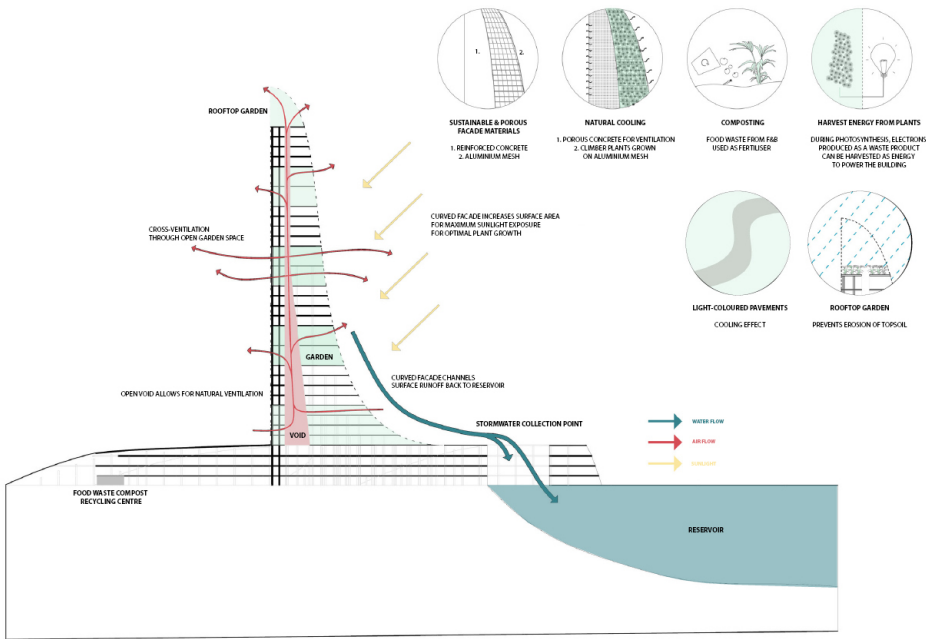
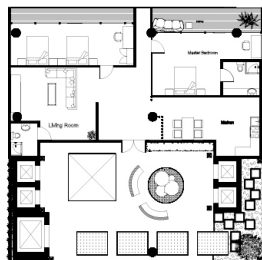
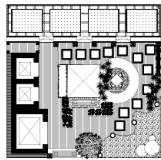


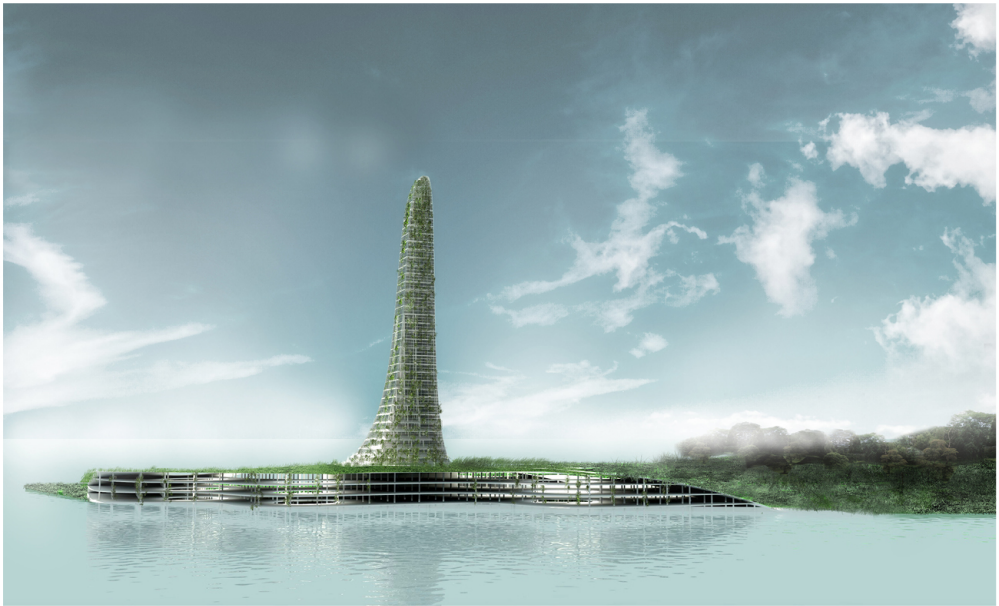
DRAWINGS FOR PARADIGMS OF ADAPTATION
BLAST FURNACE PARK | LANDSCHAFTSPARK



CTBUH STUDENT COMPETITION 2017

GREEN EDUCATION AND ELDERCARE TOWER







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