

Academic / Professional

Architectural Portfolio

2024-2025

Dakota Bacchus | 3B University of Waterloo

Hello!

Welcome to my portfolio,

My name is Dakota Bacchus, I'm a 3B (third year) undergraduate student at the University of Waterloo School of Architecture.

I am a detail-oriented designer, proud of my meticulous execution. I am comfortable experimenting with new ideas and learning from failure, thriving in fast-paced environments. Always seeking the next challenge to sharpen my skills, I aim to create meaningful work in the design world, one project at a time. I am passionate about learning and growing both academically and professionally within this field.

EXPERIENCE

- John MacDonald Architect** September - December 2023
- Contract Specification Preparation
 - Pre-Design and Schematic Design Activities
 - CAD Drafting and Detailing (Vectorworks)
 - Building Condition Assessment Documentation
 - Construction Contract Administration Assistance
 - Client Relations
 - Demonstrated a quick learning curve by rapidly mastering new software programs such as Vectorworks and NeoOffice

- EMCO Corporation** January - April 2023
- Quickly learned internal software (M3) and adapted to new environments
 - Led sales pitches to walk-in customers, confidently addressing questions and interests
 - Inventory Management: efficiently tracked hundreds of backordered items weekly
 - Built and maintained strong client and supplier relationships via effective communication and problem solving

VOLUNTEER WORK

- Event setup, participation and cleanup for University organized events (**UW**):
 - Coffee House
 - Formal Night
- Festival of Neighbourhoods (**JMA**)
- Minor League Hockey Tryouts, Practices and Games - regularly (**ORHL**)
- Candy Drive - Halloween (**OMR**)
- Christmas Drive (**OMR**)
- Misc. Christmas Activities (**OMR**)

EDUCATION & LEADERSHIP

- Candidate for Bachelor of Architecture eDiploma Certificate
- University of Waterloo** **Harvard Business School Online**
- Architectural Studies
 - Business Analytics
 - Economics for Managers
 - Financial Accounting

Fall 2021 - Present March 2023 - August 2023

Fall 2024 - Present

- President of WASA (Waterloo Architecture Student Association)

Fall 2024

- Aided in organizing:
 - Orientation Dinner
 - Ping Pong Tournament

Fall 2022 - Present

- Aided in organizing first year customized-merchandise

DISTINCTIONS

- John MacDonald Architect (Co-op Evaluation)**
- EXCELLENT performance
- EMCO Corporation (Co-op Evaluation)**
- OUTSTANDING performance
- President's Scholarship of Distinction**
- University of Waterloo entrance scholarships for students with a high school average of 95% or higher
- High School Valedictorian**
- Awarded to the student with the highest average in the graduating class

Drafting & Analysis

- Rhinoceros 7
- Grasshopper
- QGIS
- Revit
- Vectorworks

Physical

- Laser Cutting
- 3D Printing
- Modeling & Drafting
- Hand Sketching

SKILLSET

Post-Processing

- Photoshop
- Illustrator
- InDesign
- Lightroom
- Dreamweaver
- Premiere Pro

Visualization

- Enscape
- AI Prompt Engineering (ChatGPT, Dall-E, Gemini, LLama)
- LlamaLabs (NeRFs)

July 11, 2023.

To Whom it may concern:

My name is Tara Hotson, and I manage the Ensuite Kitchener Kitchen and Bath Showroom. I am writing this letter of recommendation for Dakota Bacchus, who was a co-op student at our organization from January to May 2023.

Dakota reported directly to me on projects, general workflow, and daily tasks. He consistently demonstrated kindness, ambition, and a drive to exceed expectations on every project assigned to him. Dakota presented himself with confidence and compassion, always seeking knowledge and opinions before taking action. He left such a positive impression on everyone he interacted with that, when we took him to our yearly regional conference, most people assumed he was in our Management Trainee Program and had been with us for years.

During his time with us, Dakota's responsibilities included:

- Tracking hundreds of items on backorder through dozens of suppliers.
- Building and maintaining strong client and supplier relationships.
- Quickly adapting to new environments and becoming proficient in software such as m3 (internal company software).
- Leading sales pitches to walk-in customers, confidently addressing their questions and needs.

Dakota gives 100% to everything he does. We believe he will go far and be someone to watch in the future. He is a true asset, demonstrating the qualities of a Smart, Work-Ethic Driven, Ambitious, and Nice individual (SWAN).

We wish Dakota the best in all his future endeavors and hope that his career path will cross back with our organization again sometime in the future.

Warmest Regards

Tara Hotson


Showroom Manager



John MacDonald Architect inc.

care communication
construction community

To Whom It May Concern

January 15, 2024

Dakota Bacchus, Student Intern re:

Sir / Madam,

I am writing to recommend Dakota Bacchus as a candidate for employment. Dakota recently assisted our firm through this past fall, as a junior architectural intern, and we are familiar with his tremendous capacity for learning, the accuracy in his work, and his positive contribution to work environments.

Dakota worked as an integral part of our studio team, and assisted primarily with:

- assistance with contract specifications for several projects,
- pre-design and schematic design activities and drawings for a custom private residence;
- drafting and detailing in Vectorworks (CAD) for aspects of design development and construction contract drawings. These projects included preparation of existing conditions drawings for a private residence project, several public washroom projects for municipal parks, and a community health centre;
- setting up baseline documents for a Building Condition Assessments for a public library asset study; and
- assistance with construction contract administration tasks for a municipal public washroom project.

Dakota was responsible for other aspects of office support including a continuous stream of small tasks associated with the day-to-day operation of the firm. We are a small studio, and tasks for all staff are wide ranging. Dakota contributed very effectively, and with tremendous grace, and was exposed to all aspects of our practice.


Dakota is an excellent learner. He is organized, reliable and was unfazed by the sort of multi-tasking, on-again / off-again environment which is typical of our industry and projects. He worked independently and followed through to ensure tasks were completed. He is responsible, careful, and able to identify what he does not know and needs to consult about. This is an especially valued attribute for me, and I believe he will be of benefit to any work environment where attention to detail is critical.

Dakota was quick to volunteer to assist in other areas of company operations as well.

Ours is a lifelong journey of learning, and Dakota has the attitude, the willingness, and the capacity to achieve great things along the way. He will be an asset wherever he goes, and we hope he considers our firm as a positive stepping stone in this journey.

If you have any further questions, please do not hesitate to call me.

Yours sincerely,



John MacDonald OAA, MRAIC
John MacDonald Architect inc.

Public Utilities Commission Building
195 King Street West, Suite 202 Kitchener ON N2G 1B1
JohnMacDonaldArchitect.ca 519 579 1700

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ReDesign: From Void to Value

Studio 3B: Generative AI in Architecture

Completed: Fall 2024

Supervised by: Sayjel Patel & Ugonna Ohakim

Software: Adobe Illustrator, Photoshop, InDesign

Gen AI Toolkit:

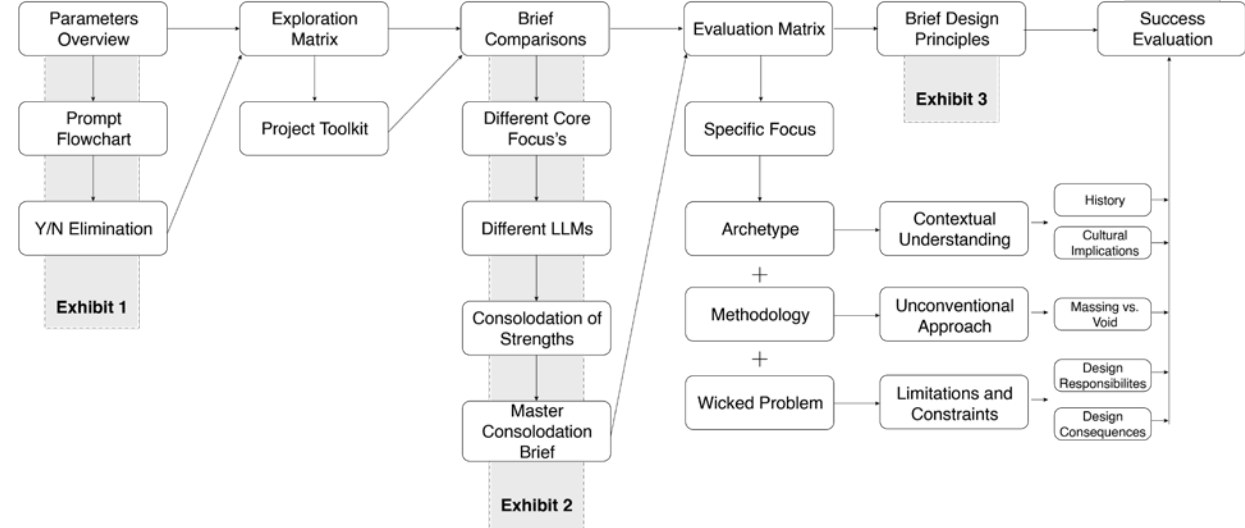
LLMs - OpenAI GPT-4, Gemini Advanced, Meta AI Llama 3.1

Diffusion - Huggingface Stable Diffusion, ComfyUI, Adobe Generative Fill, Generative Expand

This project is driven by the belief that courtyard architecture has the potential to be more than just an enclosed outdoor area. It has the ability to become an immersive and multisensory environment that nurtures the mind, body, and soul. By incorporating design principles of cognitive psychology and design, this project aims to redefine courtyards by challenging conventional notions of void space, seeking to transform it into a layered and dynamic mass that is responsive to individual needs and aspirations



Project Workflow



Project Toolkit

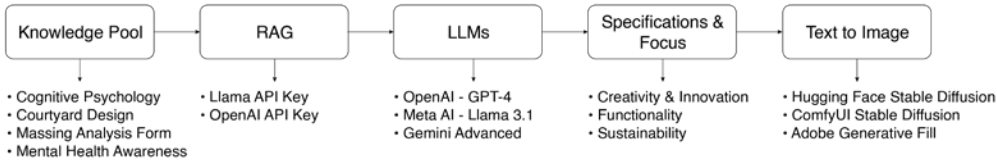


Exhibit 1

Concept	Is It Logical?	Is It Scalable?	Potential to go Viral?	Impact on a Global Scale?	Yes = 2 Maybe = 1 No = 0
1. Veranda + Massing Studies + Clean Energy	No				0
2. Veranda + Sustainable Design + Resilient Infrastructure	No				0
3. Courtyard + Sustainable Design + Mental Health Crisis	Yes	No			2
4. Atrium + Contextual Design + Resilient Infrastructure	No				0
5. Vault + Massing Studies + Clean Energy Transition	Maybe	Yes	Maybe	No	4
6. Dome + Parametric Design + Clean Energy Transition	Yes	No			2
7. Bay Window + Contextual Design + Resilient Infrastructure	No				0
8. Piazza + Sustainable Design + Water Management	Yes	Yes	No		4
9. House on Stilts + Parametric Design + Resilient Infrastructure	No				0
10. Cave Dwelling + Layering + Resilient Infrastructure	Maybe	No			1
11. House on Stilts + Site Analysis + Affordable Housing	Yes	Yes	Yes	Yes	8
12. Veranda + Massing Studies + Clean Energy Transition	No				0
13. Facade + Parametric Design + Clean Energy Transition	No				0
14. Cantilever + Massing Studies + Clean Energy Transition	No				0
15. Courtyard + Sustainable Design + Mental Health Crisis	Yes	No			2
16. Atrium + Contextual Design + Resilient Infrastructure	No				0
17. Vault + Massing Studies + Clean Energy Transition	Maybe	Yes	No		3
18. Dome + Parametric Design + Water Management	Yes	Yes	No		4
19. Facade + Parametric Design + Water Management	Maybe	Yes	Yes	Yes	7
20. Courtyard + Massing studies + Mental Health Crisis	Yes	Yes	Yes	Yes	8

Exhibit 2

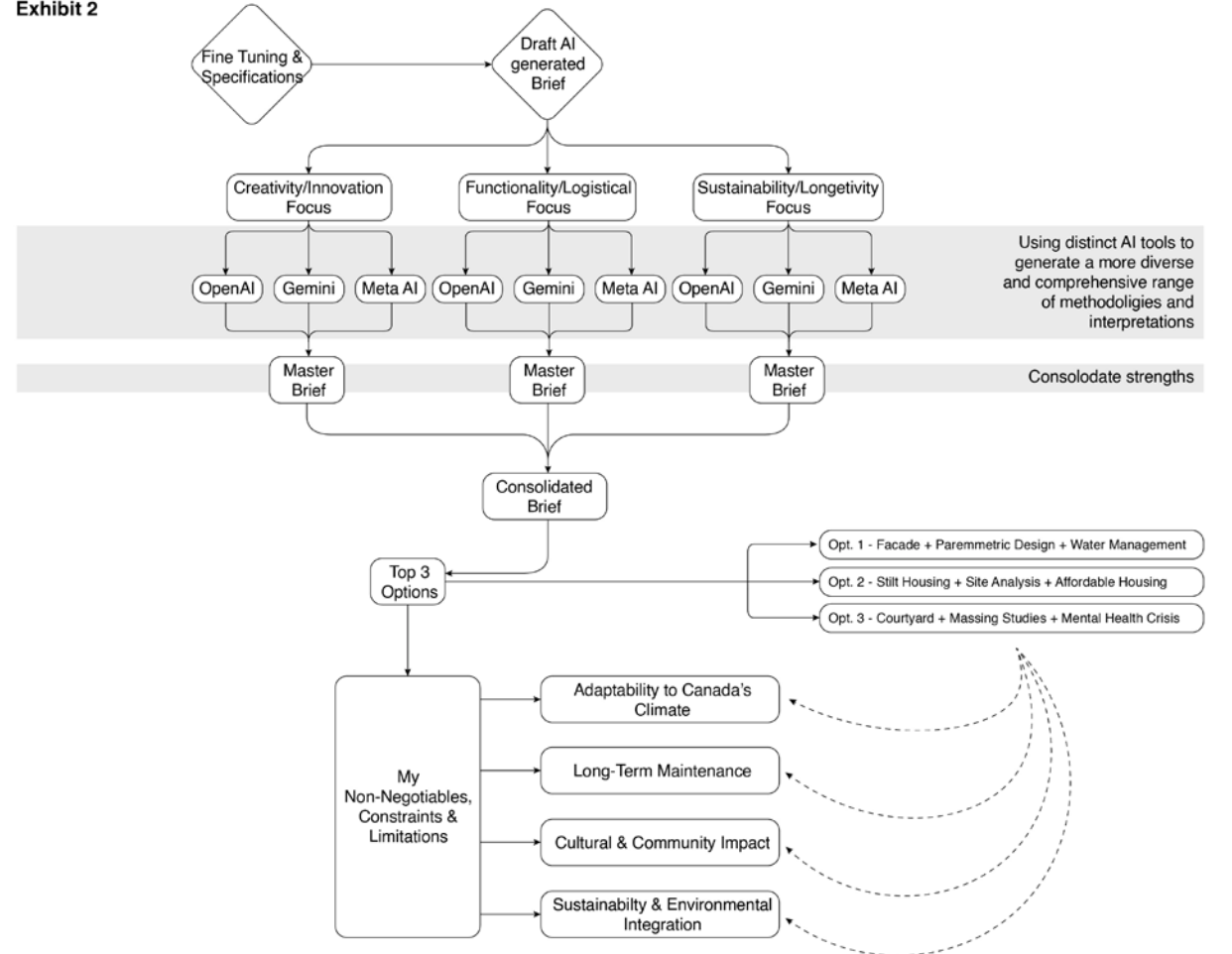


Exhibit 3

- Design Objectives:**
- Re-Design courtyard Typology
 - Create Restorative environments
 - Foster Social Interaction and Reduce Isolation
 - Sustainable Design
- Design Principles:**
- Zoning for interaction
 - Fluid movement
 - Connection with surrounding environment
- Cognitive Restoration**
- Soft fascination and involuntary attention
 - Natural light and shade
 - Reestorative spaces
- Social and Community Building**
- Zoning for interaction
 - Fluid movement
 - Connection with surrounding environment
- Scale and Proportions**
- Human Scale
 - Gradation of Spaces
- Sustainable Design**
- Biophilic Elements
 - Passive Environmental Control
 - Water Management
- Materials and Aesthetic**
- Natural and Recycled Materials
 - Light and Shade Play

Exhibit 4

- Range of Prompt Key Words**
- Season**
- Canadian Winter
 - Fall
 - Autumn
 - Spring
 - Summer
- Architectural Style**
- Neo-Futurism
 - Parametricism
 - Deconstructivism
 - Baroque
 - Constructivist
 - Late-Modernism
 - Expressionist
 - Modern
 - Rustic
 - Historic
- Massing**
- Courtyard
 - Atrium
 - Backyard
 - Parasitic Mass
 - Extrusion
 - Enclosed Dome
 - Horizontal Enclosed Dome
 - Cuboid
 - Rectangular Cuboid Extrusion
 - Urban Plaza
 - Business Complex
 - Urban Park
 - Provincial Park
 - Federal Park
- Environmental**
- Water Management
 - Therapeutic Zones
 - Layered
 - Futuristic Year 3000
 - Futuristic Year 2050
 - Passive Environment
 - Fluid Movement
 - Sensory Control
 - Psychological
 - Ambient
 - Biophilic
 - Adaptive Systems
 - Human-Centric
 - Healing-Environments
 - Green

Concept Comparison

Current

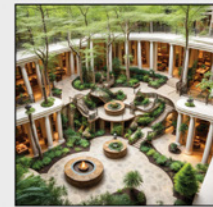
Proposal

Design Goals



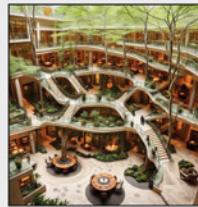
Aesthetic Focus

Static Functionality

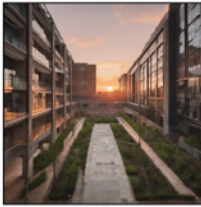


Cognitive Health Focus

Dynamic Social Interaction



Form and Space



Rectilinear Layout

Hard Boundaries



Fluid, Non-Linear Layout

Seamless Transitions

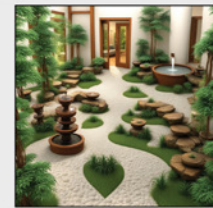
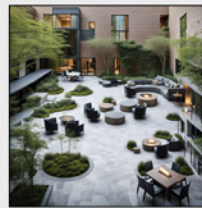


User Experience



Visual Dominance

Limited Restorative Impact



Multi-Sensory Engagement

Personalized Experience



Parti Diagrams

Soft Fascination



- Fluid natural lines
- Organic Shapes to guide flow
- Natural light & shaded areas
- Invite restorative spaces

Zoning - Social & Community Building



- Distinct zones for interaction
- Soft transitions between zones
- Fluid pathways
- Human scale and proportion

Sustainable Design & Biophilic Elements



- Integration of natural materials
- Passive environmental control
- Natural shading elements
- Greenery

Gradation of Spaces & Human Scale

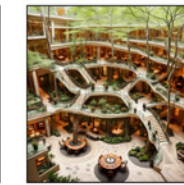
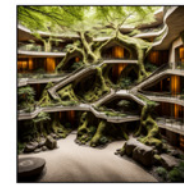
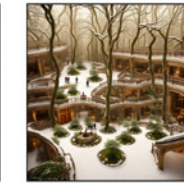
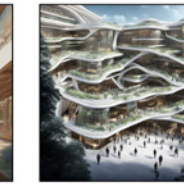
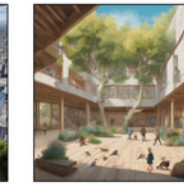
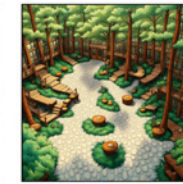
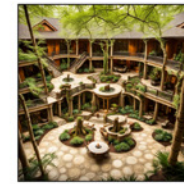


- Transition from intimate human-scale spaces into larger open areas

Experiments

Successful

Unsuccessful



"Rustic"

"Atrium"

"Various Zones"

"Addition"

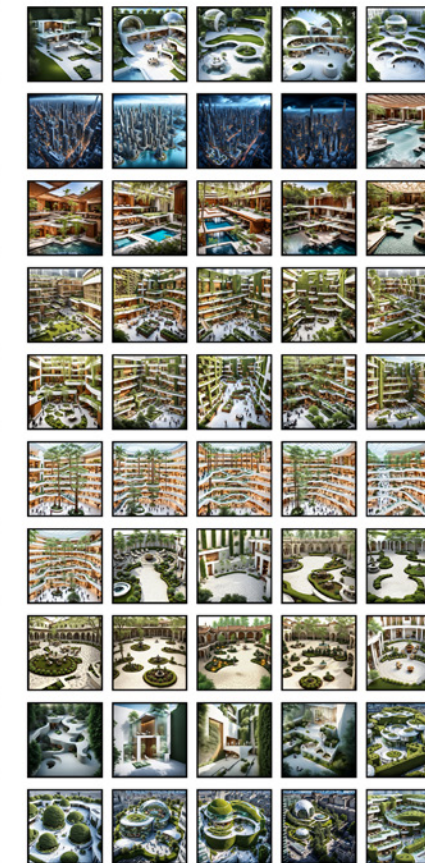
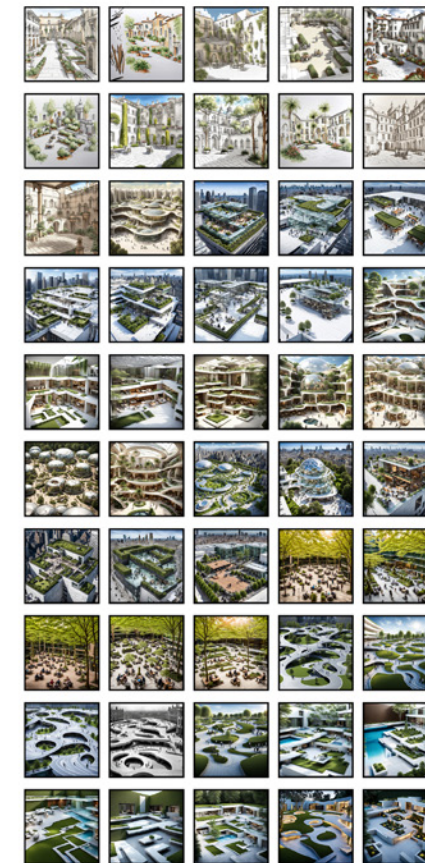
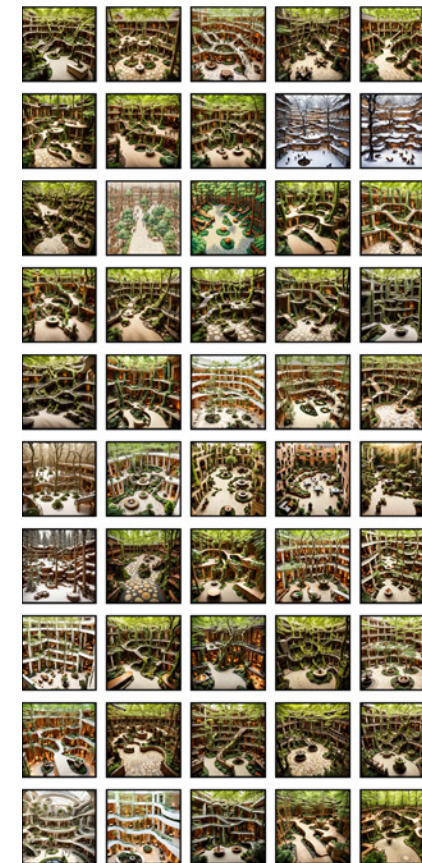
"Courtyard"

"Layered"

Exhibit 5
Successful

Unsuccessful

Unsuccessful



Output Render



Output Vignettes



Output Vignettes



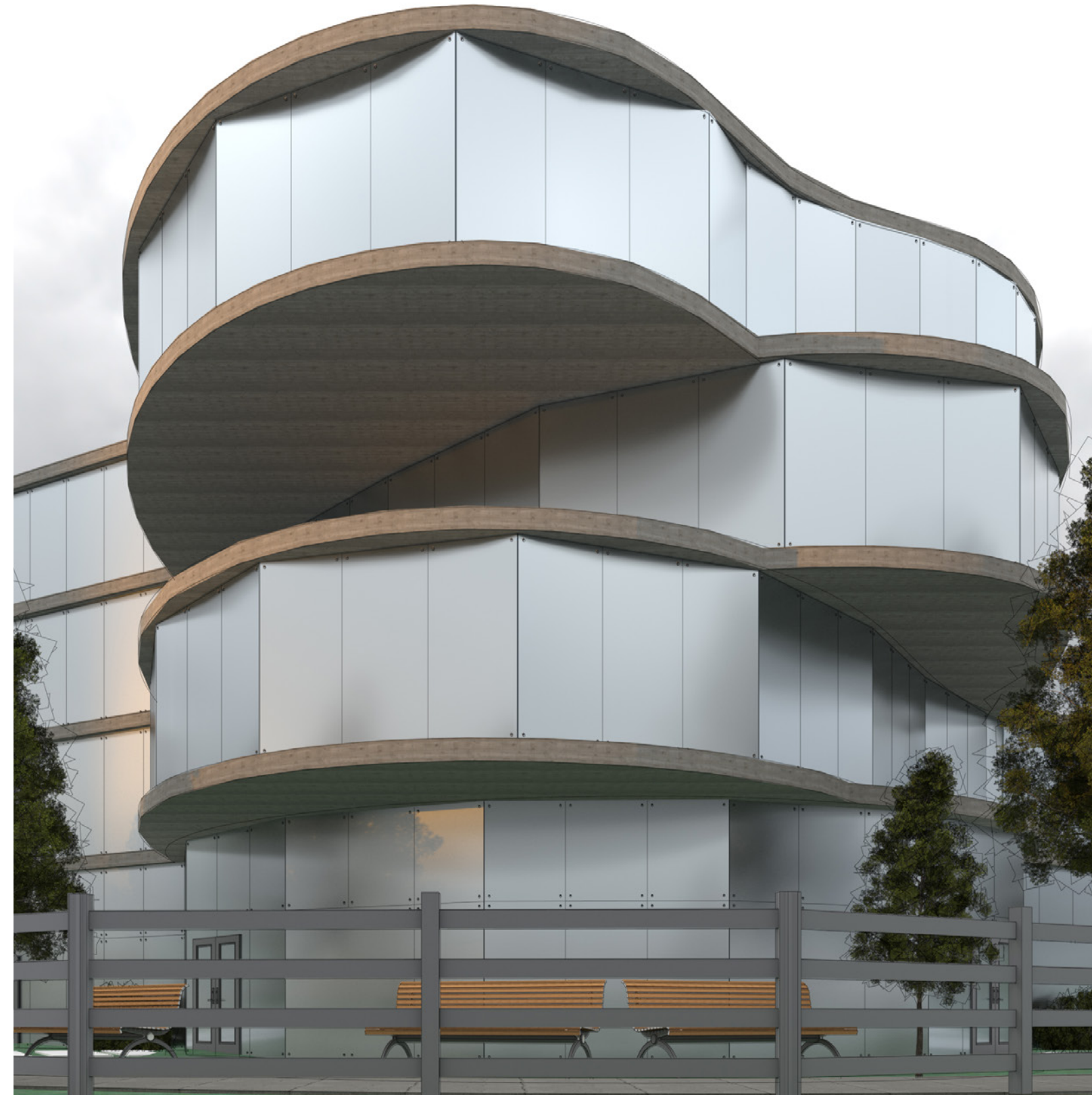
The Boston Harbour

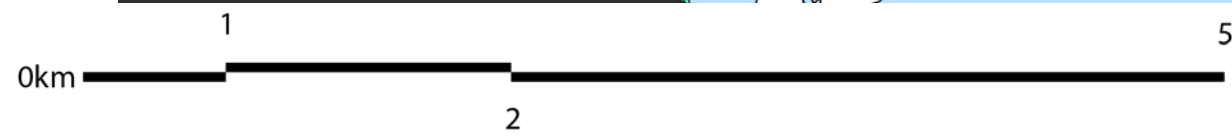
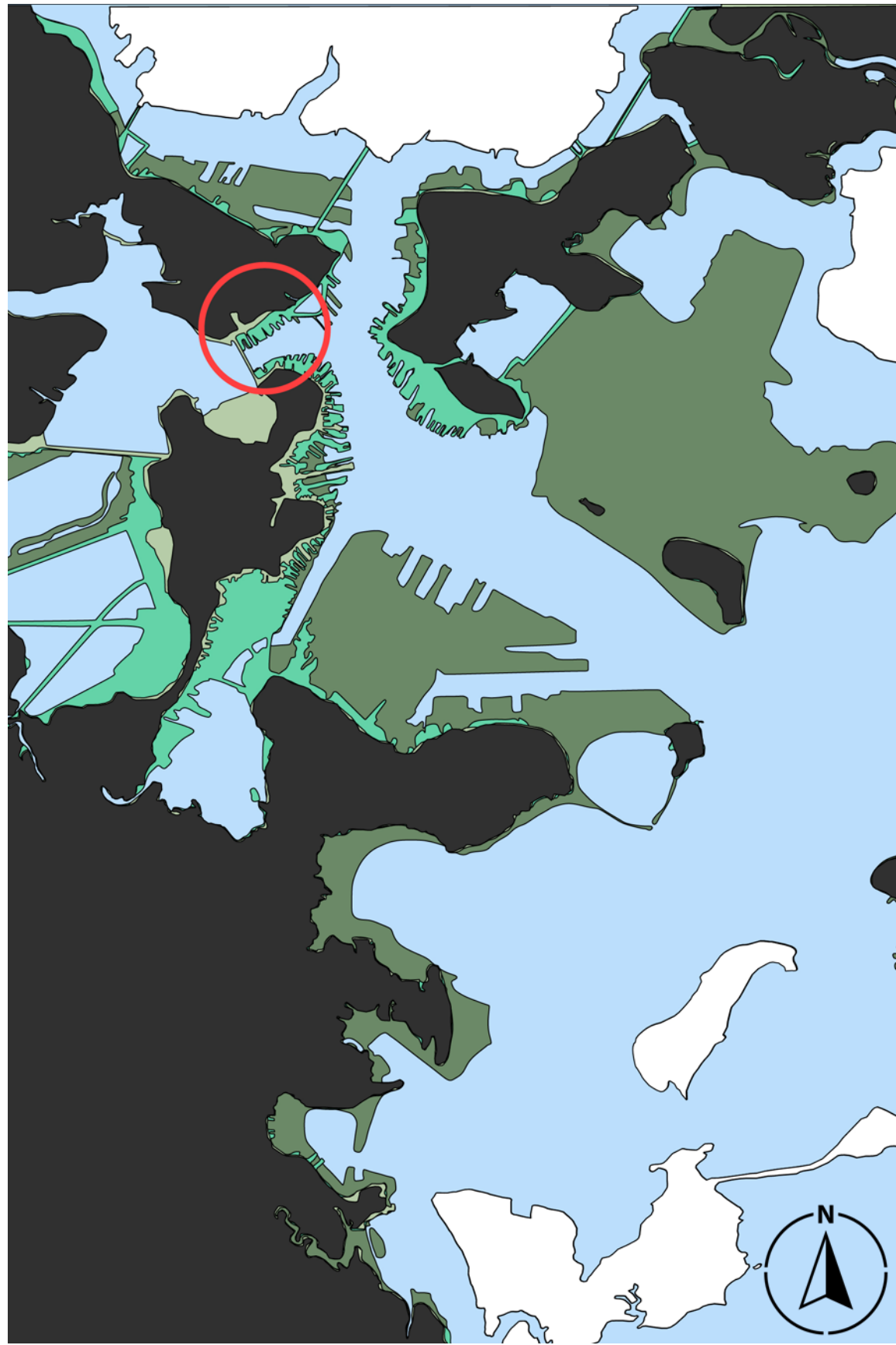
Personal Design Project: Urban Business Complex

Completed: Spring/Fall 2024

Software: Rhino 7, Illustrator, Photoshop, InDesign

The Boston Harbour is a personal project designed over the summer, which considers the city's historic layering. Situated on a business complex site frequented by veterans, tourists, day visitors, white-collar professionals, college and university students, as well as children and infants, this area presents an incredible opportunity to transform into an urban oasis. The existing program has been preserved and integrated into this unique space, while new programs and architecture have been introduced to enhance its overall efficiency and use. With a focus on business opportunities, vibrant urban spaces, and respect for the surrounding building heights, this project aims to strengthen historical connections while elevating the quality of the business park.

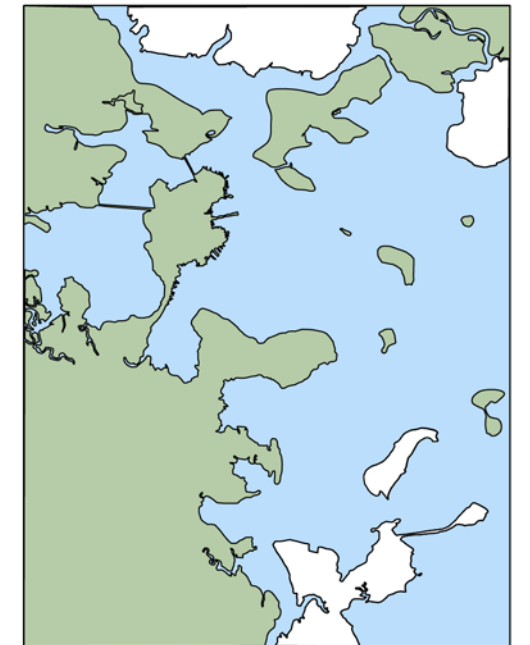




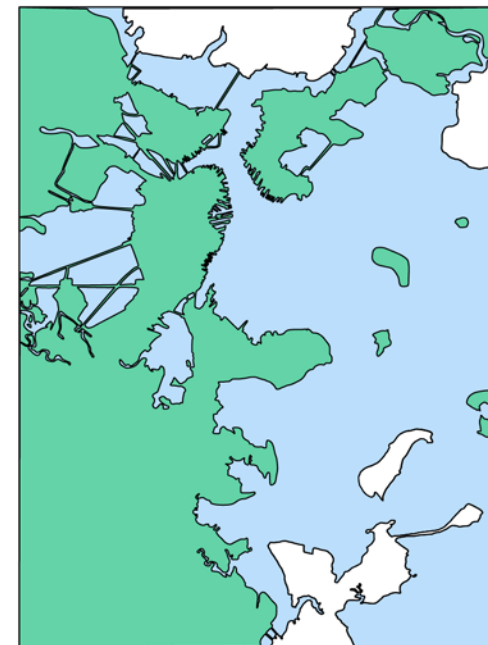
Historic Boston Shoreline



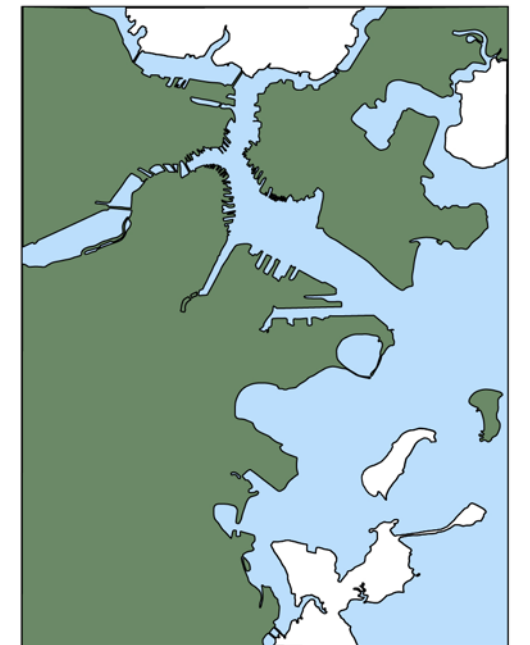
1630



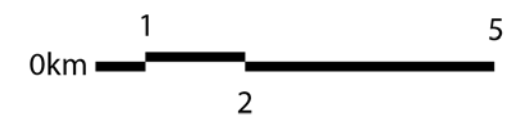
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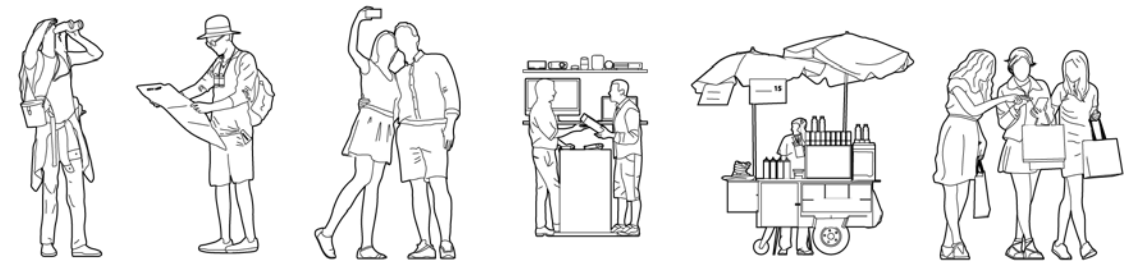
1852



1995

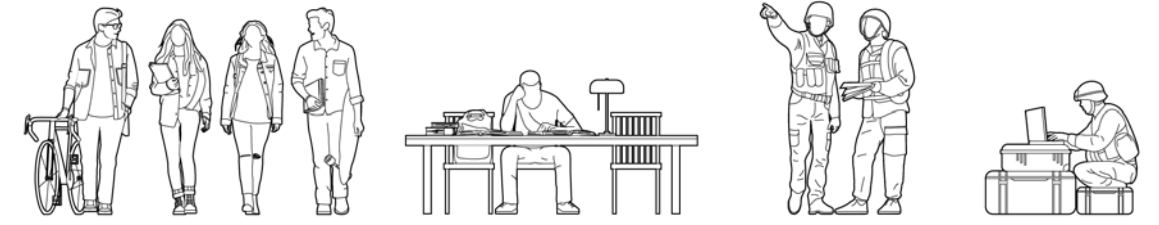


Site Demographic



Tourists

Day Visitors

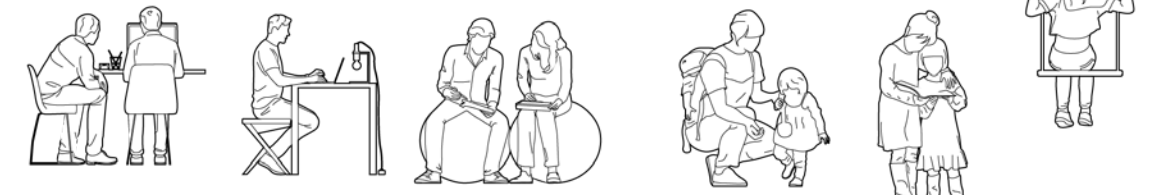


College/University Students

Veteran Personnel

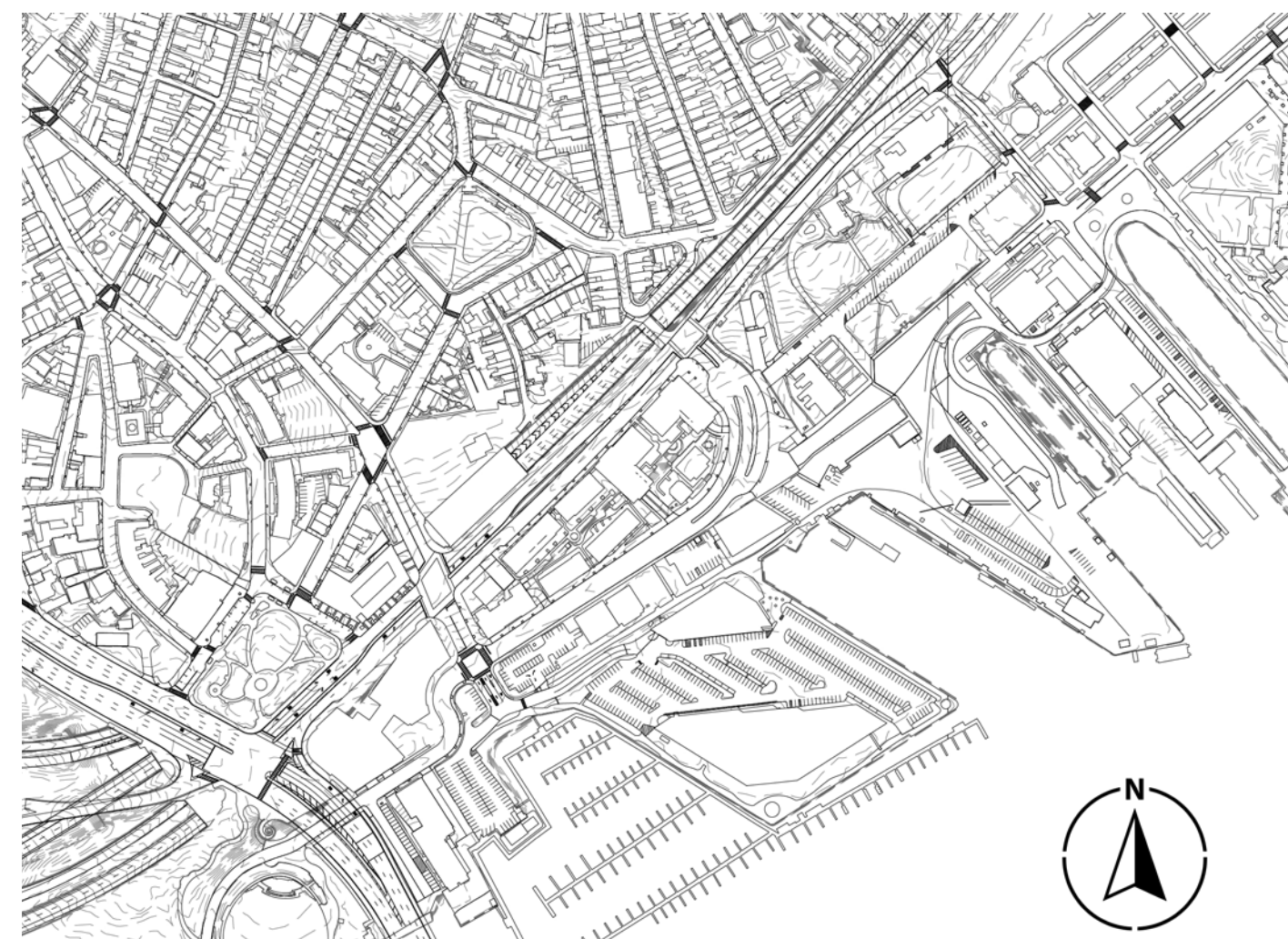


Families

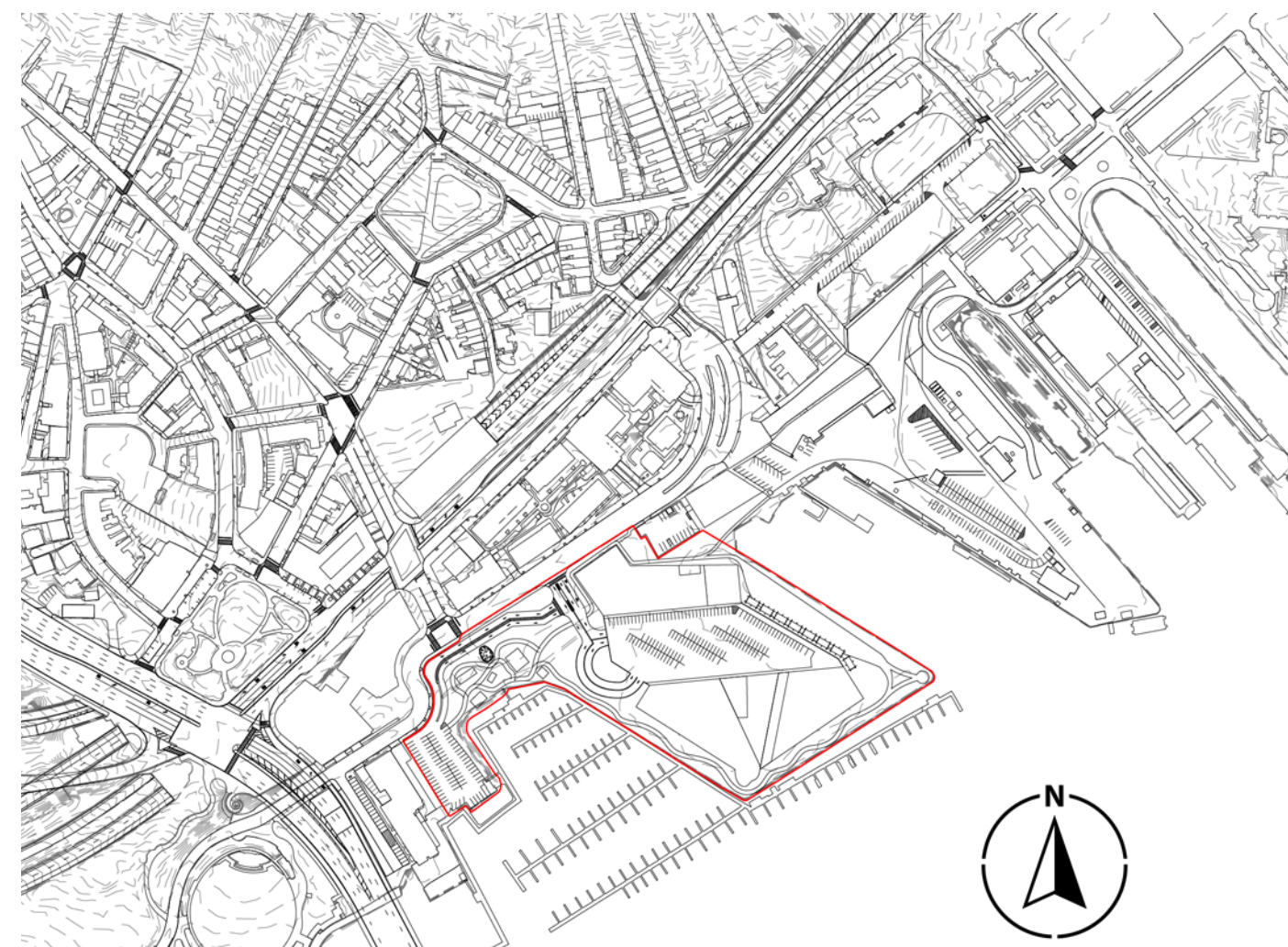


White Collar Professionals

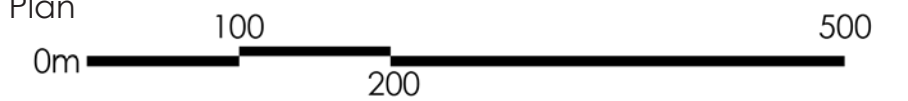
Children/Infant



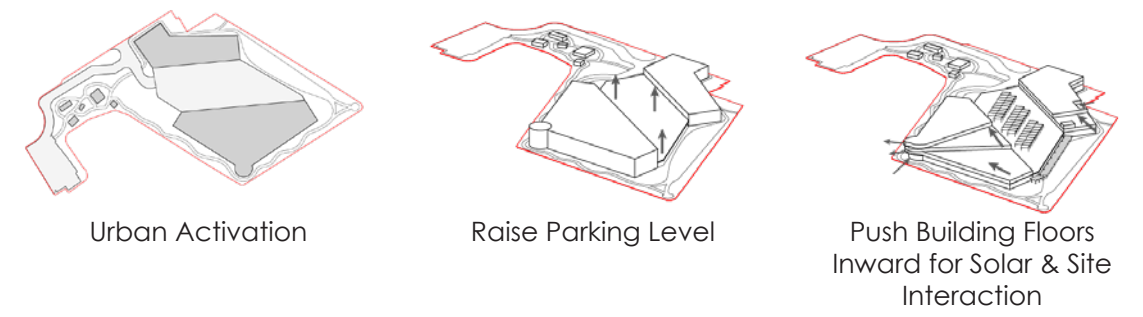
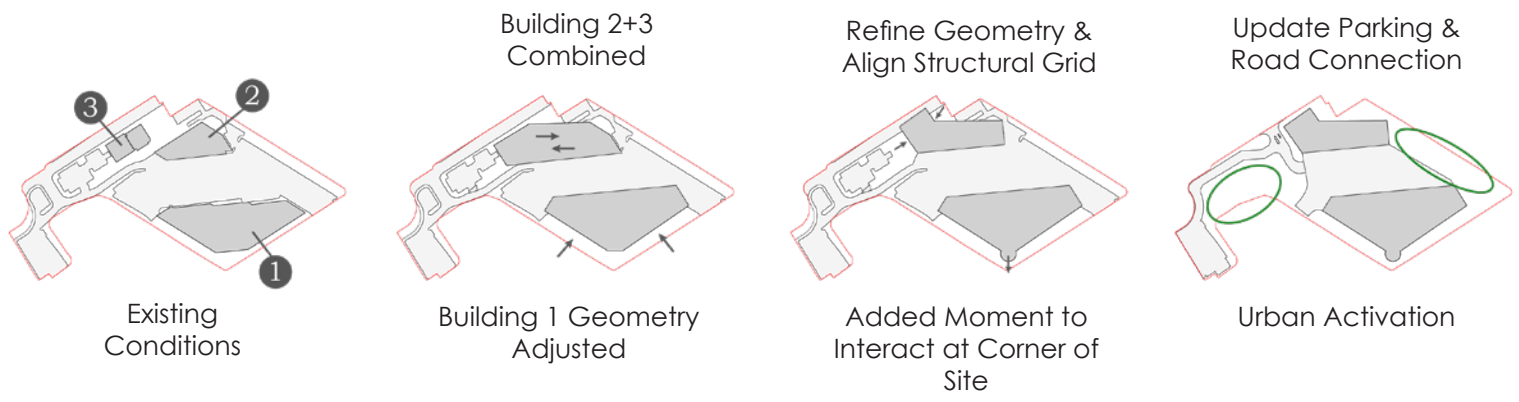
Existing Context Plan



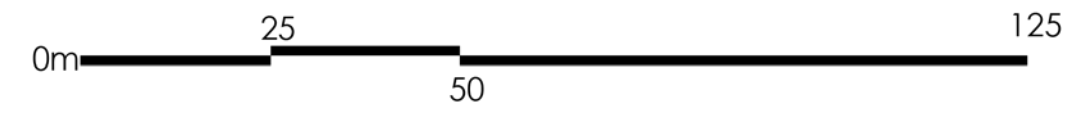
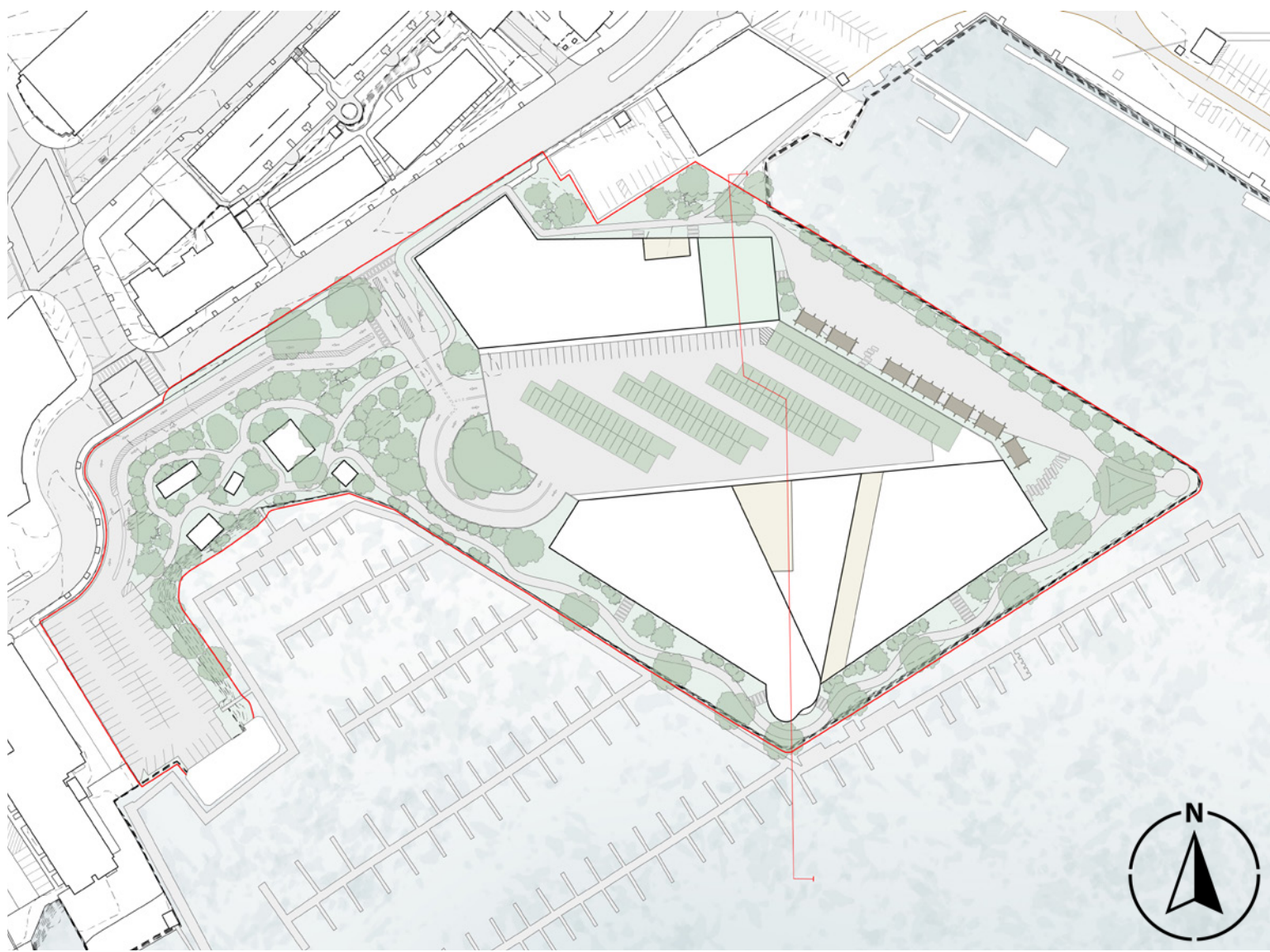
Preposal Context Plan



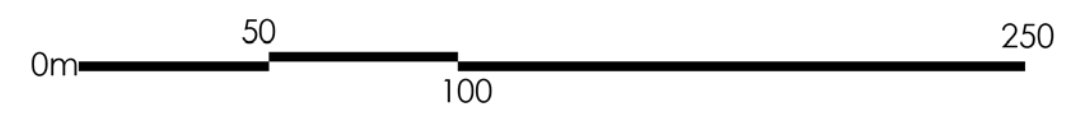
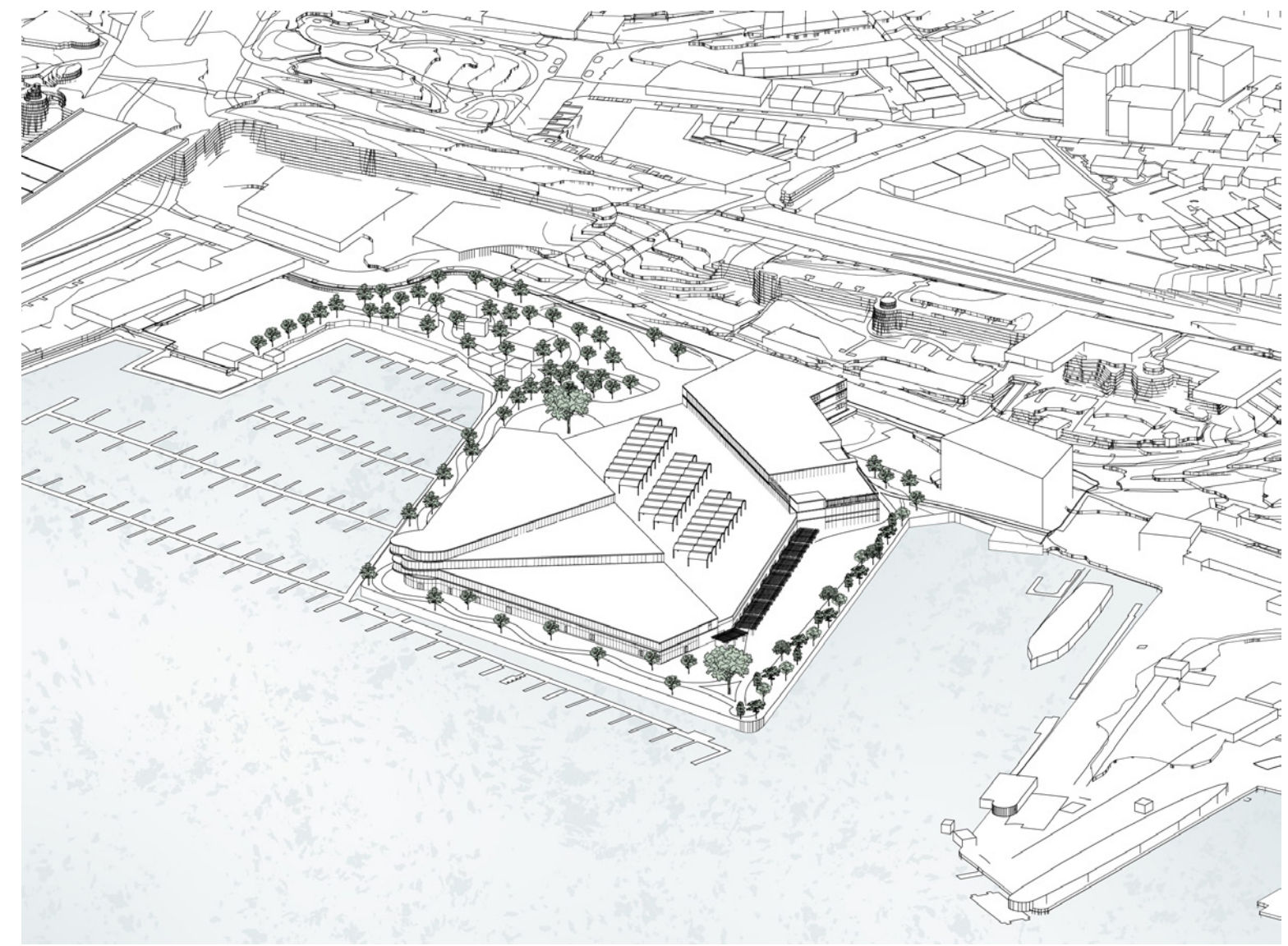
Morphology Diagram



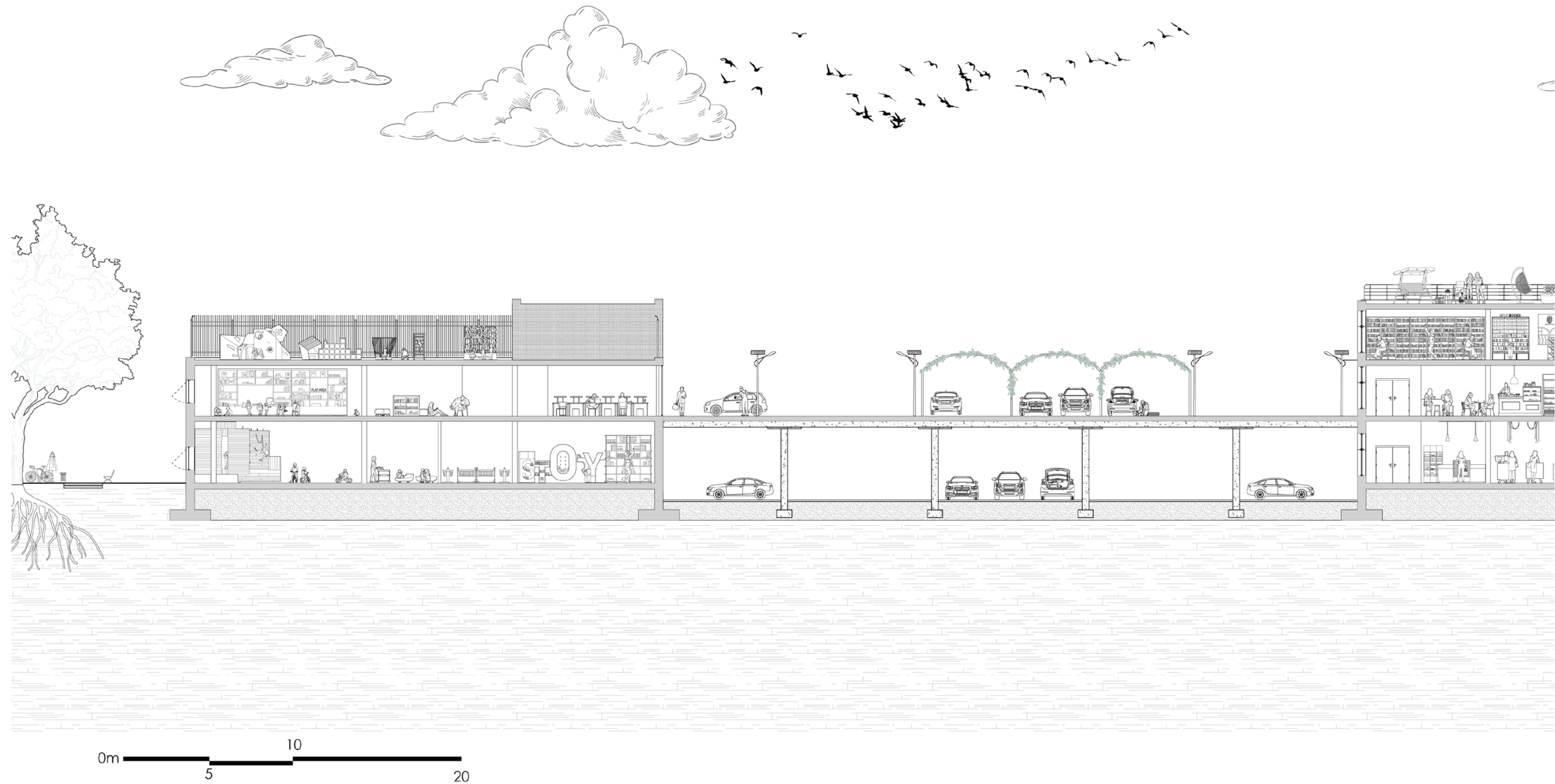
Site Plan



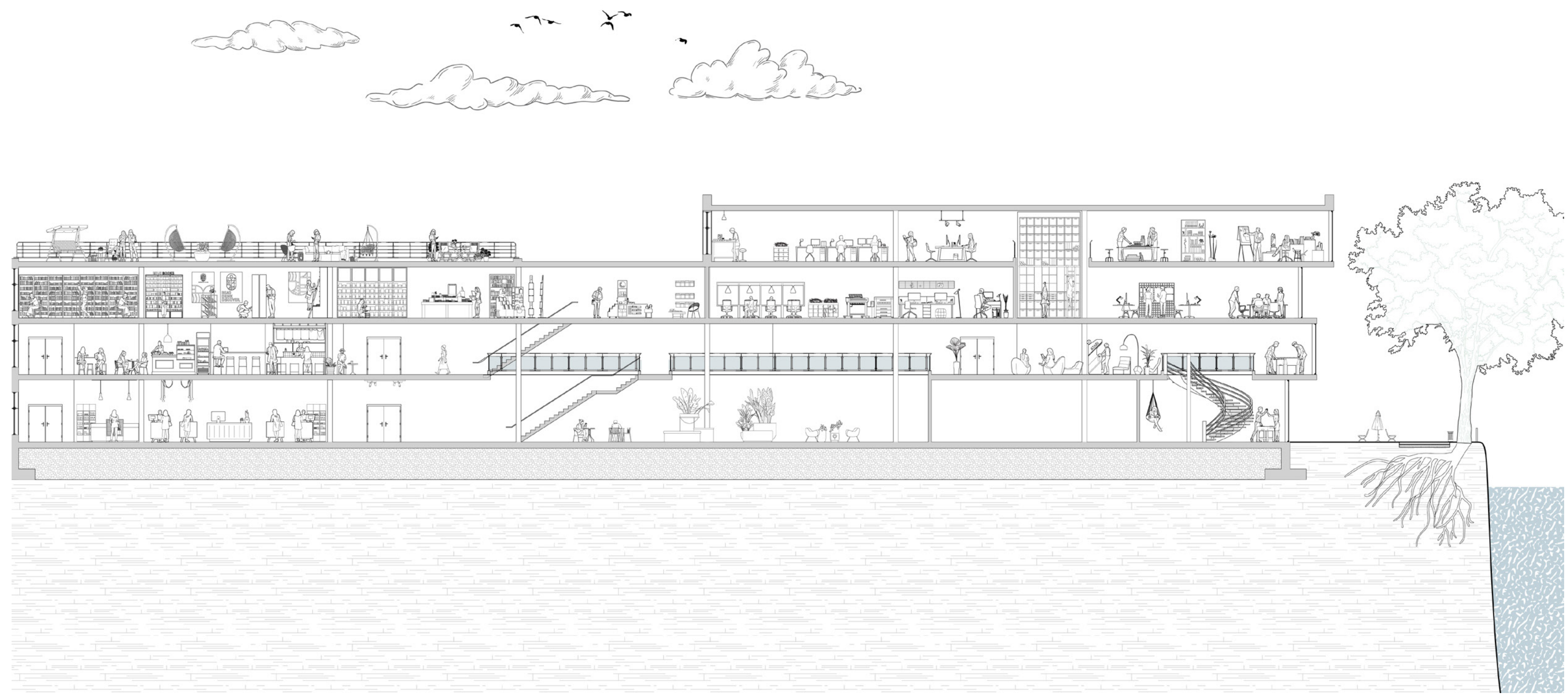
Site Axo



Building Section(s)



Building Section(s) cont.







Home Base

MGH Institute

Physical Exam Room

Optometrist

Daycare Facility

Makerspace

Library

Office

Office

Office

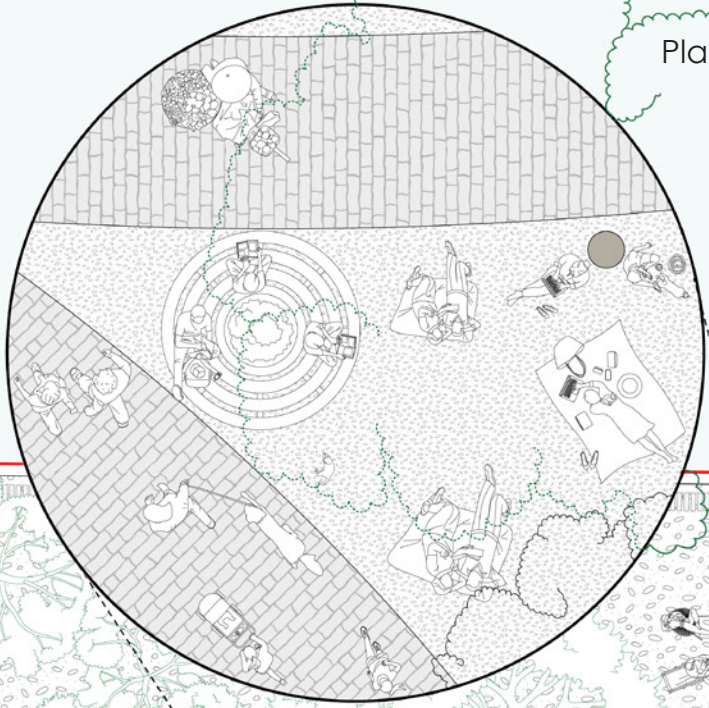
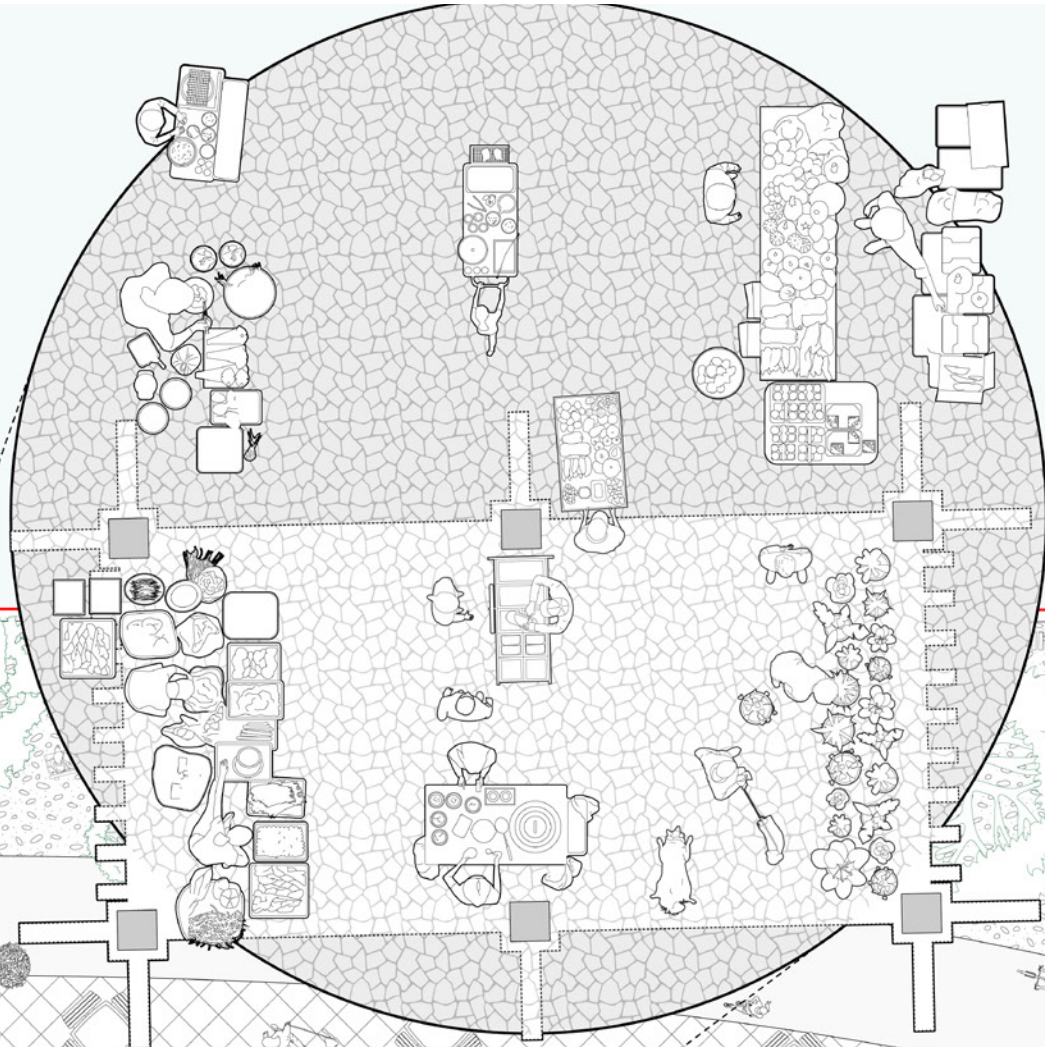
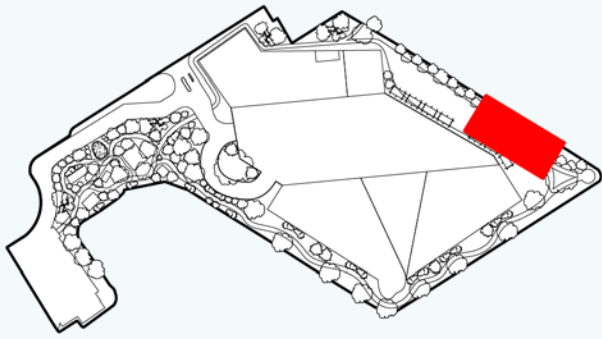
Office

Conference

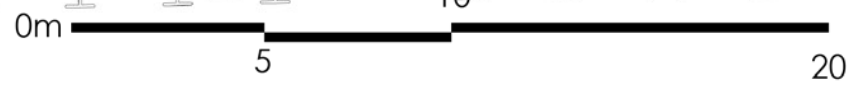
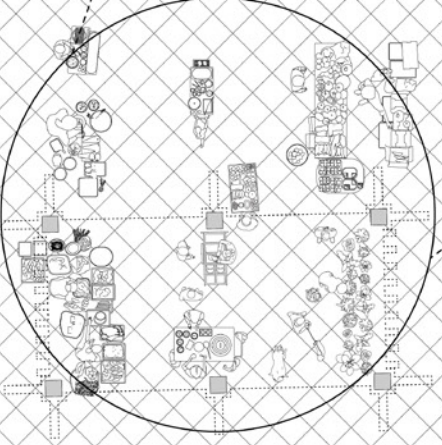
Conference

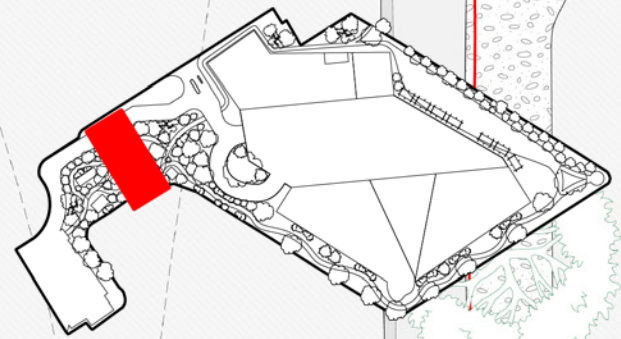
Lounge

0m 25 50 100

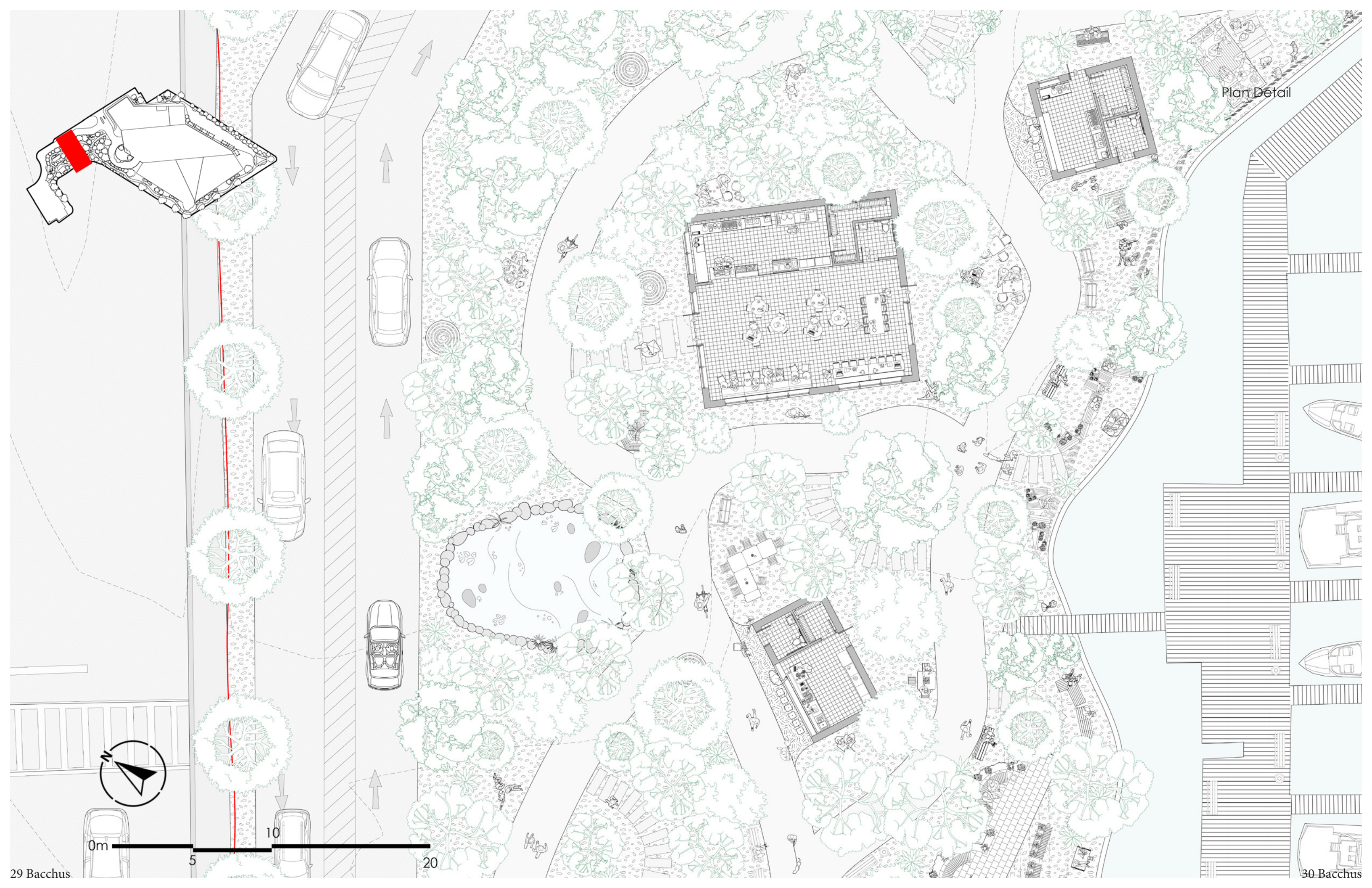


Plan Detail





Plan Detail



Ambient Doon Commons

Studio 3A: Urban Design & Housing Studio

Completed: Winter/Spring 2024

Supervised by: Adrian Blackwell

Software: Rhino 7, Illustrator, Photoshop, InDesign

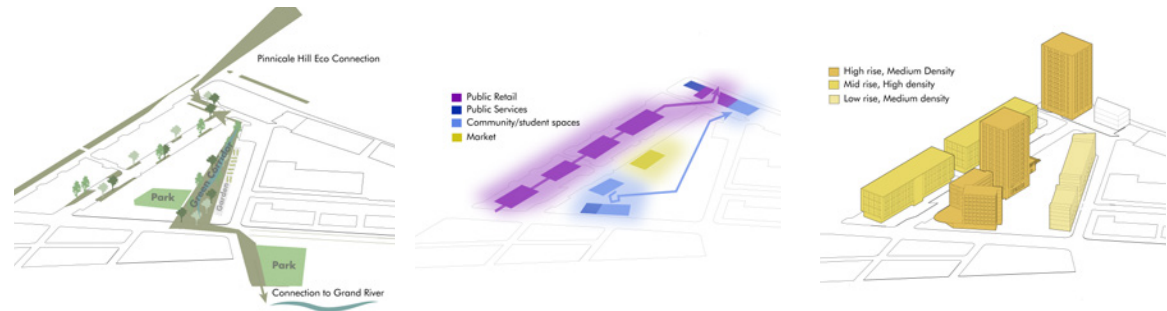
Partners: Shriyan Mistry, Nathan Chan

Ambient Doon Commons is a project that responds to the immediate local issues such as Conestoga College's influx of on-campus students increased the pressure for student housing within the surrounding housing market, ultimately leading to students occupying suburban homes through unsafe rentals, creating and increasing the divide between local community members and students—further creating overcrowding and displacing residents. Rising student rentals and lack of supply for students and local families in combination with urban sprawl and lack of services provide a prompt: **What strategies can we employ to restore Doon into a thriving and dynamic community?**

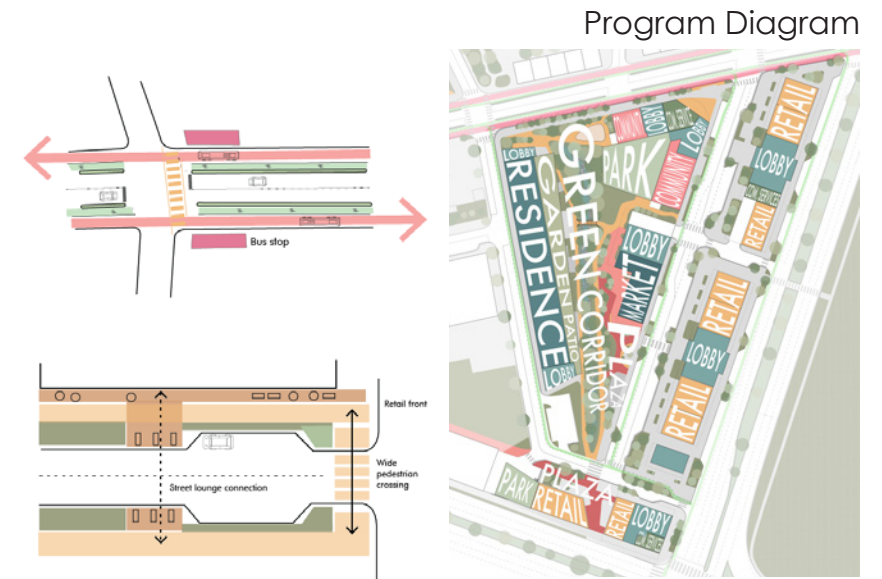


Group Masterplan

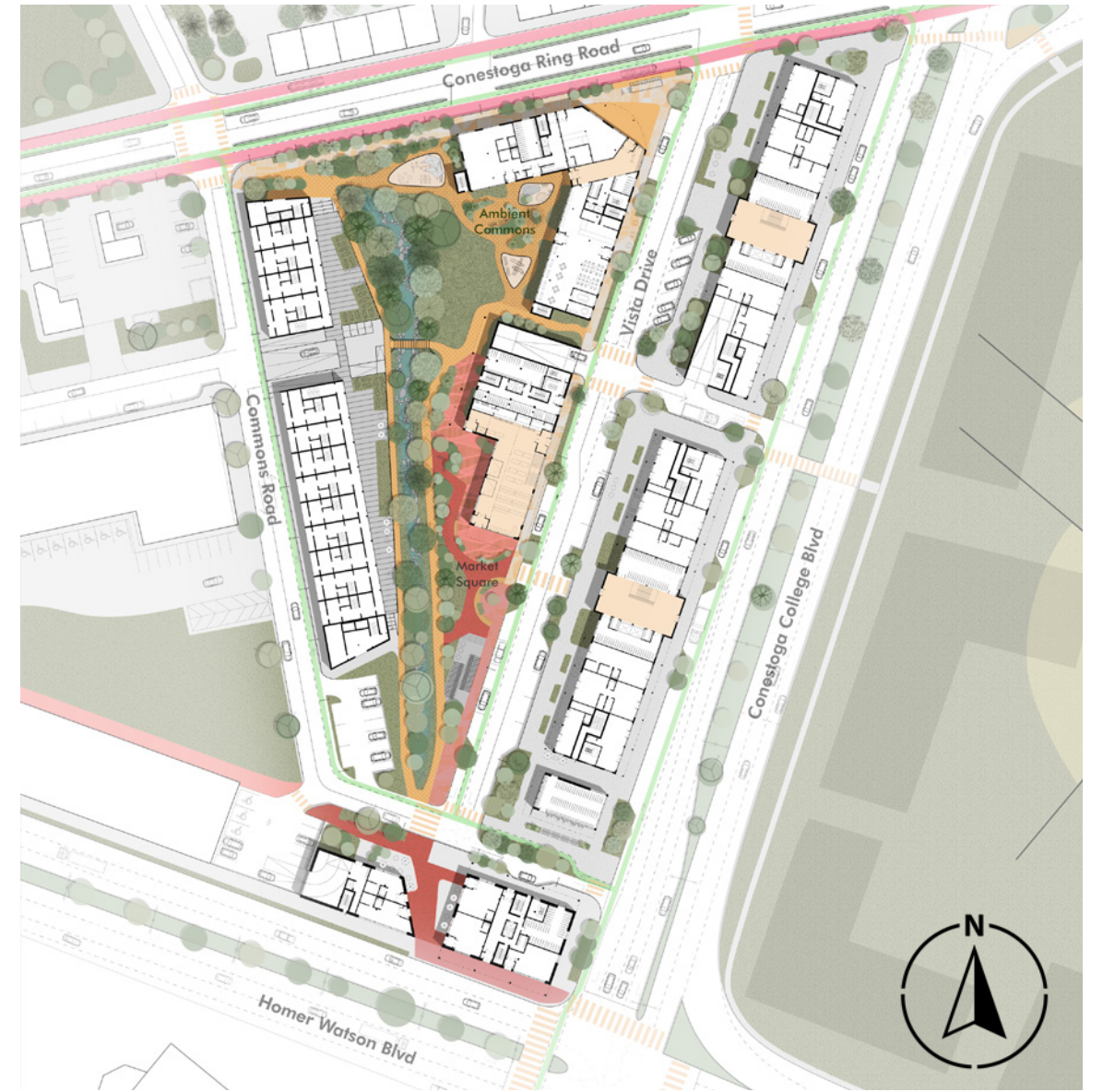




Concept Diagrams



Site Axo

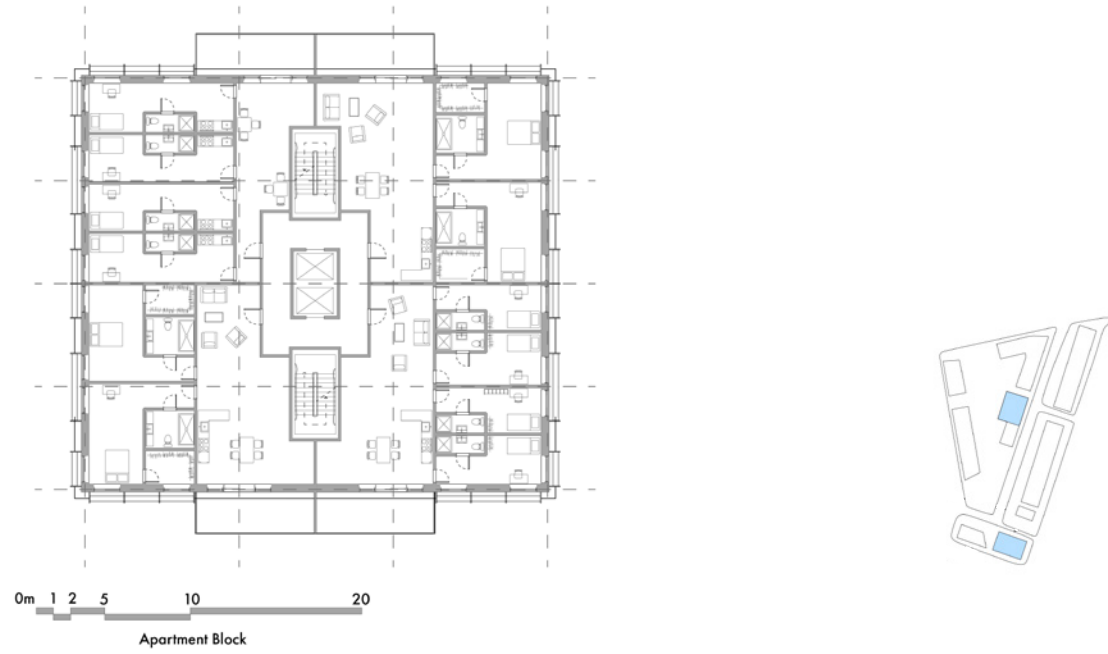


Site/Floor Plan(s)

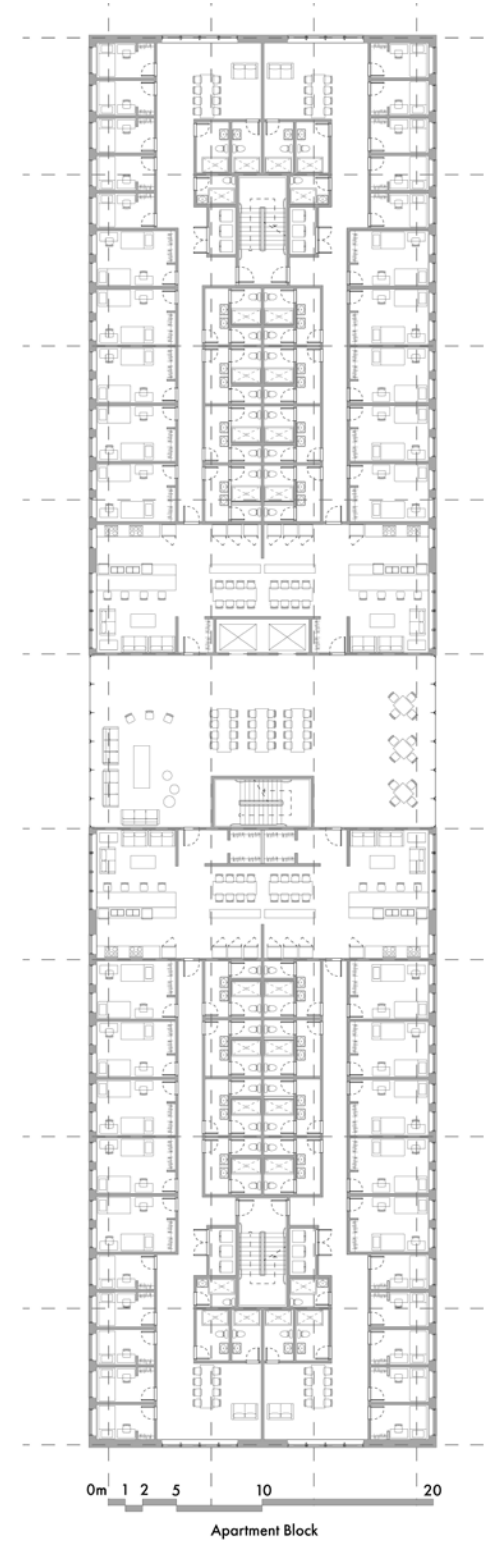
High-Rise Unit Plans



High-Rise Apartment Block



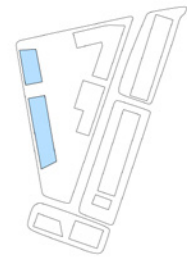
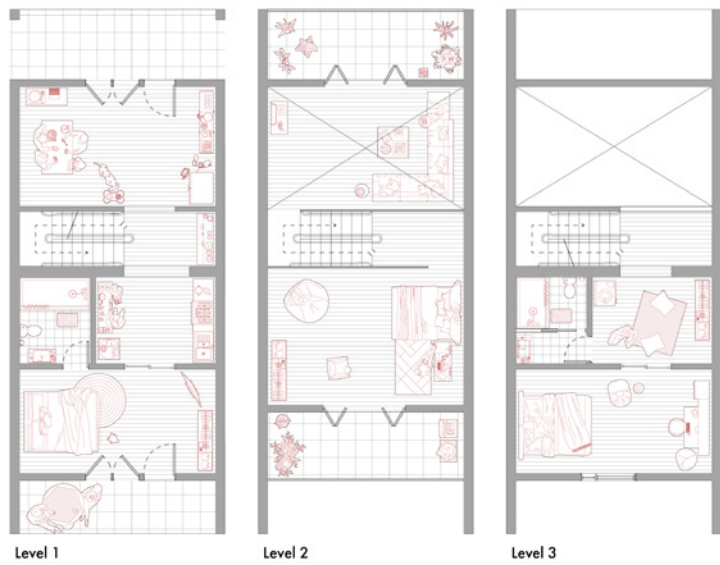
Mid-Rise Apartment Block



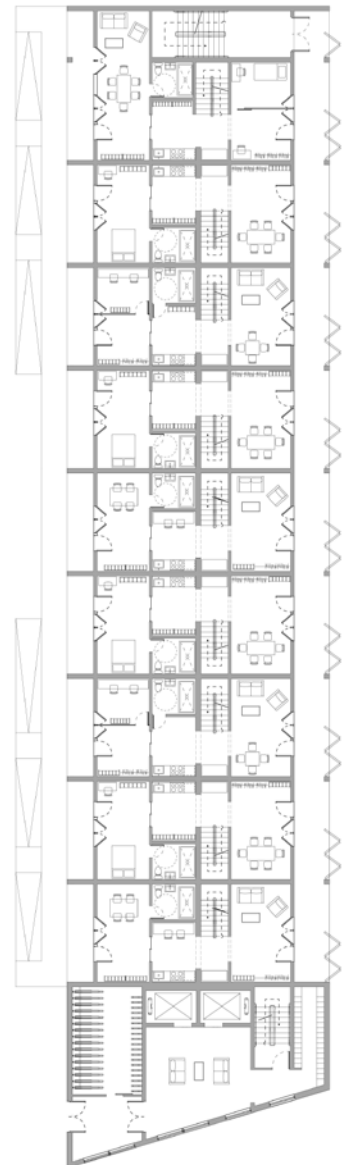
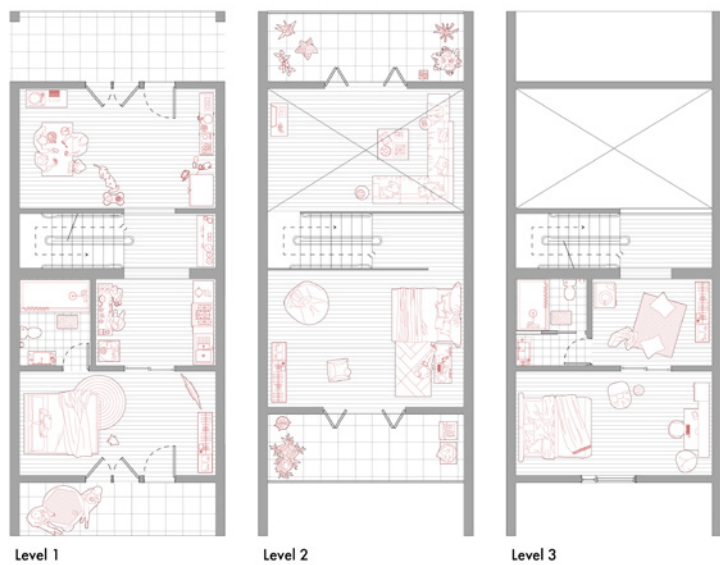
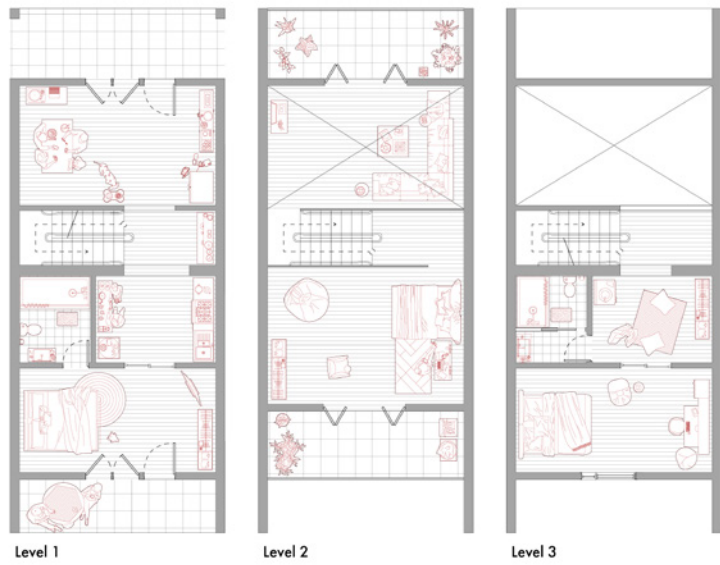
Mid-Rise Unit Plans



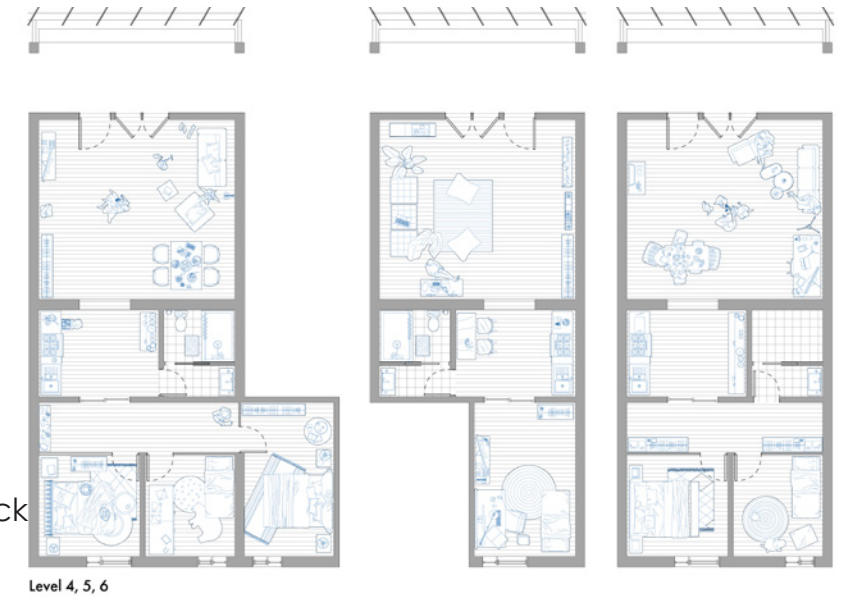
Low-Rise Triplex Unit Plans



Low-Rise Triplex Block



Low-Rise Apartment Unit Plans



Low-Rise Apartment Block



Detail Section



DEEP-ROOTED SHRUBS

ROCK TRENCH

BIO-RETENTION SOIL

AGGREGATE

GLUTTON

PEA GRAVEL COURSE

PERFORATED DRAIN TUBE

LOCAL EATERY

farmer market

LOCAL MONEY

Ambient Doon Commons

Section Model

Studio 3A: Urban Design & Housing Studio

Completed: Winter/Spring 2024

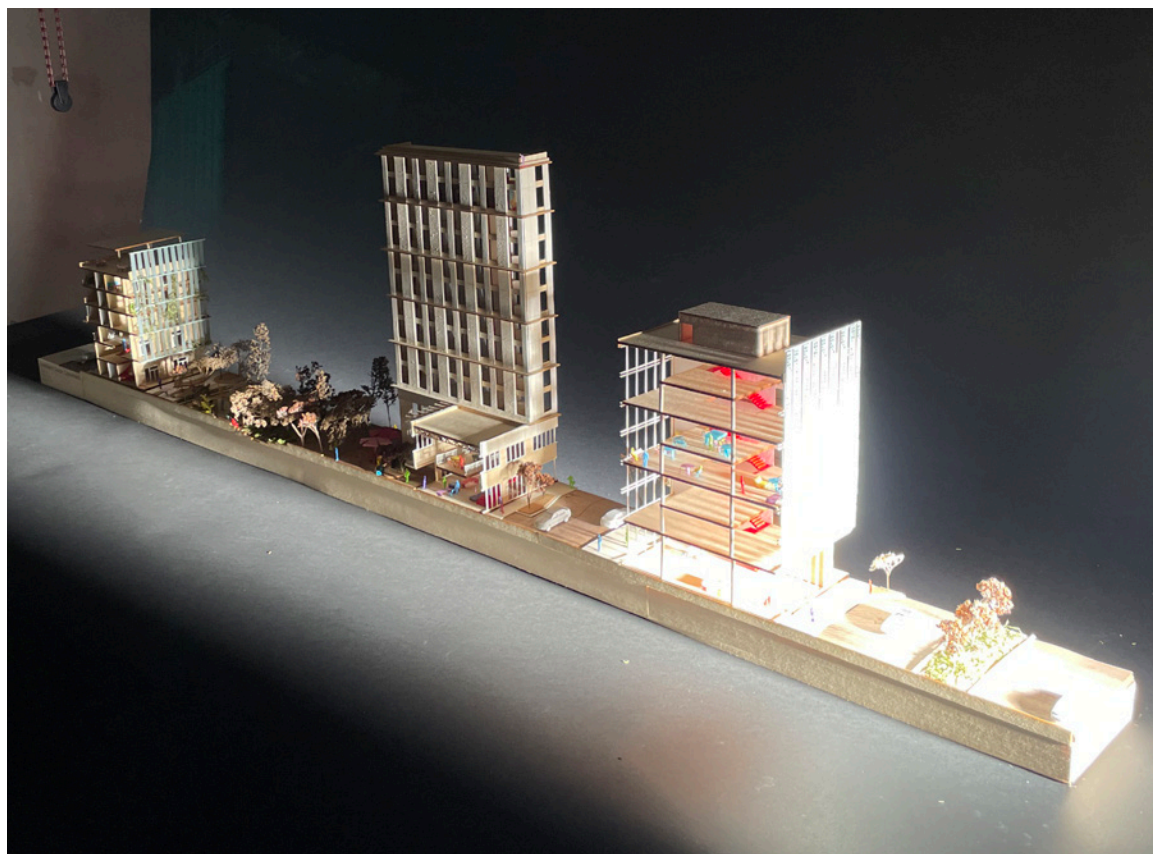
Supervised by: Adrian Blackwell

Tools: Laser Cutting, 3D Printing, Hand Modeling

Partners: Shriyan Mistry, Nathan Chan

This model measures 6' long and 5.5" wide, utilizing a 2"x4" as the base to build on.









Communal Seclusion

Studio 2A: Housing Studio

Completed: Fall/Winter 2023

Supervised by: Adrian Blackwell

Software: Revit 2023, Illustrator, InDesign

Communal Seclusion is a project that addresses the immediate local issues in Cambridge, Ontario, concerning recently displaced youth and homeless individuals. This project utilizes flexible spaces, supportive services, and community engagement through a strategically programmed environment to accommodate individuals' social needs as they begin their transition back into broader communities. **This provokes the question, how can architectural design empower and integrate affected individuals, fostering community and well-being?**

Site Axo

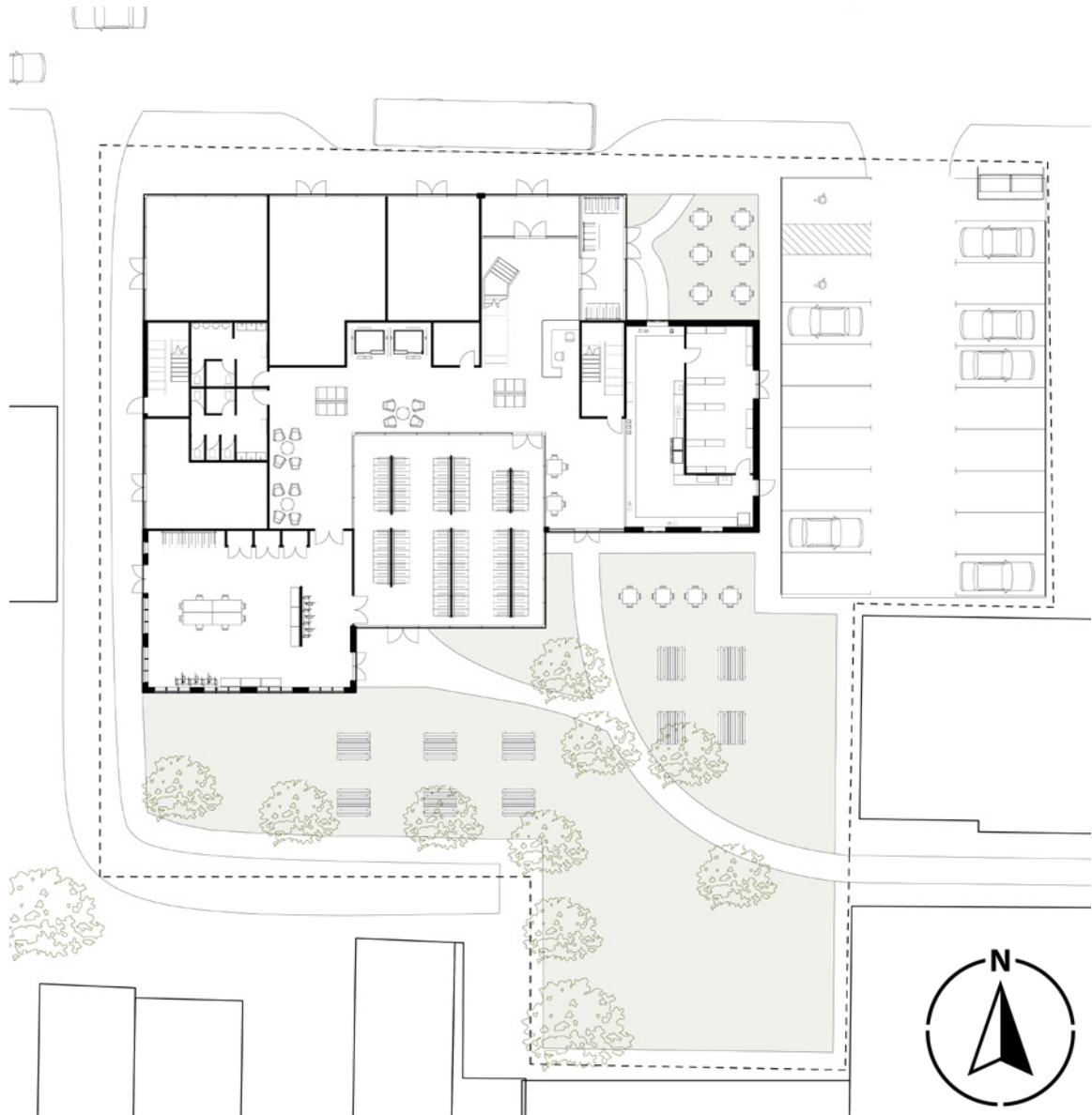


Site Section

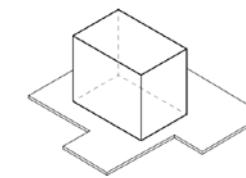
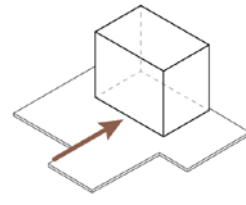
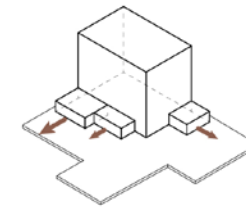
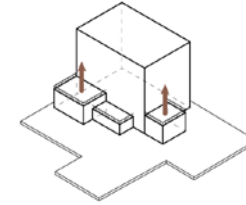




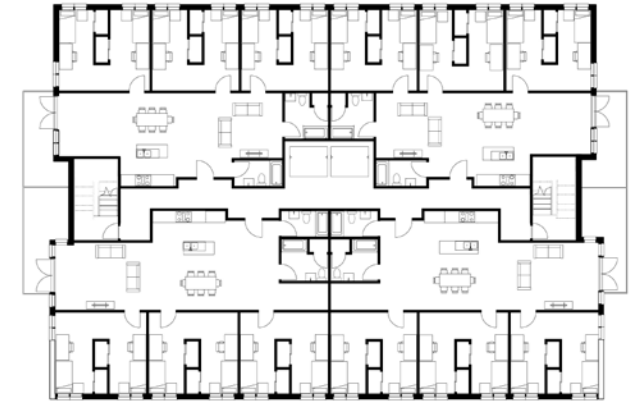
Site Plan



First Floor Plan



Morpho Diagram



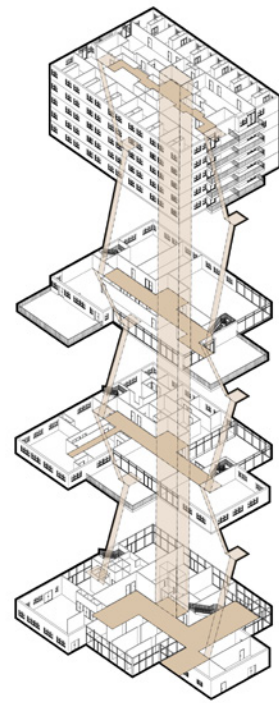
Fourth-Eighth Floor Floor Plan



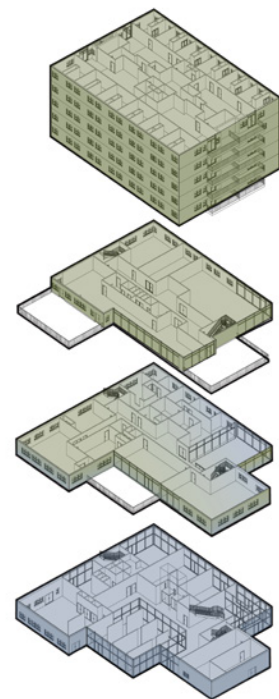
Third Floor Floor Plan



Second Floor Floor Plan

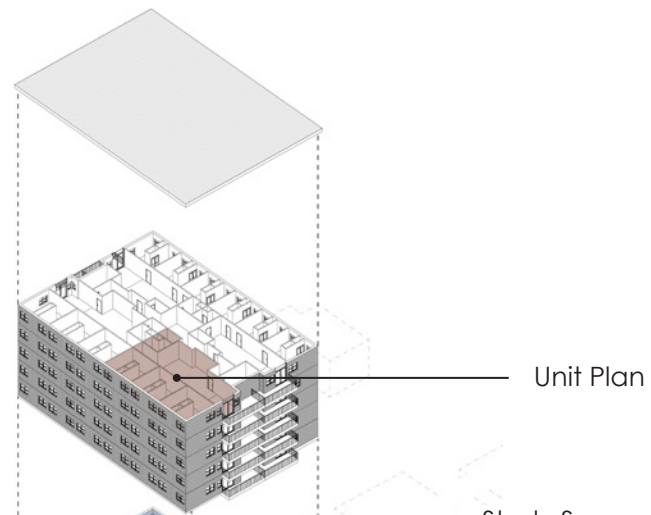


Circulation Diagram

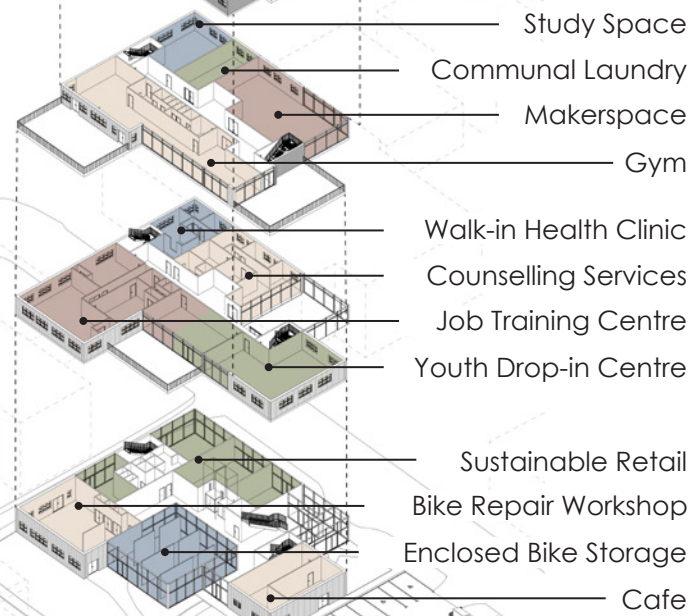


Private + Public Program

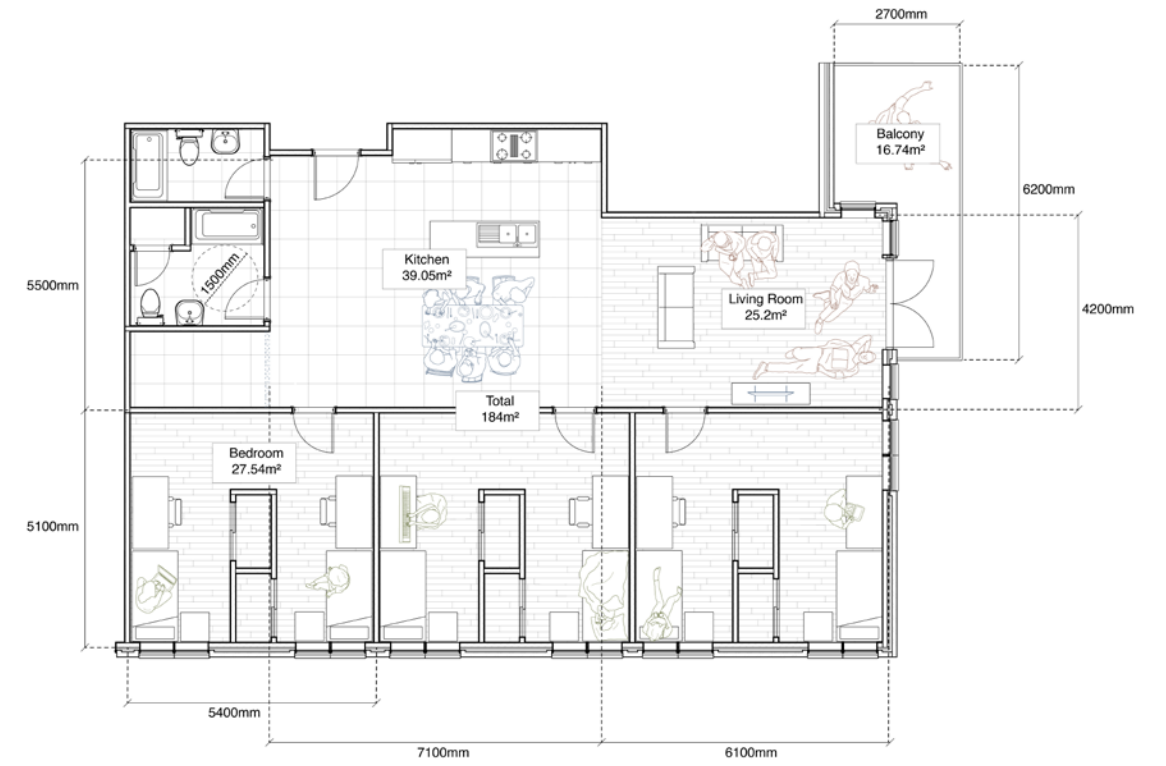
Private
↑
↓
Public



Unit Plan



Exploded Axo



Unit Plan

Thank you,

Dakota Bacchus

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or
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