

**Architecture  
Design  
Fabrication  
+**

**2025**

**JULIE NIU**

**Selected  
Works**

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HELLO,

<http://www.julieniu.work>

Julie Niu is a designer and researcher whose work explores the intersection of architecture, digital space, and interactive media. She recently completed her Master of Architecture degree at the University of Waterloo, where her thesis, “Elements and Patterns of Virtual Contested Space: Understanding the Spatial Anatomy of Competitive Multiplayer First-Person Shooter Video Game Maps,” established a syntax of architectural elements and gameplay patterns, bridging architectural theory with digital spatial analysis. With professional experience spanning architecture and exhibition design, Julie approaches game studies from a distinct architectural perspective, examining virtual environments through the lenses of spatial experience, narrative, and interaction. Her ongoing research continues to examine how architectural methodologies can enrich our understanding of virtual worlds and interactive game spaces.

JULIE NIU

EDUCATION

20	<b>M.Arch</b>	<b>Master of Architecture</b>	20	<b>BAS</b>	<b>Bachelor of Arch. Studies</b>	
24	UNIVERSITY OF WATERLOO SCHOOL OF ARCHITECTURE				21	UNIVERSITY OF WATERLOO SCHOOL OF ARCHITECTURE

EXPERIENCE

<b>Exhibit Designer</b>			<b>Project Coordinator</b>		
CANADIAN MUSEUM OF ARCHITECTURE	Toronto ON	2022 - 2025	LEDCOR GROUP	Vancouver BC	01 - 04 2021
<b>Architectural Intern</b>			<b>Architectural Intern</b>		
DILLER SCOFIDIO + RENFRO	New York USA	01 - 06 2020	WXY STUDIO	Vancouver BC	05 - 08 2019
<b>Architectural Intern</b>			<b>Architectural Intern</b>		
MCM PARTNERSHIP	New York USA	09 - 12 2018	DEUTSCHER ARCHITECTURE	Vancouver BC	01 - 04 2018

PROFICIENCIES

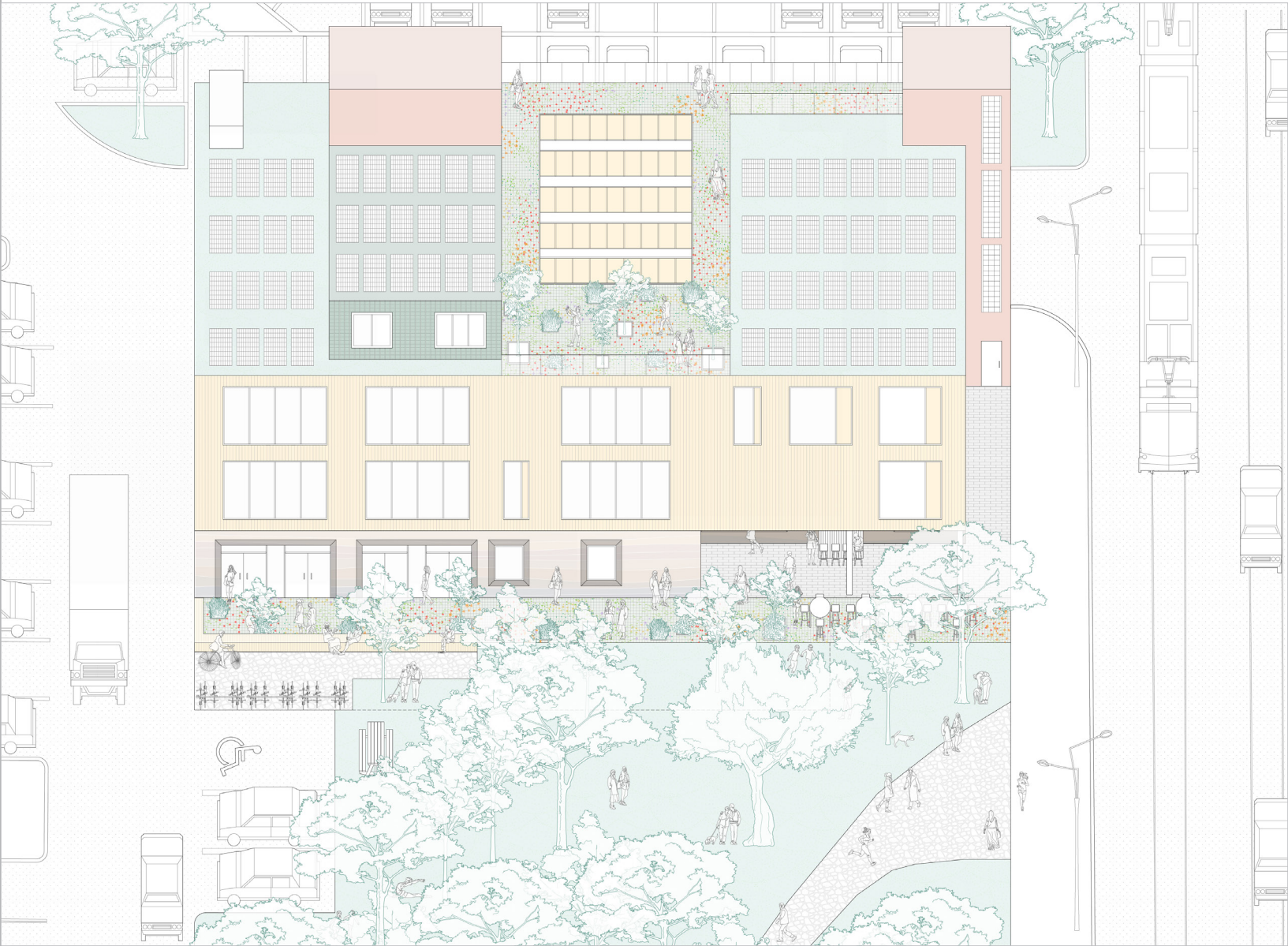
<b>Software Suites and Clouds</b>	<b>3D Modeling and Drafting</b>
Adobe [Photoshop, Illustrator, InDesign, Premiere Pro] Microsoft [Word, Excel, PowerPoint]	Rhinoceros 3D, Grasshopper and Rhino Python, AutoCAD, Revit, Sketchup, 3dsMax, Blender, GIS, Unreal Engine
<b>Digital Fabrication</b>	<b>Analog Craft</b>
3D Printing, Ceramic 3D Printing, Laser Cutting, CNC Milling	Hand Drafting, Illustration, Wood Working, Phys. Model Making
<b>3D Rendering</b>	<b>Programming</b>
V-Ray, Enscape, Maxwell, D-5, Lumion	Python, Processing[p5], HTML

# A CENTER FOR CONVERSATION

**TYPE** ACADEMIC PROJECT  
**YEAR** 2020  
**LOCATION** TORONTO

This project establishes a platform for constructive dialogue and collaboration among multiple stakeholders. It is conceived as both an educational institution—offering courses and training workshops on facilitation and collaboration skills—and a refuge where professional mediators support communities confronting chronic or acute injustices. The architectural design reinforces these objectives by providing spaces conducive to difficult conversations, while also offering sanctuary in the face of adversity. Interior gardens act as mediators, introducing elements of calm and tranquility that foster openness and understanding. A series of adaptable meeting rooms further underpins the center’s mission, accommodating a variety of group sizes and activities. Through this flexible configuration, the project aspires to become a catalyst for transformative dialogue and collective problem-solving.

North Facade Elevation-Oblique

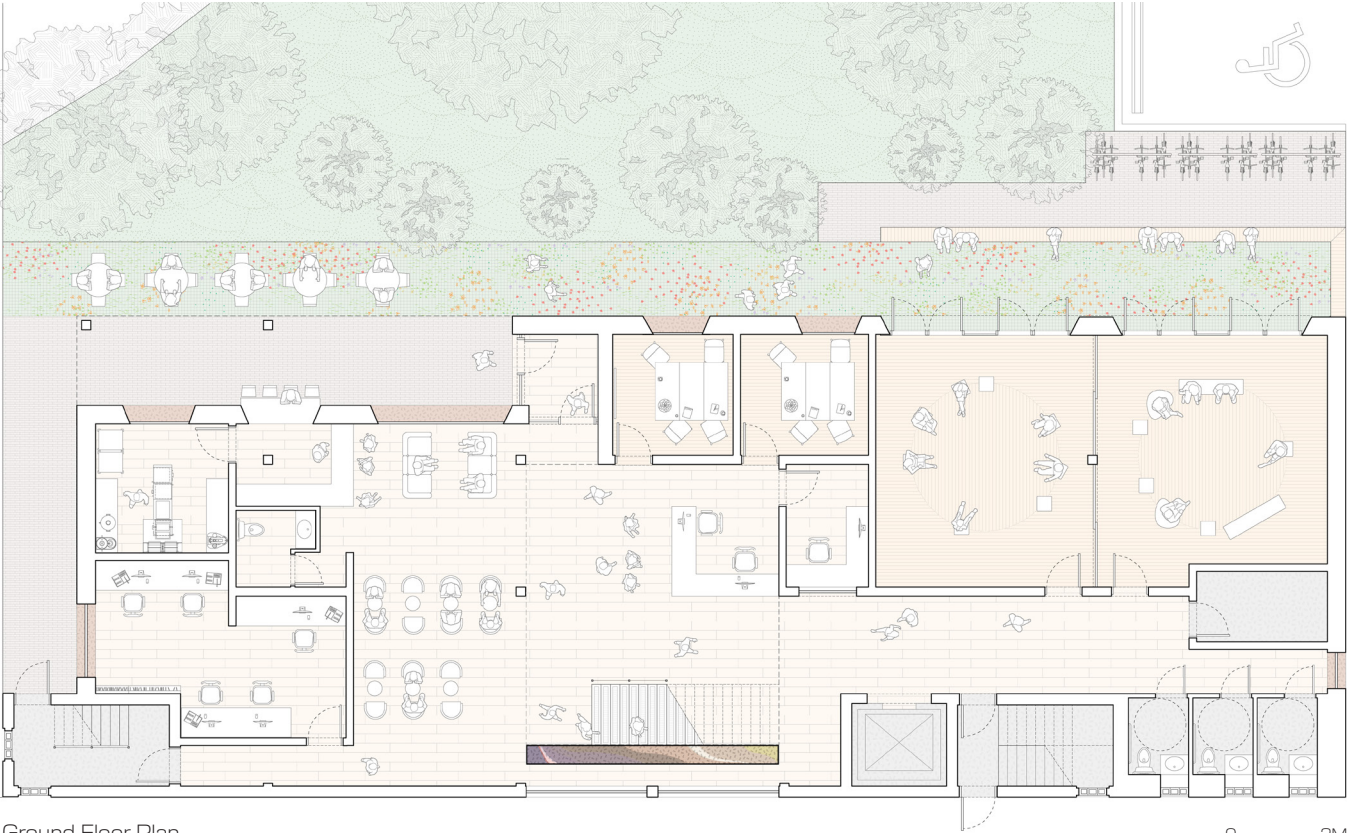






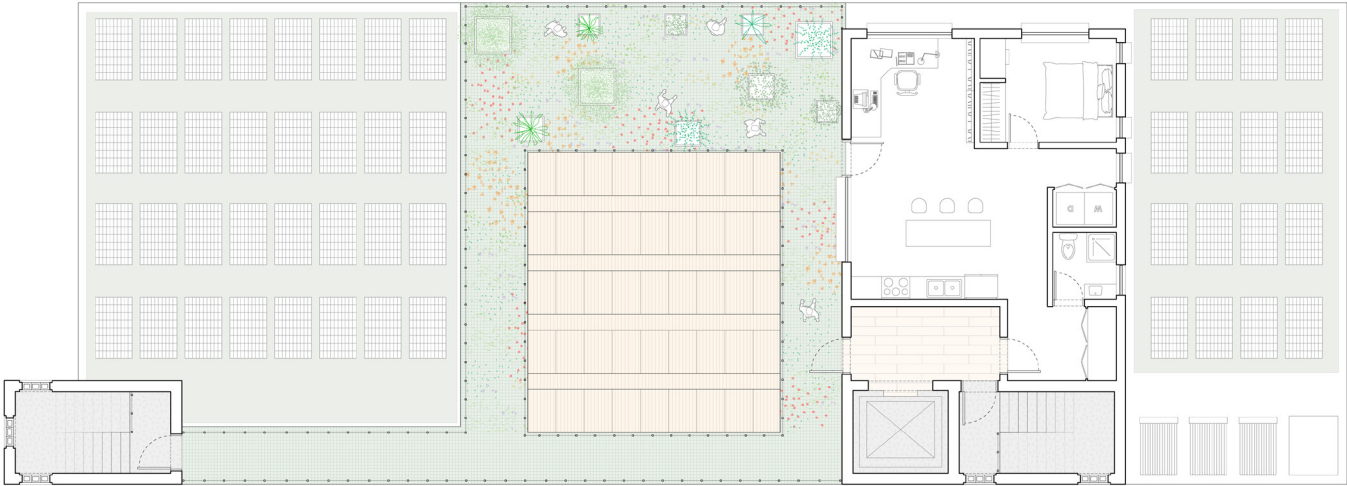
Ground Floor Site Plan

0 — 5M

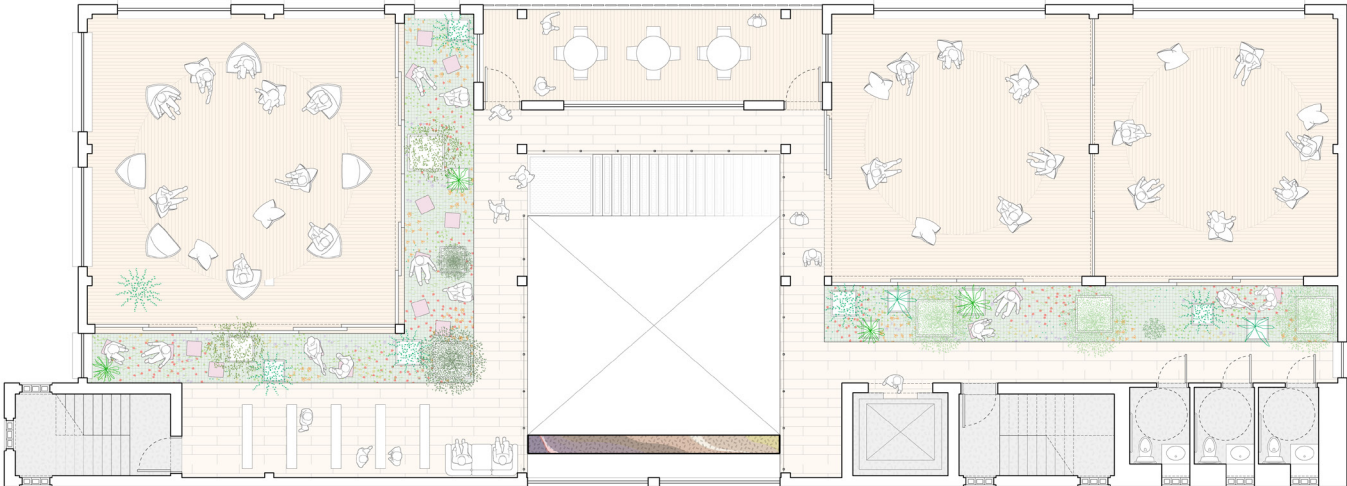


Ground Floor Plan

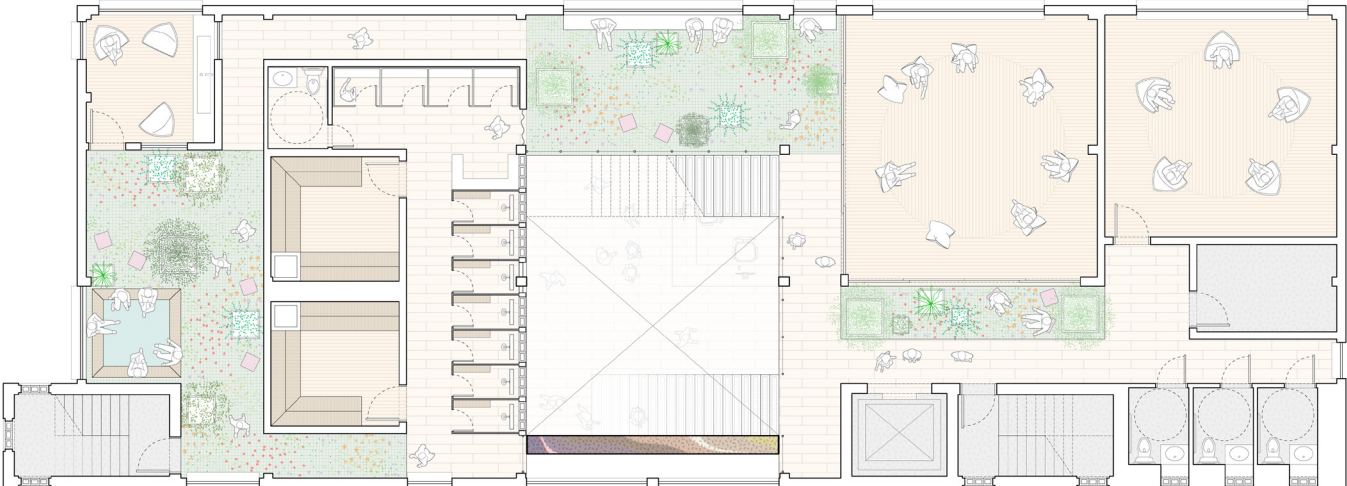
0 — 2M



Fourth Floor Residence Plan

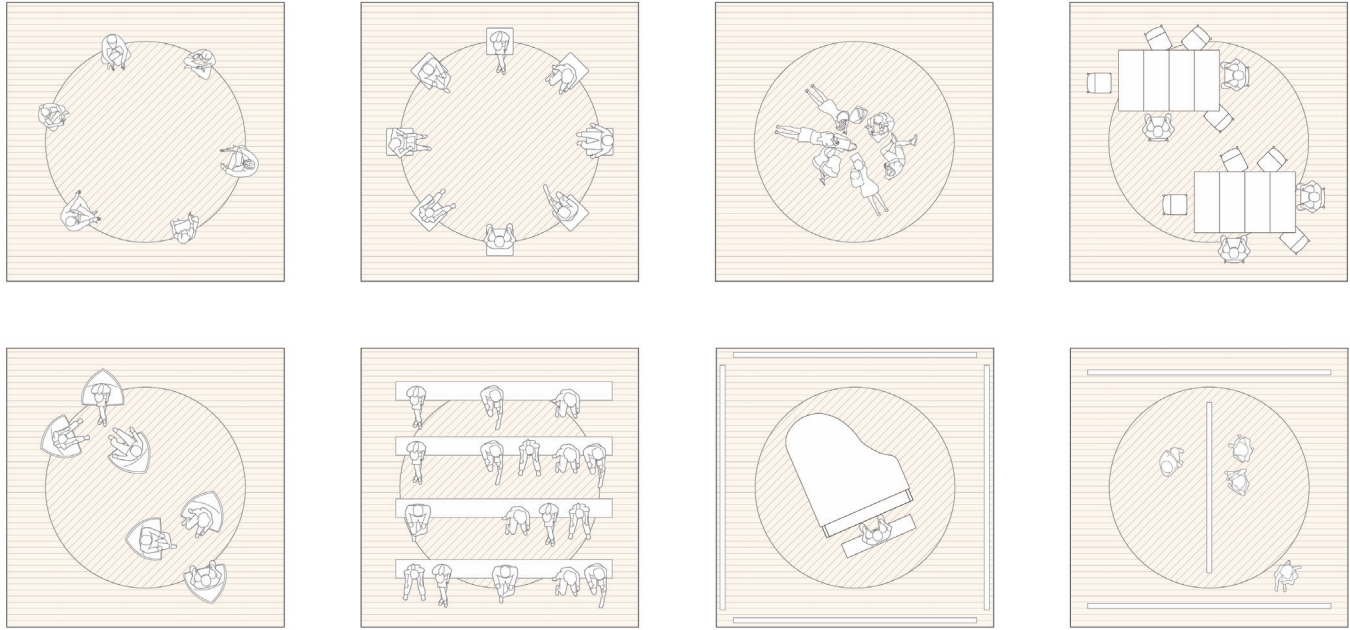


Third Floor Plan

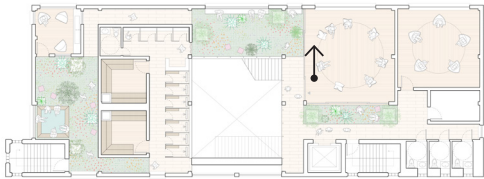


Second Floor Plan

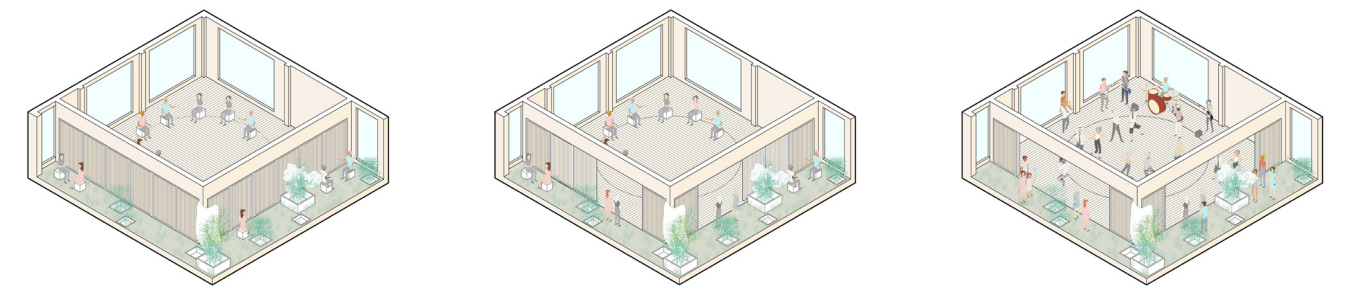




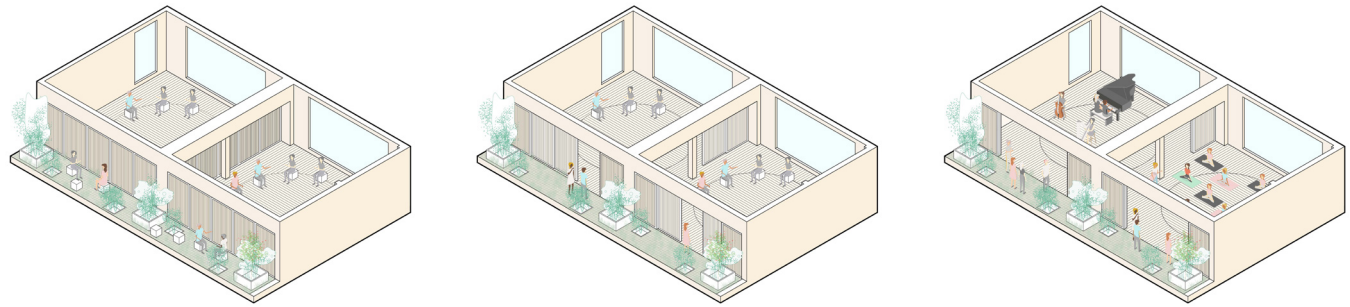
Room Flexibility diagrams



Meeting Room Garden Perspective



Large Meeting Rooms Flexibility



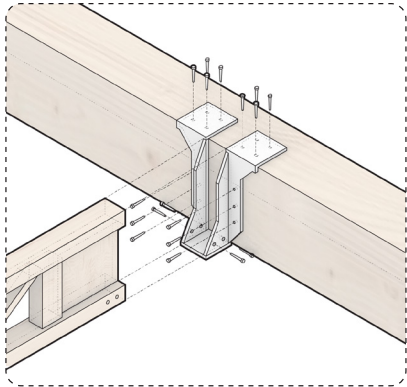
Adjacent Meeting Rooms Flexibility



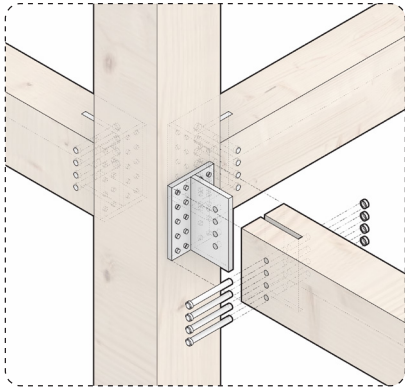
West Elevation

0 — 1M

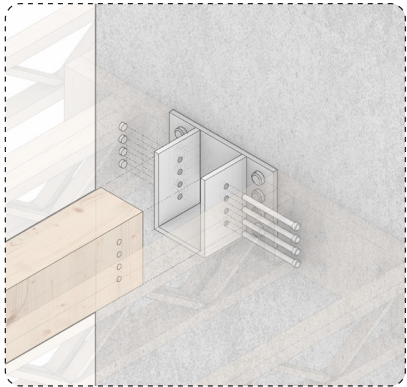




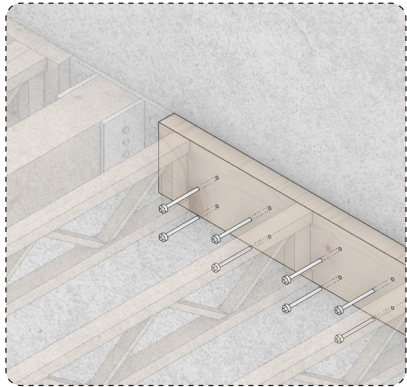
Joist to Beam Hanger Connection



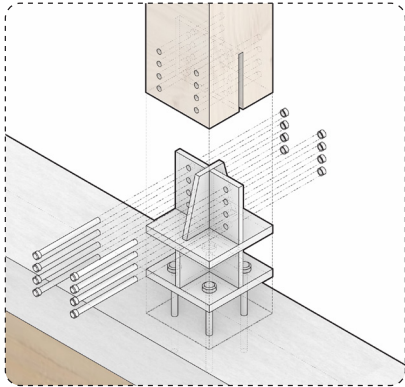
Glulam Beam to Column Connection



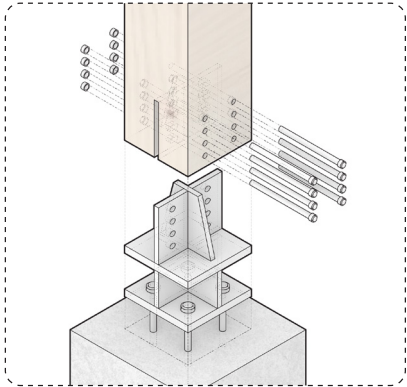
Beam to Concrete Core Connection



Ledger Beam Attached To Concrete Core With Epoxy Anchors



Glulam Column to Rammed Earth (Concrete Bond Beam) Connection

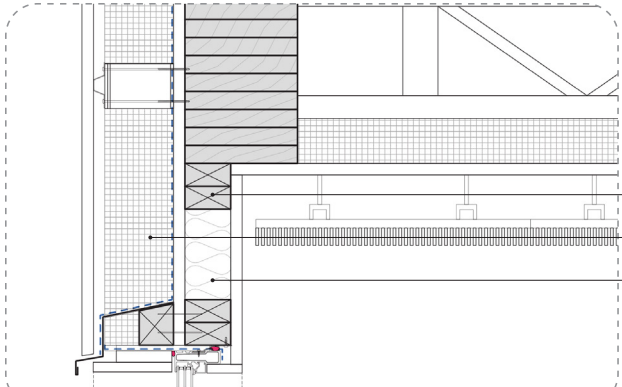


Glulam Column to Concrete Pad Footing Connection



Section 01

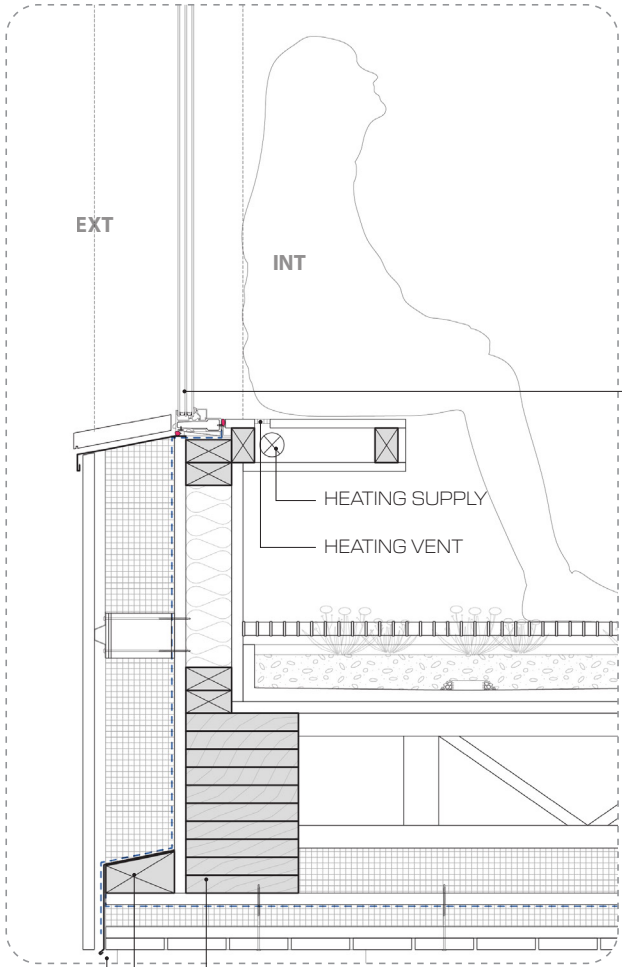
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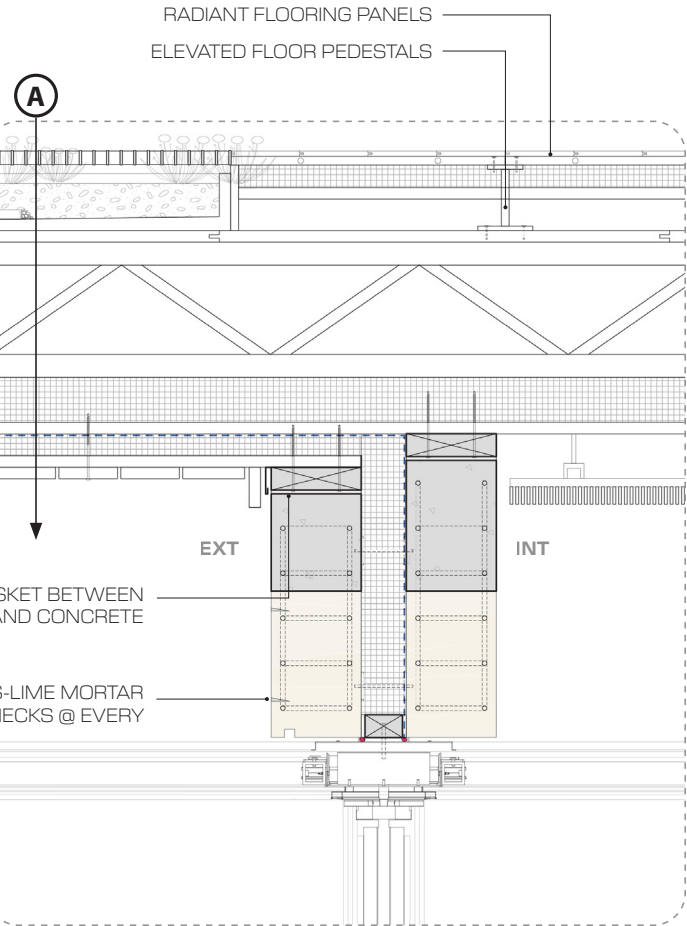
- 2X4 WOOD BLOCKING
- 6" XPS RIGID INSULATION
- FIBREGLASS BATT INSULATION

**A: INTERIOR GARDEN FLOOR PACKAGE**

- MODULAR PLANTERS
- 1" TONGUE AND GROOVE PLYWOOD SHEATHING
- TRIFORCE OPEN JOIST (OJ418S) @ 24" O.C
- 4" RIGID XPS INSULATION
- 1" PLYWOOD SHEATHING
- FULLY ADHERED AIR AND WATER BARRIER
- 2" RIGID XPS INSULATION
- 1" WOOD HORIZONTAL AND VERTICAL STRAPPING @ 1600MM O.C ATTACHED WITH SCREWS
- 1" TREATED CEDAR CLADDING

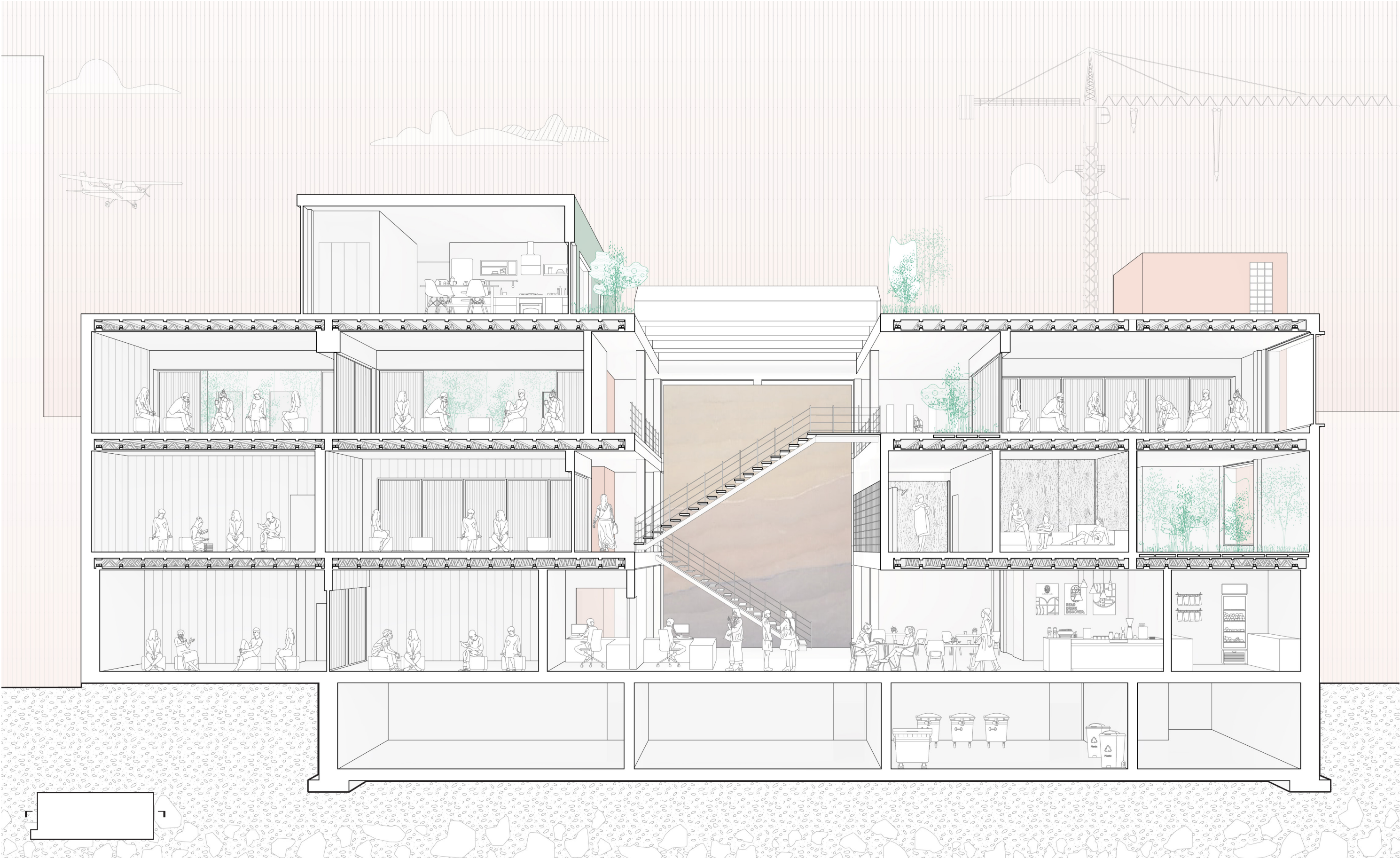


TRIPLE GLAZED WINDOW



Building Envelope Details

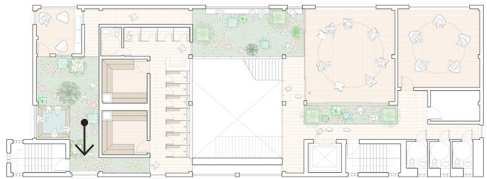
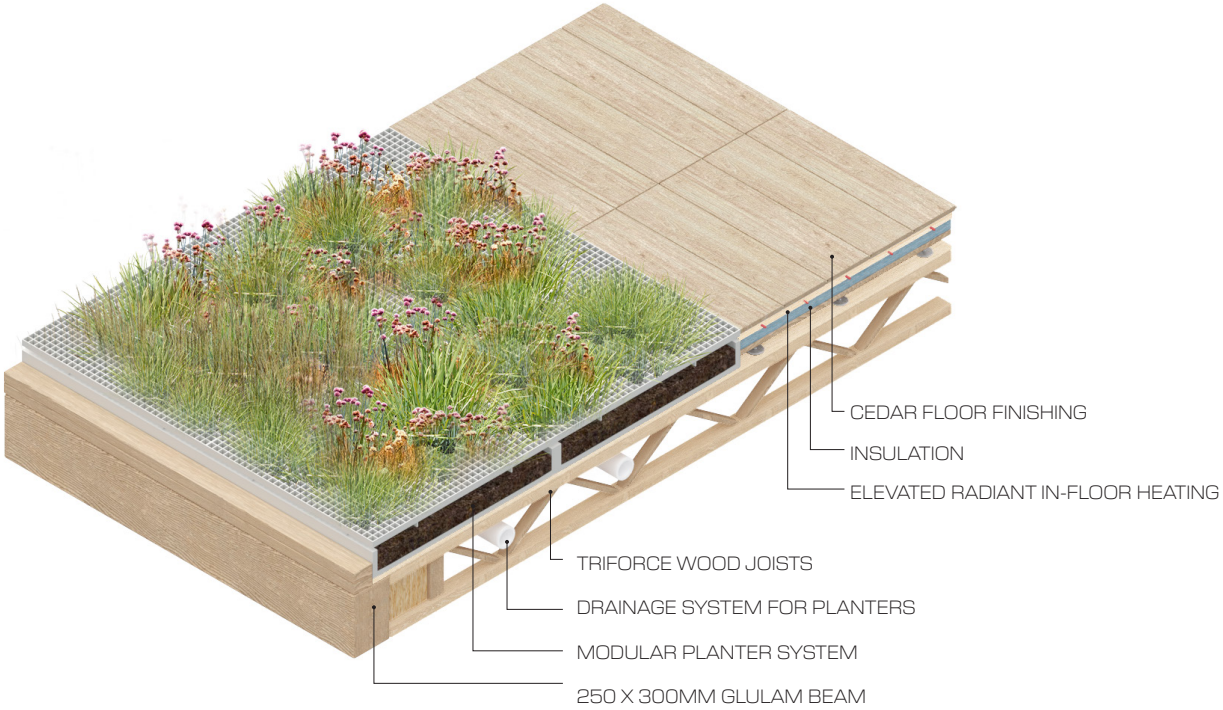




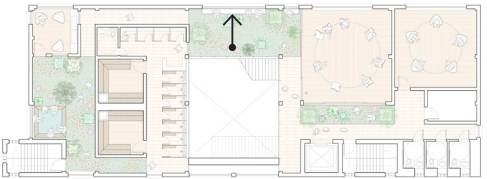
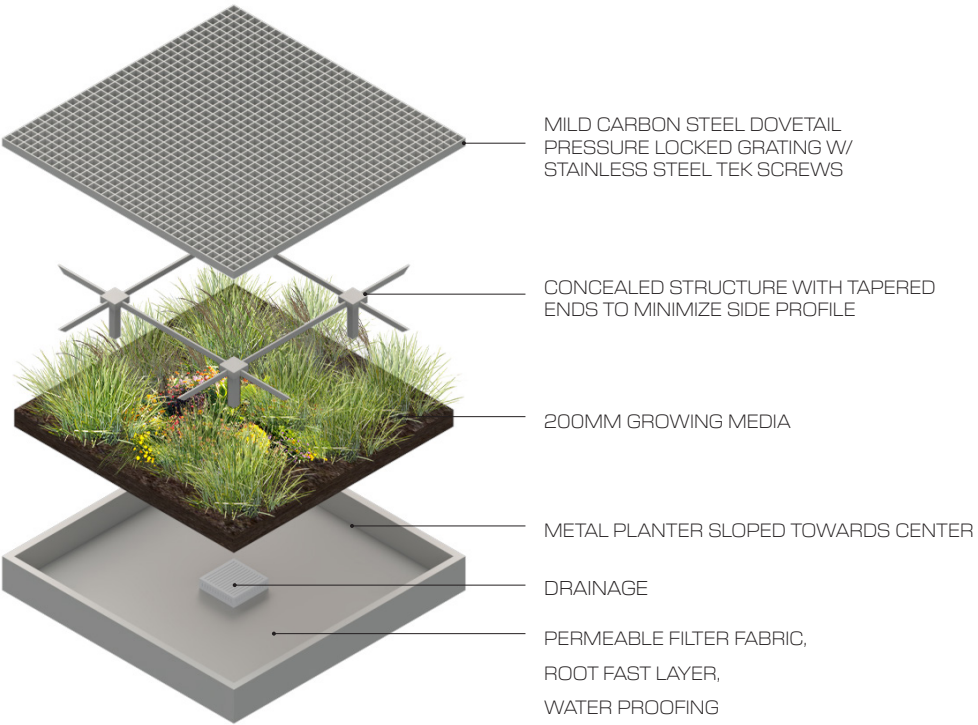
Section 02

0 1M





Second Floor Sauna Garden Perspective



Second Floor Interior Garden perspective



# THE SUSTAINABLE HOUSE MODEL

IN COLLABORATION WITH ETHAN DUFFEY

**TYPE** CONTRACTED PROJECT

**YEAR** 2022

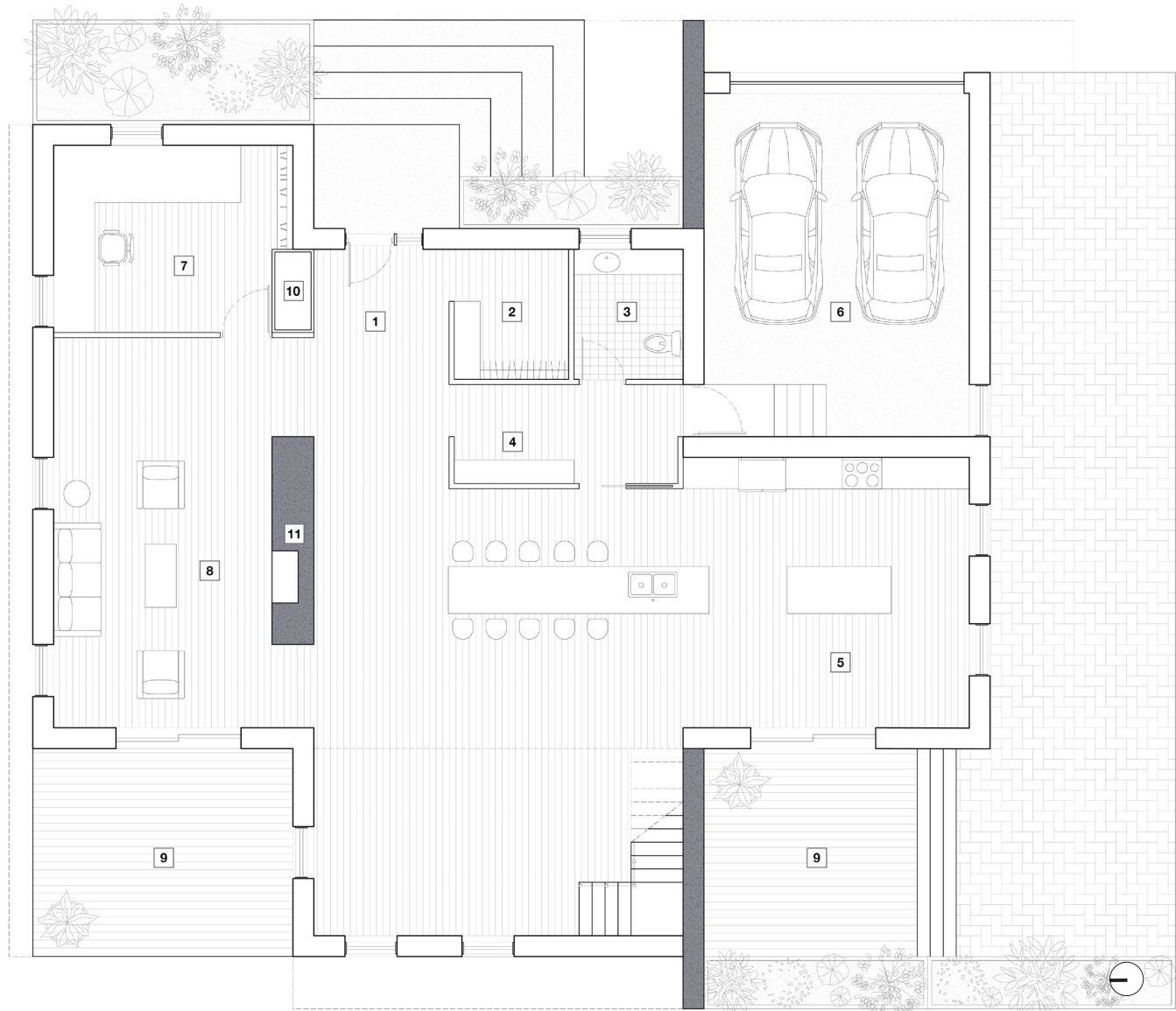
**LOCATION** TORONTO

This exhibition, designed and fabricated for the Canadian Museum of Architecture, features a large-scale model to demonstrate the principles of a sustainable house. Through custom videos, touchscreen interactives, and supporting display materials, it illustrates how passive strategies—such as building orientation and form—combine with modern technologies, including solar-generated electricity and high-efficiency heating and cooling systems. The display visualizes processes of heat transfer, solar energy production, and total energy consumption, offering visitors a clear understanding of how targeted design strategies can reduce environmental impact and promote sustainable living.





- 1. ENTRY
- 2. ENTRY CLOSET
- 3. WASHROOM
- 4. PANTRY / STORAGE
- 5. KITCHEN
- 6. GARAGE
- 7. OFFICE
- 8. LIVING ROOM
- 9. DECK
- 10. MECHANICAL SHAFT
- 11. CHIMNEY



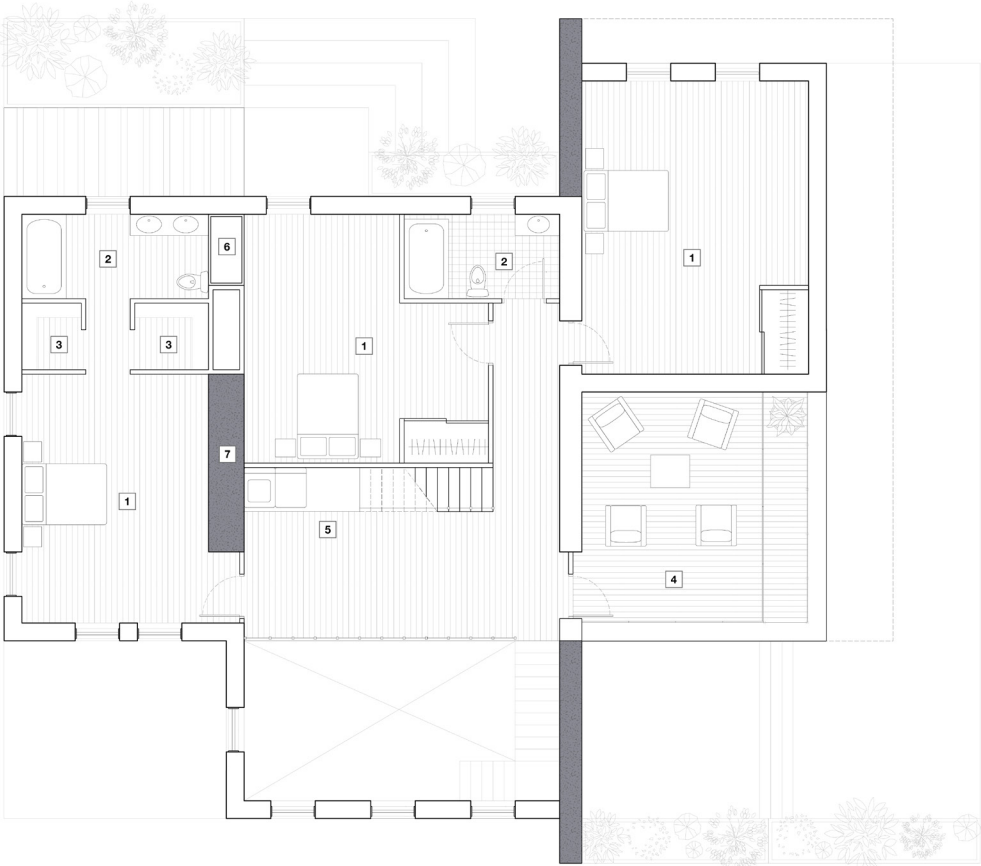
First Floor Plan

0 — 1M



Third Floor Plan

- 1. BEDROOM
- 2. MECHANICAL SHAFT
- 3. CHIMNEY



Second Floor Plan

- 1. BEDROOM
- 2. BATHROOM
- 3. CLOSET
- 4. SUN ROOM
- 5. LAUNDRY/STORAGE
- 6. MECHNICAL SHAFT
- 7. CHIMNEY

0 — 2M







# PLAY!

**TYPE** ACADEMIC PROJECT

**YEAR** 2019

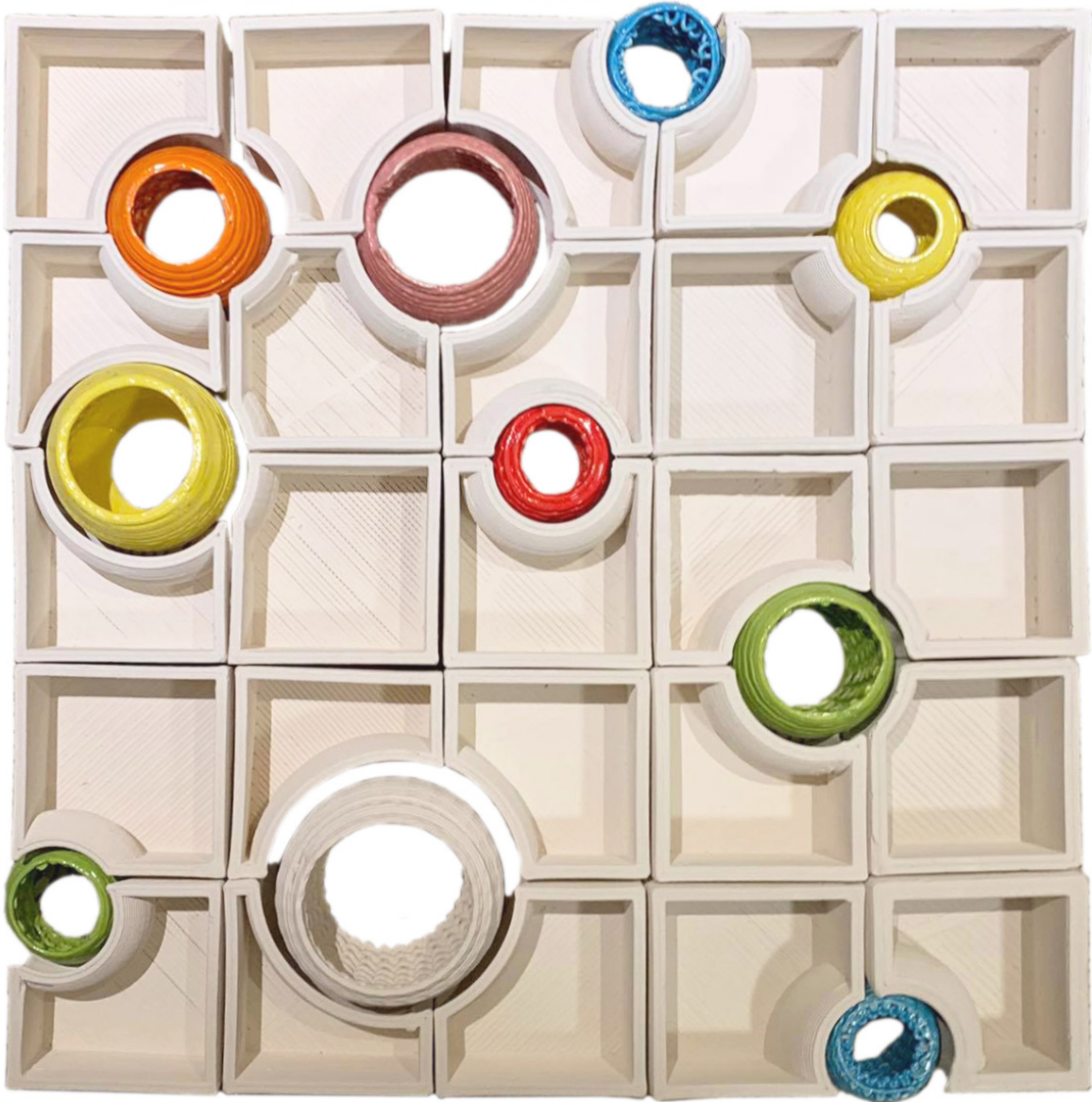
**LOCATION** TORONTO

**IN COLLABORATION WITH SALMAN RAUF AND KEVIN KUNNAPPILLY**

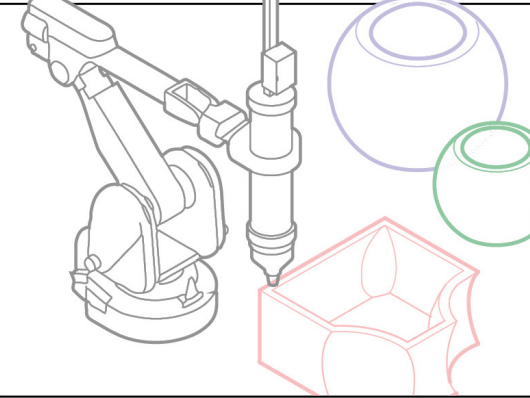
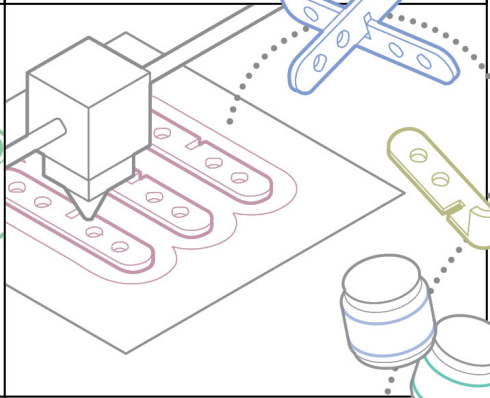
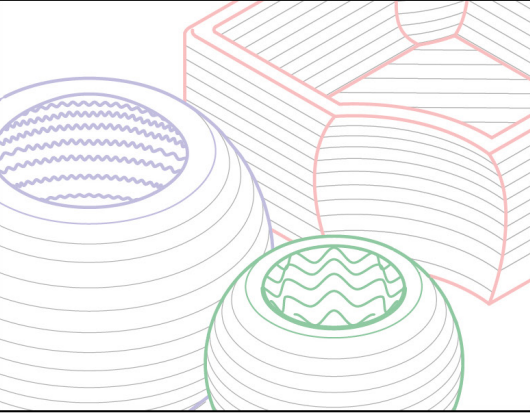
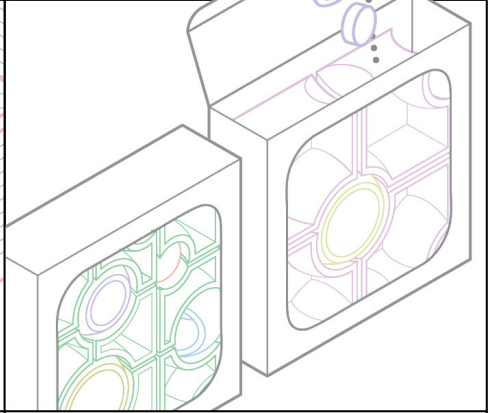
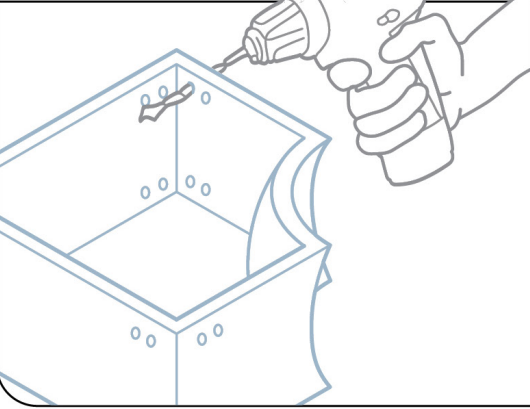
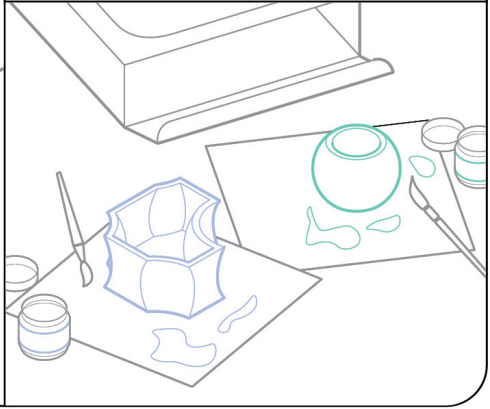
**HONORABLE MENTION FOR ARCHASAM COMPETITION 2021 “PLAY”**

**DISPLAYED IN THE 2020 MATERIAL SYNTAX EXHIBIT AT THE CANADIAN CLAY AND GLASS GALLERY**

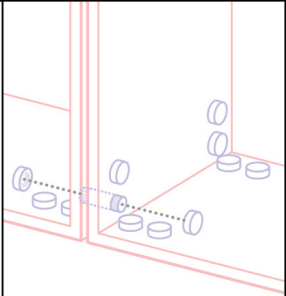
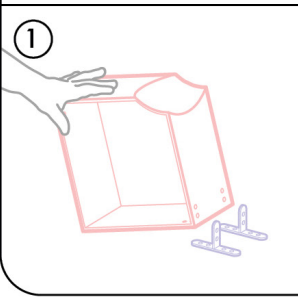
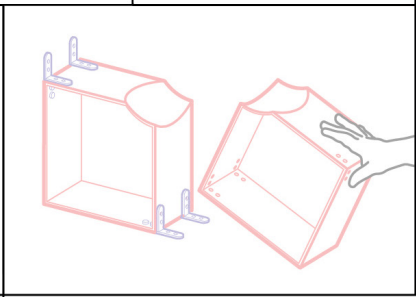

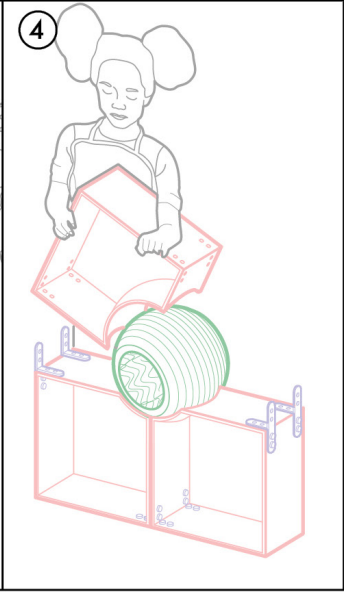
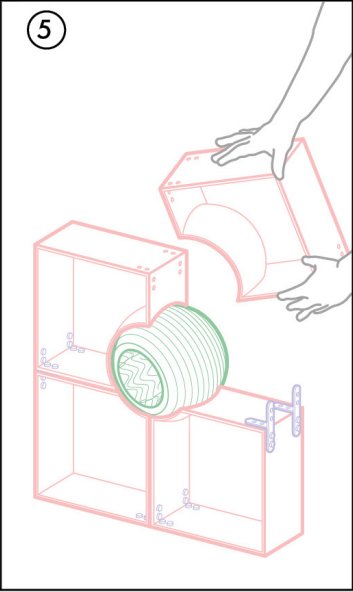
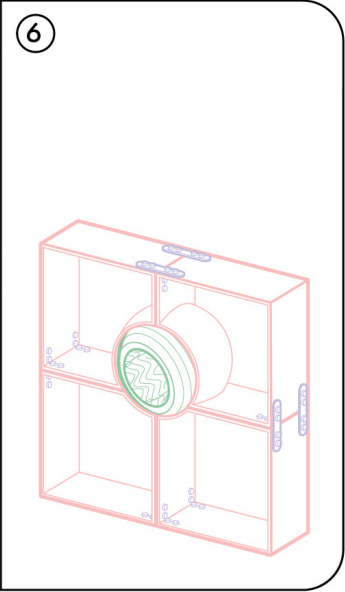
PLAY! is an interactive modular wall that fosters sensory engagement and creative exploration through the interplay of smooth blocks and textured spheres. Adaptable in color, texture, and configuration, it integrates into diverse settings—encouraging immersive play, collaboration, and holistic childhood development. The assembly leverages state-of-the-art clay 3D printing, enabling precision fabrication and unique tactile qualities that enhance both its functional adaptability and sensory appeal.



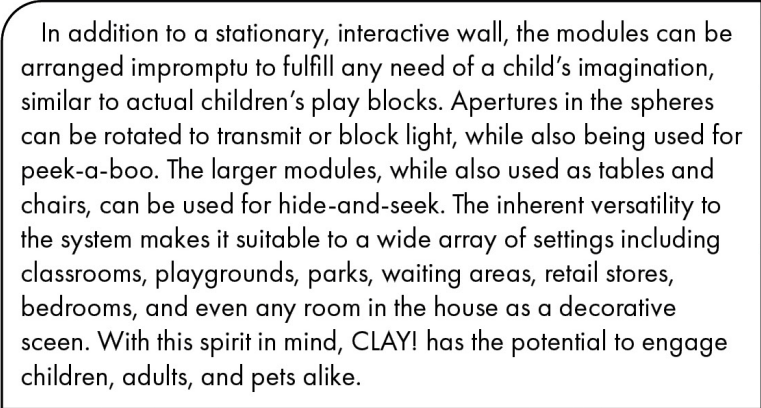
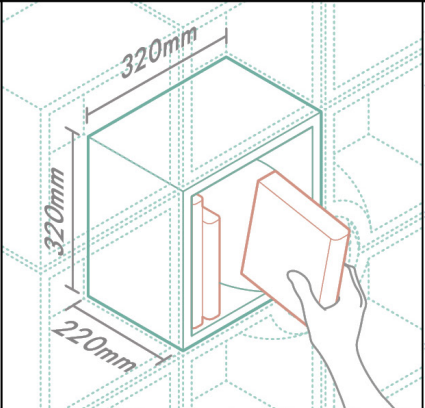
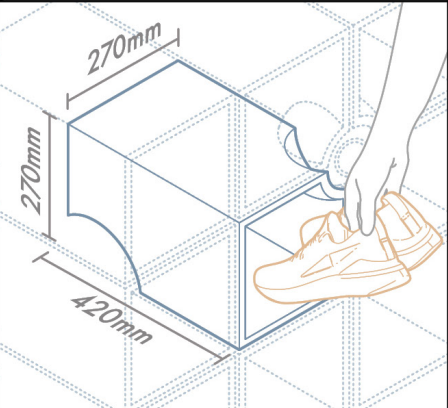
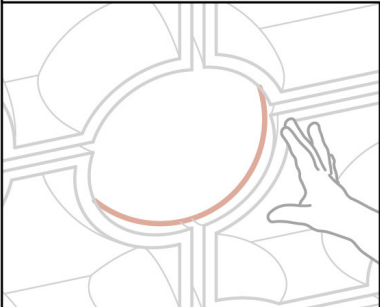
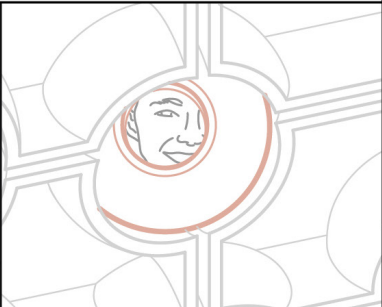
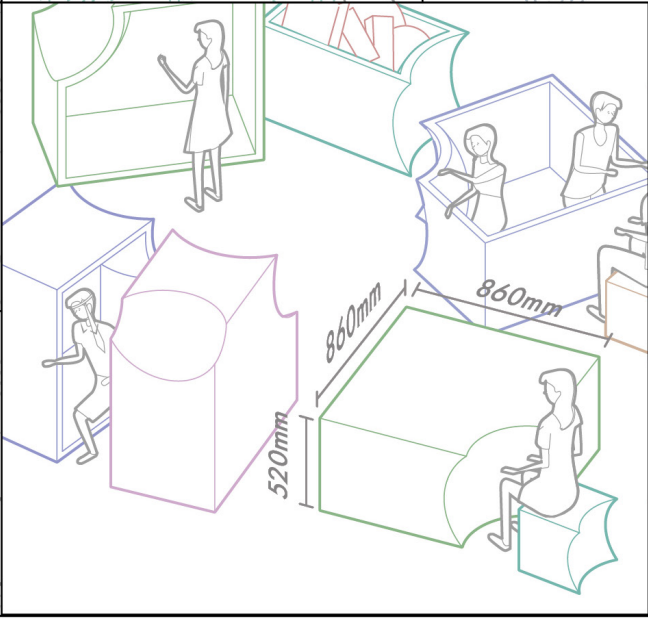
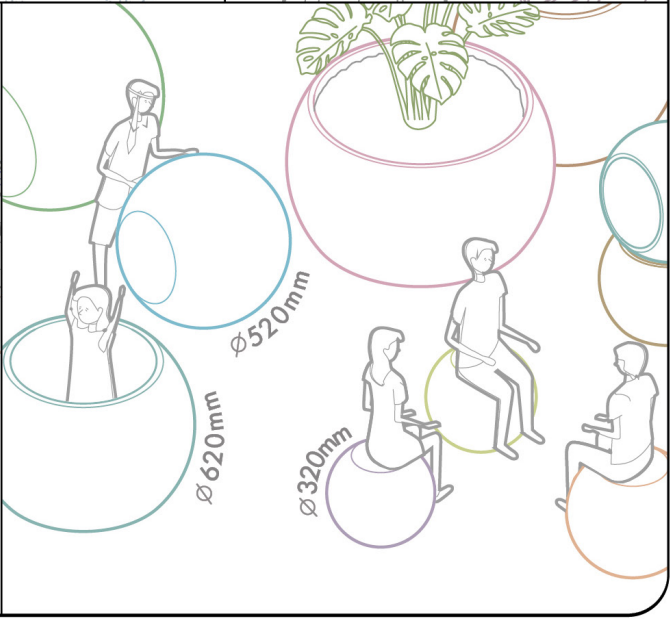


<p>The modules are 3D printed with a robotic arm and a tube-and-piston apparatus filled with wet clay or concrete. Ceramic pieces are bisque fired to a stark white finish.</p>	<p>Connections, end pieces, and hooks are made with conventional plastic 3D printers.</p>
	
<p>The additive layering lends a striated texture to all the pieces, while parametrically altering the g-code can create 'loops' adding further intrigue and customization to each piece.</p>	<p>The components are compiled into various retail packages for differing programs.</p>
	
<p>Holes are drilled into the modules to accept the threaded connections.</p>	<p>The modules can be painted with included low-fire enamel to the user's liking, and cured in a household oven.</p>
	

Fabrication and Assembly Process Diagram

<p>Pronged clips serve to attach and provide further friction between blocks in a stationary wall assembly. These are 3D-printed in plastic and mounted between holes drilled into the blocks. Protrusions to the exterior faces of the wall act</p>	
<p>①</p> 	
<p>③</p> 	<p>④</p> 
<p>⑤</p> 	<p>⑥</p> 

In addition to a stationary, interactive wall, the modules can be arranged impromptu to fulfill any need of a child's imagination, similar to actual children's play blocks. Apertures in the spheres can be rotated to transmit or block light, while also being used for peek-a-boo. The larger modules, while also used as tables and chairs, can be used for hide-and-seek. The inherent versatility to the system makes it suitable to a wide array of settings including classrooms, playgrounds, parks, waiting areas, retail stores, bedrooms, and even any room in the house as a decorative scene. With this spirit in mind, CLAY! has the potential to engage children, adults, and pets alike.

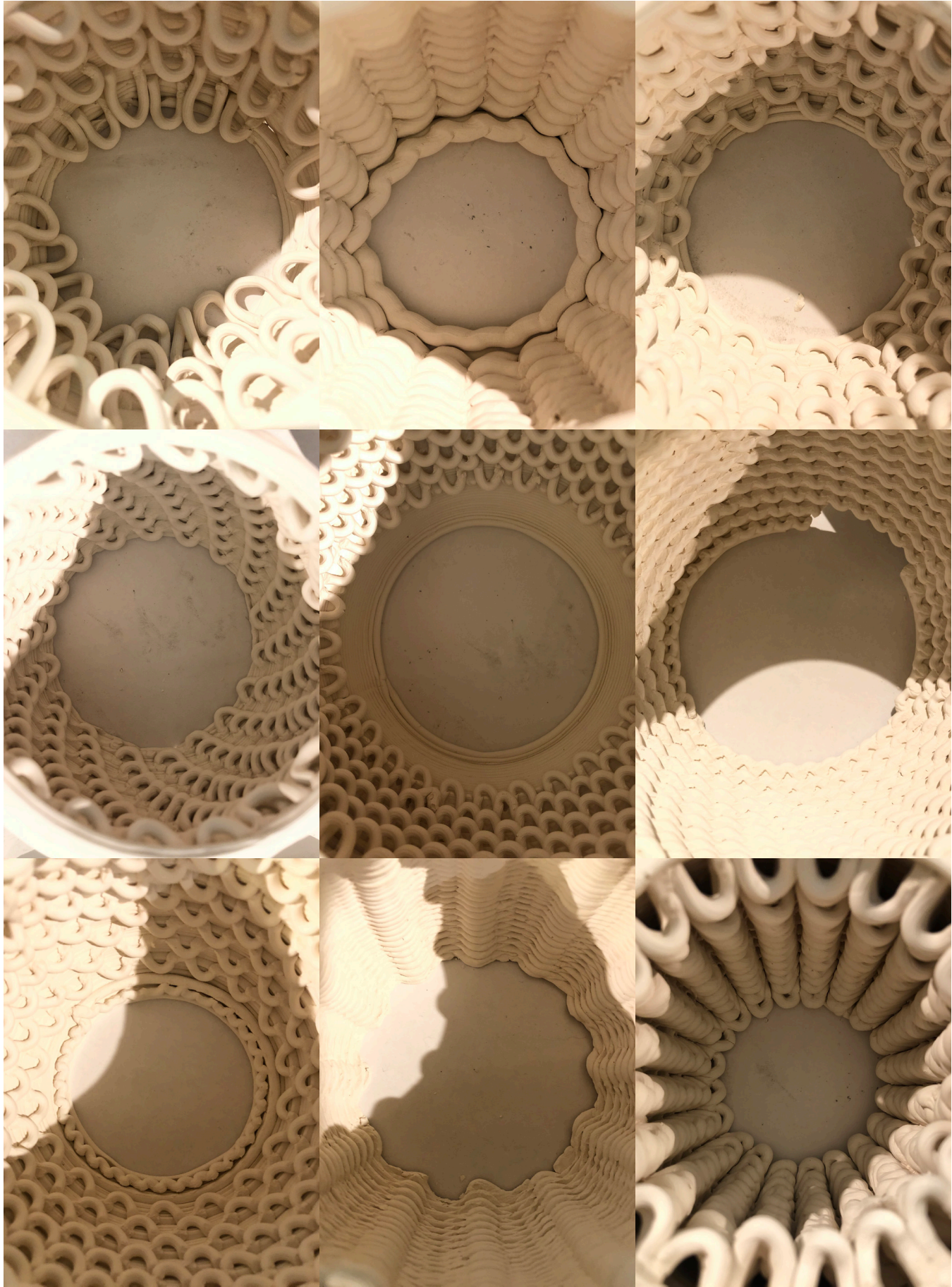




Wall Assembly Render



Assembly Photographs



Sphere Pattern G-CODE Iterations





Program Matrix



# WATERMARK

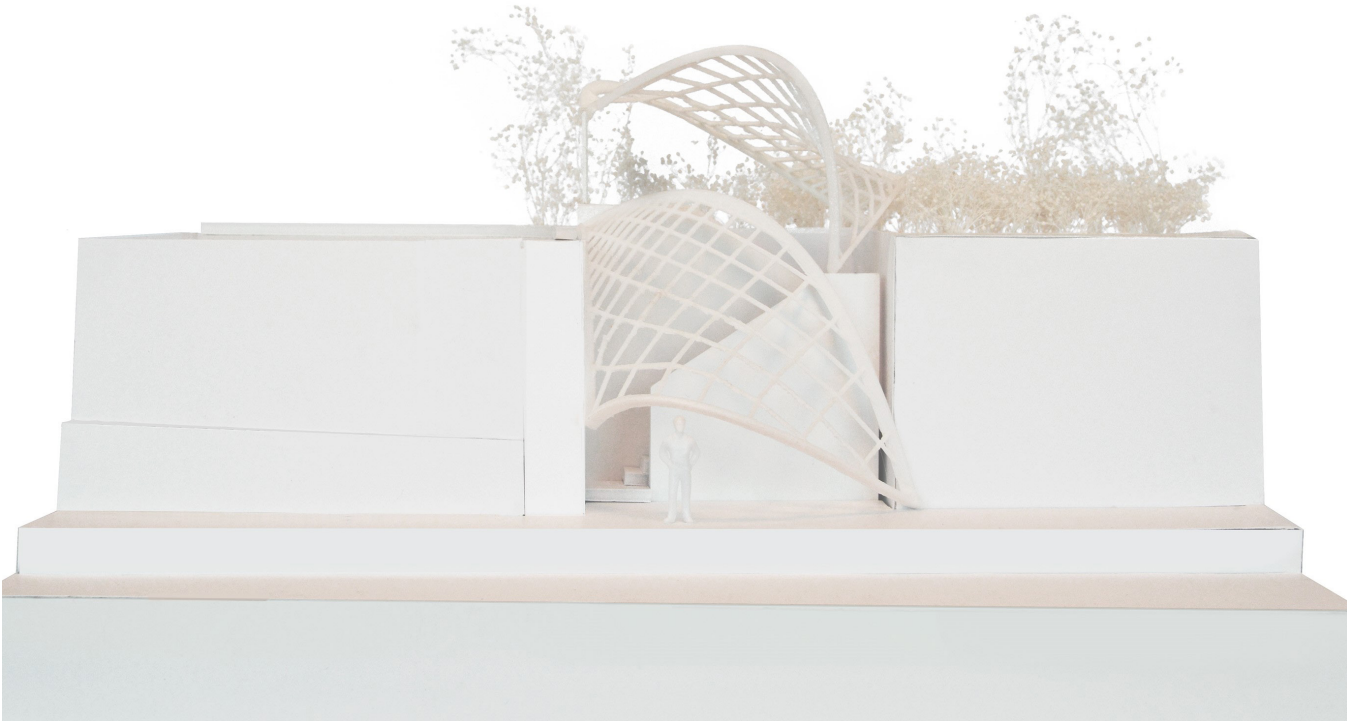
IN COLLABORATION WITH MEGHAN WON

**TYPE** ACADEMIC PROJECT

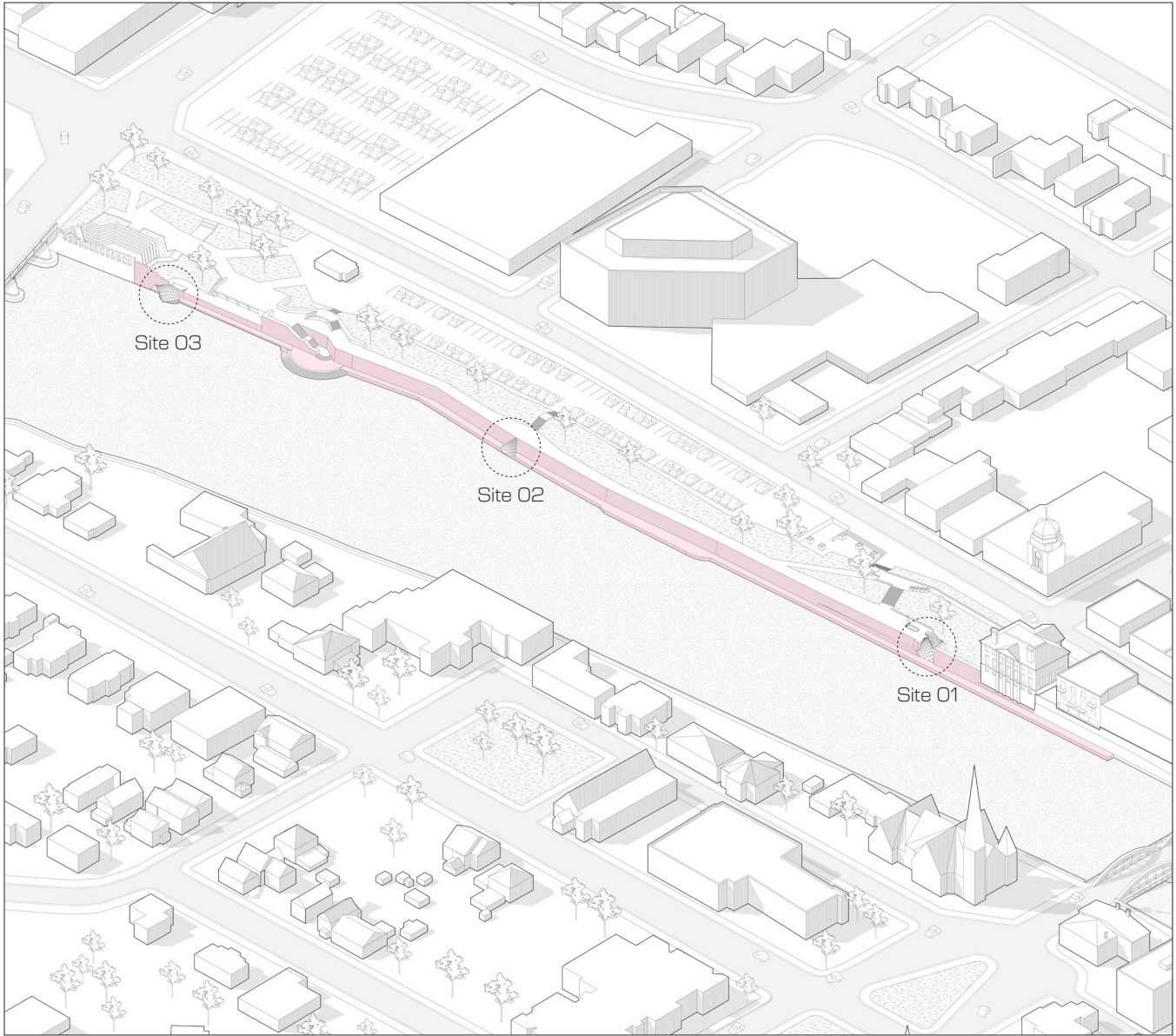
**YEAR** 2019

**LOCATION** CAMBRIDGE ON

WaterMark is a series of site-responsive pavilions that strengthen the connection between urban life and the waterfront, offering shade, shelter, and visual screening along a flood wall. Over the course of the year, seasonal precipitation dramatically alters the ETFE membrane. The tensile steel skeleton responds to these external forces, creating subtle yet visible distortions in the pavilion’s form. Cells oriented at minimal angles undergo the most pronounced concavity during rainfall, highlighting the project’s capacity to dynamically record and reveal environmental conditions. By blending computational rigor with climatic responsiveness, WaterMark showcases the potential of parametric architecture to both serve the public and engage critically with evolving ecological imperatives.







Context Axonometric



Contextual Plan

0 10 20 40M



Site 03

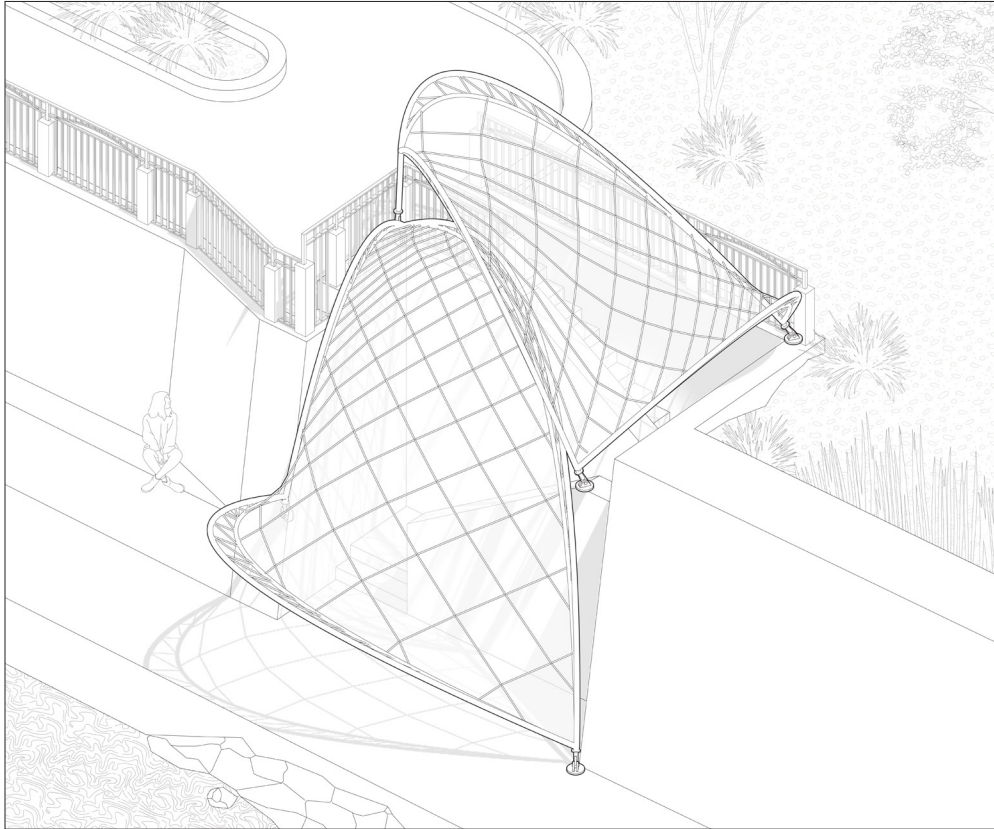


Site 02

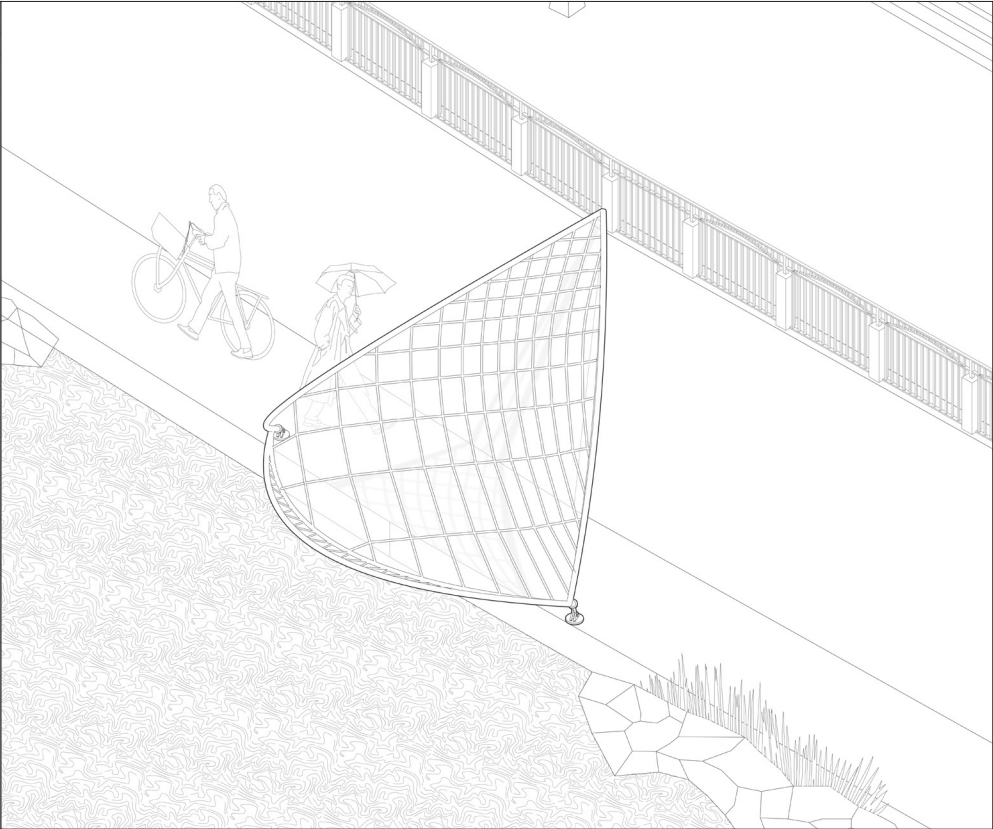


Site 01

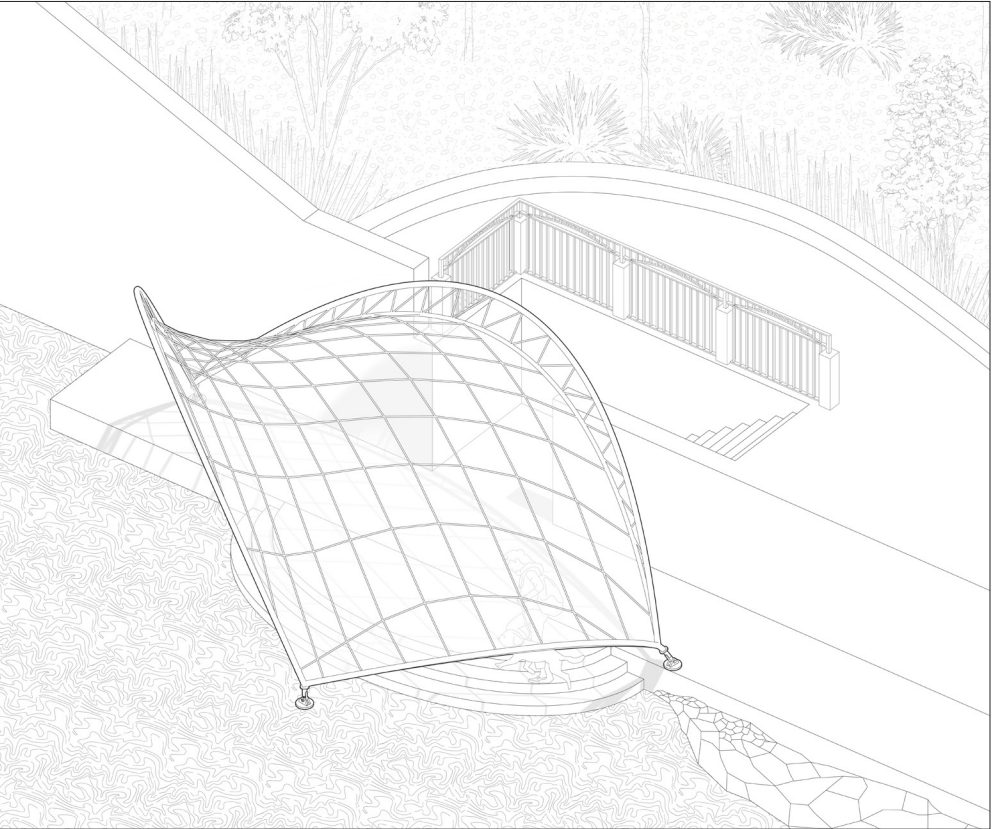




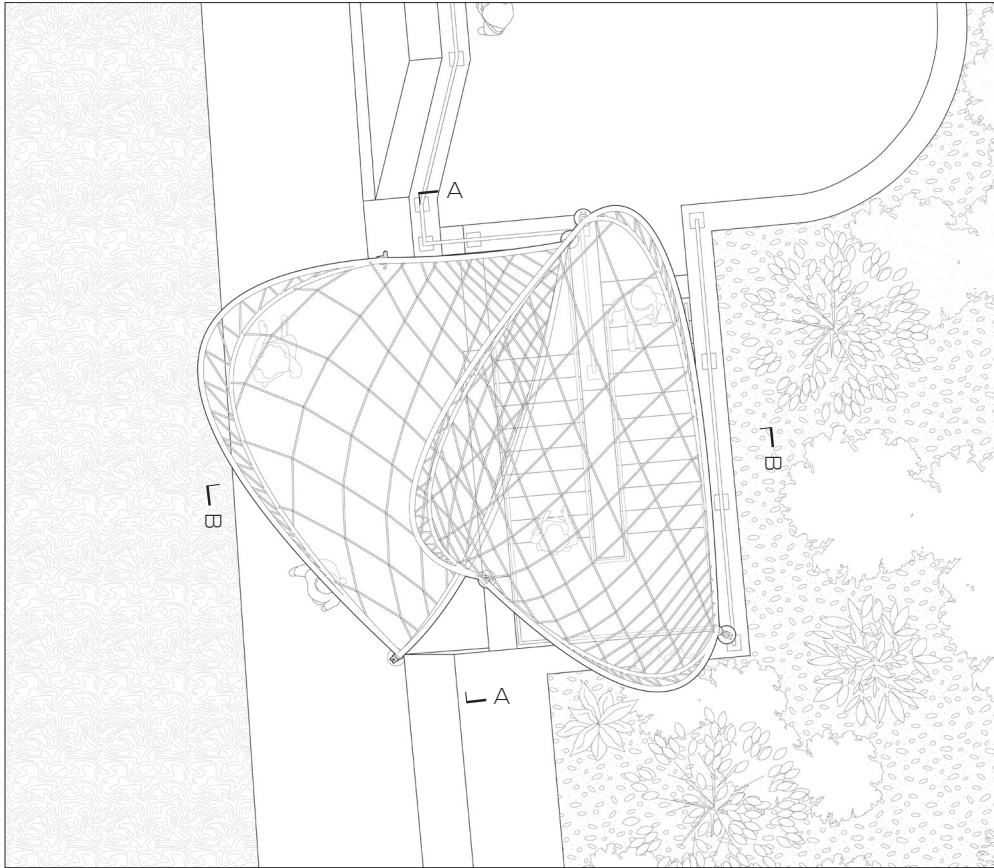
Site 01 Axonometric



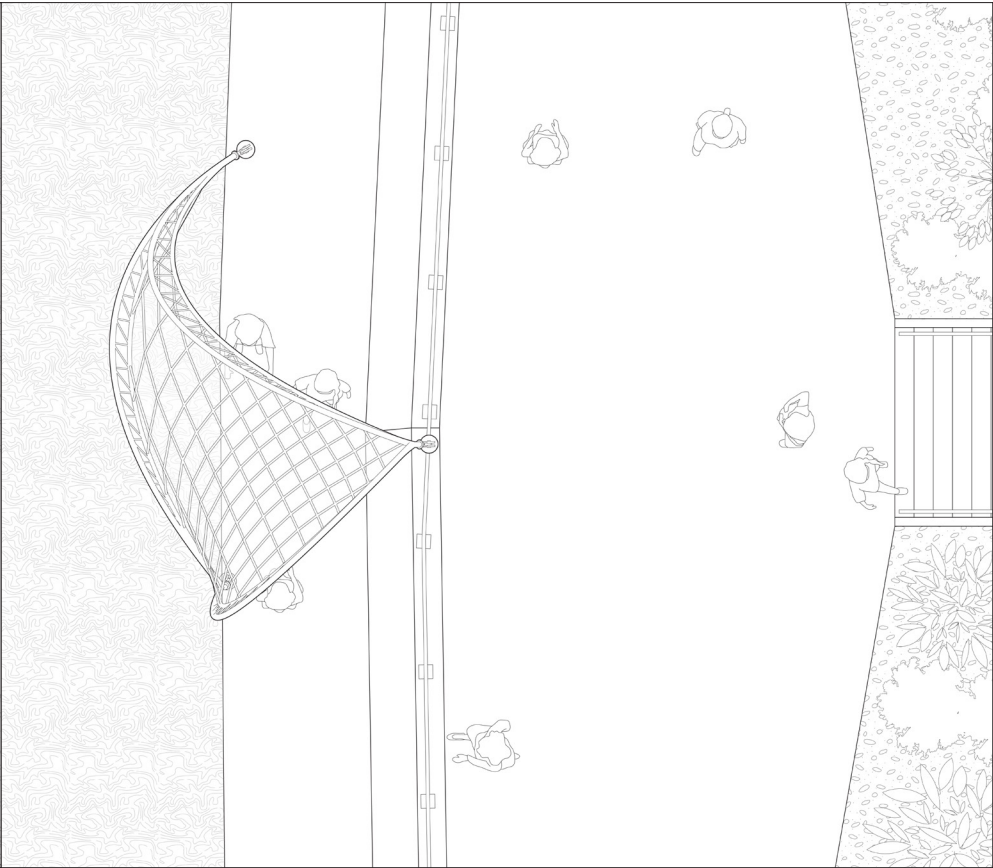
Site 02 Axonometric



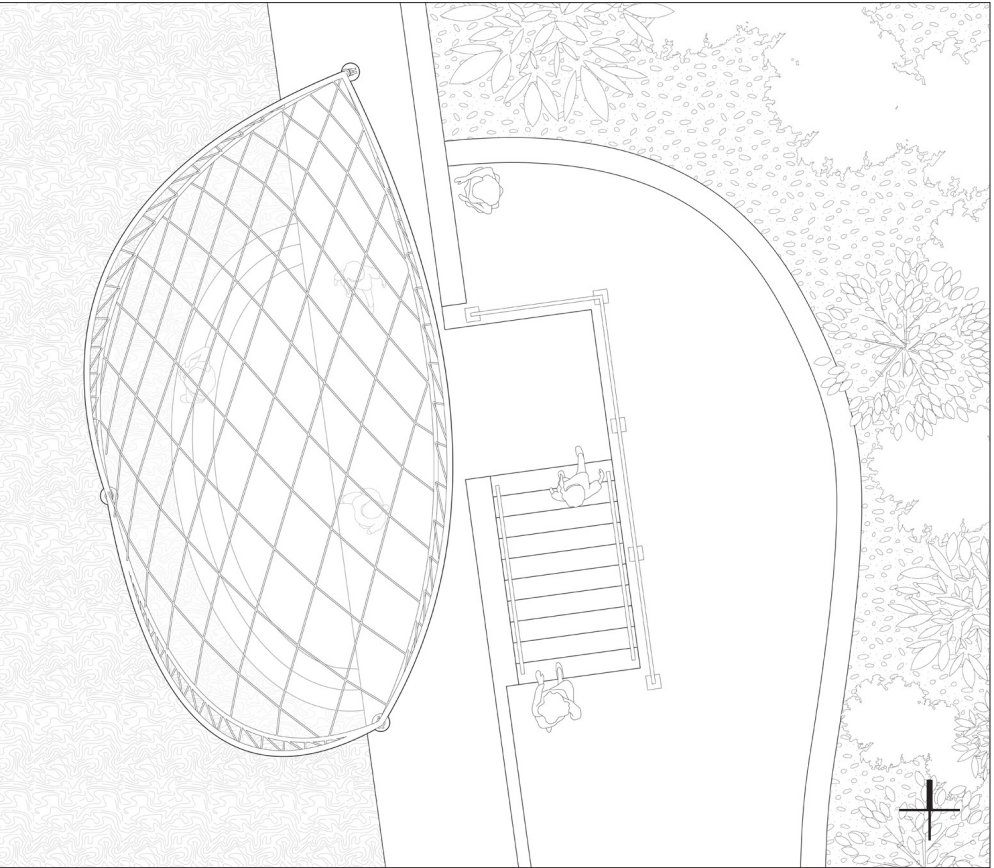
Site 03 Axonometric



Site 01 Plan



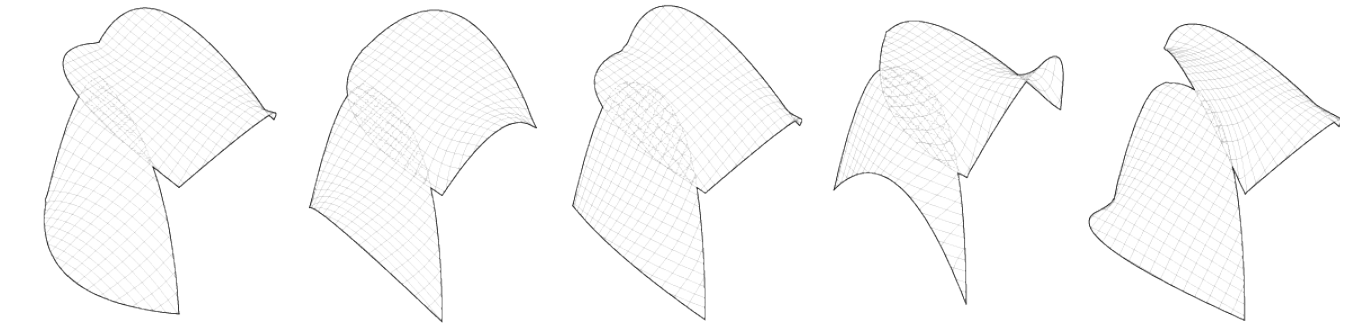
Site 02 Plan



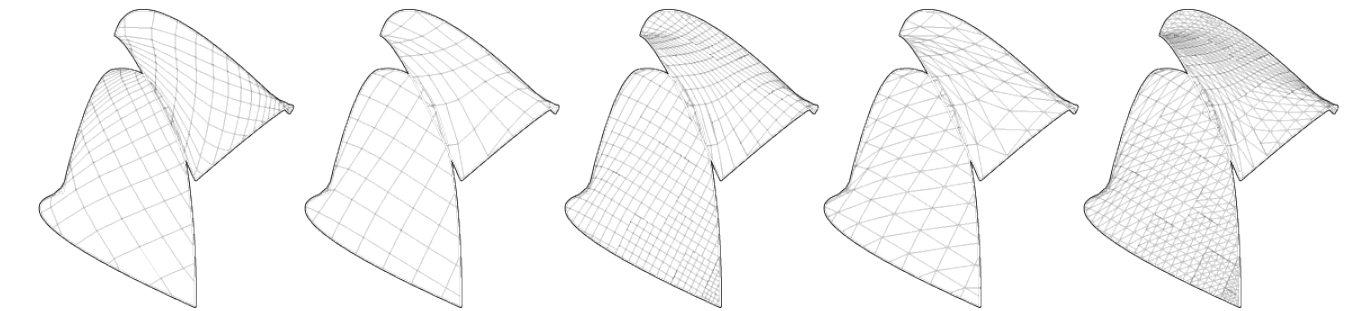
Site 03 Plan

0 1 5M

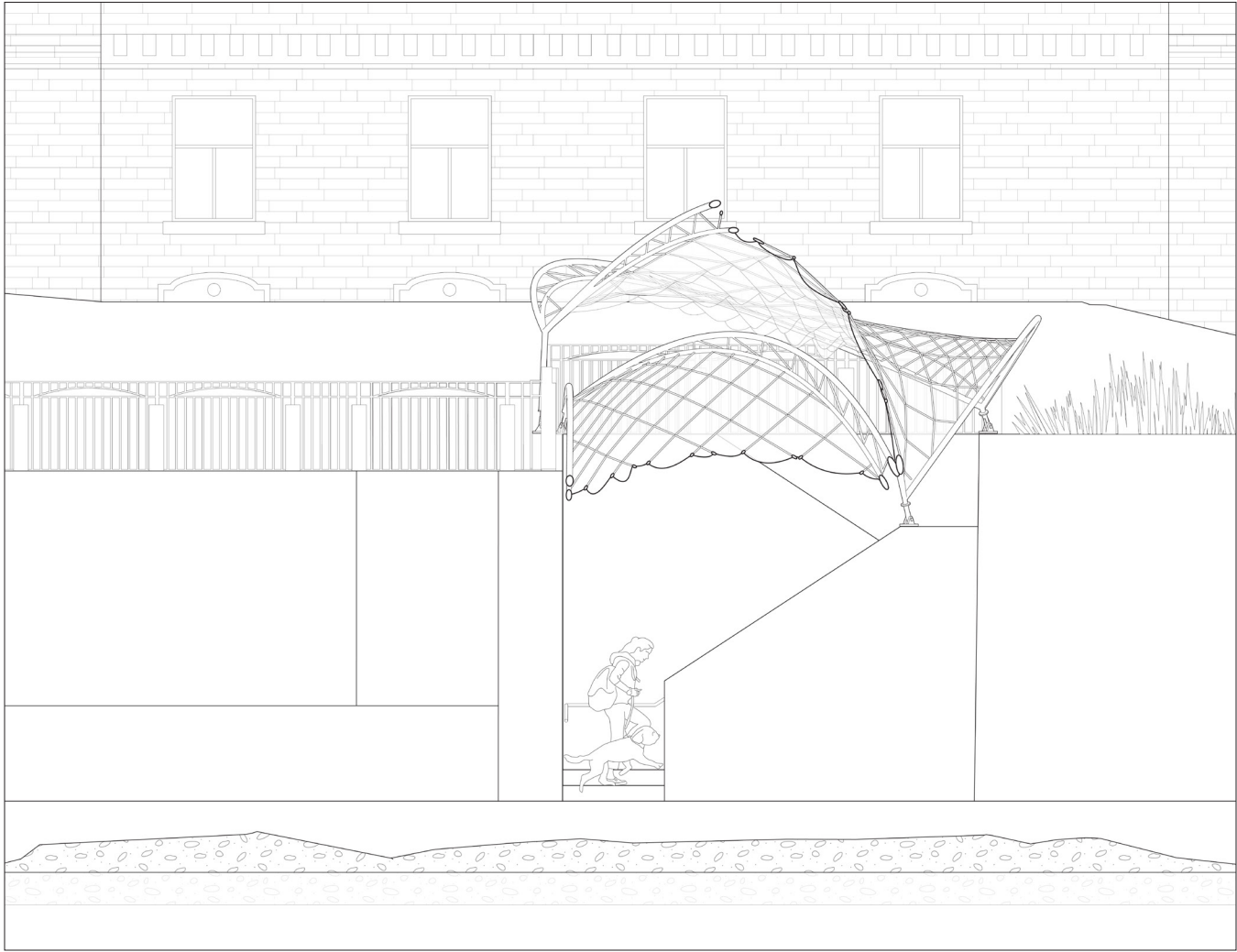




Parametric Form Explorations



Parametric Grid Explorations



Site 01 Section A-A

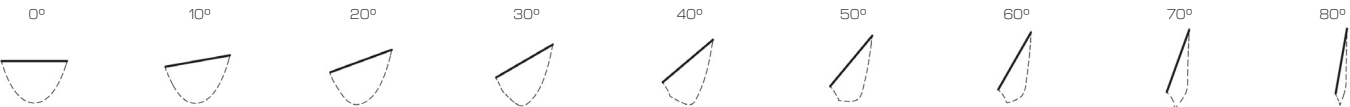
0 1 5M



Simulated ETFE Distortion  
Clear Weather



Simulated ETFE Distortion  
Moderate Rain



Simulated ETFE Distortion  
Heavy Rain



Site 01 Section B-B

0 1 5M

DS+R

RE: JULIE NIU

New York, January 17, 2021

To whom it may concern,

I had the pleasure of working with Julie Niu for her 2019 internship at Diller Scofidio + Renfro. She demonstrated exceptional skills in conceptual thinking, physical and digital modeling, diagramming, and drawing, as she contributed to a number of the studio’s major projects and competitions. I worked with her directly on design competitions for a majority of her tenure at DS+R, and she contributed to the design and documentation for the Exil Museum in Berlin; a first ever Women’s Mosque in the Middle East; an urban ensemble project of park, cultural, residential and office at the heart of Milan’s Porta Nuova district; cultural and commercial retrofit of an existing building in Paris, and our entry for the design of the new Shenzhen Opera. While navigating this diverse set of programs and locales – all in rapid succession, Julie demonstrated great maturity in her work, as she consistently managed her time well in developing conceptual diagrams, study models, high-quality presentation drawings and physical models. She was proactive and never held back to present and respond to the critique of her work in both team and partner meetings. Liz Diller came to entrust Julie to design and develop important components of our competition entries, most memorably working with her directly to craft a precision physical model and highly detailed exploded axonometric drawing for the Exil Museum; and develop intricate diagrams that explained the crux of our highly adaptable design for the Women’s Mosque. These episodes are just a few of many examples of Julie’s exceptional contributions to the studio.

I recommend her without reservation for all of her future endeavors both academic and professional. I look forward to seeing her continue to grow and amaze!

Best,

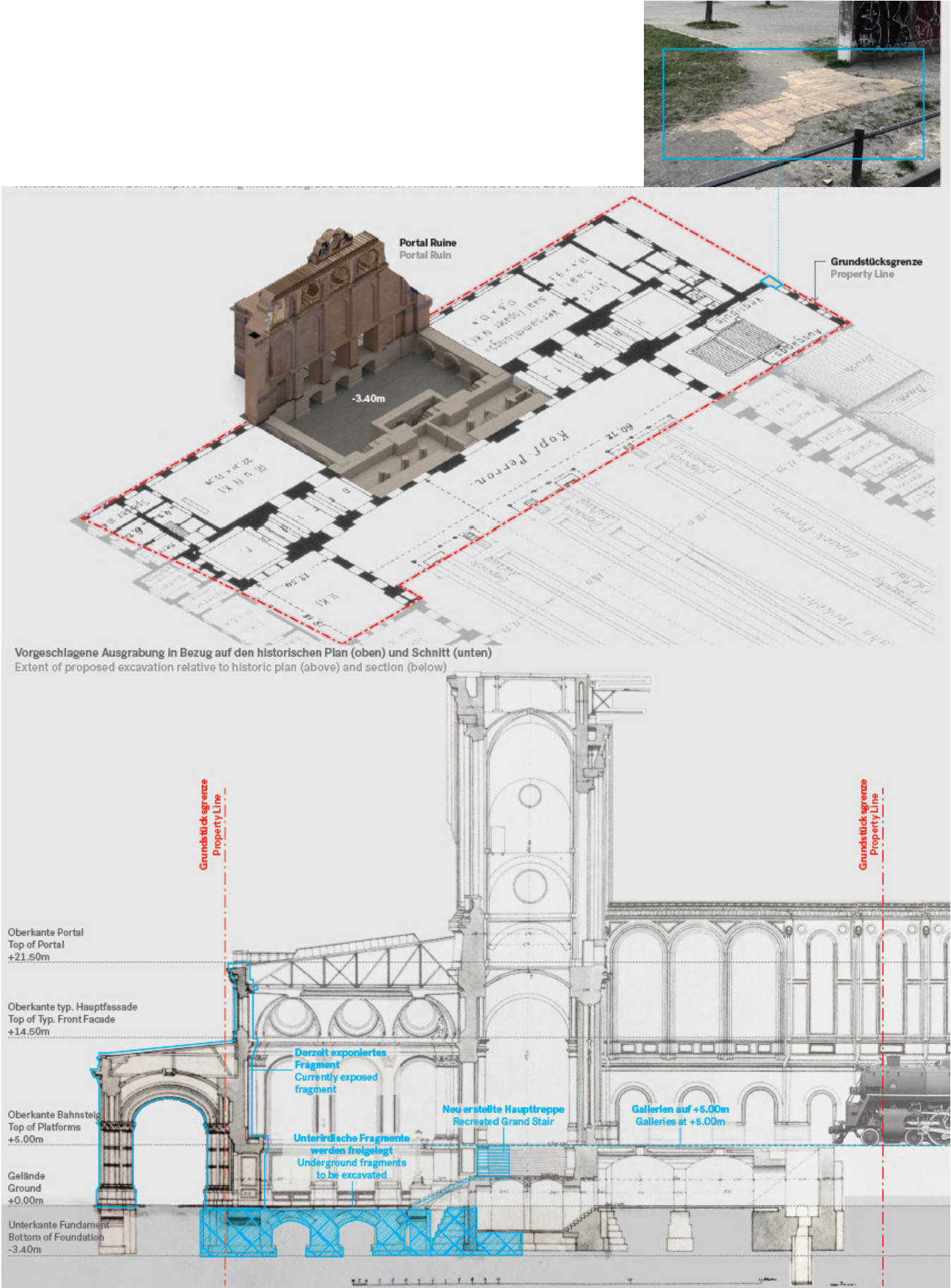


Charles H. Curran  
Competitions Director, Diller Scofidio + Renfro  
(e) [ccurran@dsrny.com](mailto:ccurran@dsrny.com)  
(c) 1-917-575-9379

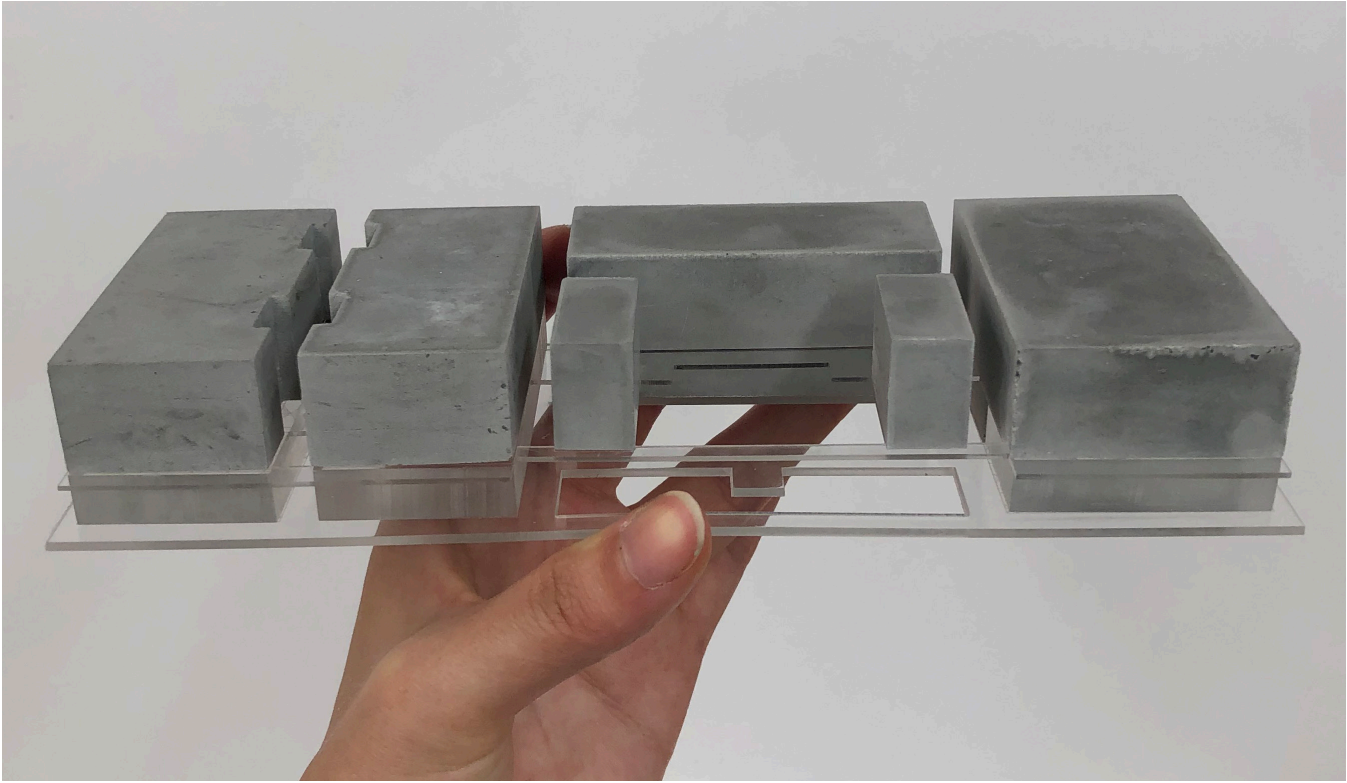
DILLER SCOFIDIO + RENFRO

At Diller Scofidio + Renfro I assisted with competition, schematic, and design development phases of projects ranging from cultural to institutional.





EXIL Museum Buried Foundation Investigation



EXIL Museum Iteration Model

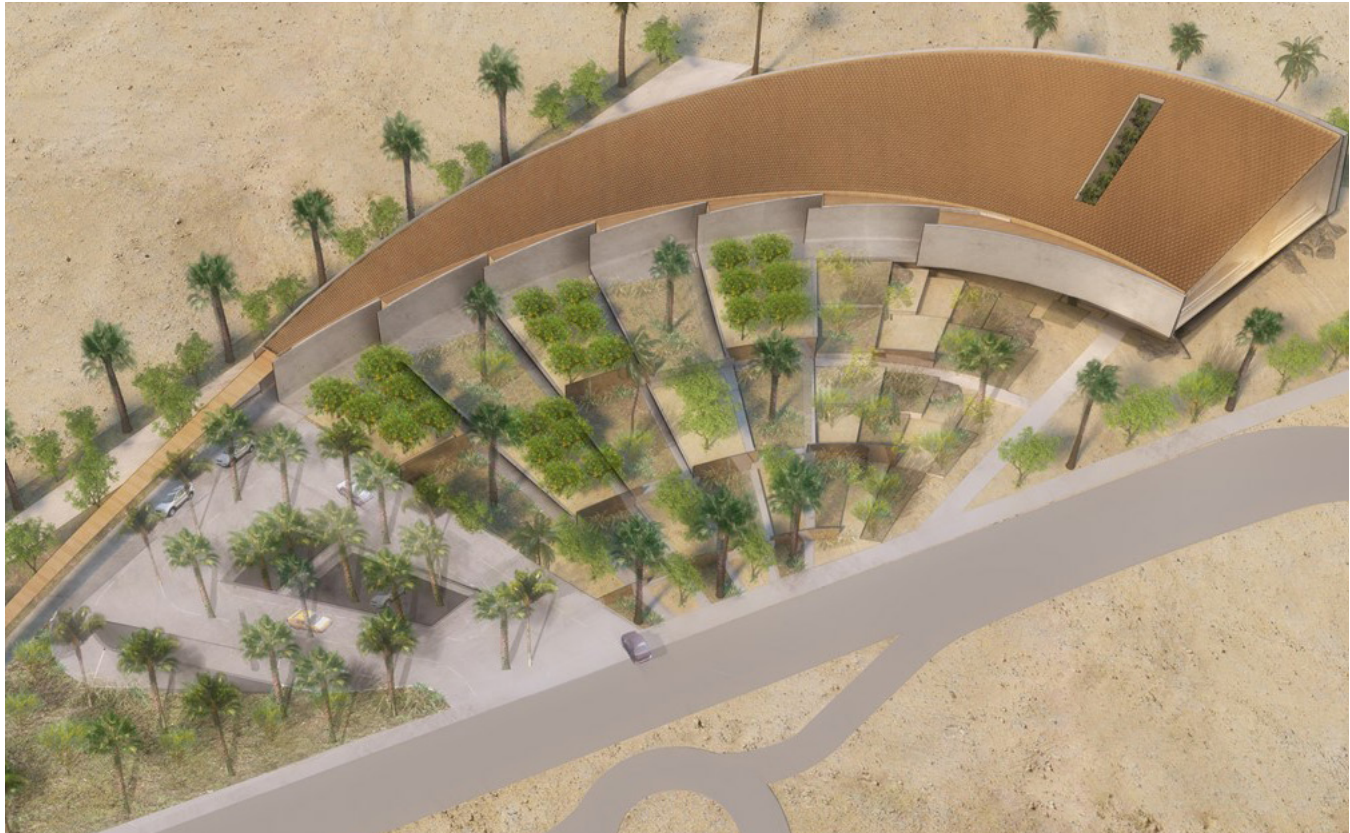


EXIL Museum Model





DOHA Model w/o Roof



DOHA Render



DOHA Model



# WXY ARCHITECTURE + PLANNING

At WXY Architecture + Planning I took part in conceptual design, schematic design, and design development phases for projects, competitions and proposals in both architecture and planning departments.

## W X Y architecture + urban design

224 Centre Street, 5th Floor, New York, NY 10013  
Tel 212.219.1953 Fax 212.274.1953 Web wxystudio.com

September 12, 2019

RE: Julie Niu, Letter of Recommendation

To whom it may concern:

Julie spent August-December 2018 with the WXY team. I received extremely positive feedback from the Associates and senior staff under whom she worked. Julie consistently performed at a very high level and was a great asset during her four-month period here. Julie worked several competitions and urban design projects during her time here.

For the Colgate University Master Planning competition, she prepared a series of site sections that proved critical to our understanding of the relationship between site topography and program. In addition to these analytical site sections, Julie also created program diagrams to illustrate new facilities on site. Our Times Square Alliance project, which leveraged the energy of Time Square to activate the Broadway Plazas (between 47<sup>th</sup> - 53<sup>rd</sup> Streets) also benefitted significantly from Julie's close attention and illustrative skills. Julie created a series of annotated diagrams and plans to explain our streetscape strategy along the Broadway Plazas.

Julie was a valuable team member for two of our Downtown Revitalization Initiative (DRI) projects in New Rochelle and Downtown Brooklyn. DRI is an intense community-based design process that seeks to prioritize capital projects for funding by the Department of State. Julie's work on the project helped to reinforce a transparent community engagement process that empowered stakeholders and community leaders to identify and design catalytic projects that advance the community's vision for revitalization. In both Downtown Brooklyn and New Rochelle, she developed a number of baseline condition maps and other graphics to support our geospatial analysis. She also supported the creation of clear and informative community engagement graphics for a number of public workshops.

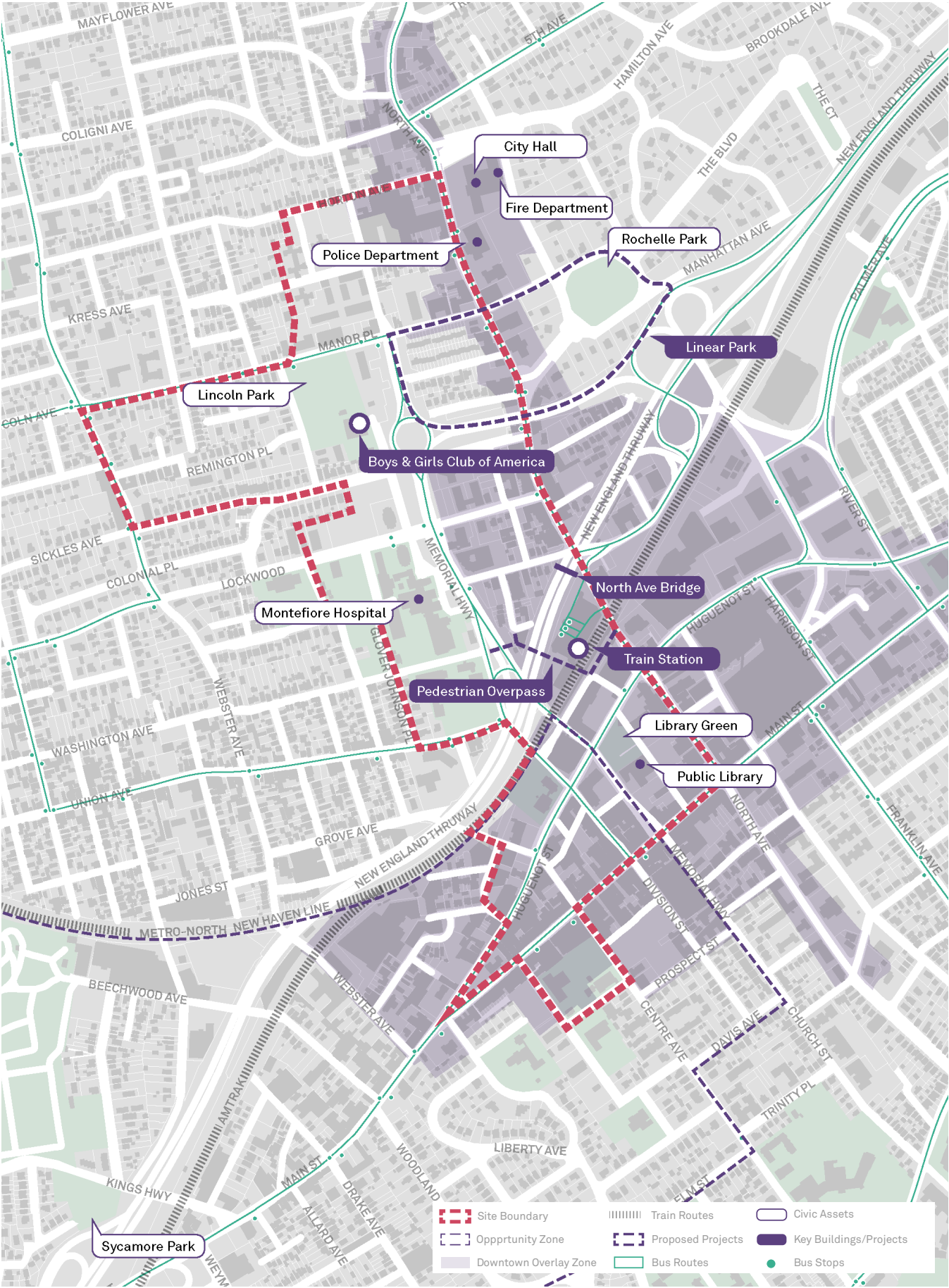
In addition to these core projects, Julie was also a great asset on our Captiva Master Plan team, where she developed research and baseline assessment drawings. Julie was a reliable and efficient member of both Detroit Greenway proposal and Gansevoort Peninsula competition teams, where she created diagrams, photocollages and renderings to depict proposed future conditions using Rhino and Photoshop.

Her involvement at WXY was often on intensive projects that required quick edits from a large group of clients, consultants and stakeholders. Seeing through tasks, Julie willingly worked extra time to complete on her own accord, working well independently and as a part of larger project teams. Julie has a good work ethic and was a collaborative team member. She is a dedicated individual who understands and appreciates the value of challenging projects. Julie was a pleasure to work with and would be a valuable addition to any design team.

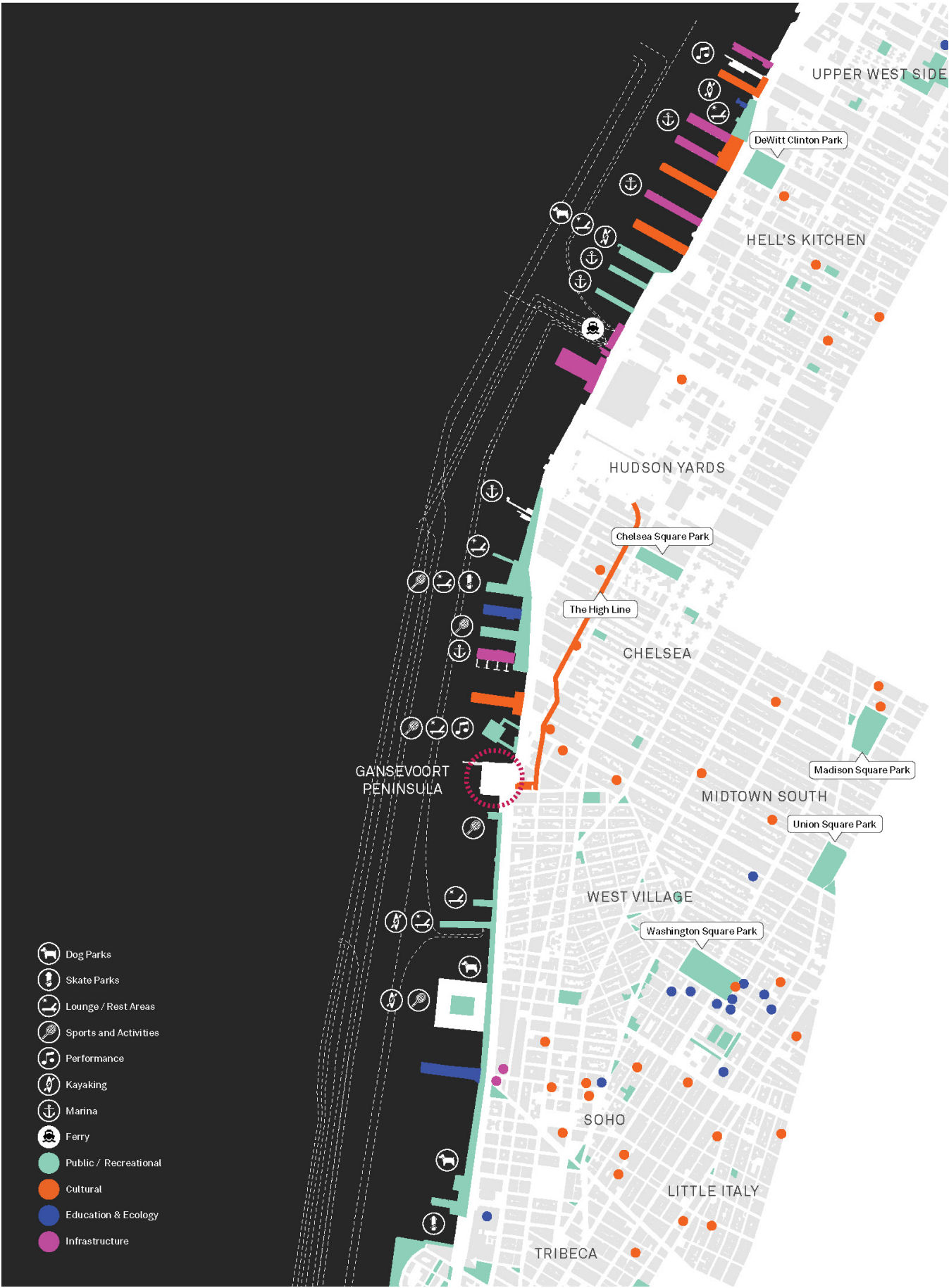
Sincerely,



Claire Weisz, FAIA  
WXY architecture + urban design



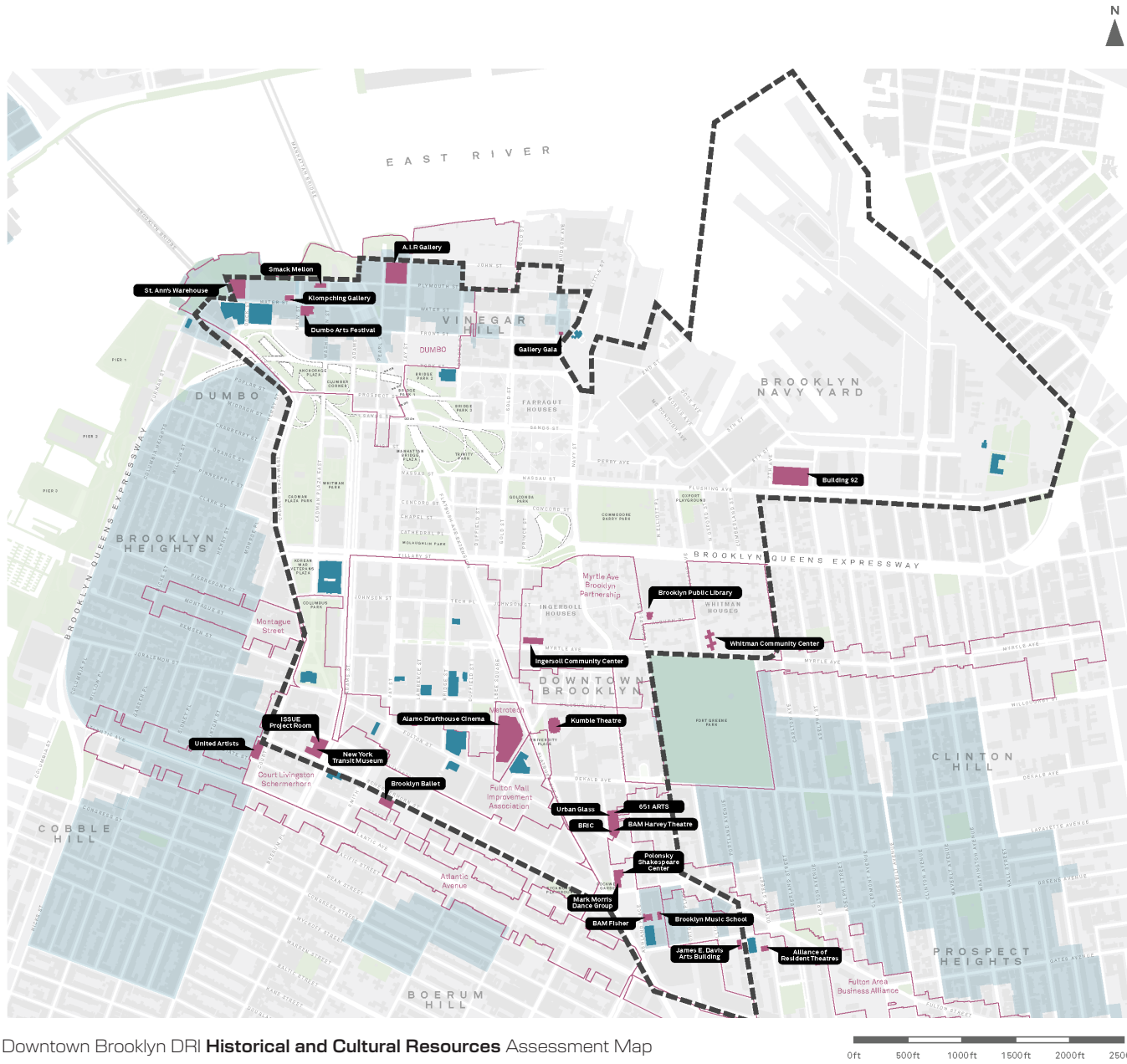
Assesment Map for DRI New Rochelle



Context Map for Gansevoort Peninsula

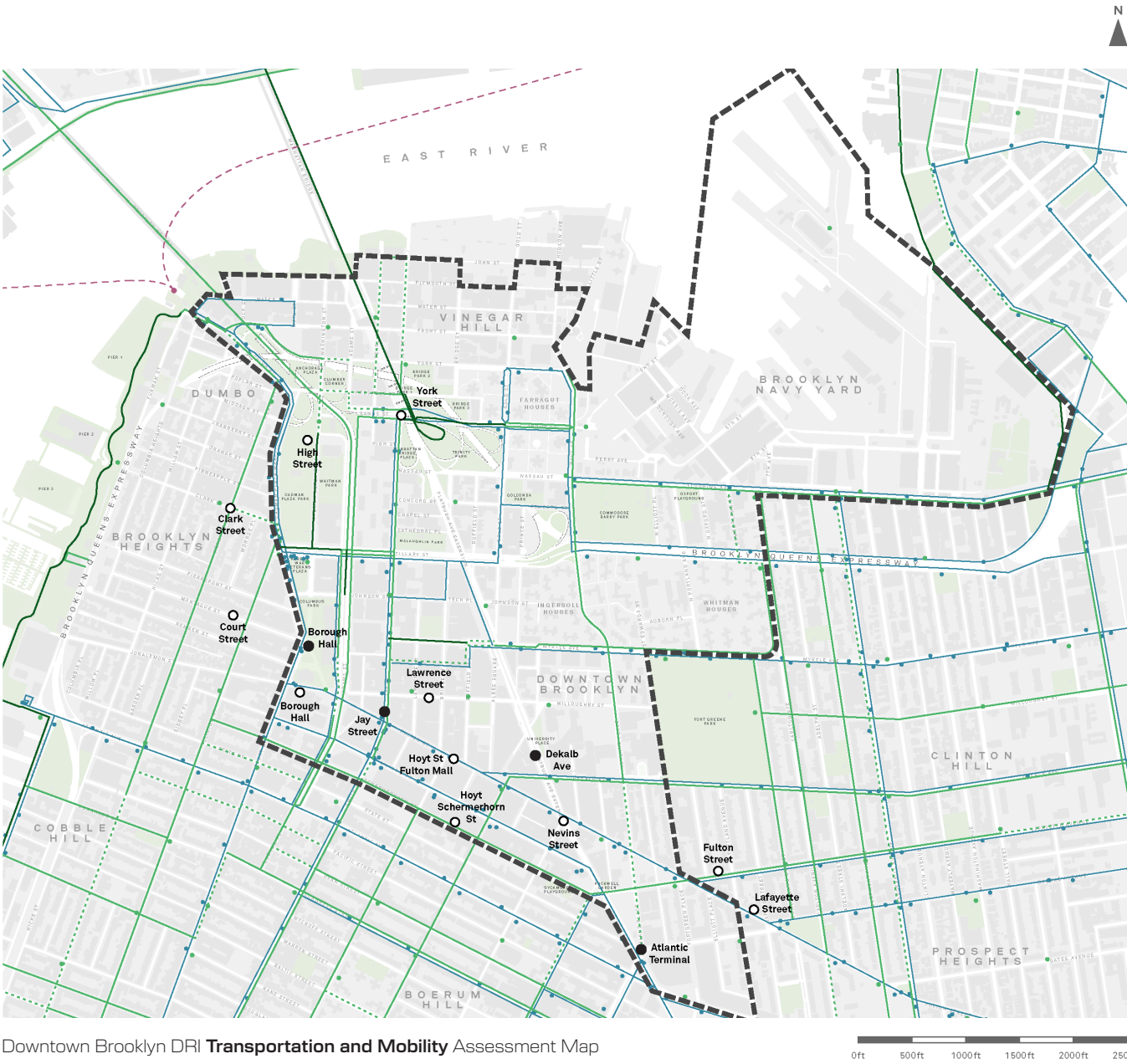


- DRI Boundary
- Cultural Institutions and Buildings
- Business Improvement Districts
- LPC Designated Historical Landmarks
- Historic District



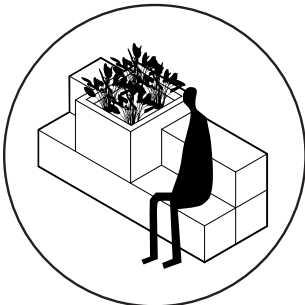
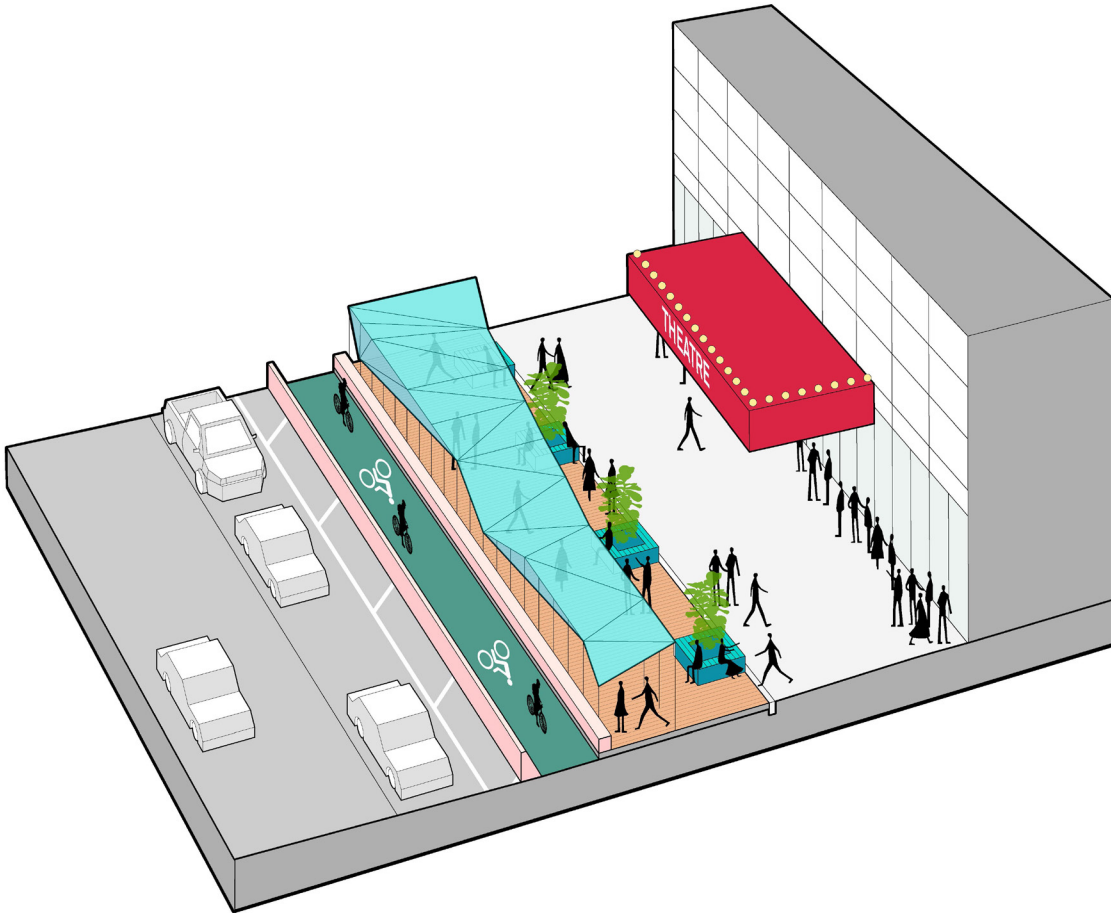
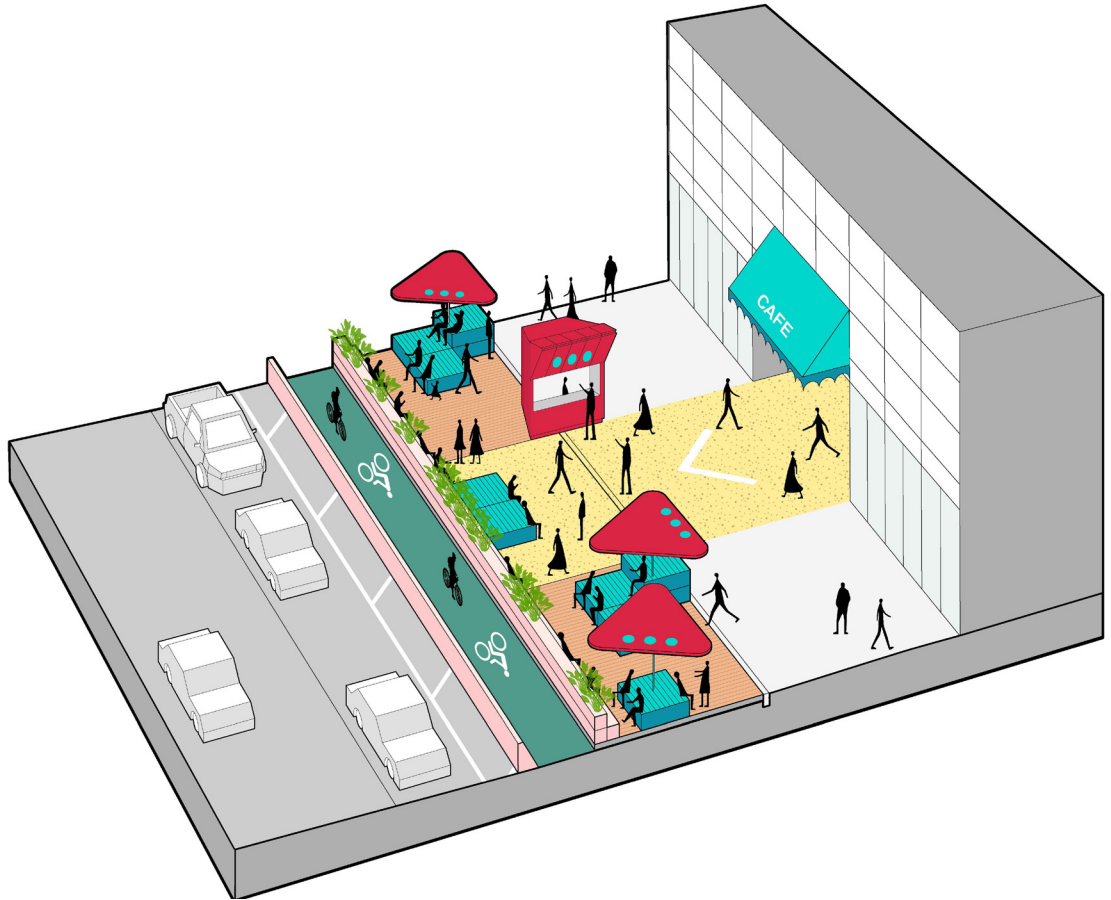
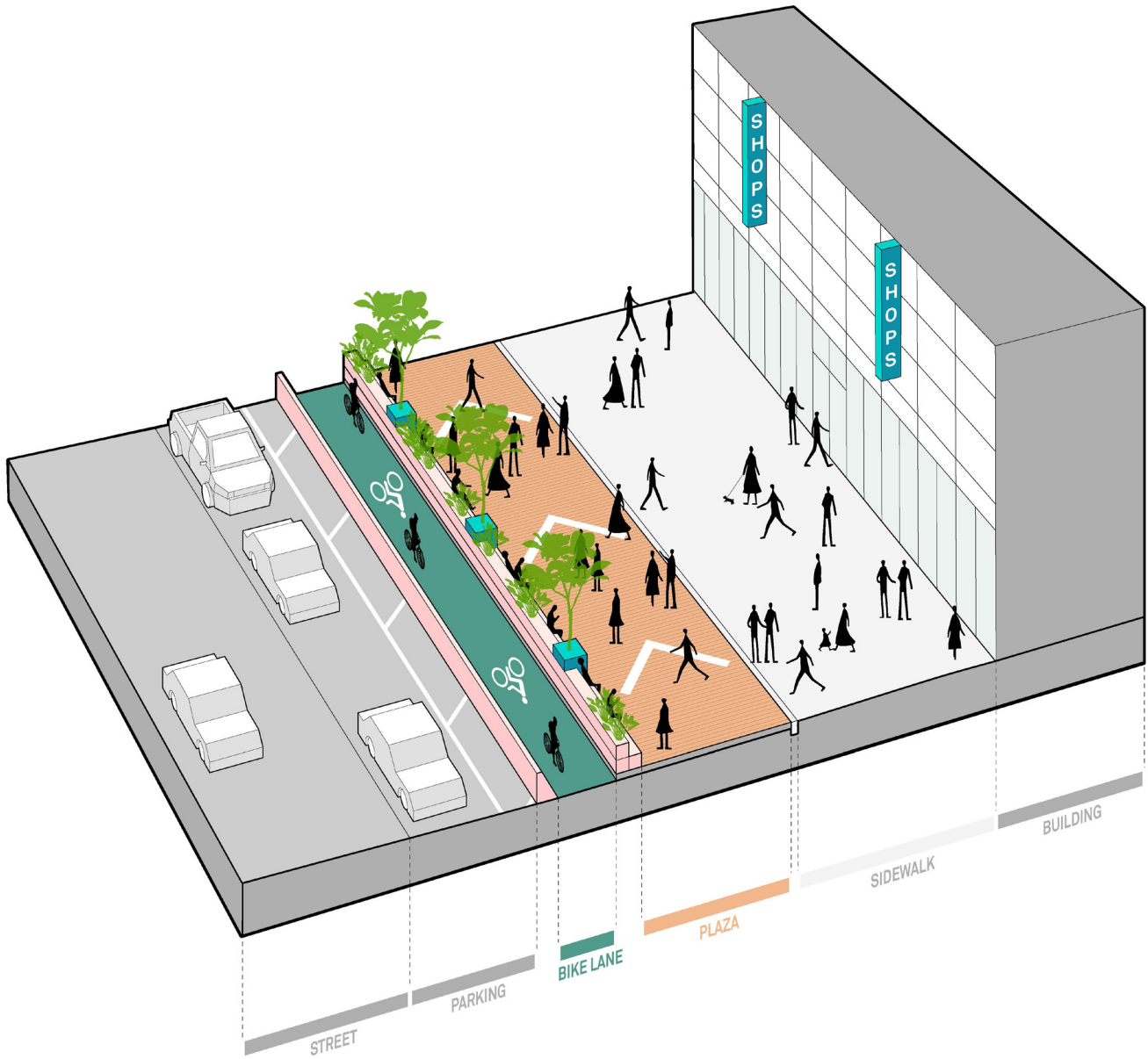
Downtown Brooklyn DRI **Historical and Cultural Resources** Assessment Map

- DRI Boundary
- Bus Routes
- Bus Stations
- Ferry Routes
- Ferry Stations
- Subway Stations
- Accessible Subway Stations
- Class 3 Bike Lanes
- Class 2 Bike Lanes
- Bicycle Trails
- CitiBike Stations

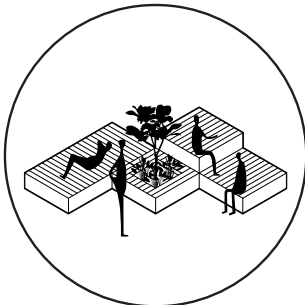


Downtown Brooklyn DRI **Transportation and Mobility** Assessment Map

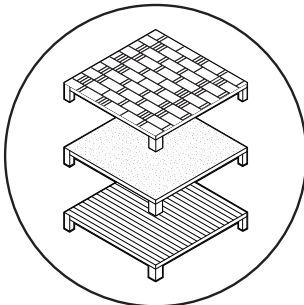




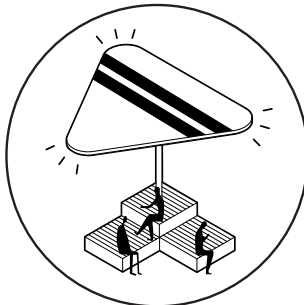
Edge Reinforcing  
**01.**



**02.**  
Modular Furniture



**03.**  
Permeable Platforms



**04.**  
Protective Canopies

Diagrams of streetscape strategy along the Broadway Plazas for the Times Square Alliance

Thank You Thank You Thank You Thank You Thank You Thank You

Thank You Thank You Thank You Thank You Thank You Thank You