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# A PLACE TO BE



# A SPACE TO DREAM

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Columbia University | Graduate School of Architecture, Planning and Preservation*

# << TO BE >> << TO DREAM >>

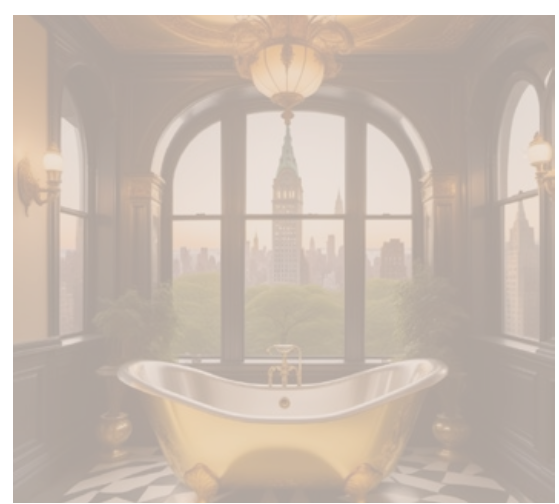
"PLACE IS SECURITY SPACE IS FREEDOM"

YI-FU TUAN

EVERY PROJECT IN THIS PORTFOLIO IS GROUNDED IN REALITY, YET SIMULTANEOUSLY CHALLENGES THE STATUS QUO TO SPARK THOUGHTS OF WHAT COULD BE



**< CLASS > HOME**  
Adv VI Studio  
<< dwell >> << daydream >>



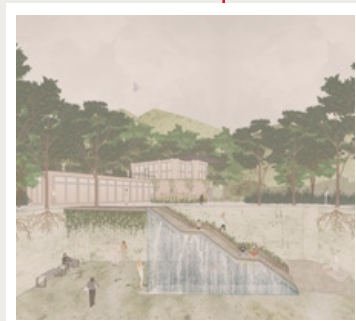
**MISE-EN-SCENE**  
WORLDINGS  
<< vacation >> << escape >>



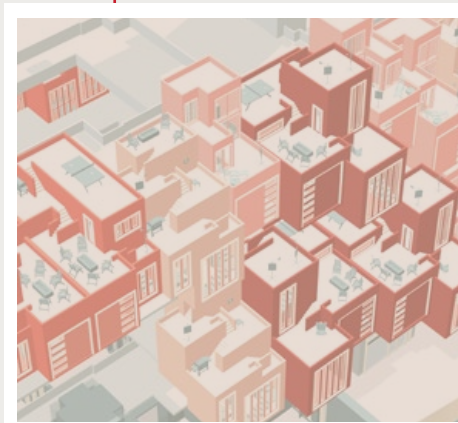
**DIPLOMACY OF DISUSE**  
Adv V Studio  
<< transact >> << reunify >>



**CEDAR CROSSING**  
ULI HINES COMPETITION  
<< sojourn >> << inspire >>



**SANCTUARIES**  
Adv IV Studio  
<< mend >> << re-imagine >>



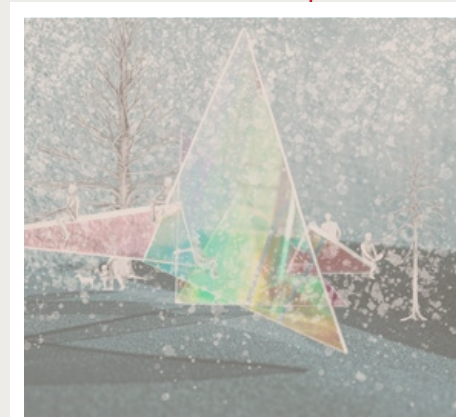
**HOUSING, Inc.**  
CORE III STUDIO  
<< make >> << create >>



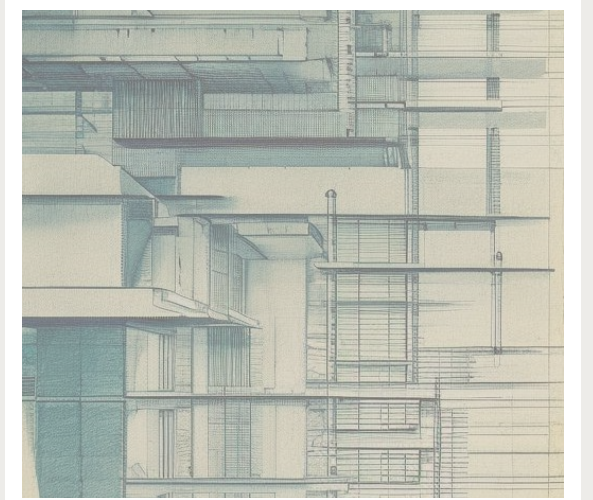
**LAYERED LIVING**  
DEVELOPMENT PROCESS II  
<< settle >> << muse >>



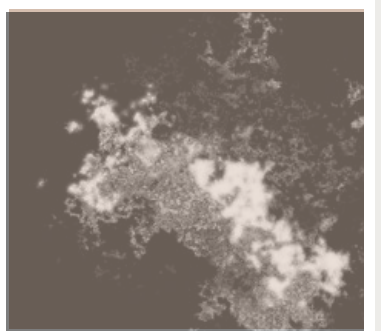
**POST-CLASSROOM**  
CORE II STUDIO  
<< challenge >> << explore >>



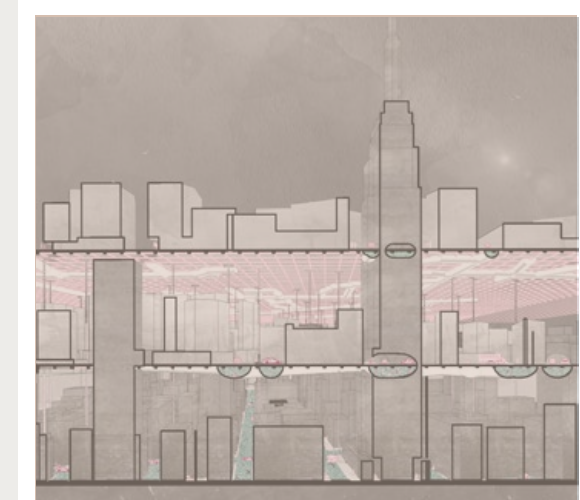
**RE-CENTER**  
CORE I STUDIO  
<< pause >> << imagine >>



**CODED PRACTICE**  
METATOOL  
<< routine >> << invent >>



**VISUALIZING SOUND**  
ADR II  
<< listen >> << perceive >>



**OPTIMIZING DYSTOPIA**  
X-INFORMATION MODELING  
<< fate >> << opportunity >>

## < class > Home

The single-family tract home is a staple of American suburbia, lending its predictable and repeatable composition to developers for decades; yet, as ways of living evolve, the tract home fails to adapt. Originally conceived to accommodate the stereotypical middle-class family of four, the rigid layouts of these homes are incapable of welcoming modern family compositions. In addition, they leave sellers with little added economic value, appearing nearly identical to hundreds of neighboring homes.

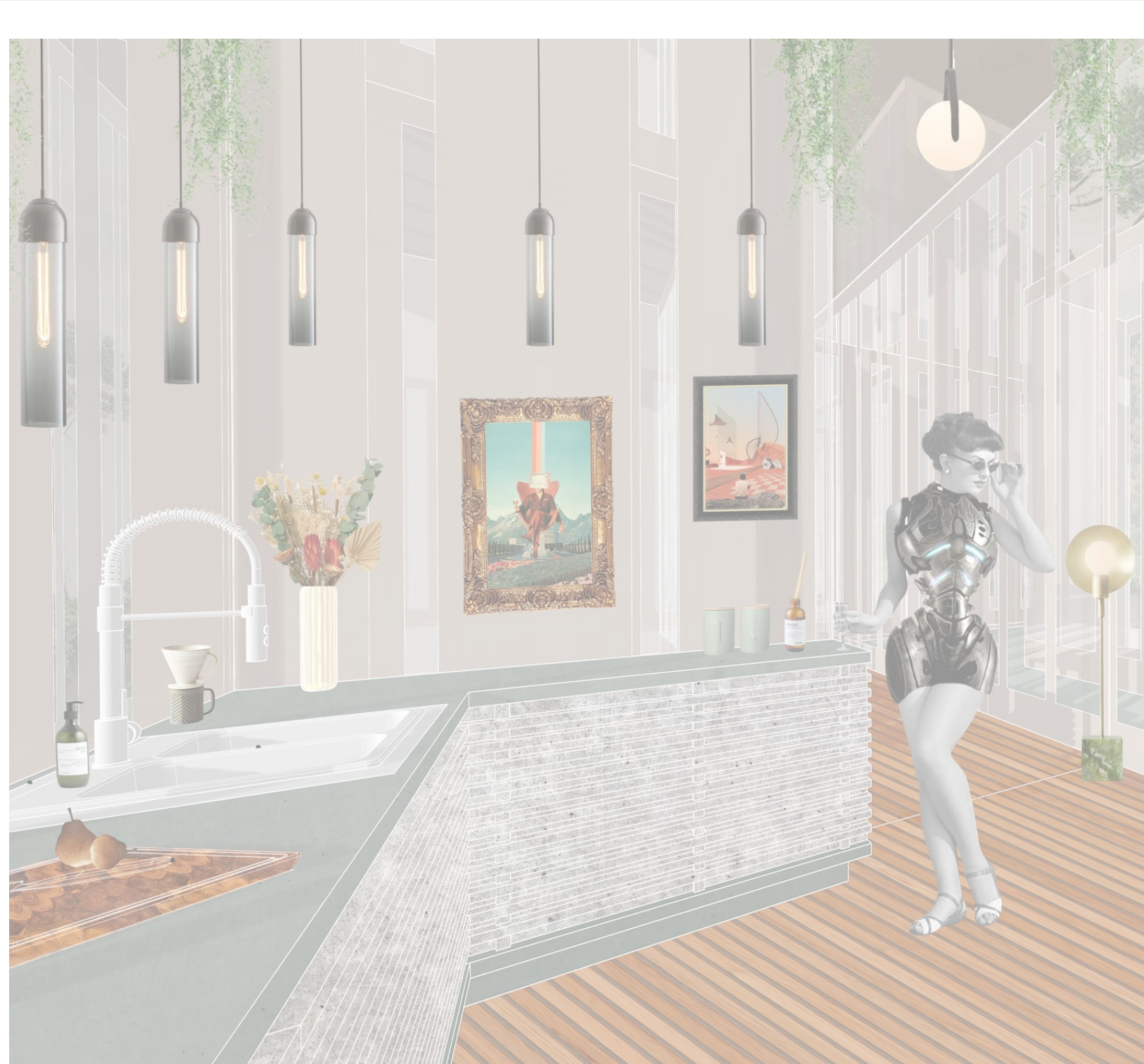


*A typical American single-family tract home development.*

This project questions the homogeneity ingrained in American tract homes and explores an alternate design and development pathway to generate additional value, flex with user needs, and create beautiful living spaces.

It is important to note that the houses generated by this interface are not meant to output a set configuration of rooms or spaces. Instead, they are meant to suggest layouts that an architect pressed for time and other constraints in the context of tract home development may not ordinarily consider. The role of the buyer therefore becomes more integral to the process.

For instance, a prospective family may give the architect their base requirements (e.g. number of bedrooms, required % outdoor space, desired adjacencies and division of space), and the architect will proceed using the Grasshopper model inputs to generate a number of options to present to the buyers. Because truly unlimited options tend to overwhelm and cause 'analysis paralysis,' it is important that they are presented with a focused set of options. From there, the architect and buyer work together to create a layout that functions fluidly with their needs.



## < CLASS > HOME

ADV VI STUDIO

SPRING 2024 | CRITIC: MICHAEL BELL | INDIVIDUAL WORK

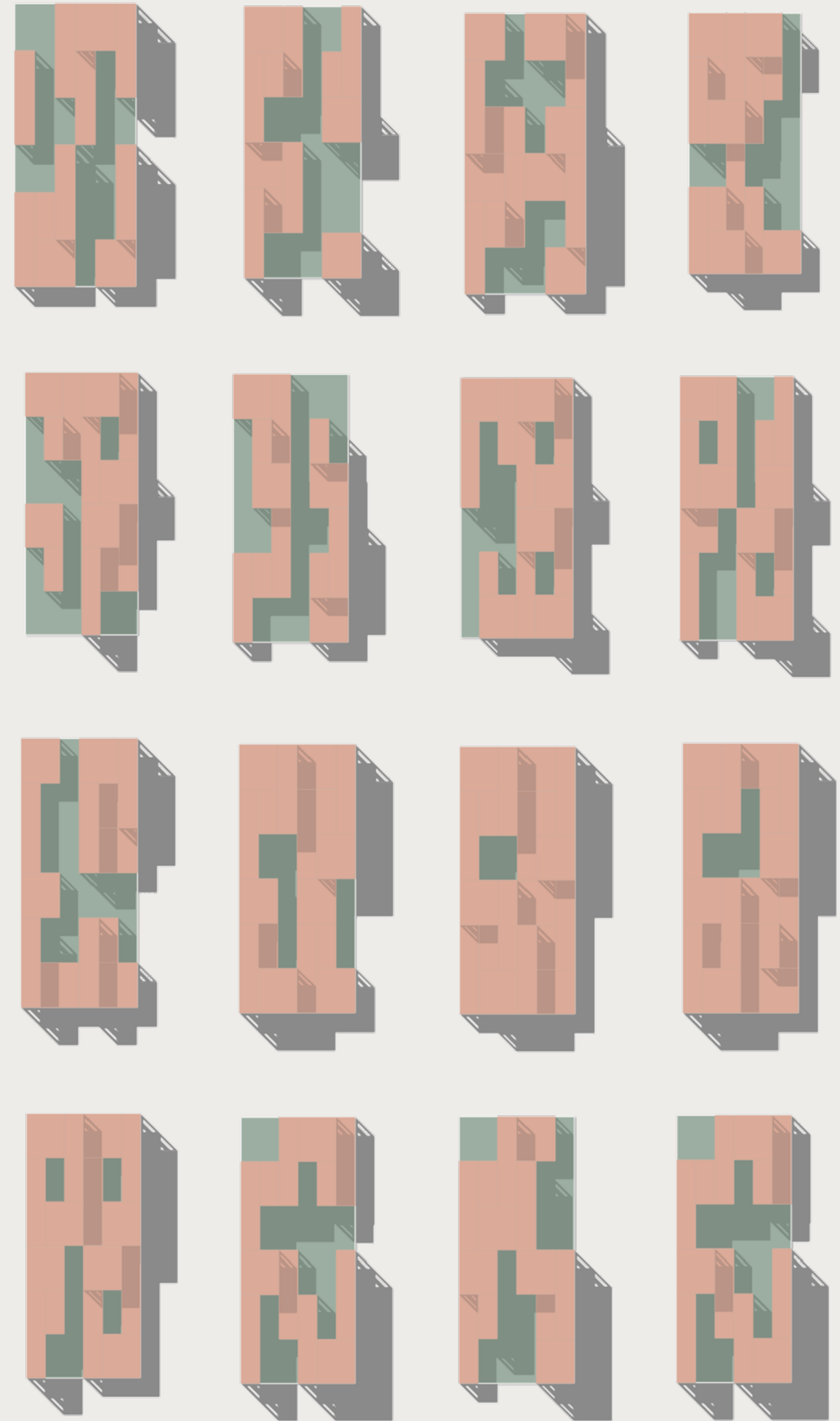
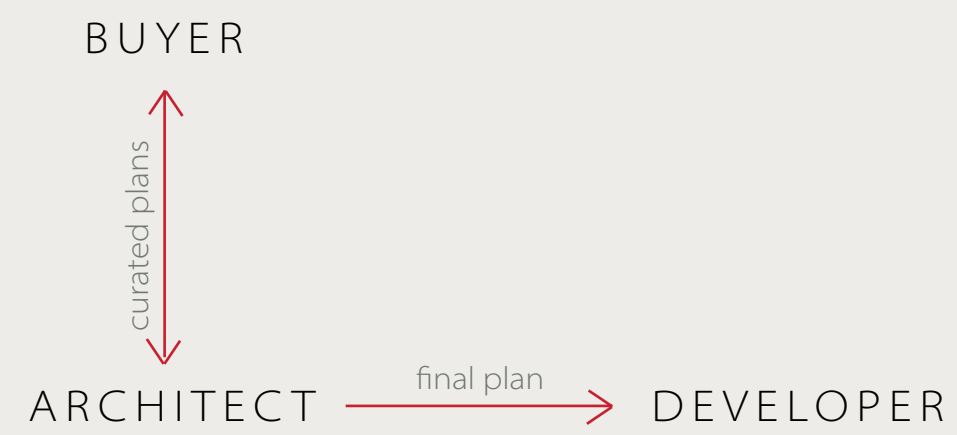
<< dwell >> << daydream >>

# THE ROLE OF THE HOMEOWNER

traditional relationship structure



proposed relationship structure



## CREATING VALUE

value-add opportunities for the single-family tract home upon resale:

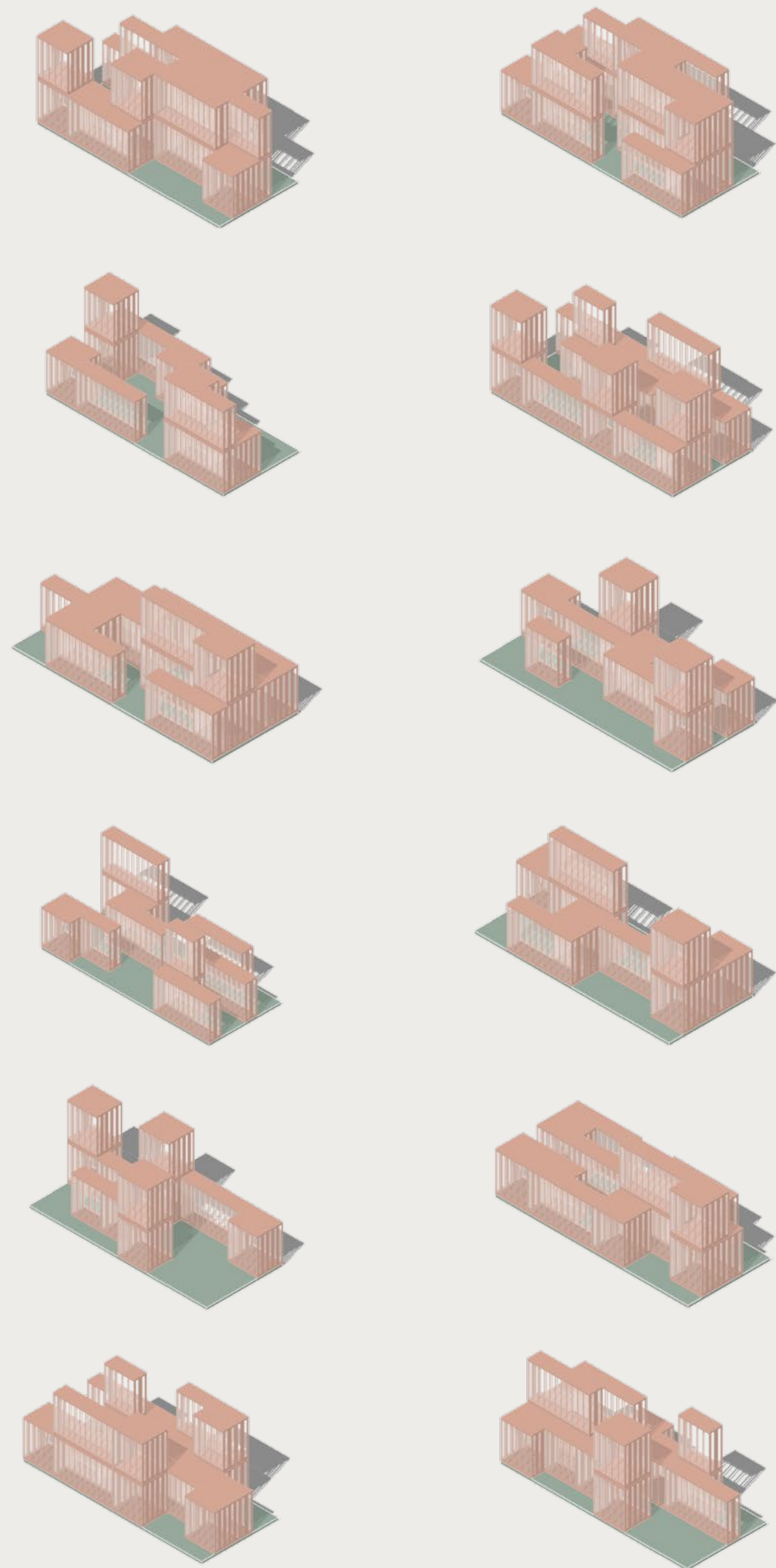
- + floor plan variety
- + kitchen
- + bathroom
- + natural light
- + energy efficiency
- + perception of space (windows, mirrors)
- + usable outdoor space (courtyards, sun rooms, gardens)
- + curb appeal

## COMPUTATIONAL FLEXIBILITY

floor plan flexibility to accommodate:

- + multi-generational families living in separate wings with both private and connected courtyards
- + main living areas with separated, on-site spaces that can function as guest houses, art studios, play rooms, meditation space, etc.
- + preferences for ratio of indoor/outdoor space, room adjacencies, etc.

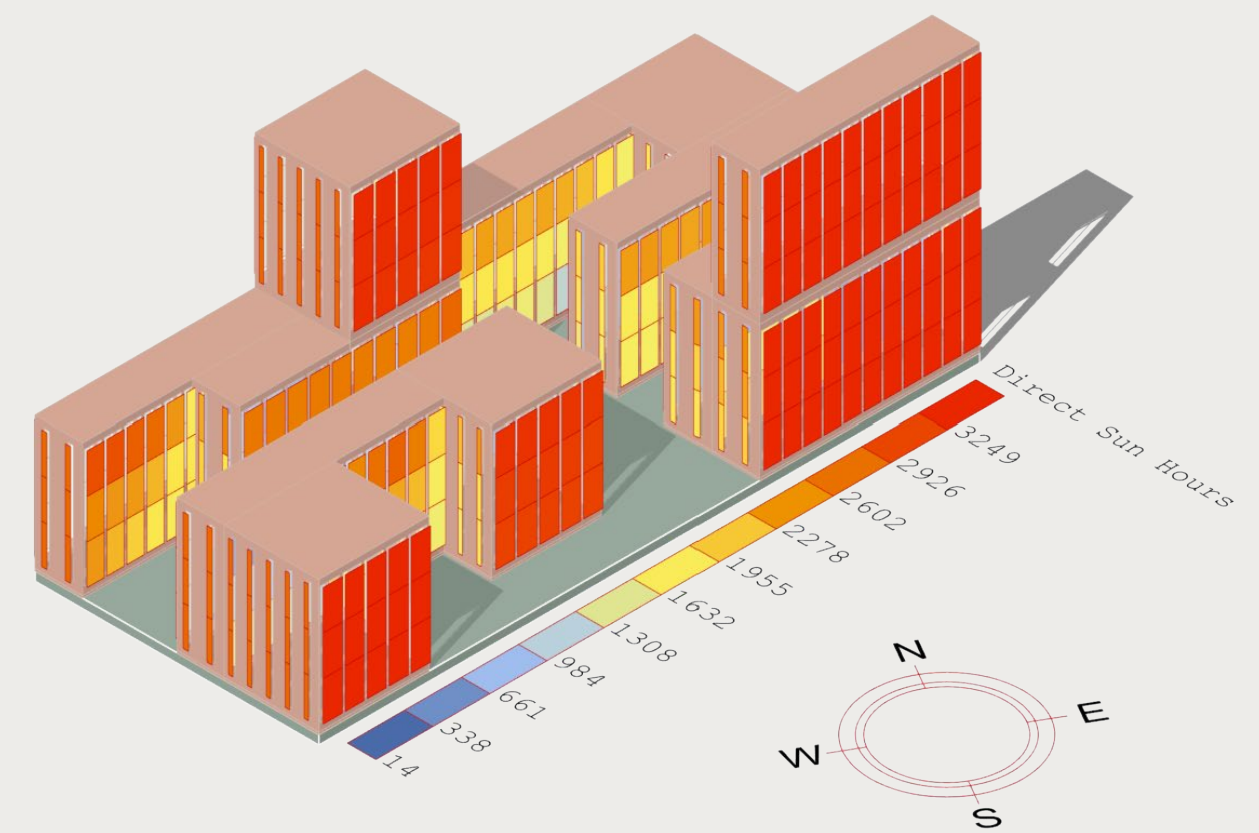
*A selection of plans generated in Grasshopper.*



A selection of homes generated in Grasshopper.

## ENVIRONMENT

Thermal comfort and daylight play an integral role in the designation of space in the home. Understanding exactly how these factors affect each room can help the architect and buyer adjust layouts and select from the options generated by the model. Furthermore, shading mechanisms can be placed appropriately and window openings adjusted early in the design process, further contributing to the custom aesthetic while also contributing to energy efficiency.



Sunlight analysis in Grasshopper.



Interior view of home with detached art studio and courtyards.

ONCE-IN-A-LIFETIME HOSPITALITY EXPERIENCE

# MISE-EN-SCENE

Uniquely positioned to deliver an unforgettable experience in one of New York City's most famed buildings, the Mise-en-Scene hotel will offer guests a once-in-a-lifetime stay in its film-inspired suites and residences. Each guest floor is an immersive, lavish experience of world-renowned cinematic treasures from classics like James Bond and The Godfather, to more modern masterpieces like Black Panther and Oppenheimer, to instagrammable hits like Barbie and La La Land. With each floor hosting a different movie theme and rotating authentic art, costumes, and objects from the host films in each suite, guests are sure to desire a return visit for a completely different experience at one of the other suites.

A trip up to The 1 restaurant in newly installed, all-glass elevators will whisk restaurant goers past a taste of the art and objects from each film, further enticing them to book a stay. At The 1 rooftop restaurant, as the title implies, the focus is one: one ingredient, per month. The selected ingredient makes an appearance in every dish and every drink, from appetizers to cocktails to entrees and dessert. Ingredients are selected to inspire delight and intrigue—from rose to peach to chocolate, guests will be pleasantly surprised by the ways in which one ingredient can compose an entire meal. While The 1 is open to the public, guests of the hotel receive a complimentary evening with one of the chefs in a private dining suite to fully unpack this culinary experience.

At the ground floor is both an extension of the hotel experience and an opportunity for visitors to the city and residents alike to jump into the world of cinema in the immersive, film-focused retail space. Customers can participate in a digital detox by swapping their phone for a film camera for the day. Tutorials are always available with staff on hand, and film is processed in one hour upon their return. The immersive retail experience also features film and specialty cameras for sale, along with unique production equipment that can be tested before buying in the cellar studios. Customers will also find a VR theater in the cellar floors, where vintage films are screened in a unique, immersive experience.

At every floor, the Mise-en-Scene not only offers guests and visitors once-in-a-lifetime experiences, but it focuses on design as a feast for the eye, guest experience as a top priority, and countless unforgettable (and instagrammable) moments along the way, it is sure to be both a destination and part of the journey.



## MISE-EN-SCENE

WORLDINGS

SPRING 2024 | CRITIC: DR. PATRICE DERRINGTON | INDIVIDUAL

<< vacation >> << escape >>



# CONCEPT + VISION

GASTRONOMY

## THE 1

The 1 ingredient of the month makes an appearance in every sip and every bite.

Savor the meal of a lifetime with breathtaking views on the top floor of the famed Flatiron Building.

End the evening with a drink at the rooftop garden lounge.



EXPERIENTIAL RETAIL

## CINE STILL

Digital detox: swap your phone for a film camera for the day.

Choose from hundreds of film cameras, either still or motion picture.

Have your film processed in one hour while you dine at The 1 and leave with prints or your own motion picture you'll never forget.

Stay a while and immerse yourself in the VR theater screening vintage classics.





# MARKET ANALYSIS

## DEMAND DRIVERS

### Slow Travel

Across many niches of tourism, consumers are consistently indicating that experience matters, and far more than it has in past years. And, they are willing to pay for it. At the forefront of successful experiential hospitality are hotels that focus on wellness trends such as digital detox trends, stay-cation hotels, and slow travel.

### Private Group & Multi-Generational Travel

In another post-pandemic trend that has lasted, travelers are continuing to travel in meaningful groups. Three-generation families to empty-nesters to those reconnecting after losing touch. Most increasingly represented across these groups are empty nesters and all-female groups of the same age range looking for meaningful bonding experiences later in life. Many hospitality groups have pivoted to cater to larger groups needing multi-room suites and craving unforgettable experiences with their travel companions.

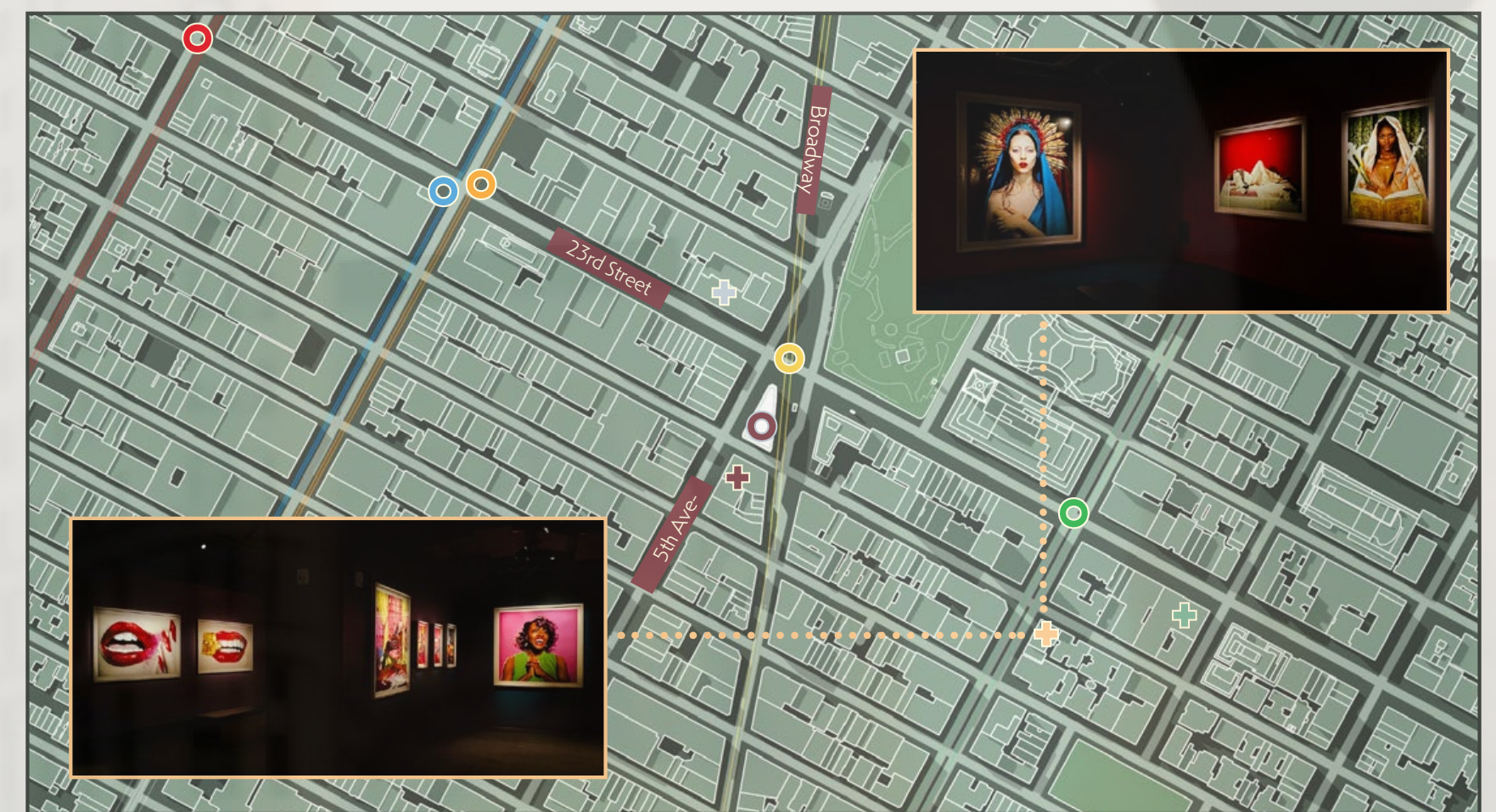
### YOLO Splurging

Proving to be a lasting post-pandemic trend, 'YOLO splurging'--that is, impromptu spending of an amount more than normal--is a significant player in the hospitality industry. Dining out and travel took two of the top three splurging categories, across all age groups. Notably, at the end of 2023, travel surpassed apparel and beauty, further supporting the shift toward increased consumer spending on experiences over products. With interests rates sky high, many consumers have written off long-term financial goals such as buying a house to focus on more attainable, short-term purchases. Unlike a big purchase consumers may later regret, they classify this type of spending as something they would regret not doing--for them, it is about having a once-in-a-lifetime experience that they will never forget.

# SITE ASSESSMENT

Positioned in the historic Ladies' Mile District and within a five minute walk of four subway stations and one PATH station, the site provides tourists an enticing home base in a trendy, design-conscious neighborhood with effortless access to the rest of the city. The PATH station also acts as an attractor for visitors from New Jersey such as a weekend bachelorette party or a family looking for a unique stay-cation.

Furthermore, nearby Fotografiska is a significant attractor for arts-oriented tourists and locals alike, with many of these visitors passing the development on their way from public transportation. In addition, experiential retailers such as Harry Potter New York and The FRIENDS Experience draw to the area both groups and individuals interested in unique retail who are willing to spend.



### Key Points of Interest

○ Mise-en-Scene

#### Subway Stations

- 1
- F/M
- R/W
- 6

#### PATH Station

- PATH Station

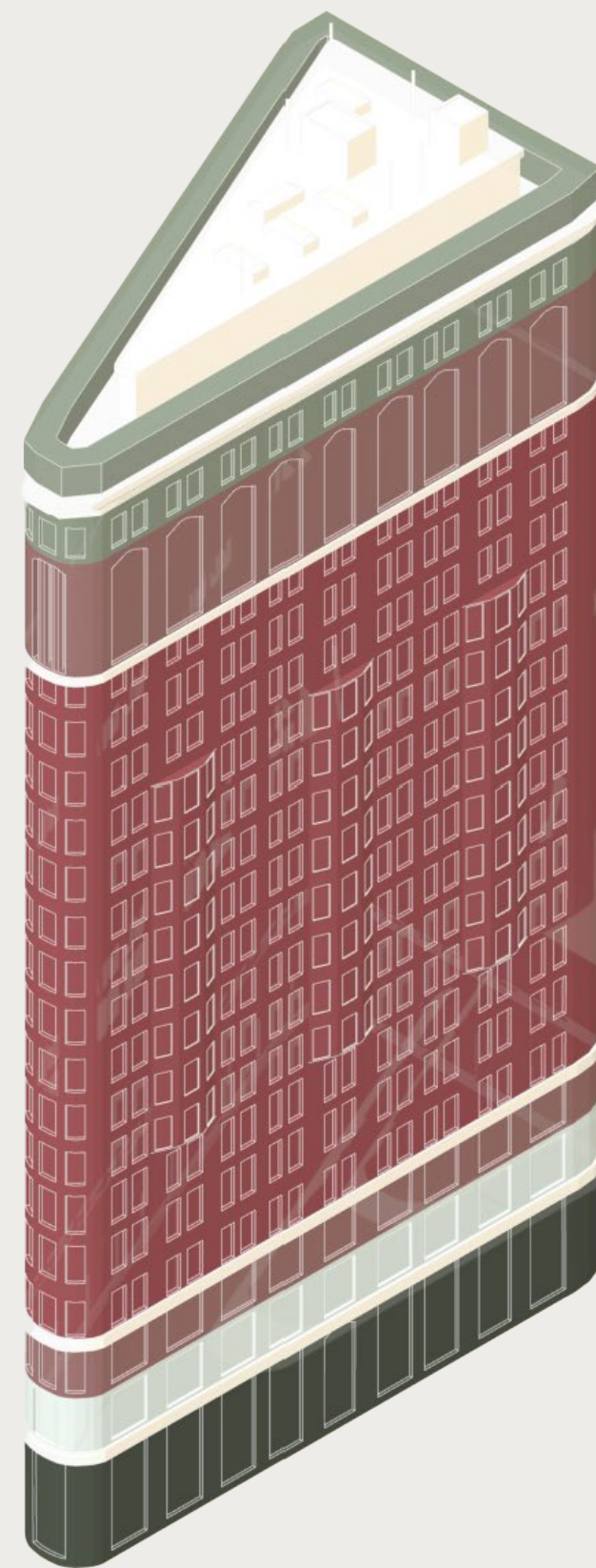
#### The Arts

- + Fotografiska

#### Tourism Micro-Attractors

- + Harry Potter New York
- + The LEGO Store
- + The FRIENDS Experience

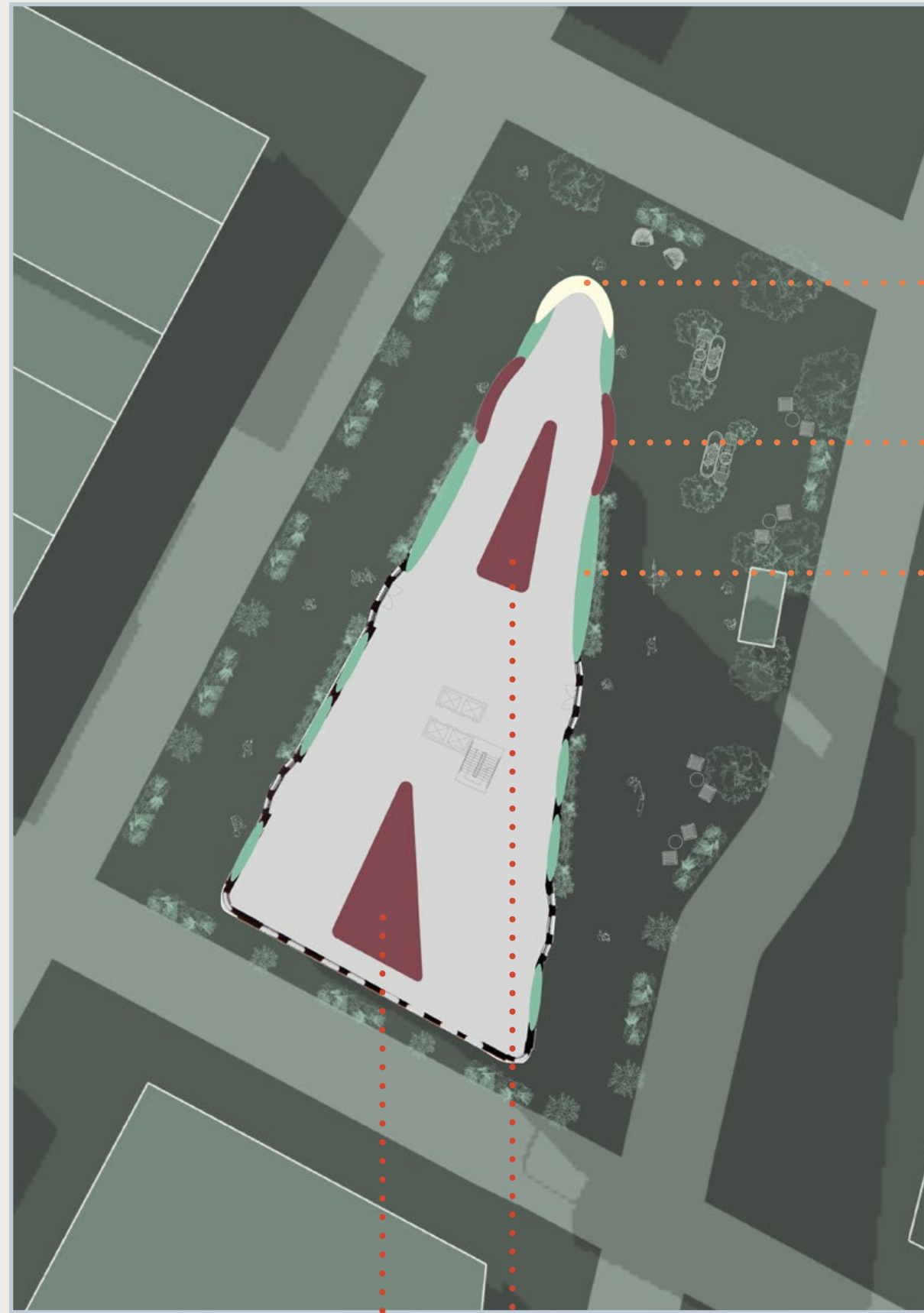
# MASSING



- 1 Restaurant + Rooftop Terrace
- Residences
- Suites
- Hotel Lobby + Amenities
- Cinestill Retail | Public Arcade
- Cinestill Retail | Film Processing, Studios, VR Theaters, Private Screening Rooms

# GROUND FLOOR

# UPPER FLOOR



## OUTDOOR

Wraparound Screen  
Showing Customer Film  
Images & Super 8 Videos

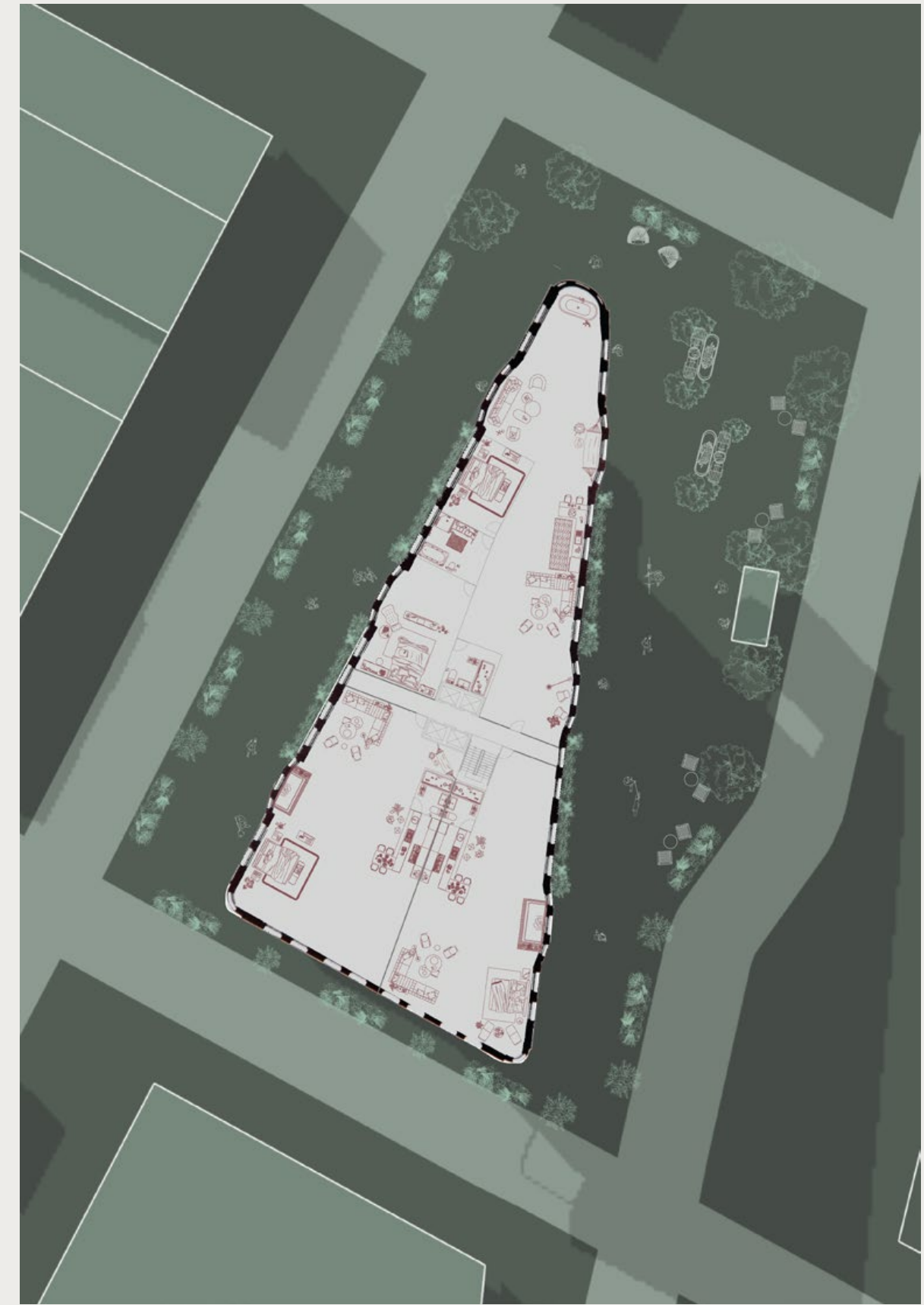
Vintage Super 8 Public  
Film Screening

Floor-to-Ceiling  
Window  
Displays of Vintage  
Cameras & Photo  
Books

## INDOOR

Experiential Dark Room | Film  
Drop-off/Pick-up | Tutorials

Checkout | Image Gallery | Film Selection



# FINANCIALS

Building Summary & Assumptions	
Building GSF	223,294
# Floors (incl. cellar & sub cellar, excl. rc)	25
SF per floor	8,932
Loss Factor (per floor)	15%
Usable SF per Floor	7,592
Total Usable SF	189,800
# Amenity Floors (incl. lobby)	1
Amenity SF	7,592
# Retail Floors	3
Retail SF	22,776
# Guest Room Floors	20
Gues Room SF	151,840
F&B Floors	1
F&B SF	7,592

Debt Assumptions	
Construction Loan	
LTC	60%
Interest Rate	8.30%
% Stabilization for Repayment	70%
Closing Costs (% TDC)	3%
Permanent Loan	
Cap Rate	8.00%
LTV	75%
DSCR	1.15x
DY	10%
Interest Rate	7.30%
Amortization	30 Years
Perm Loan Amount	\$359,762,460
Annual Payment	\$29,597,122

Sources & Uses			
Construction Sources		Construction Uses	
Senior Loan	\$327,043,930	Acquisition	\$160,000,000
Bridge Loan	-	Land Closing Costs	\$14,525,501
Equity	\$218,029,287	Hard Costs	\$235,850,230
		Soft Costs	\$53,266,784
		FF&E	\$37,286,749
		Opening Expenses	\$11,186,025
		Financing Costs	\$14,525,501
		Developer Fee	\$18,432,428
Total Sources	\$545,073,217	Total Uses	\$545,073,217
Permanent Sources		Permanent Uses	
Senior Loan	\$359,762,460	Construction Loan Repayment	\$373,996,884
Mezz Loan	-	Origination Fee	\$3,739,969
Equity	\$29,194,300	Closing Costs	\$11,219,907
Total Sources	\$388,956,760	Total Uses	\$388,956,760

Hotel Summary	
Suite Summary	
# Suite Floors	18
Suites per Floor	12
Average Suite SF	600
Average Suite ADR	\$2,156
Total # Suites	176
Residence Summary	
# Residence Floors	2
Residences per Floor	3
Average Residence SF	2,000
Average Residence ADR	\$25,471
Total # Residences	6
Summary	
Room Count	182

Project Timeline				
Event	Start	Duration	End	
Acquisition		0	1	0
Design & Permitting		1	18	18
FF&E Procurement		13	12	24
Construction		6	20	25
Opening		25	2	26
Stabilization		26	36	61
Construction Loan Repayment		44	1	44
Sale		120	1	120

Development Cost Assumptions	
Hard Costs PSF (base)	\$950
Hard Costs % Inc. for Residences	20%
Soft Costs (% hard costs)	25%
Soft Costs PSF	\$238

Return Metrics		Investment Assumptions	
Project Level		Project Level	
Unlevered IRR	15%	Cap Rate	8.00%
Unlevered Equity Multiple	3.07x	Growth Rate	3%
Levered IRR	31%	Partnership Level	
Levered Equity Multiple	10.76x	GP Investment	20%
Partnership Level		LP Investment	80%
GP IRR	36%	Discount Rate	11%
GP Equity Multiple	21.02x		
GP Profit	\$706,167,651		
LP IRR	31%		
LP Equity Multiple	9.00x		
LP Profit	\$1,185,472,702		
Waterfall Structure			
Hurdle 1: Preferred Return	11%		
Hurdle 2	18%		
Hurdle 2 Promote	30%		
Hurdle 2: GP Distribution	20%		
Hurdle 2: LP Distribution	80%		
Hurdle 3	24%		
Hurdle 3 Promote	50%		
Hurdle 3: GP Distribution	50%		
Hurdle 3: LP Distribution	50%		

Operating Assumptions	
Hotel	
ADR (weighted average)	\$2,925
Occupancy (Year 1)	60%
RevPAR	\$1,755

Retail Assumptions	
Tourism	
Annual # NYC Tourists	64,500,000
Retail Capture Rate	1.75%
Average Spend per Customer	\$50
NYC Tourism Annual Growth	3%

F&B Assumptions	
Operations	
Expense Ratio	95%
Annual Revenue	\$6,250,000

GP IRR  
**36%**

GP EMx  
**21x**

LP IRR  
**31%**

LP EMx  
**9x**

## DIPLOMACY OF DISUSE

Nicosia, Cyprus remains one of the only divided capitals in the world, and is the UN's longest peacekeeping mission in history. Fifty years ago the Turkish invasion of Cyprus resulted in a division of the island that has lasted to this day. The land between the two sides is controlled by the United Nations and is referred to as "The Green Line," "No Man's Land," and "The Buffer Zone" among other titles. This project explores opening up the Green Line to facilitate bi-communal relationships through traditional and future-oriented land use and disuse.



*A simplified mapping of Cyprus: the UN Buffer Zone in blue and British military bases in dark gray..*



# DIPLOMACY OF DISUSE

ADV V STUDIO

FALL 2023 | CRITIC: MIREIA LUZARRAGA | INDIVIDUAL WORK

<< transact >> << reunify >>



Cosmogram. Mapping relationships between key players, both human and non-human.

DECOMPOSITION

ENVIRONMENTAL

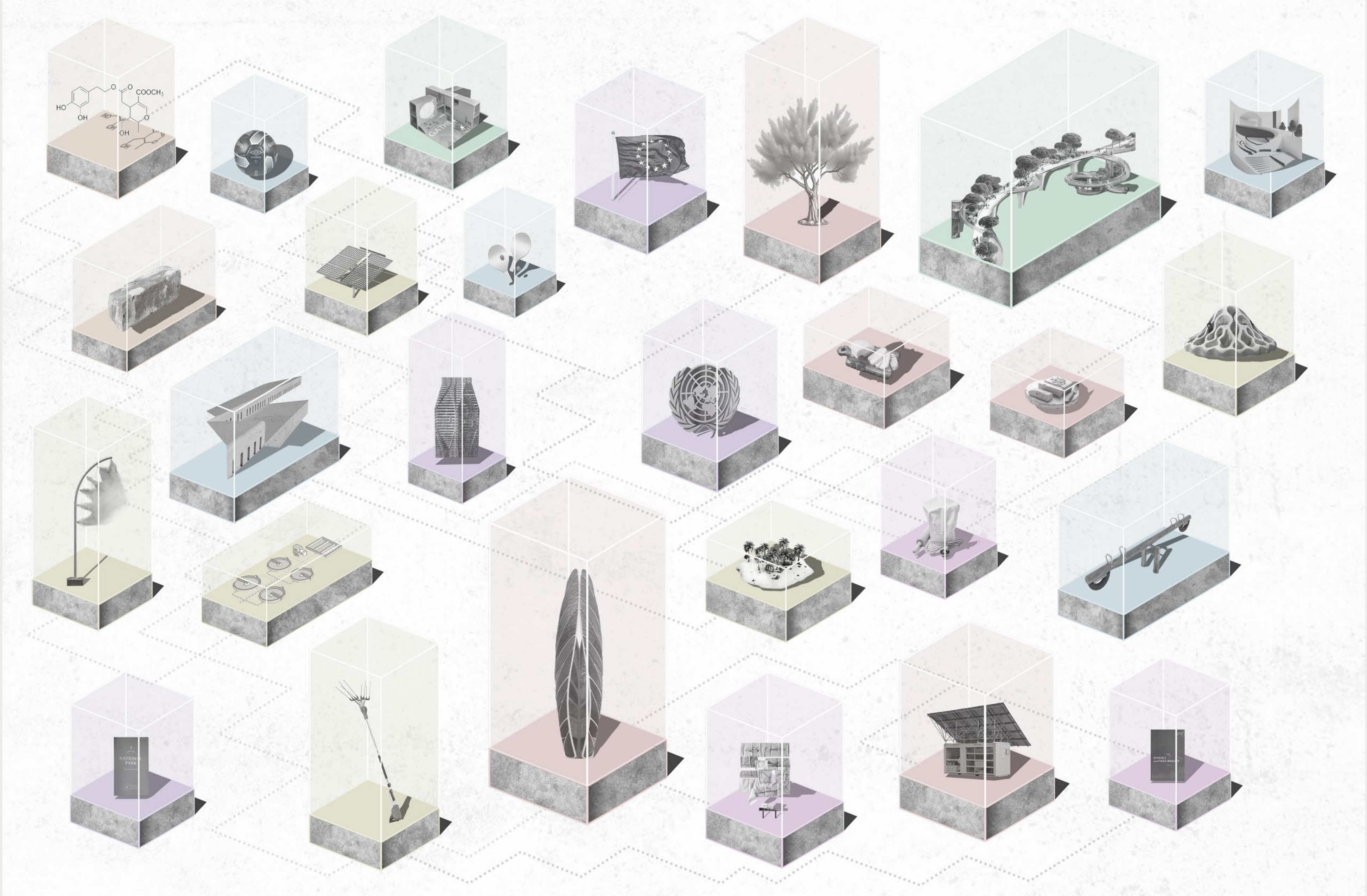
SOCIAL

POLITICAL

PRODUCTION

PRESERVATION

EDUCATION



Theater of Operations. Ideating solutions that utilize key players in the cosmogram and mediators.

## DISUSE

After nearly five decades of abandonment, nature has overtaken much of the Green Line, from abandoned homes to car dealerships to airports. The lack of human intervention and pesticide use has resulted in Green Line olive trees producing olive oil with some of the highest polyphenol levels in the world. That, along with flourishing mouflon and sheep population in the Green Line, suggests a future in which these key players can act as agents to a bi-communal coexistence in the Green Line.

## ACTIVATION

This proposal suggests opening up the Green Line and constructing a walkway with portable artisan stalls, where makers from the North and the South have an opportunity to sell their goods. Both traditional products such as olive oil, pottery, and halloumi can be sold, as can more forward-thinking products such as 3D printed products (chairs, sweaters, etc.) from the wool of the sheep residing within the Green Line. Portable stalls will continue the notion of disuse, rotating after a set number of years to return the land to nature.



*Bi-communal marketplace within the Green Line.*





Section cut showing the use of water from the bi-communal water treatment plant in the Green Line to supply misting units at each portable station during the hot summer months.

# Design Narrative

Cedar Crossing is **4.3MM sq.ft. of transit oriented, mixed-use development**. Urban challenges of connectivity, economy, equity, and the environment are addressed through partnerships with community organizations, equitable mobility design, and **alignment with Seattle 2035**. The cedar is an emblem of versatility, resilience, and cultural significance embedded in the history of the Pacific Northwest—from the Squamish to the timber mills and beyond. Cedar Crossing draws on this to set a new standard for **uplifting, sustainable, and financially prudent** development.

### Equity: Seeding Restoration

The site's legacy of **people displacement, incarceration, and concentration of assistive programming** is the foundation for justice sought. Mirroring DESC's "housing first" mantra, Cedar Crossing delivers **820 affordable and 564 senior living units**. The mixed incomes and ages enable **upward mobility and wisdom sharing**. Design solutions provide access to homes, shops, and open spaces **regardless of mobility level**. Leveraging DESC and King County Department of Corrections as partners, jobs training and placement programs, private supportive services, and government aid are integrated throughout the economy. The area inhabitants, from the Coast Salish to the Japanese and onward, are reflected in the art, architecture, and tenancy. A mix of **city, county, tribal, and federal government offices** are located on site, highlighting the value of each. The **Pacific Northwest Museum of Natural History** provides space flexibility, hosting programming, exhibitions, and classes, **educating and promoting the diversity** of Seattle's populace and their legacy. Like the tree, Cedar Crossing aims to be a **provider, nurturing growth and fostering an inclusive urban environment**.

### Accessibility: Weaving Roots

Mirroring roots of the cedar and superblocks of Barcelona, Cedar Crossing envisages a **network of pedestrian-only streets, communal spaces, and public transit that link adjacent neighborhoods on both sides of I-5**. The Hub, **Seattle's only station where all Link lines converge**, redefines public government offices through adaptive reuse of City Hall. The Hub transforms maligned trips to civic offices and **fosters a sense of pride and excitement**. Enhanced pedestrian infrastructure enables access to Pioneer Square, Harborview Medical, Yesler Terrace, and the waterfront, **linking \$20 billion of development**. Emphasizing safety and mobility, 4th and 5th Ave are closed to private traffic, and Terrace and Jefferson transformed into pedestrian promenades. Cedar Crossing creates a **24/7 activated place to explore**, bridging communities and serves as the **keystone species for others to thrive**.

### Economy: Branching Out

Drawing on the cedar's role as a source of sustenance and trade, Cedar Crossing recognizes the value of diverse uses, and houses **start-ups, cultural enterprises, and commercial ventures**. Essential and experiential retail provide **grocery, childcare, and healthcare**. Programming and diverse entertainment options – from the Hub's rooftop beer garden to First Thursday street fairs – create **streetscape activation** and a true sense of place. The **INCubator**, located in the Atlantica, partners with the Alliance for Pioneer Square to give owners and artists the **training, tools, and mentorship required for success**. Government tenancy anchors the commercial sphere, providing stability. Cedar Crossing will bring **5,357 permanent jobs to the area and over 4,000 construction jobs during development**. The mixed-use real estate highlights the role that activity of all scales—from government to mom & pop—plays in a **healthy, vibrant business ecosystem**.

### Environment: Evergreen for Generations

Cedar Crossing will create healthy, enduring spaces **in concert with the natural environment**. This is critical in ensuring that future populations have the same – if not better – opportunities as today. **1,300,000 sq.ft. of real estate is repurposed**. All buildings are **Net Zero-ready and electric** through envelope design, MEP systems, and material choices. Proximity to the port infrastructure and the region's prefab economy enables **modular construction** of the Canopy. Heartwood, the low-rise retail and residences, are **mass-timber construction**. All residential interiors throughout the Canopy and the Atlantica emphasize **natural materials, daylight, and no-VOC finishes**. The results are efficient, quiet, and healthy homes, offices, and shops. Access to nature and ecosystem services are woven throughout. **750 new trees** trap particulate pollution from I-5, dampen road noise, and boost moods. **70,000 sq.ft. of permeable streetscapes**, bioswales, and rain gardens manage less predictable and more extreme rainfall. Shared gardens, volunteer park clean-ups, and morning yoga help foster a sense of community and ecological reverence. **Living Building Challenge, PassivHaus, and CCREM alignment** provide the frameworks for Cedar Crossing to exemplify the **value sustainable real-estate creates**.

The cedar is embraced as the namesake and shepherds this plan's values. The role it serves as a keystone species in the ecosystem is replicated, and its attributes – resilient, productive, and storied – highlighted. **Welcome to Cedar Crossing**.



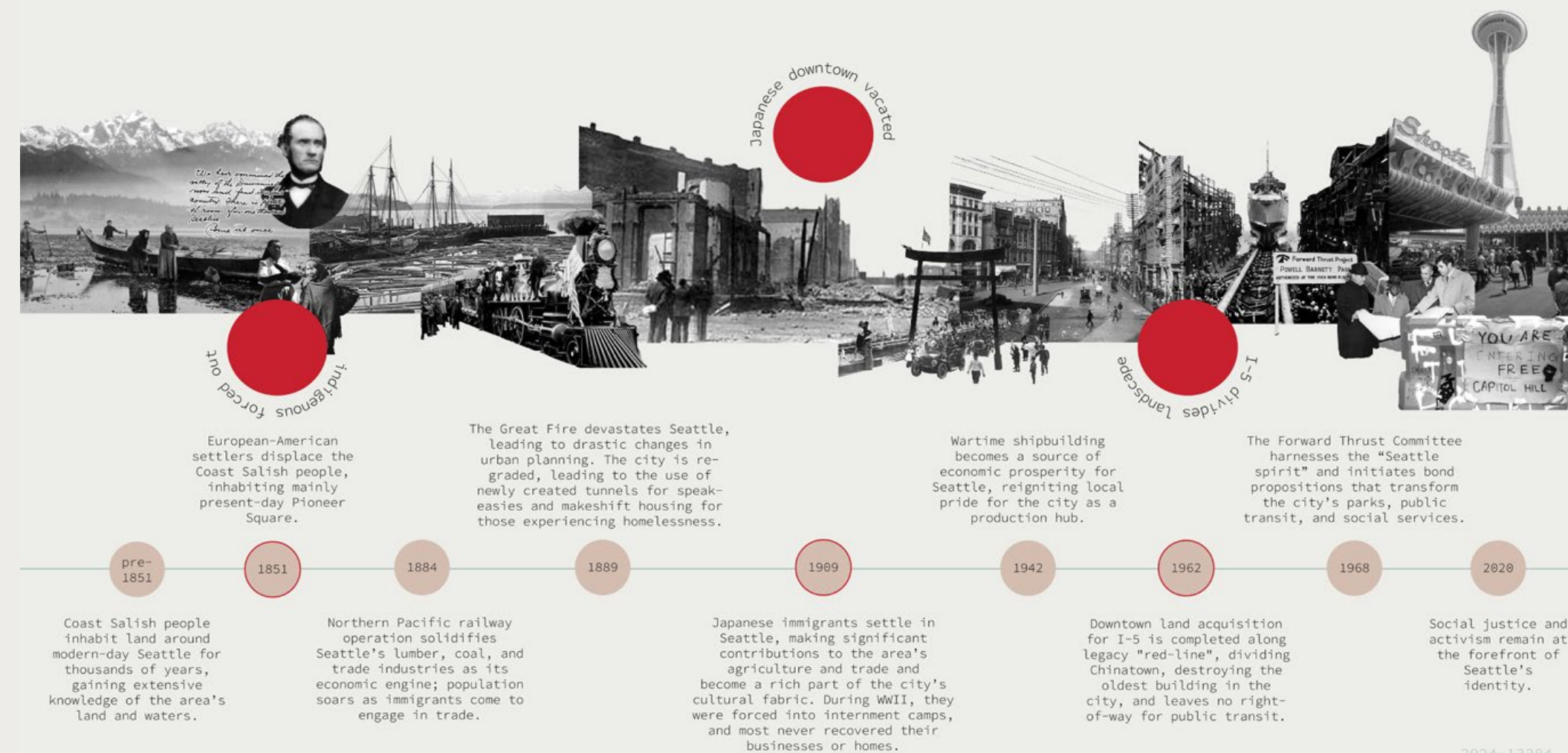
# CEDAR CROSSING

ULI HINES STUDENT COMPETITION

SPRING 2024 | GROUP WORK: JOHN MATHAI, NEERAJ VARYANI, ROBB DALGLEISH, KATERINA GREGORIOU

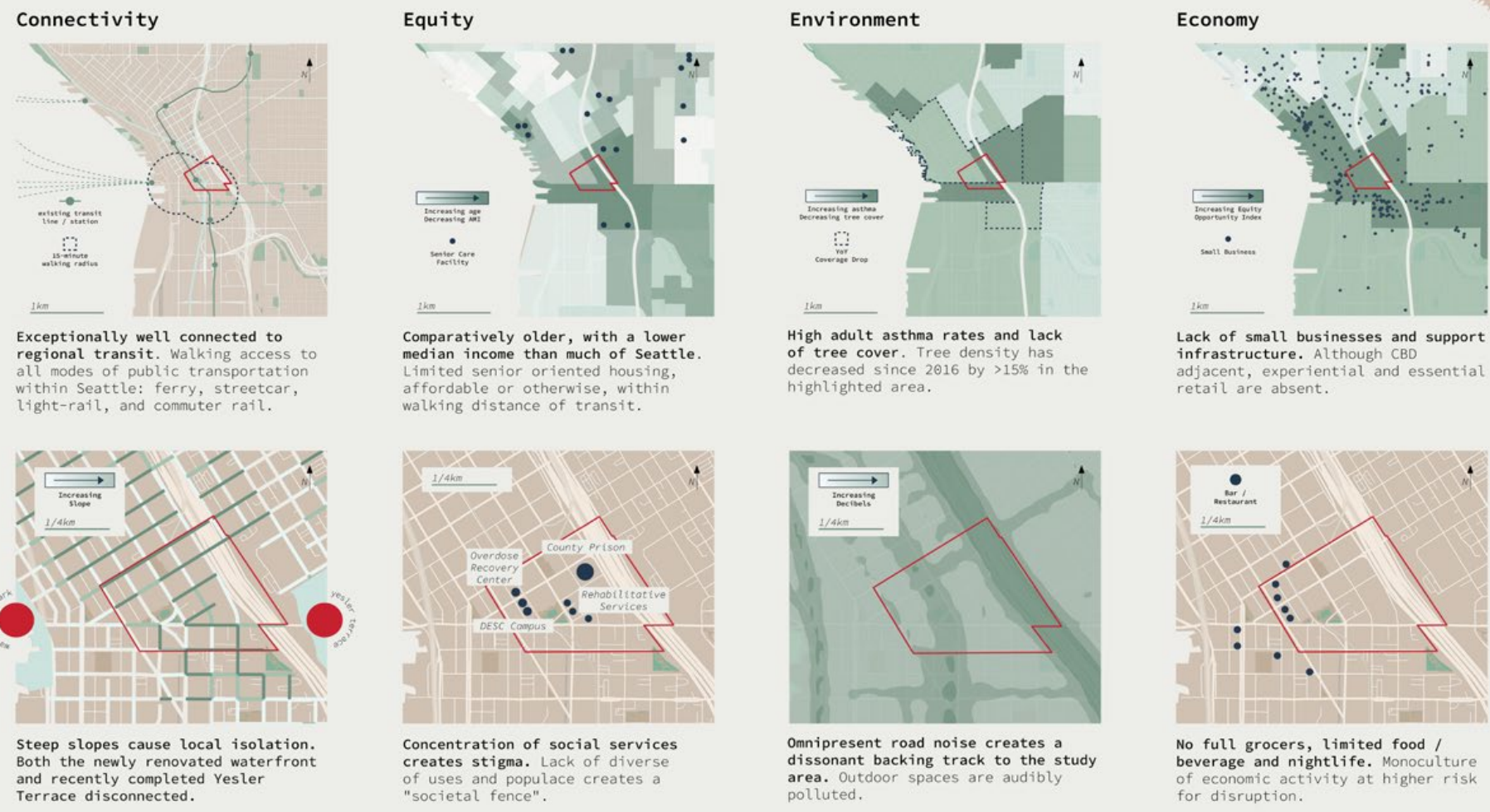
<< sojourn >> << inspire >>

# Site History





# Growing the Cedar



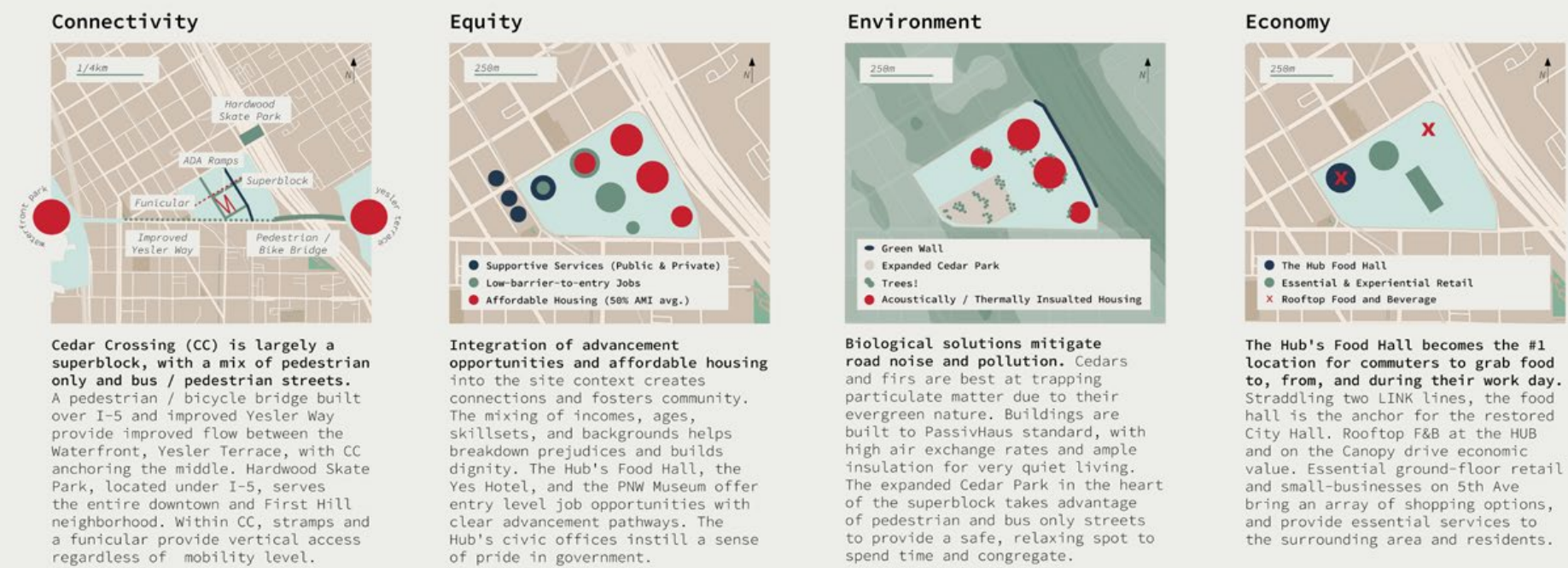
## Inequities & Opportunities

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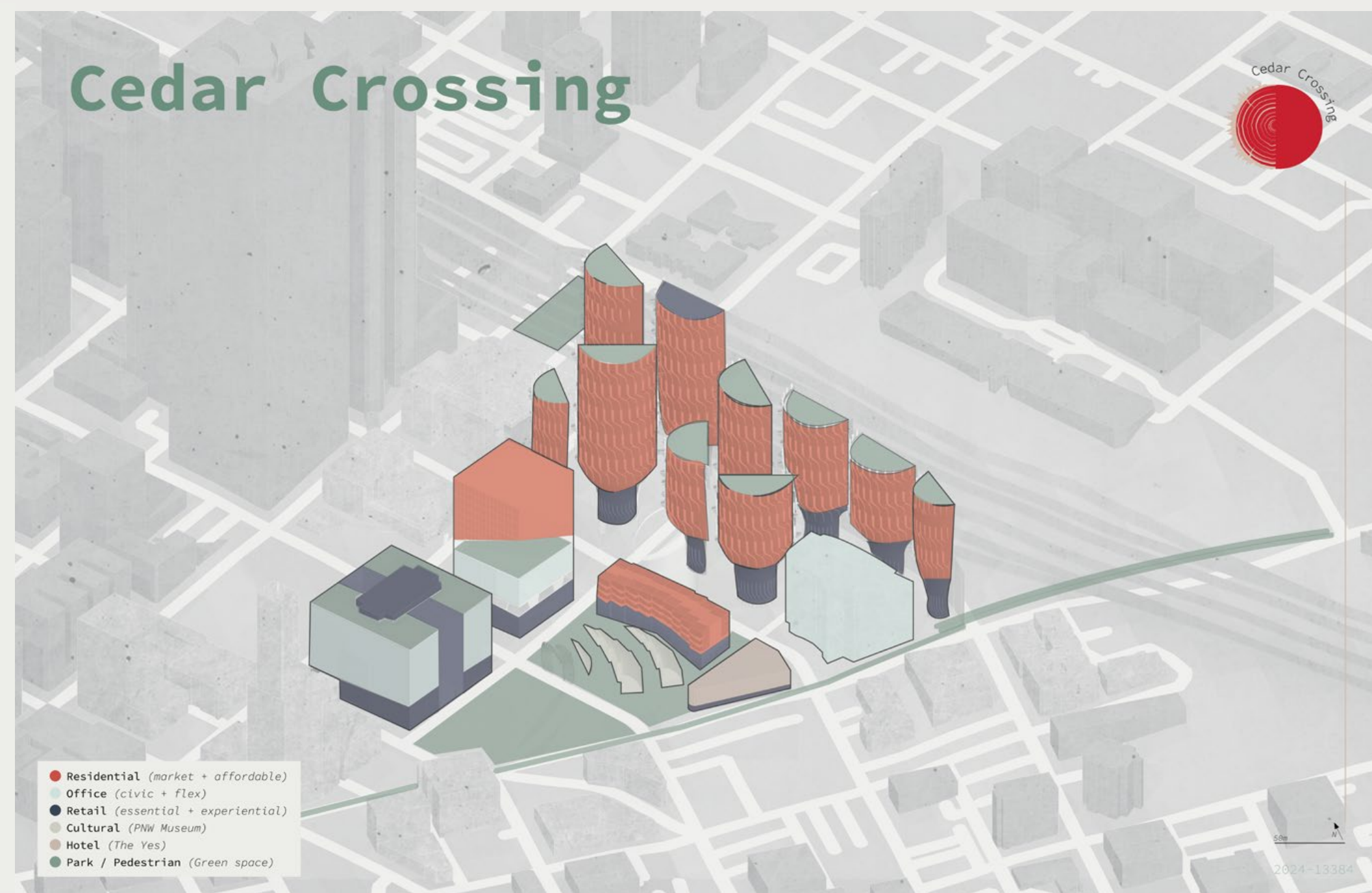


## Intervention Strategies

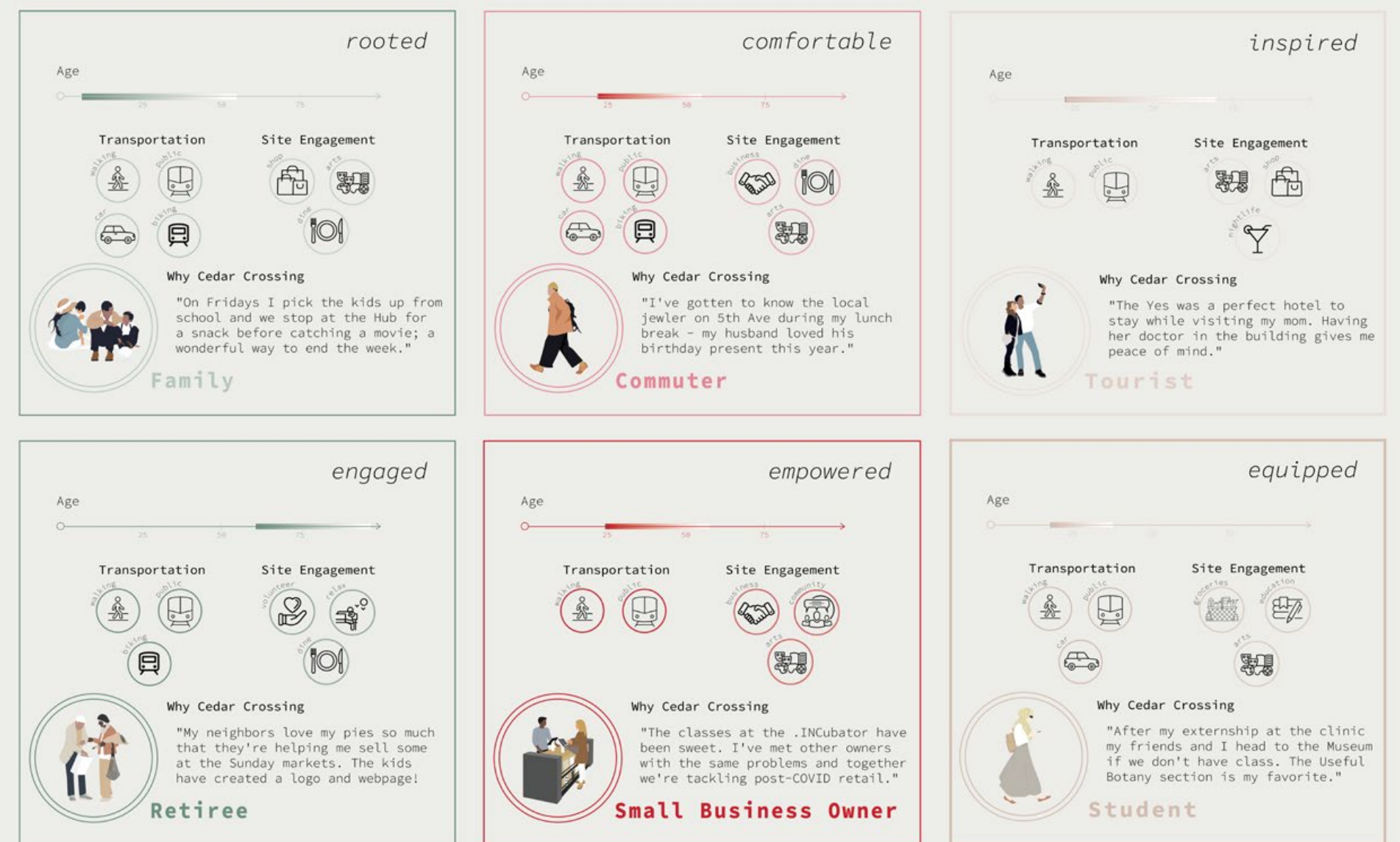
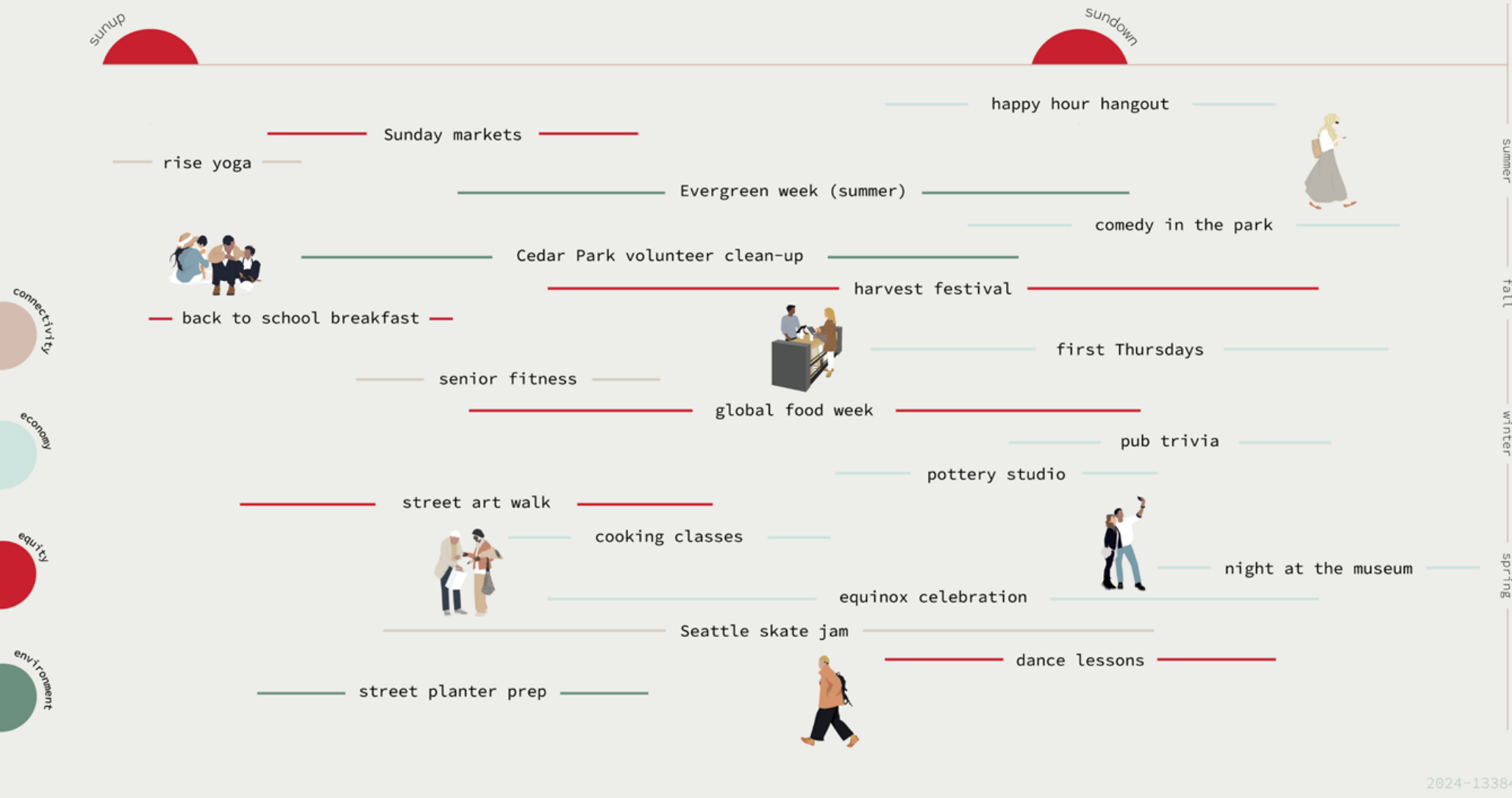


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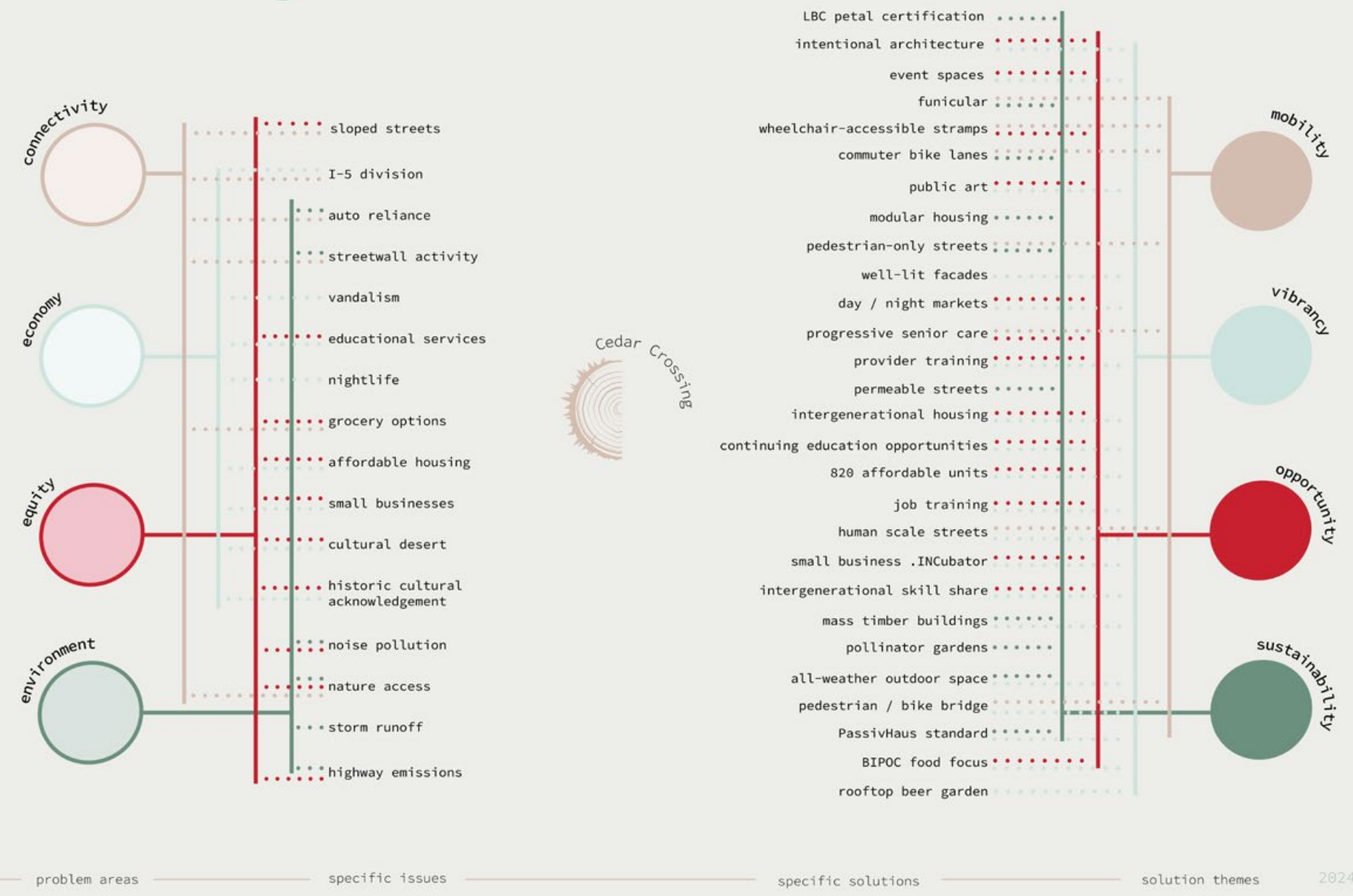
# 24/7 Activation



## Community Members

# Problem Solving

## Solving



# Project Phasing

### Phase I

**RESIDENTIAL**  
628,160 SF / 568 Units  
142 Affordable at 50% AMI

**COMMERCIAL**  
595,611 SF  
Civic + Flex Space

**RETAIL**  
315,805 SF  
Food Hall, Essential Retail, Small Biz Row

**PUBLIC**  
100,000 SF  
PNW Museum of Nat. Hist.

FAR: 6.0  
Res. Parking Ratio: 0.25/APT

Buildout: 1,711,576 SF  
Cost: \$928,920,202

Leveraged IRR: 15.89%  
Unleveraged IRR: 10.62%

### Phase II

**RESIDENTIAL**  
1,649,352 SF / 1,933 Units  
624 Affordable at 50% AMI  
564 Senior Units

**RETAIL**  
156,000 SF  
Harborview Clinic + More

**PUBLIC**  
44,000 SF  
Community Facility

FAR: 16.0  
Res. Parking Ratio: 0.25/APT

Buildout: 1,849,352 SF  
Cost: \$1,318,725,551

Leveraged IRR: 23.38%  
Unleveraged IRR: 13.78%

### Phase III

**RESIDENTIAL**  
524,780 SF / 322 Units  
54 Affordable at 50% AMI

**COMMERCIAL**  
290,664 SF  
Anchor Gov't Tenants

**RETAIL**  
23,000 SF  
Spa at The Yes Hotel

**HOTEL**  
120,800 SF / 144 Keys  
The Yes Hotel

FAR: 14.40  
Res. Parking Ratio: 0.25/APT

Buildout: 959,244 SF  
Cost: \$495,182,936

Leveraged IRR: 15.16%  
Unleveraged IRR: 9.51%

2824-13384

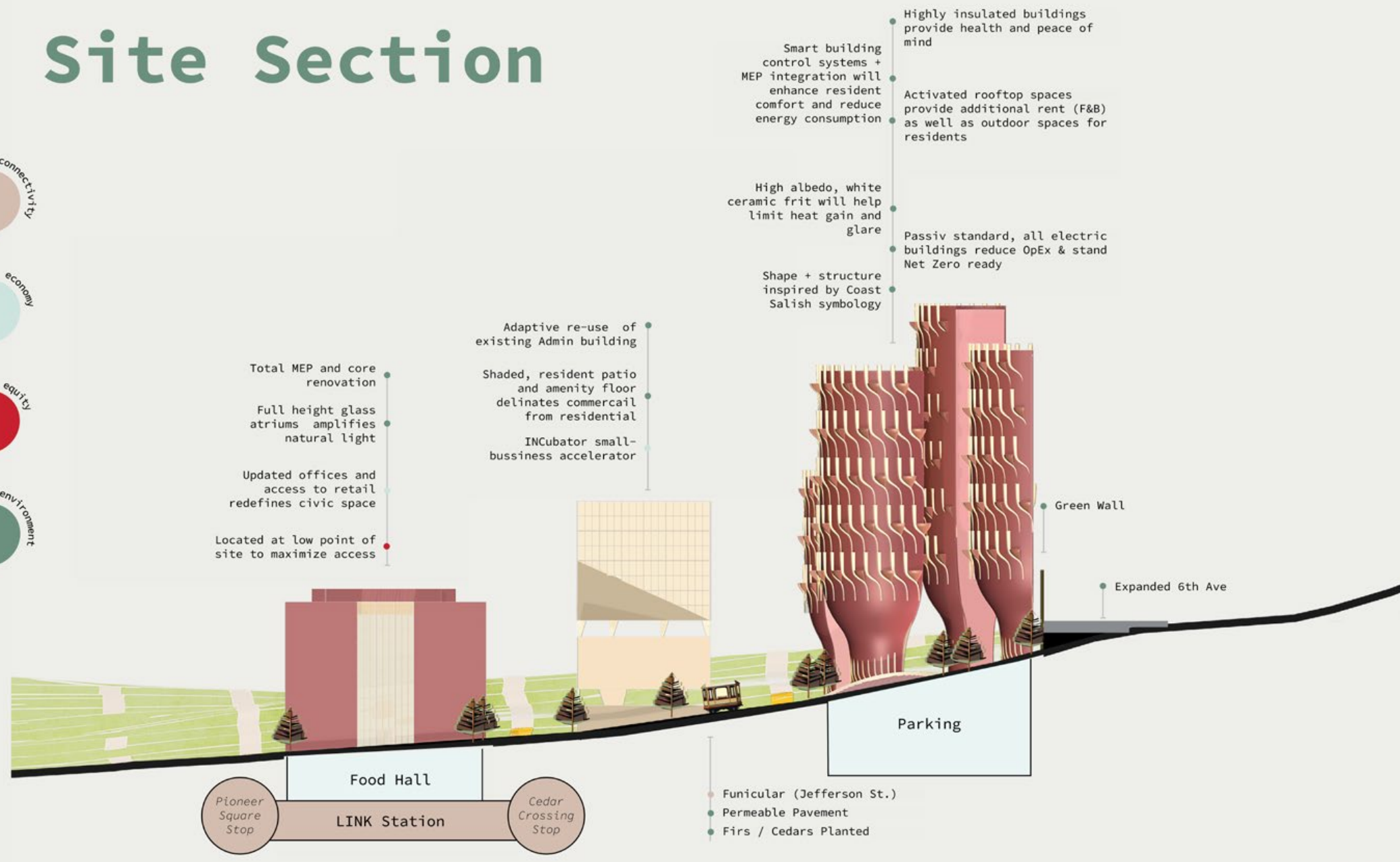
# Site Plan



- 1. Pioneer Square Link Station
- 2. Cedar Crossing Link Station
- 3. Jefferson St. Funicular - Pedestrian / Bike Only
- 4. 4th Ave - Pedestrian / Bike Only
- 5. 5th Ave - Ped. / Bike / Bus Only
- 6. 6th Ave - Additional right lane
- 7. Ped. / Bike Bridge
- 8. Yesler Way - Improved Sidewalk / Bike Lane
- 9. Hardwood Skate Park - Beneath I-5
- 10. City Hall Park - Dilling Way Removed
- 11. Cedar Park - Terrace St Removed
- 12. Permeable Streetscapes
- 13. Green Wall - Mitigates I-5 Pollution
- 14. Rooftop Gardens
- 15. The Hub
- 16. Atlantica
- 17. The Canopy (I-VIII)
- 18. Heartwood
- 19. PNW Museum of Nat. Hist.
- 20. The Yes Hotel
- 21. 300 5th. Ave
- 22. Formosa (A & B)
- 23. Food Hall - Basement
- 24. Beer Garden
- 25. INCubator
- 26. The Overstory - Rooftop Restaurant
- 27. Amphitheater Seating
- 28. Retail Row - Small Business Street
- 29. Spa - Basement



# Site Section



# CEDAR CROSSING

**\$2.74B Investment**  
**19.25% Levered IRR**

## Equity

**3,600+**  
New Housing Units

**24 % Affordable**  
At 50% of AMI

**280+**  
New Homeowners

## Economy

**5,300+**  
Long Term Jobs

**4,000+**  
Construction Jobs

**100+**  
Local Businesses

## Connectivity

**\$100 Million**  
Public Infra. Investment

**6,500+ Residents**  
< 5 Min to LINK

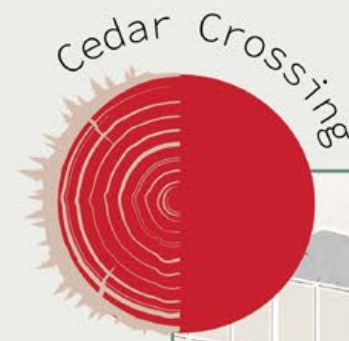
**560+ Seniors**  
< 5 Min to Hospital

## Environment

**750+**  
Net New Trees

**70,000 Sq.Ft.**  
Permeable Streetscape

**100%**  
Electrified



Rooted in access, growing opportunity

2024-13384

## HOUSING, INC.

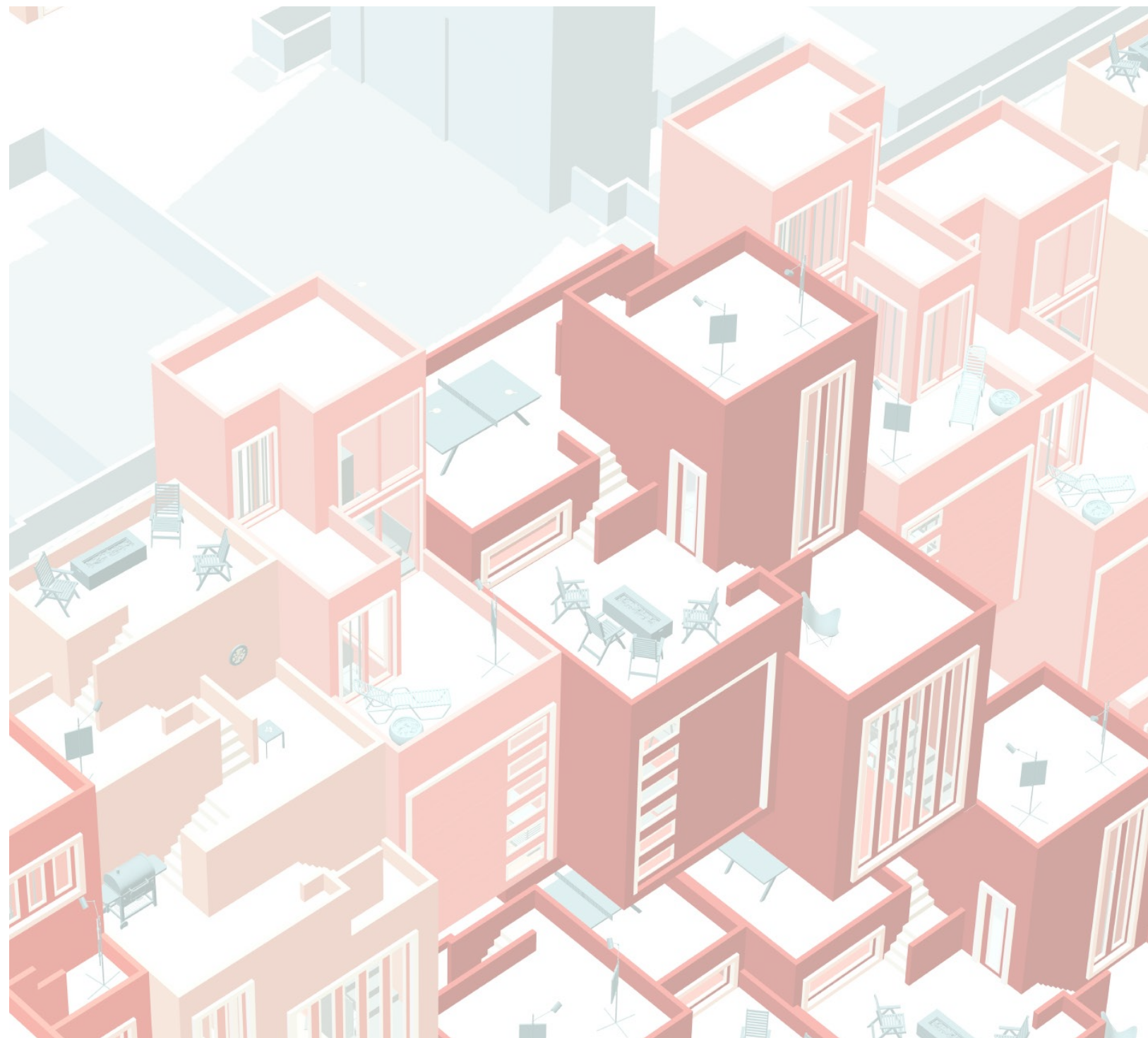
Housing, Incorporated is a community for makers.

It recalls the neighborhood's former life as the 'Piano District,' where manufacturing was at the heart of the area's architectural and cultural identity, by re-integrating manufacturing into the heart of the collective living space. It also acknowledges the significance of block parties in shaping the South Bronx's legacy as the birthplace of hip-hop and attempts to recreate the spatial and atmospheric conditions necessary for the impromptu exchange of culture, music, the arts, and lived experiences.



*View from residence hallways into the ground floor makerspace.*

This project posits that the symbiosis of blue-collar 'material makers' and white-collar 'knowledge makers' at both the formal place of work and at the informal place of living are opportunities to foster reciprocal teaching and learning, to reignite the neighborhood as a place of production that can benefit the community as opposed to down-stream consumers, and to amplify serendipitous ideation, creation, and collaboration.



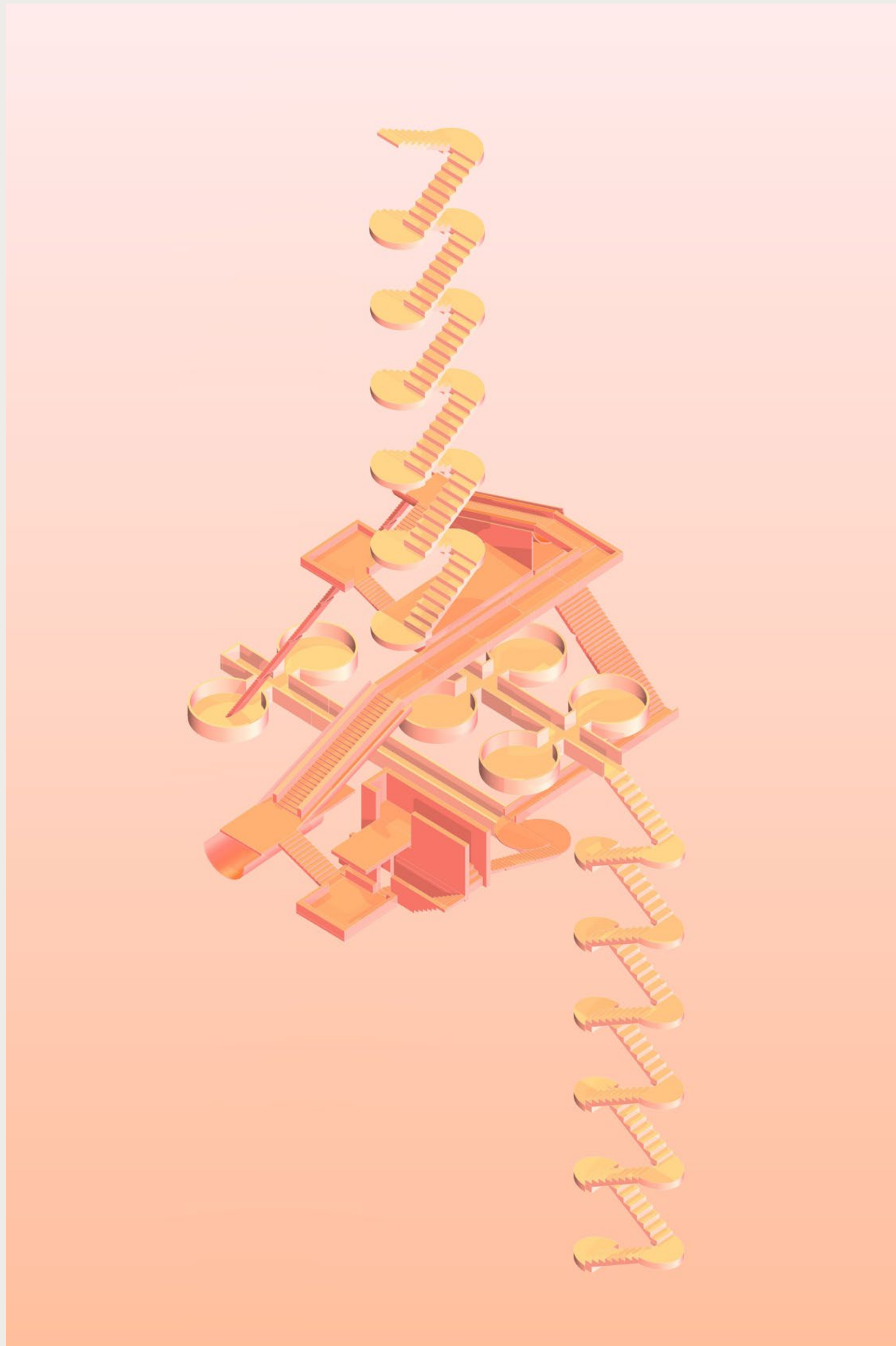
## HOUSING, INC.

CORE III STUDIO

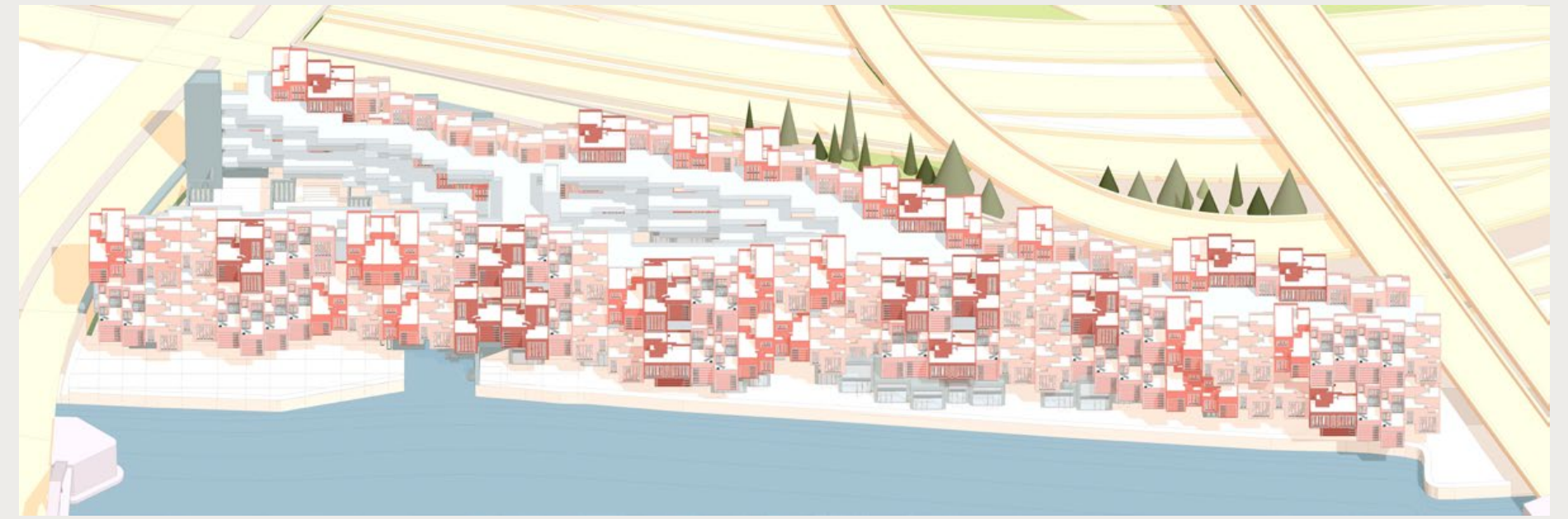
FALL 2022 | CRITIC: BENJAMIN CADENA | GROUP WORK: TAHA ERDEM OZTURK, KATERINA GREGORIOU

<< make >> << create >>

## E A R L Y   E X P L O R A T I O N S



*An early study of the Barbican as precedent for interior circulation connectivity.*



*Site massing showing connectivity between unit roofscapes and interior entrances. Roof not shown for interior clarity.*

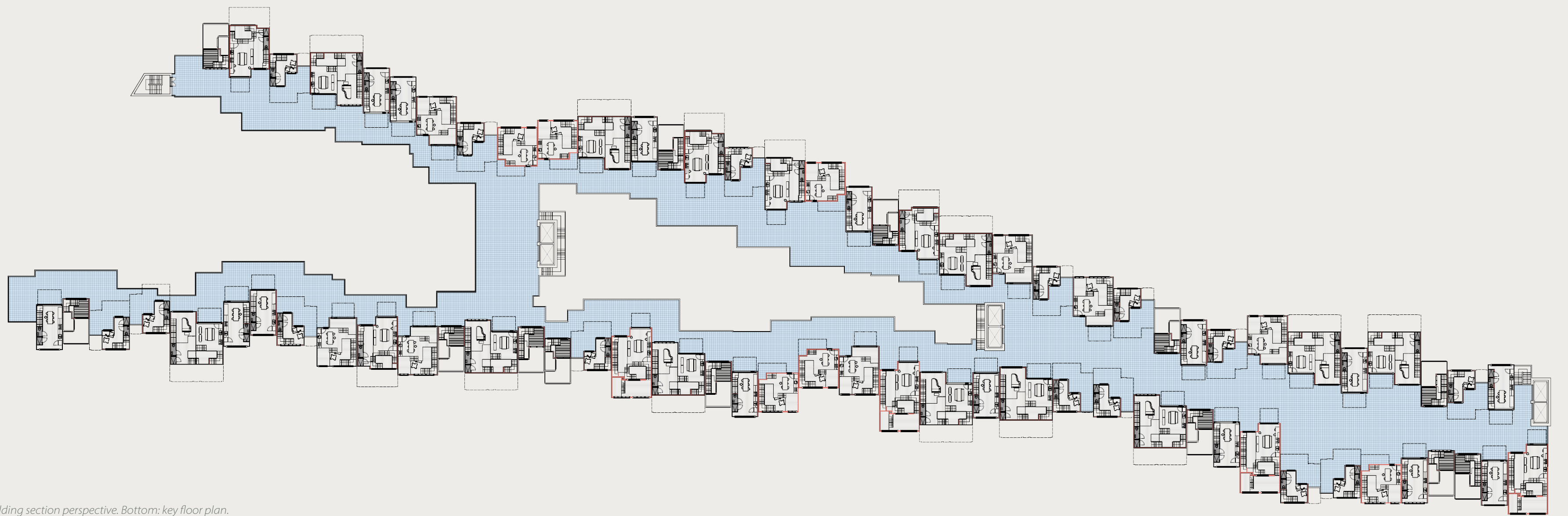
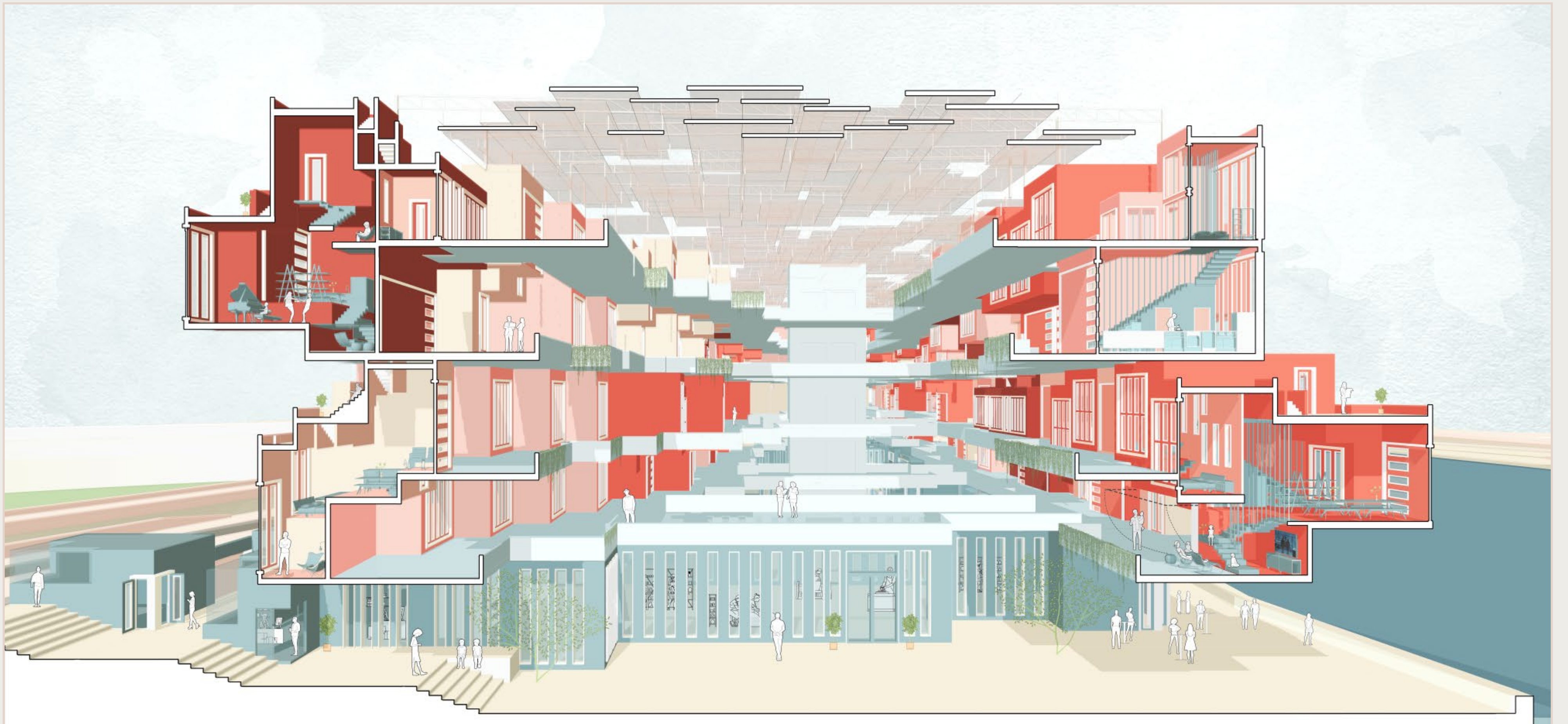
## P R O G R A M M I N G

At the core of this project is the notion that serendipitous interactions among individuals from different making industries is what drives innovation and fosters a sense of community, ownership, and belonging.

Makerspaces ranging from pottery to robotics to confectionery goods are situated at the ground floor. Bordered on one side by public-facing retail stores, residents are provided the opportunity to sell their goods adjacent to their workstations. Not only does this alleviate complex logistics for small businesses, but it also helps drive foot traffic to the area and can create connections between customers and makers as their workspaces are on display directly behind their shops. Additionally, residential corridors on the upper levels are lined with objects made by residents, furthering a sense of ownership of space.

At the unit level, each apartment is designed to facilitate organic congregation and interactions. In a nod to casual makerspaces, garage doors replace traditional front doors to maximize resident interactions and to suggest a way to rethink our traditional notions of the home as a closed-off private space. Interior staircases border these doors and provide stoop-like conditions at thresholds between interior and exterior much like brownstones across NYC, and between interior half-levels. Additionally, fluid interior layouts feature high ceilings and large windows to maximize natural light and to facilitate a greater connection to the makerspaces and surrounding landscapes. Each unit faces both the interior makerspace core and the exterior of the community. Finally, every unit features a rooftop balcony that meets neighboring balconies to create an organic roofscape topography, allowing neighbors to combine outdoor spaces and to initiate mingling.





Top: key building section perspective. Bottom: key floor plan.

UNIT INTERIOR



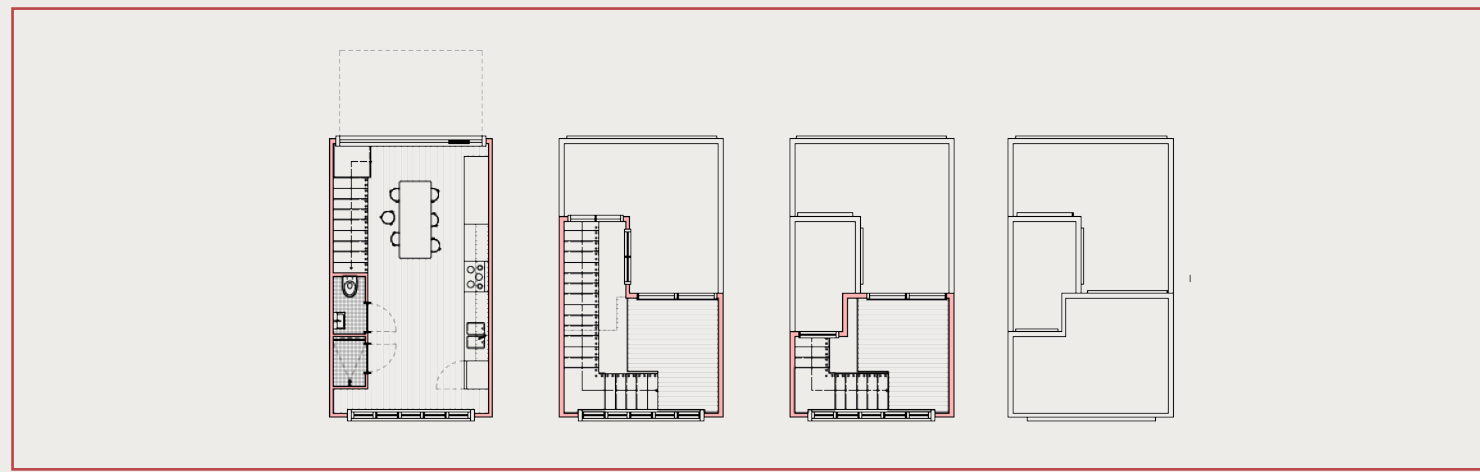
MAKERSPACE INTERIOR CORRIDORS



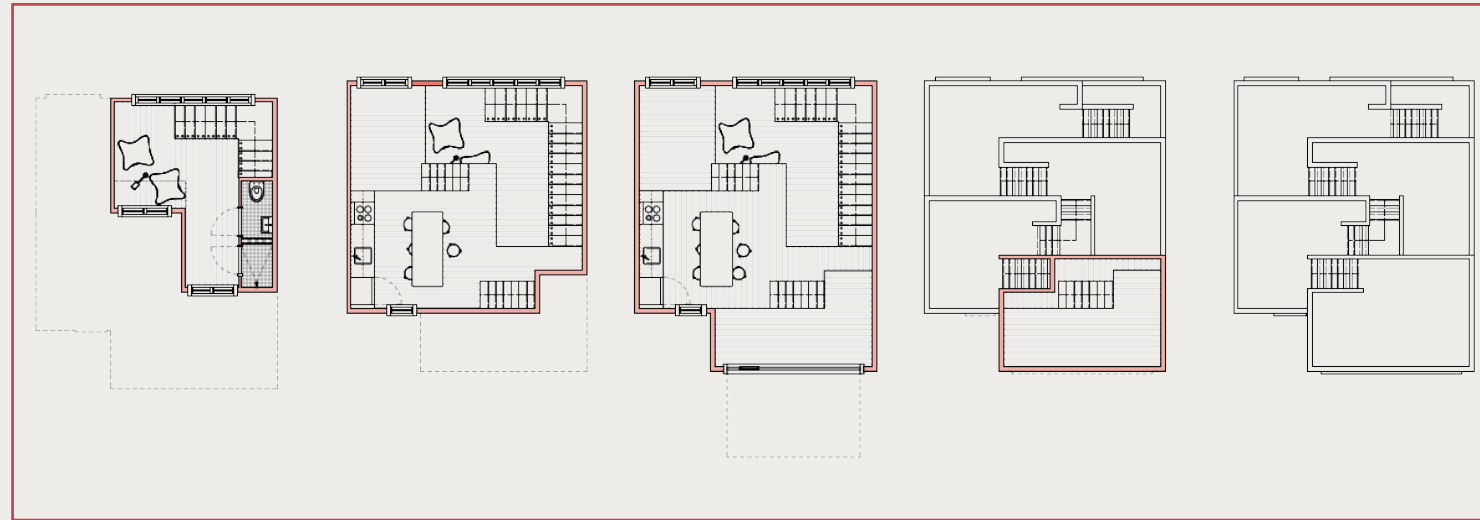
ROOFSCAPES



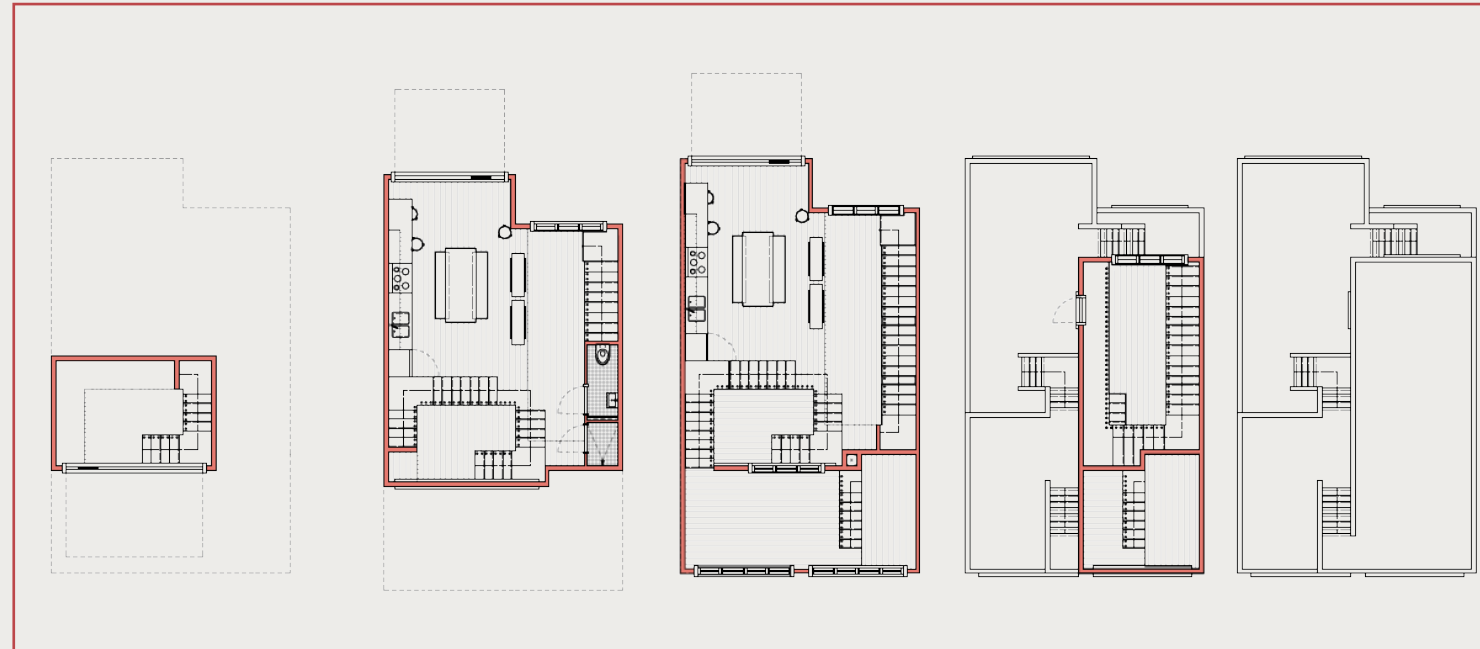
UNIT PLANS



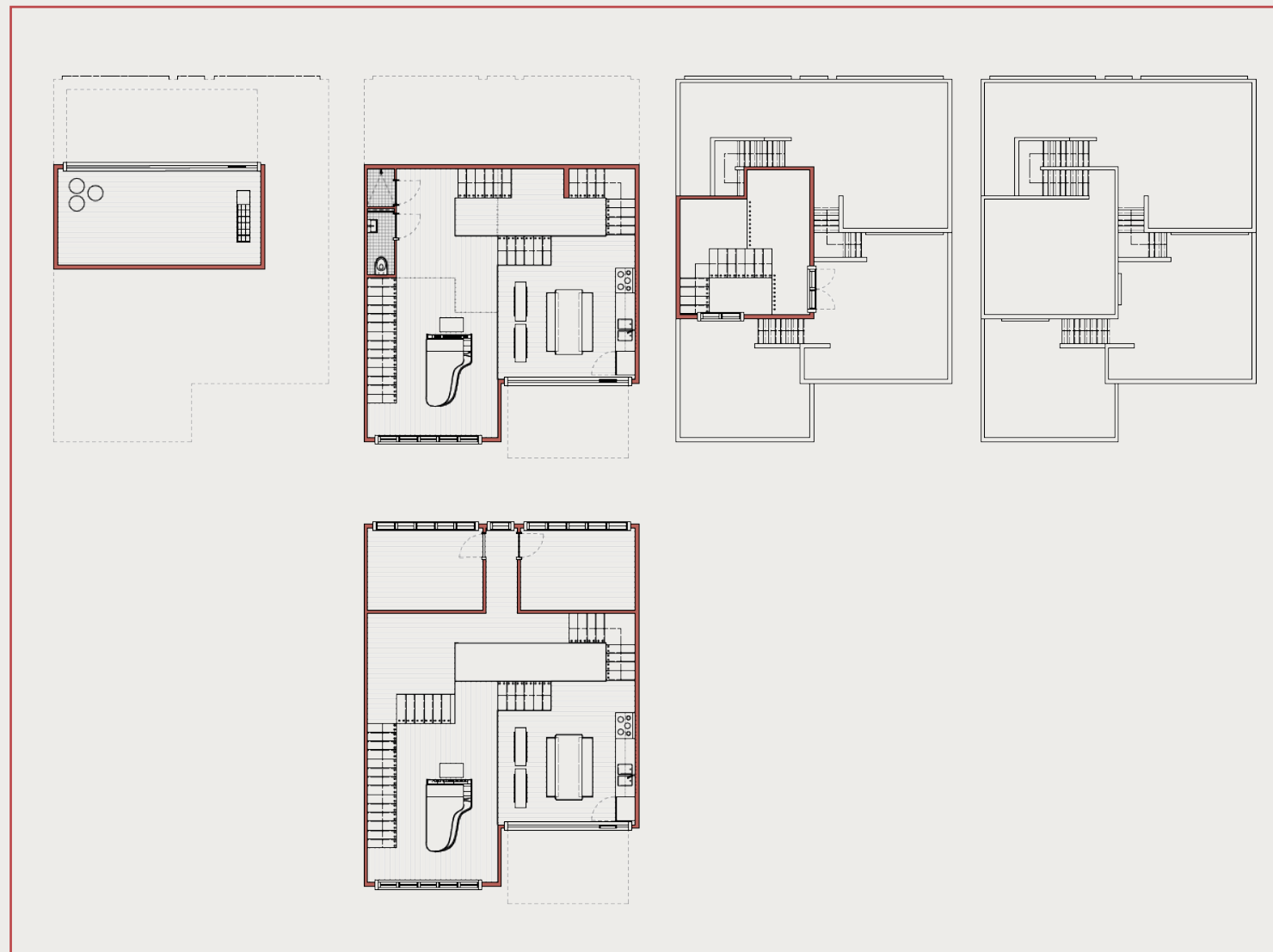
MICRO



STUDIO



1 - BEDROOM



2 - BEDROOM

## SANCTUARY: HUDSON VALLEY

The Sanctuary: Hudson Valley is a space for formerly incarcerated women and women coming from backgrounds of abuse and trauma to transition back into society in a physically, emotionally, and environmentally supportive space. Once an abandoned resort in the Borscht Belt, this development is rooted in rebirth and resilience.

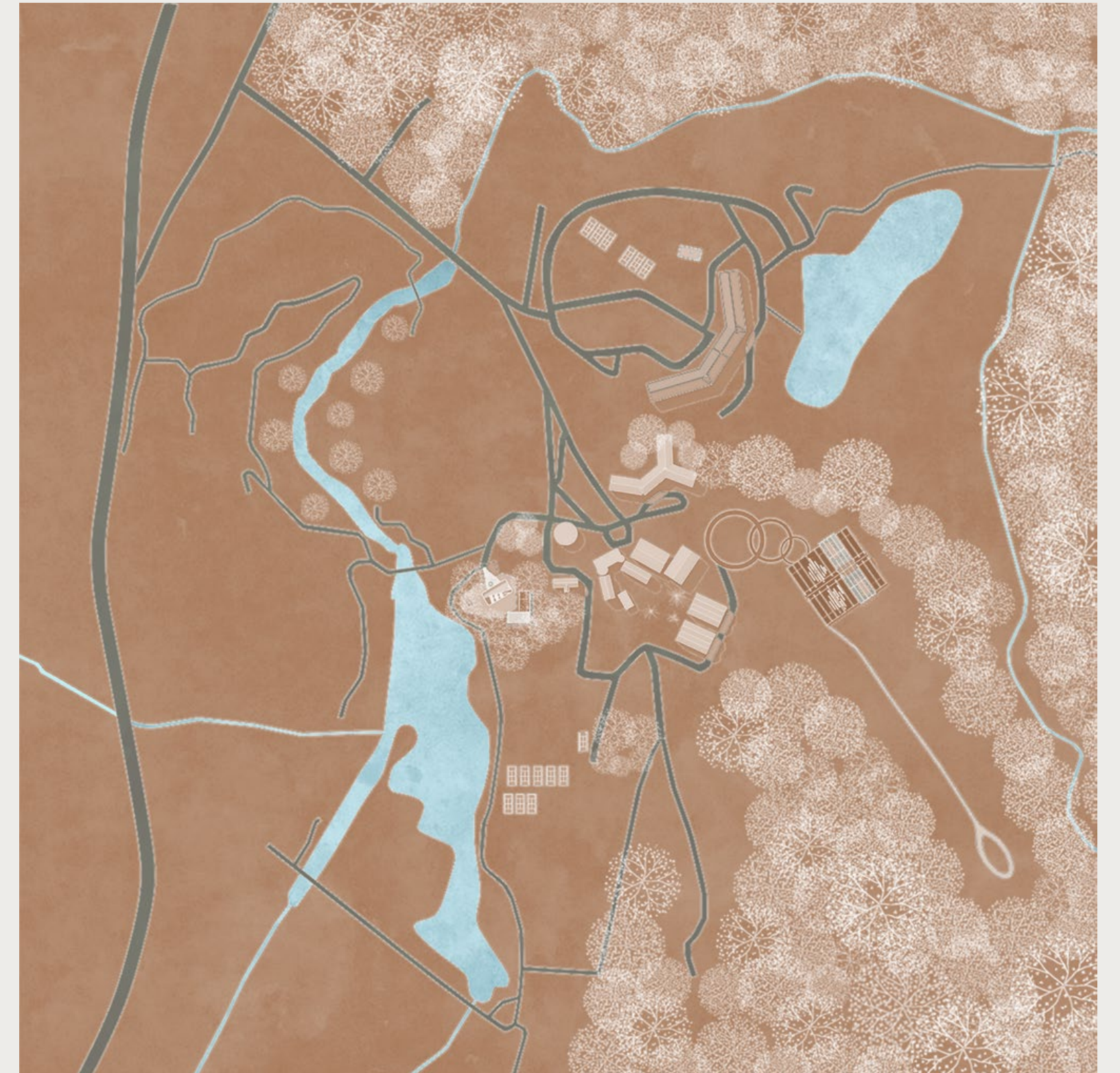


# SANCTUARIES

ADV IV STUDIO

SPRING 2023 | CRITIC: NAHYUN HWANG | INDIVIDUAL WORK

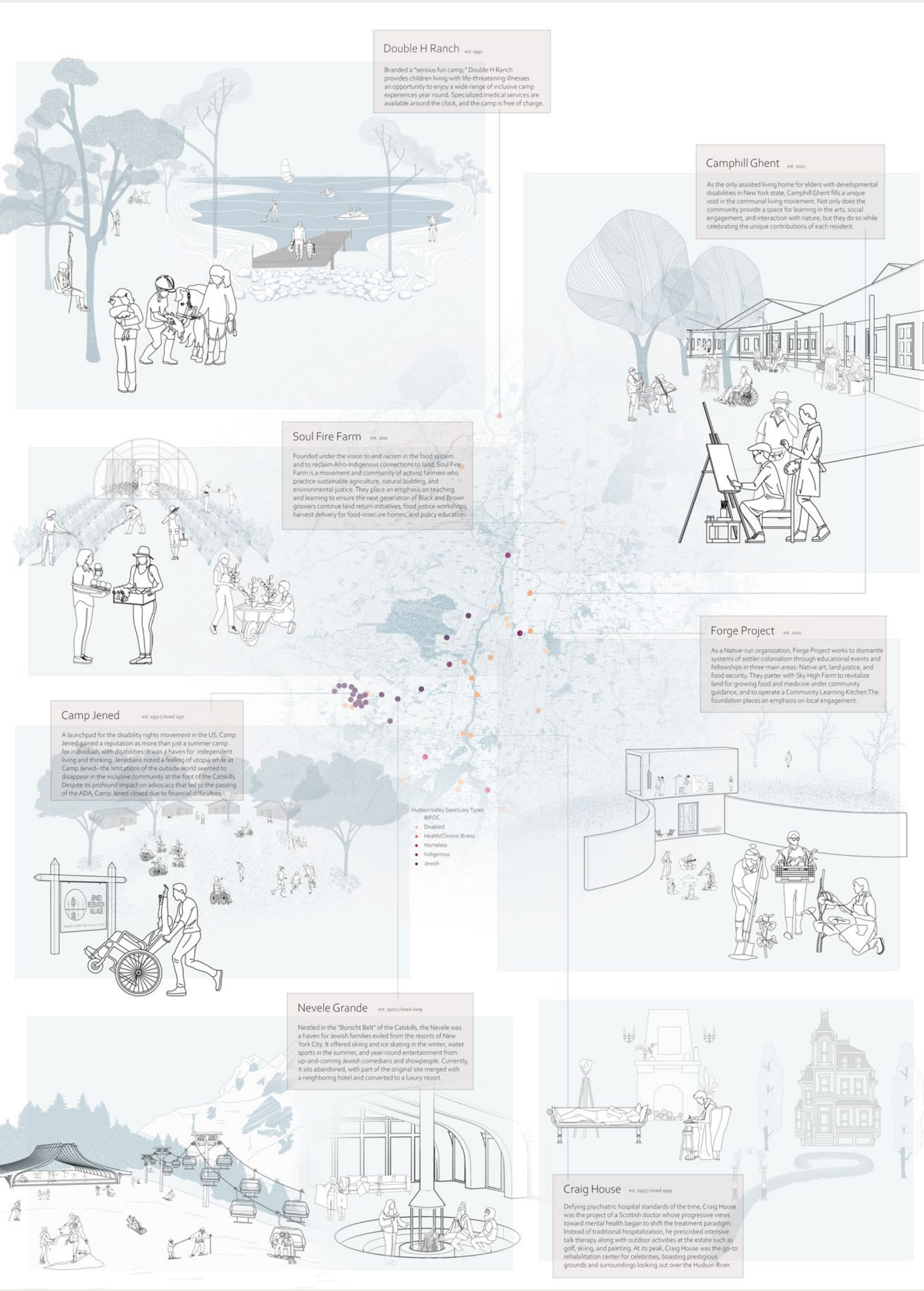
<< mend >> << re-imagine >>



Plan view of The Sanctuary site, formerly home to the Nevele Grande.

The development is an adaptive reuse of the former Nevele Grande, a resort that was part of the Borscht Belt—a sanctuary for Jewish families who were banned from resorts near New York City in the 1920s. As it sits currently, the resort has been taken over by nature, hinting at physical notions of rebirth and resilience which would complement the psychological aspirations of the program.

REFUGE & REFORM



This project is rooted in the history of Hudson Valley as a place of refuge. To the left, some of the most notable sanctuaries are mapped and analyzed by type. Their spatial qualities were analyzed with respect to the utilization of open space to promote freedom of movement, expression, and identity, while simultaneously ensuring the use of place through strategically positioned buildings that counter this freedom with a sense of security and structure. For instance, Camp Jened, a summer camp for individuals with physical disabilities that paved the way for the Americans with Disabilities Act, boasts a large, level, accessible field enclosed by smaller cabins. Jenedians noted feelings of utopia at camp, citing that the limitations of the outside world seemed to disappear within this space.

While Hudson Valley became a sanctuary for many in the twentieth century, digging further into its history reveals a complex relationship with the notion of refuge. In many of Hudson Valley's institutions that were labeled as places of refuge, they ended up blurring the lines between refuge and reform. Interestingly, the first all-female prison in the US (the Mount Pleasant Female Prison) was in Hudson Valley, and was constructed as a place of refuge due to the abuse of female prisoners by male prisoners in the former co-ed prison blocks. Over the course of the 20th century, New York City and the greater Hudson Valley became a place for the pioneering of women's rights and the birth control movement. Despite this history in Hudson Valley, over the years the majority of clinics and spaces of care and refuge for women moved to the city, leaving an imbalance of resources in rural areas. Furthermore, the number of incarcerated women in the US is on the rise, yet programs and spaces tailored specifically to their transitional care from incarceration to society is lacking.

This project aims to fill a gap in care in rural areas for women with a history of incarceration, abuse, and trauma, providing them space and place to transition into a future they can take pride in. Furthermore, its history as a place of refuge would be respected and embraced. Instead of demolishing the old, we protect and embrace it for what it has taught us, incorporating these lessons in how we move forward. In addition, the site's proximity to the small town of Ellenville, yet remoteness from the city, provides an ideal balance in environment for women coming from abusive or traumatic backgrounds. It provides a space away from the triggers of abuse, yet maintains a sense of community with other residents and mentors who are former attendees of the program.

Atlas of sanctuaries in Hudson Valley.



Section perspective of former ice rink intervention.

## PROGRAMMING

This space is intended to be a place where women from these backgrounds can land during their “short-term survival period” which is generally around 3-6 months following incarceration or an event of trauma. However, women will be free to come and leave on their own schedule, ensuring constraints of incarceration are not brought forward into their lives after prison. Research has shown that “incarceration is emotionally taxing, perhaps traumatizing...people need help to transition from incarceration to the broader society.” The program is rehabilitative with an emphasis on care and flexibility—one of the many complaints about halfway houses are that they essentially replicate prison-like conditions, living in tight quarters with heavy supervision—this program aims to counter that.



COMMUNAL DINING AREA



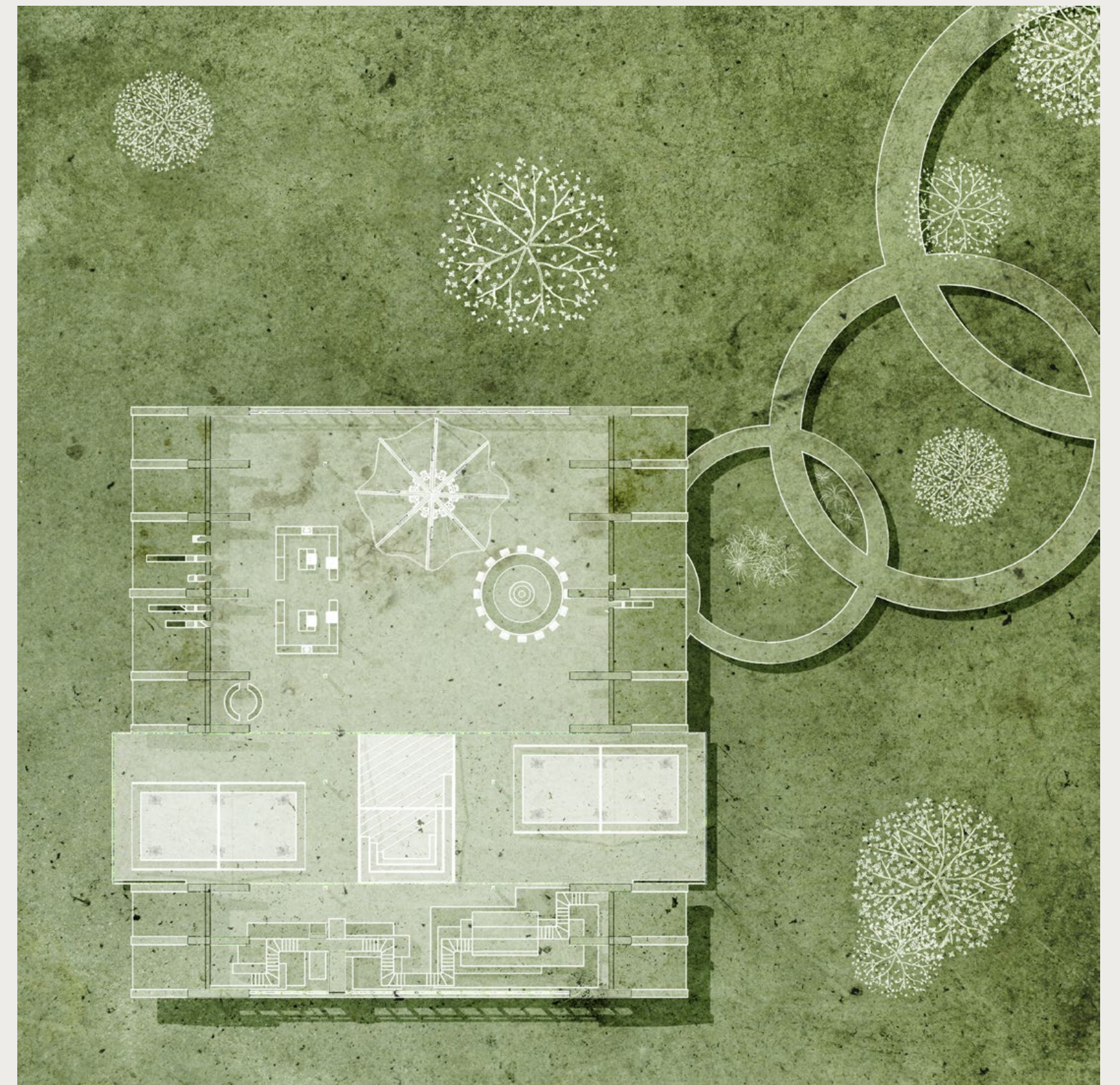
EXTERIOR

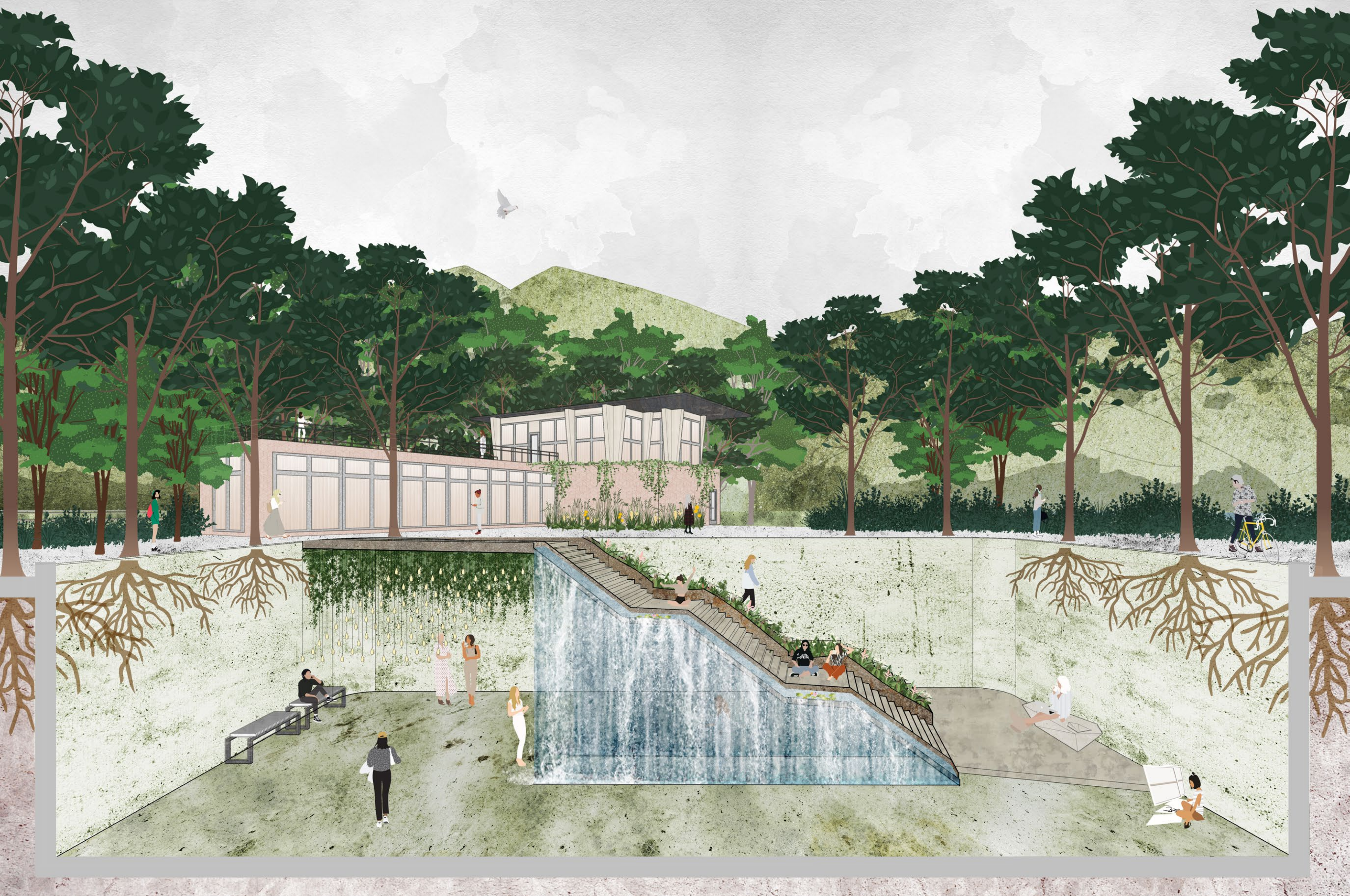


TEACHING KITCHEN

## COMMUNAL

The first site intervention re-imagines the former ice rink as a space for physical and mental nourishment. Indigenous crops are brought back, modeled after the American Seed Sanctuary's work restoring a symbiotic relationship with seeds and land. The section where the roof caved in is replaced with a transparent greenhouse-like structure that supports new life. Subterranean and elevated seating areas make room for individual contemplation surrounded by nature, while the old fire pit is filled in with water and surrounded by a group meditation circle. Indigenous herbs used for healing are grown for therapeutic use. An open kitchen acts as a teaching and learning area, modeled after the Forge Project. Careful attention was placed on creating a serene space for enjoying meals as a community—research has shown that women in halfway houses and similar facilities showed the most promise in recovery when they had space to interact with their peers over a home cooked meal. Furthermore, a delicate drape is placed over the dining area to indicate calmness and privacy.





Section perspective of former pool area and clubhouse intervention.

## PROGRAMMING

The next intervention focus is at the former pool area, and is a space for more individualized physical and mental healing. Outside, the large pool has been replaced with a meditation garden, allowing patients to decompress after doctor visits, which are often stressful and anxiety inducing.



CLINIC INTERIOR

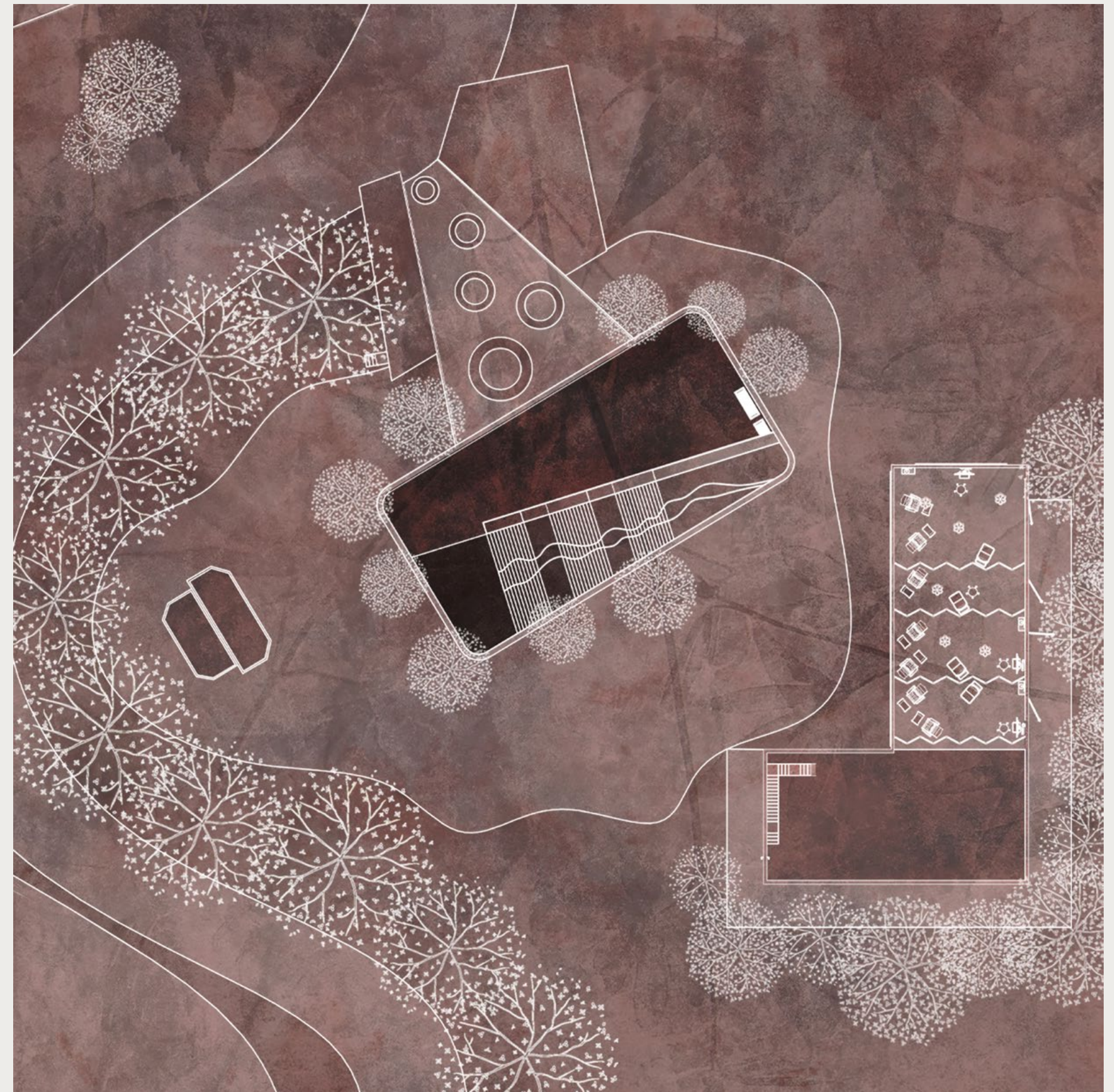


CORRIDOR: THERAPY ROOM TO MEDITATION GARDEN

## REJUVENATION

The pool house, which is currently taken over by nature is transformed into a clinic for physical care. The rooftop is transformed into an outdoor waiting room where patients are surrounded by nature instead of confined to a typical poorly lit basement waiting room. Patient rooms are re-imagined to support a more modern and flexible notion of care and support—instead of standard-size rooms with the same furniture, care is taken to accommodate for various types and sizes of patient support systems. Typical patient room chairs are replaced with more relaxed seating, and movable partitions can accommodate larger networks of support during doctor visits.

In addition, the subterranean storage space has been transformed into a mental health clinic. A hallway leads from walking paths on the grounds, through a sky light-lit tunnel, and into the meditation garden. On either side of the tunnel are the therapy rooms, again using nature taking over as a motif of resilience during the therapeutic journey.







Former fit pit transformed into a group meditation space. Plants that have taken over during abandonment are selectively kept as a nod to resiliency.



## THE GREENSTONE RESIDENCE

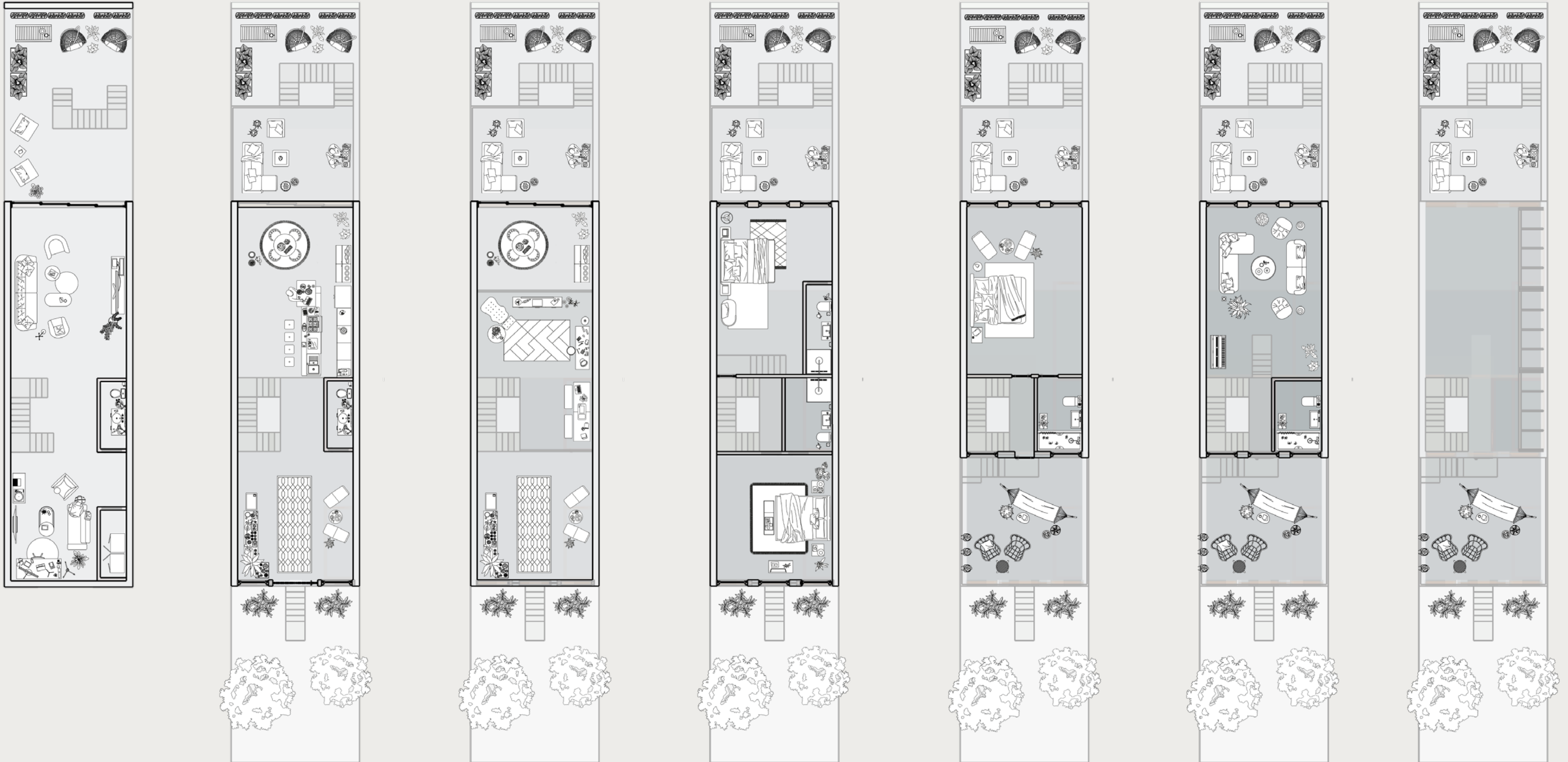
The adaptive reuse of a single-family Brooklyn brownstone merges the historic character of Park Slope with a flexible, open program that supports modern living. Passive house design standards, advanced MEP technology, and rooftop solar panels elevate the environmental performance of this building.

# LAYERED LIVING

## DEVELOPMENT PROCESS II

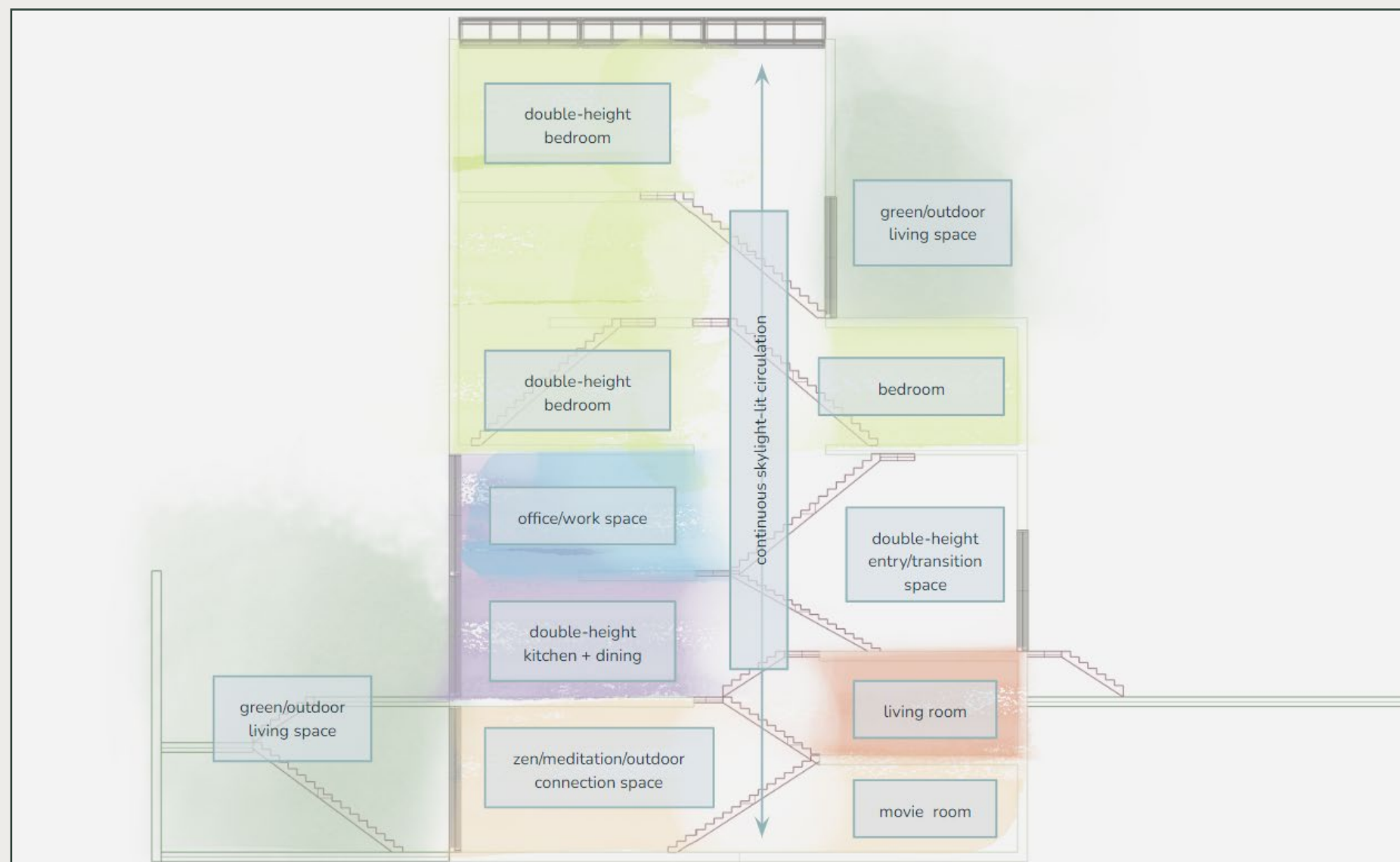
FALL 2023 | CRITIC: AARON ZELIGS | ONLY INDIVIDUAL DESIGN WORK SHOWN

<< settle >> << muse >>



Residence floor plans: basement to rooftop from left to right.

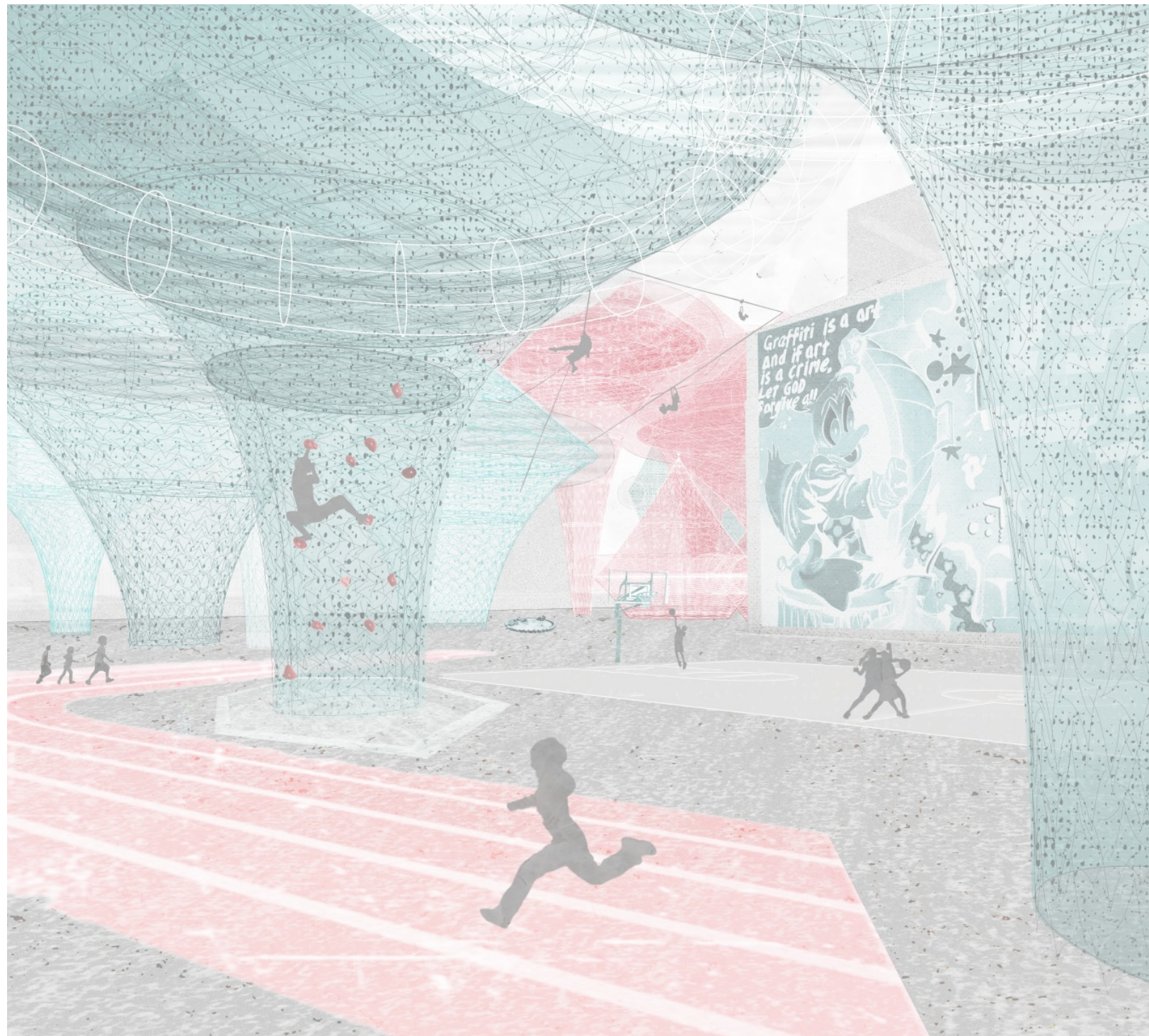
STACKING DIAGRAM



BUILDING AS MACHINE







# POST-CLASSROOM

CORE II STUDIO

SPRING 2022 | CRITIC: ESTEBAN DEBACKER | INDIVIDUAL & GROUP WORK WITH IAN CALLENDER

<< challenge >> << explore >>

## POST-CLASSROOM SCHOOL

The Lower East Side's temporally shifting landscape—both physically and culturally—informs the dynamic, interactive, and flexible approach to learning implemented in this school. Recognizing historically the LES as a home base for fluid artistic expression, and currently its status as a place inhabited by a diverse community of students, the school must also implement an approach of flexibility in order to accommodate the needs of such a population, as well as an ebb and flow of developments and open space.

One of the main ambitions of this school is to ground the experience of learning in play and joy—few children are excited to go to school, so why not make school the place they would rather be? In addition, the school aims to make the physical experience of the space fluid through the exchange of horizontal circulation between building pods, while allowing flexibility for more adventurous circulation such as zip lining and rock climbing between classes. The project also takes into consideration building for neurodiversity, acknowledging a diverse and fluid set of needs among students—it therefore employs transition zones between various learning spheres, and employs a flexible ground floor that acts as an active participant in the community thus encouraging a return of spontaneity, play, and artistic expression in the LES.

PRESENT

1996: NYC DEPARTMENT OF CITY PLANNING AERIAL PHOTOGRAPHY  
CHRYSTIE & HOUSTON HALF-BLOCK PARKING

1969: NEW YORK CITY PLANNING COMMISSION PLAN FOR NEW YORK CITY  
CHRYSTIE & HOUSTON HALF-BLOCK DUSTBOWL

1955: BROMLEY MANHATTAN LAND BOOK OF THE CITY OF NEW YORK  
PARK PROGRAMMED, PS 91 PARKING LOT CLEARED

1930: BROMLEY LAND BOOK OF THE BOROUGH OF NEW YORK  
SARA ROOSEVELT PARK DESIGNATED, BLOCKS CLEARED

1923: BROMLEY ATLAS OF THE CITY OF NEW YORK  
CHURCHYARD REDUCED

1911: BROMLEY ATLAS OF THE CITY OF NEW YORK  
PS 91 DESIGNATED

1903: SANBORN MAP Co. INSURANCE MAPS OF N.Y.  
RUINS

1891: BROMLEY ATLAS OF THE CITY OF NEW YORK  
SCHOOLYARD REDUCED

1868: PERRIS & BROWNE INSURANCE MAPS OF THE CITY OF NEW YORK  
NO CEMETERIES, NEW SCHOOLYARD, NEW CHURCHYARD

1867: DRIPPS PLAN OF NEW YORK CITY  
TWO CEMETERIES

1857: PERRIS MAP OF THE CITY OF NEW YORK  
THREE CEMETERIES

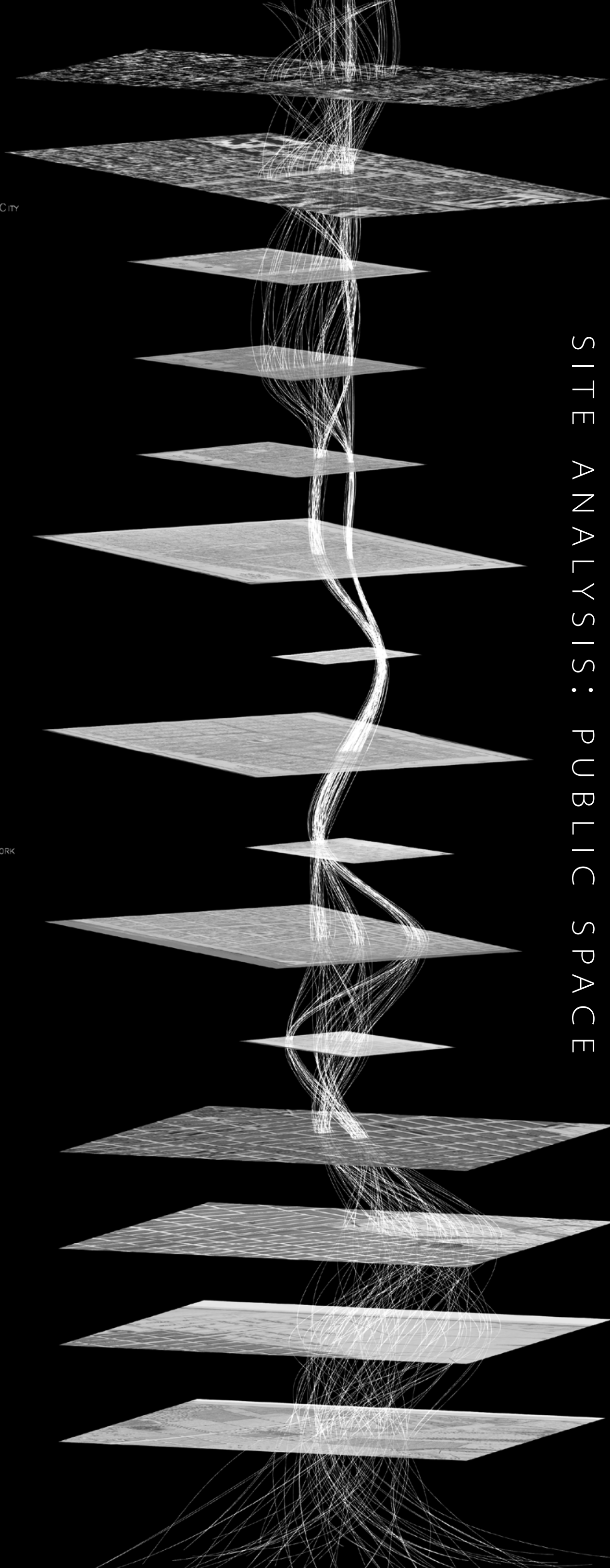
1846: AUGUSTUS MITCHELL MAP OF THE CITY OF NEW YORK  
PUBLIC AREAS DESIGNATED

1817: PRIOR & DUNNING PLAN OF THE CITY OF NEW YORK  
BUILDINGS CONSTRUCTED

1799: PLAN OF THE CITY OF NEW YORK, TANNAR Sq.  
STREETS LAIN/BLOCK DEFINED

1767: BERNARD RATZEN PLAN OF THE CITY OF NEW YORK  
DELINEATED FOREST

1700: FOREST

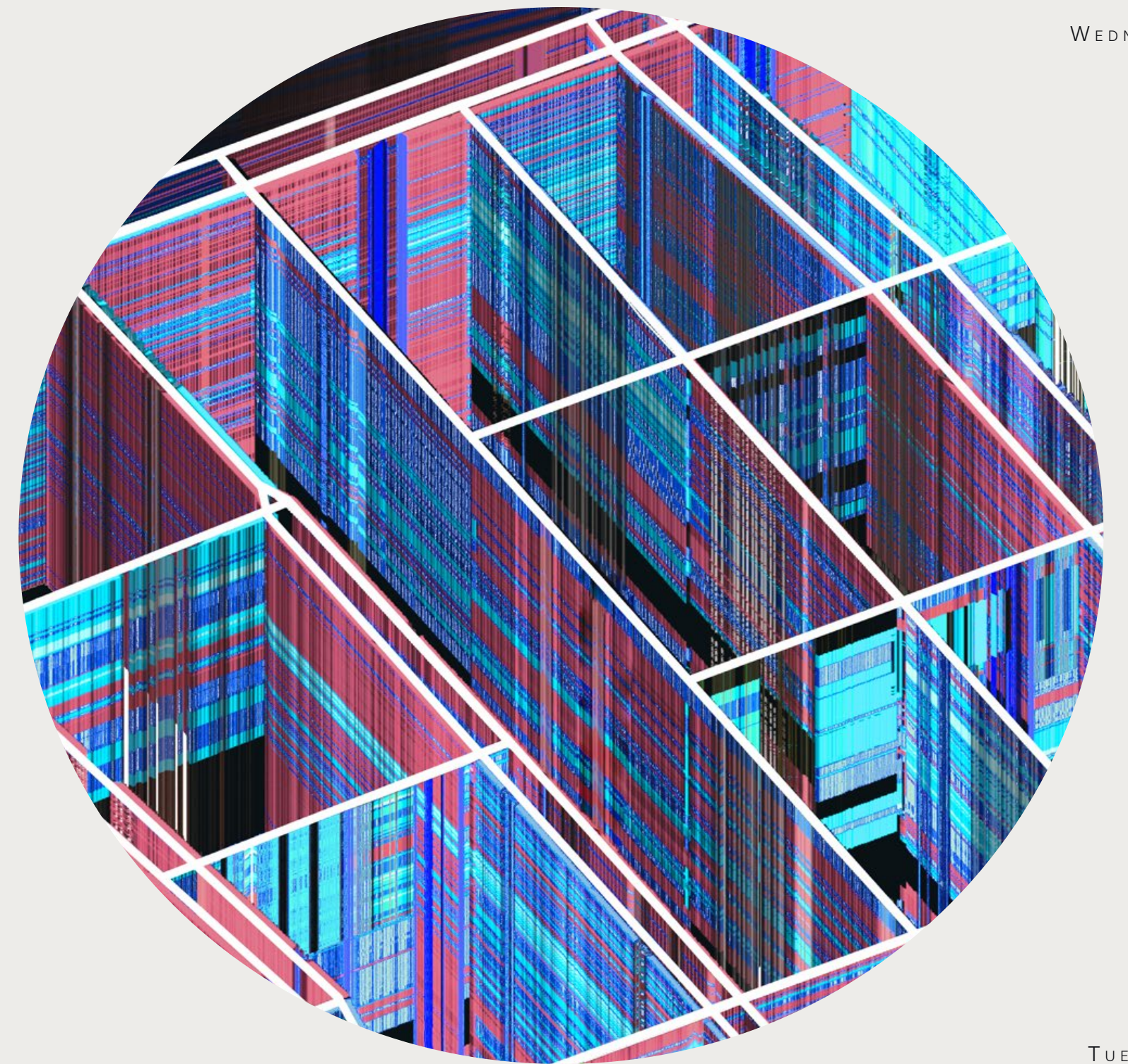


SITE ANALYSIS: PUBLIC SPACE

LEFT: Elevation view of a layered public space maps, plotting line end points at the borders of public space, and extruding those lines up to the borders of the next public space analyzed. Together, these lines show the expansion and contraction of public space over time around the site.

[Partner work with Ian Callender]

SITE ANALYSIS: TRAFFIC



WEDNESDAY, 1AM

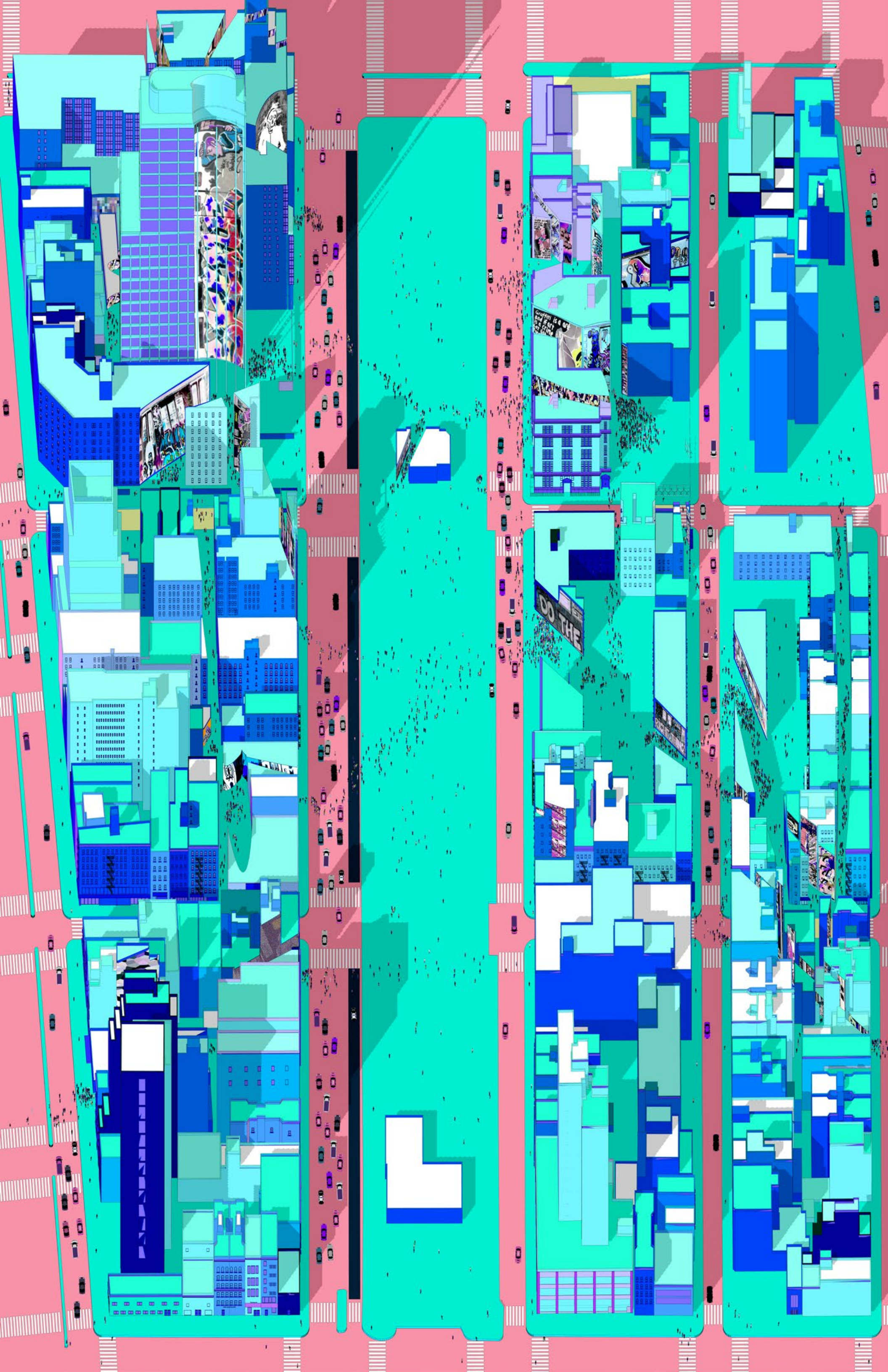
TUESDAY, 1AM

LIGHT TRAFFIC

DENSE TRAFFIC

ABOVE: A compilation of Google Maps traffic data centered around the site. Screenshots of live traffic data captured every 5 minutes over the course of 24 hours were stacked on top of each other to reveal overall site traffic patterns.

[Partner work with Ian Callender]



## A N A L Y S I S - B A S E D   S P E C U L A T I O N

The drawing to the left speculates on a future of the Lower East Side (the school's site) based on combined public space, traffic, and historical analyses of the site.

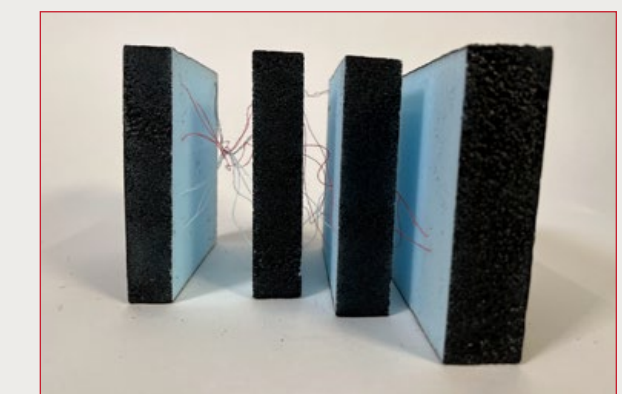
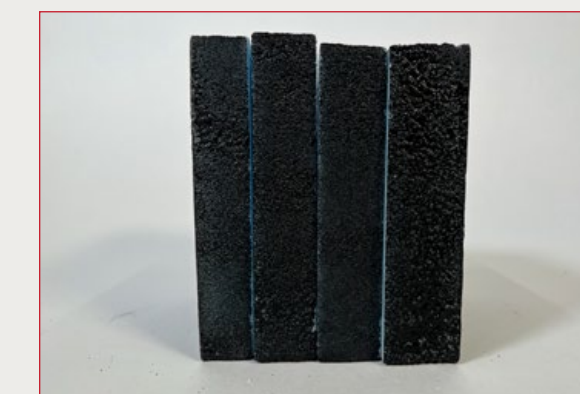
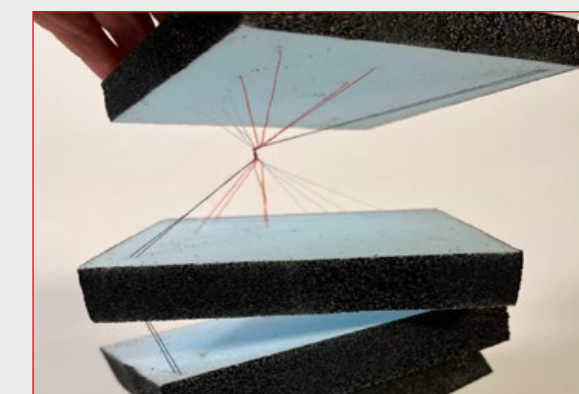
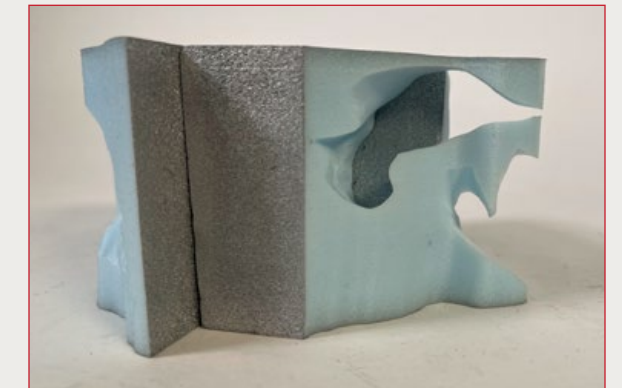
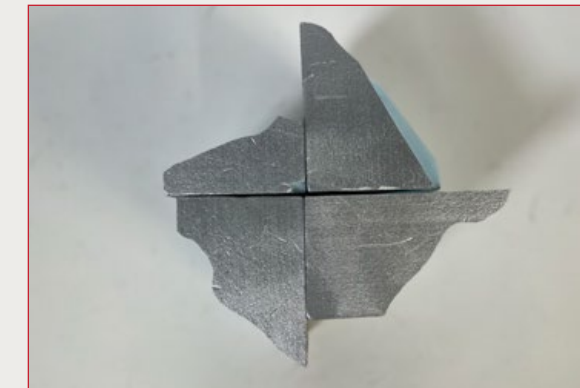
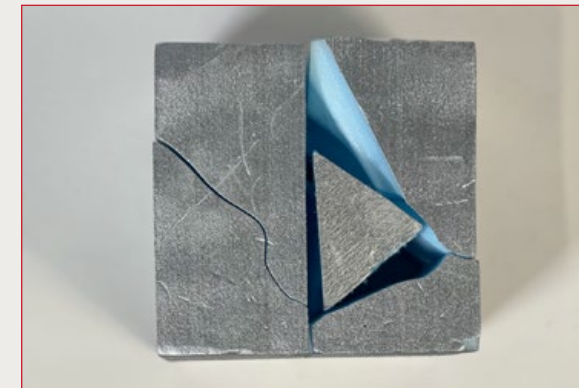
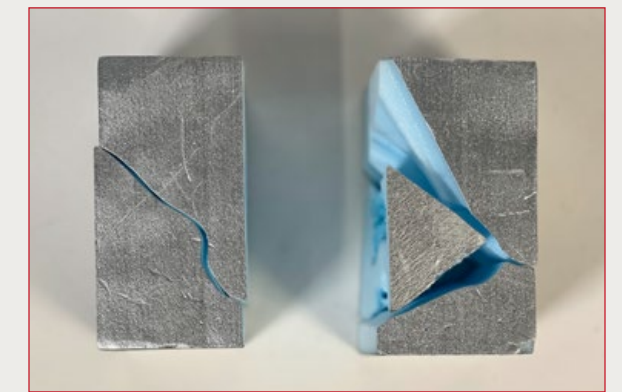
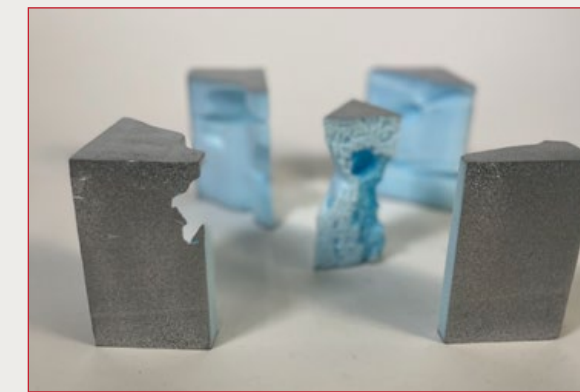
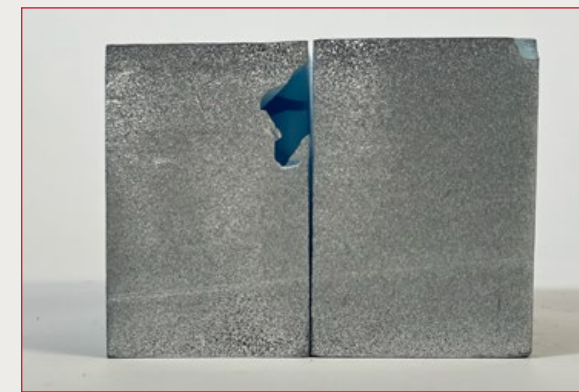
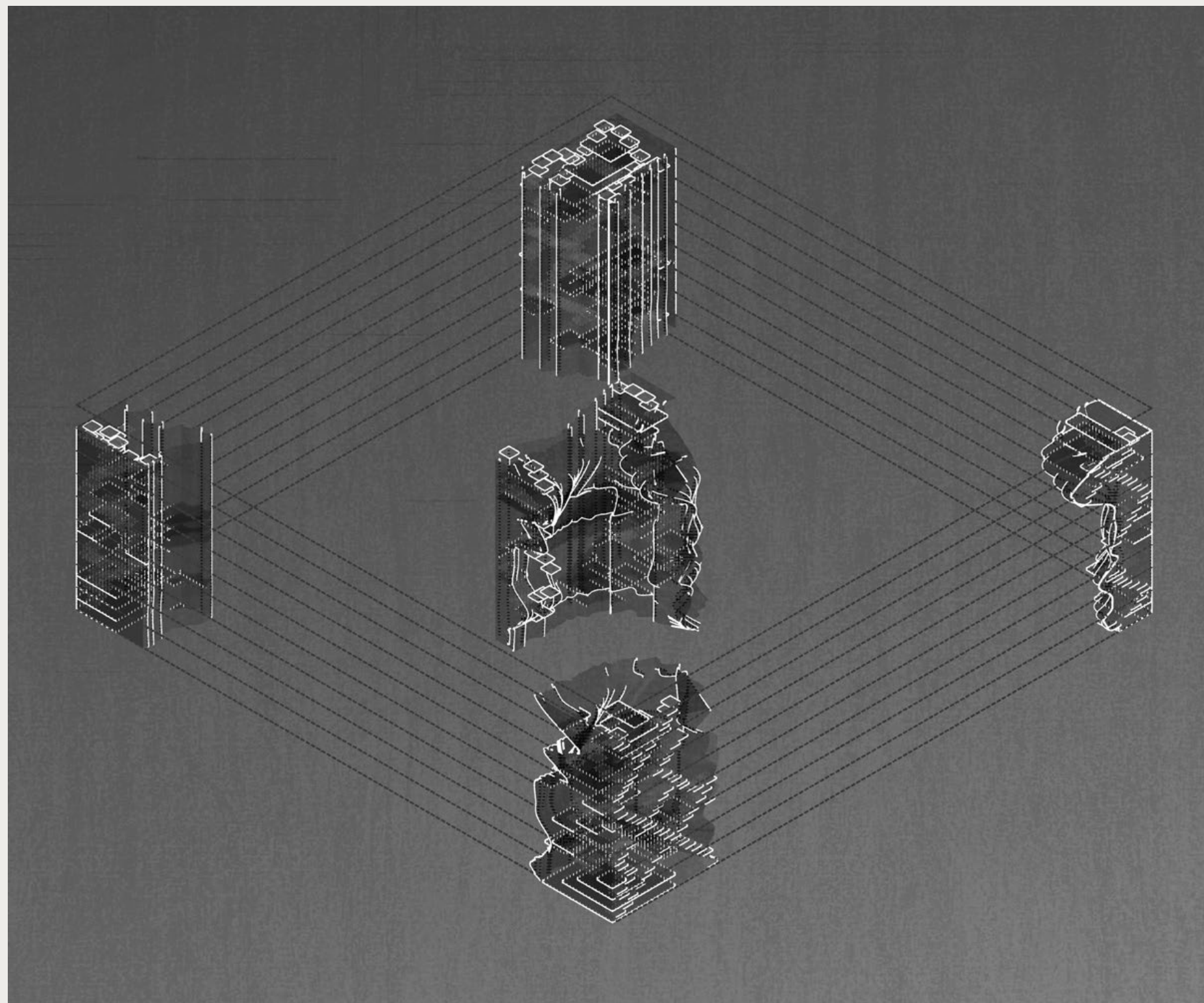
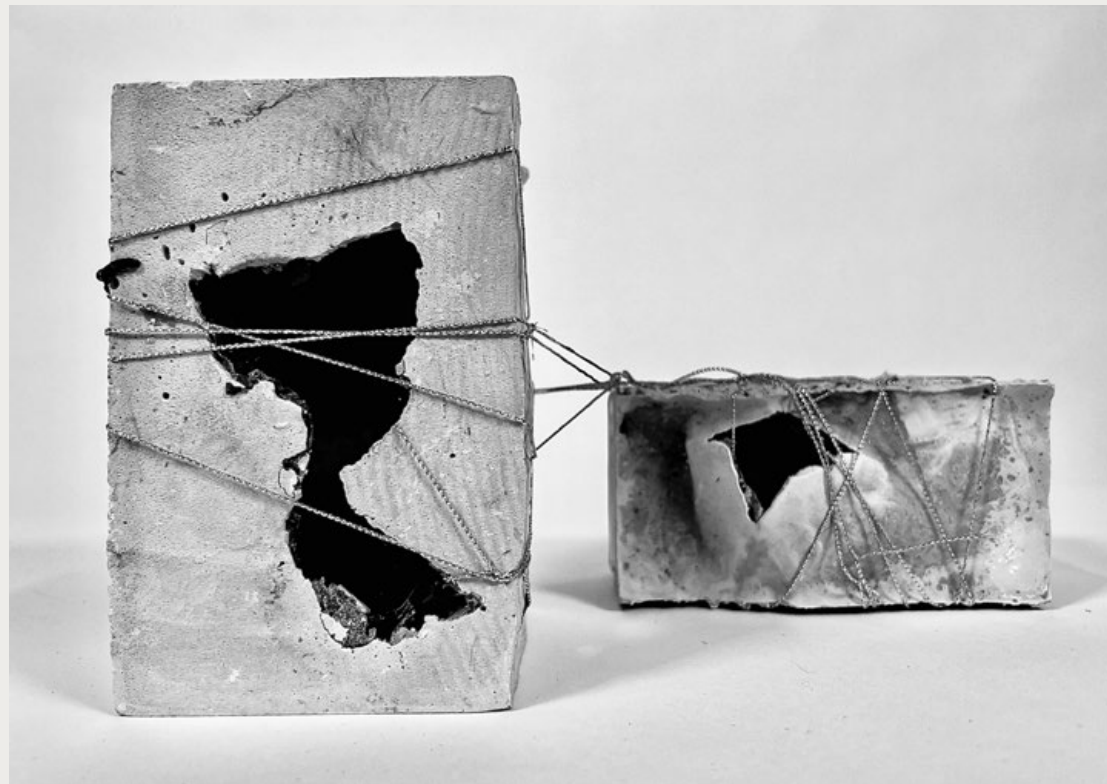
With the public space analysis revealing a shrinking amount of open space, the drawing explores what it might look like to give back space to the public by cutting through existing buildings based on curvature of the historical public space diagram. Then, acknowledging the need to bring back free-form expression of self and community through art, the cut-throughs feature subway graffiti and street art from the peak of the Lower East Side art scene in the 1980s. Finally, traffic jams are drawn where the traffic diagram revealed heavy traffic.

[Partner work with Ian Callender]



# MASSING MODELS

Drawing from the desire to bring back open space to the site, as well as a tendency to return to the organic expression that defined the Lower East Side's notorious art scene, these massing models and initial pass at rendering detail these concepts through organic experimentation with material and form.

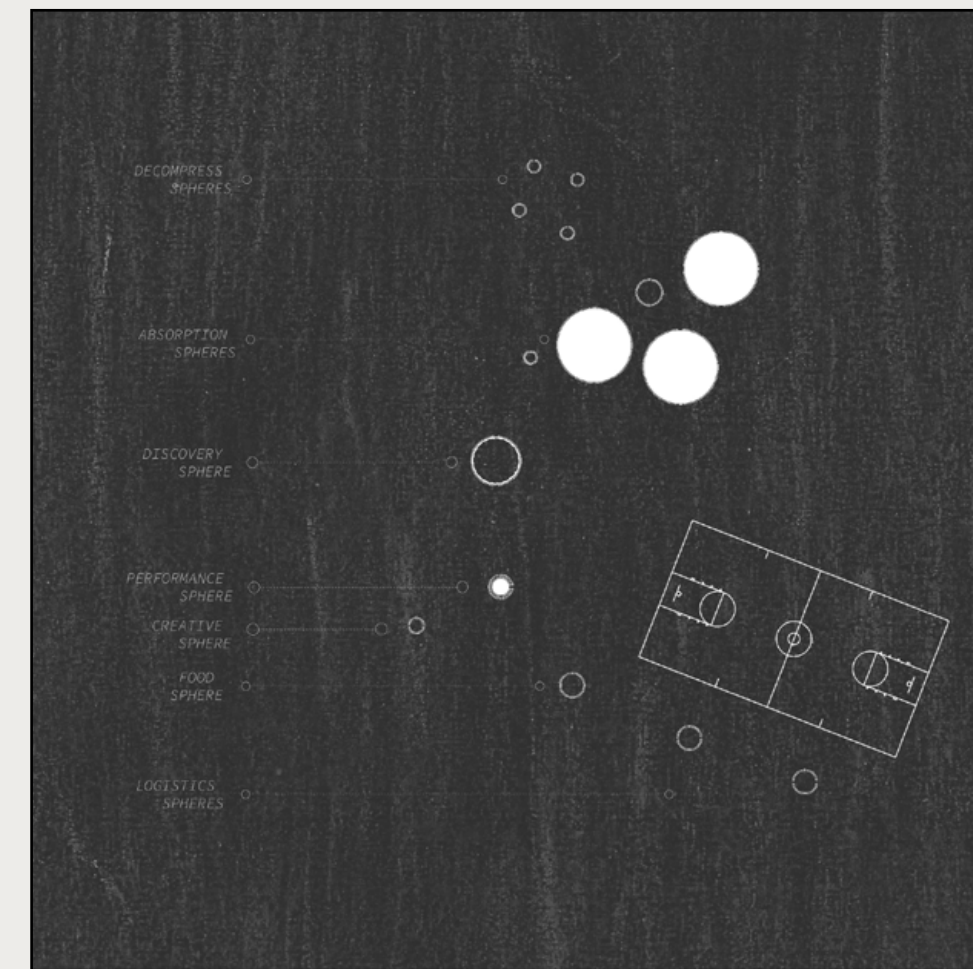
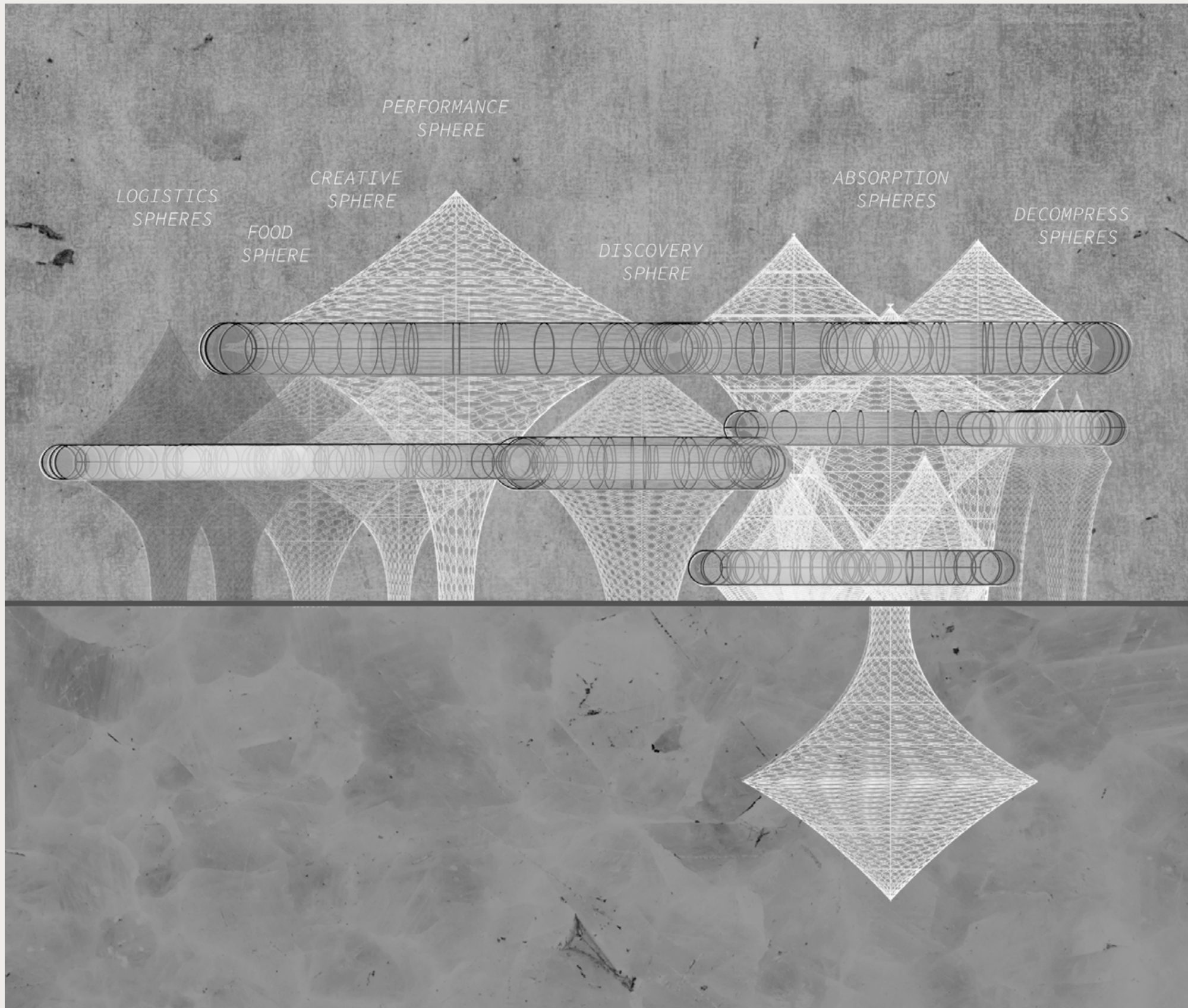


## PROTOTYPE SYSTEM

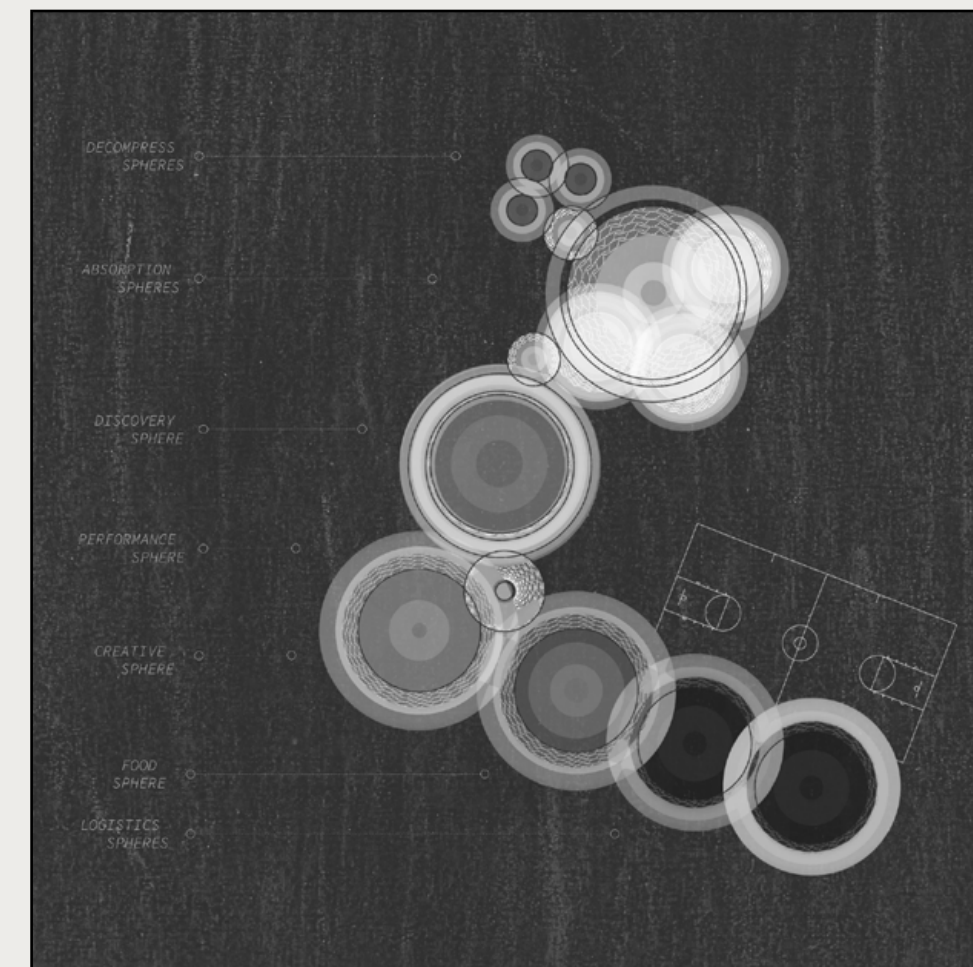
Bridging massing models with educational pedagogy, this prototype school explores a system of pods that house various experiential zones, intentionally leaving the ground floor open creating an 'under the bridge' condition. This spatial arrangement not only allows for impromptu and exploratory play within the school, but also functions as a space for legal graffiti and street art that is open to the public on evenings and weekends, therefore giving back to the community spaces for expression.



ELEVATION



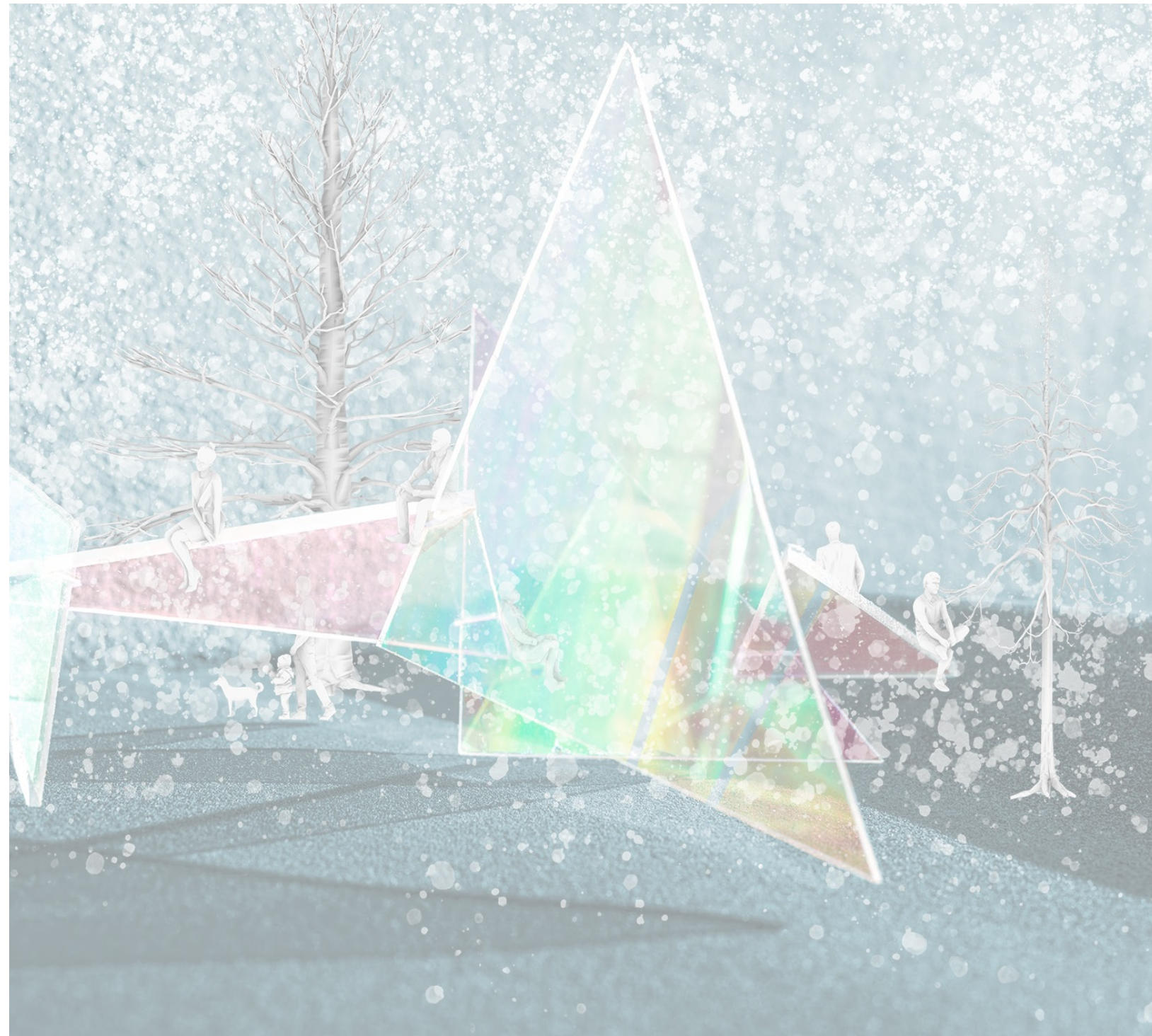
PLAN  
[GROUND FLOOR]



PLAN  
[FIRST FLOOR]



PLAN  
[TOP FLOOR]



# RE-CENTER

CORE | STUDIO

FALL 2021 | CRITIC: AMINA BLACKSHER | INDIVIDUAL WORK

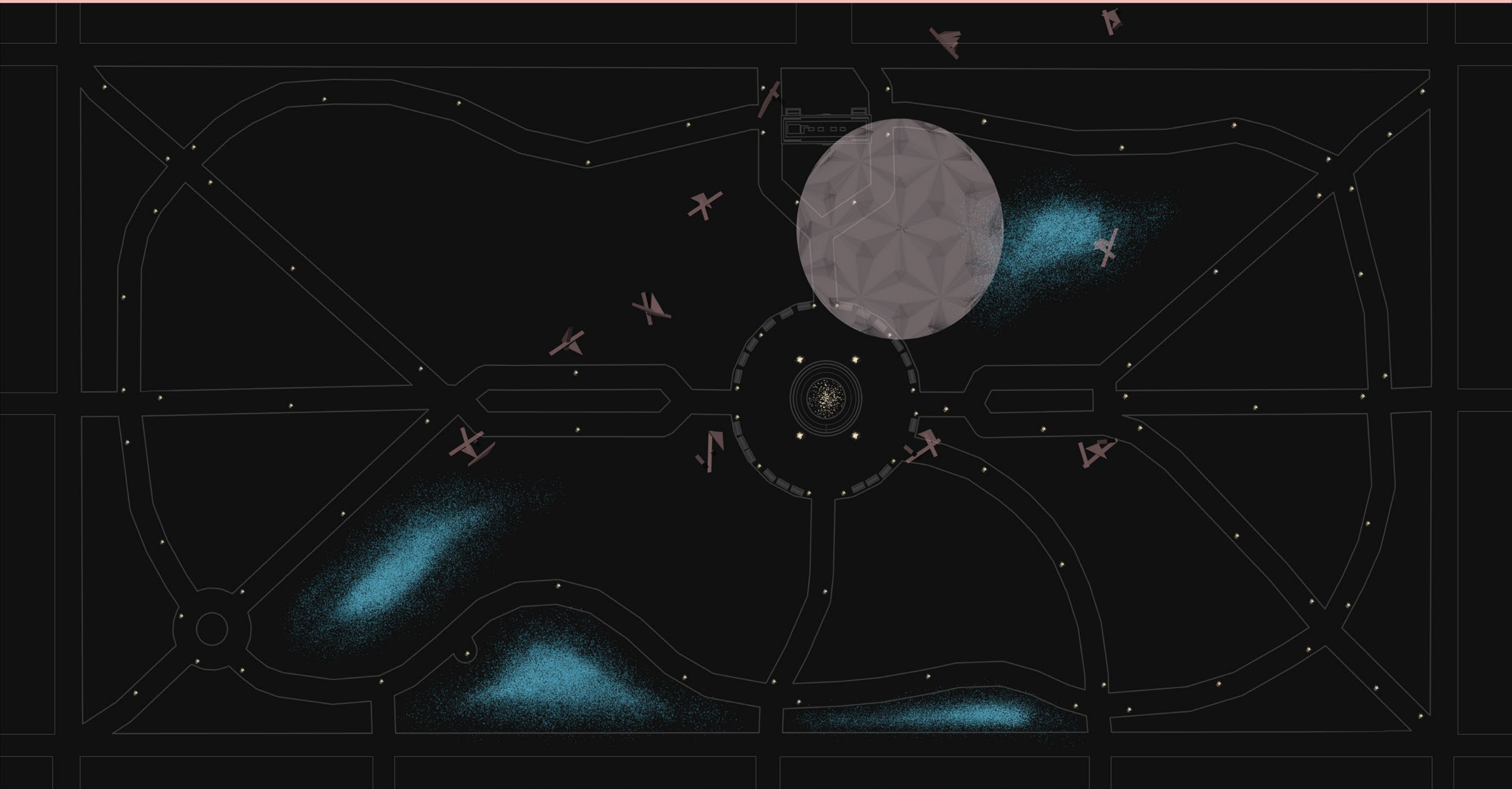
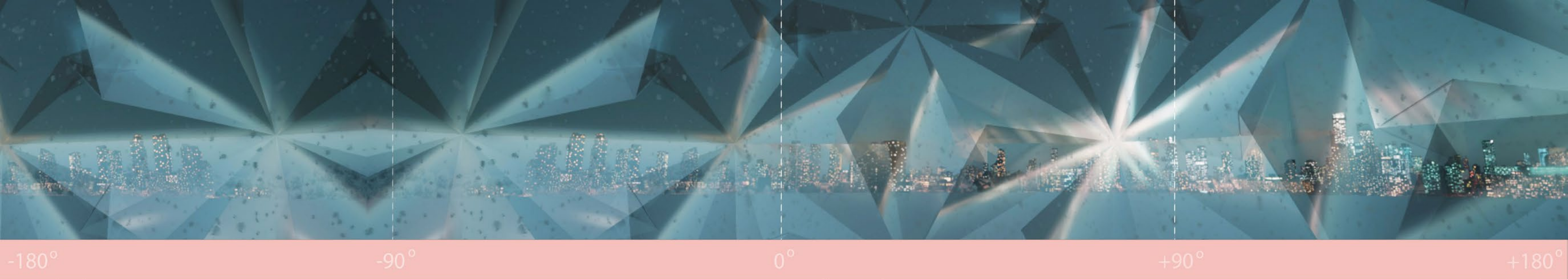
<< pause >> << imagine >>

## RE-CENTER

In the summer months, modern-day Washington Square Park functions as a social oasis on seemingly unassuming land. Digging deeper, however, we discover a ground that is anything but neutral; in fact, it functioned as a haphazard burial plot for the remains of over 20,000 human beings, and an execution ground for enslaved peoples in the early 1800s, before it was transformed into the manicured park we see today.

With both past and present in mind, the aim of this project is two-fold: first, to open up the park as a 'public living room' for 24/7/365 use into the winter and at night; and second, to re-center the park around the potter's field as a way to respectfully recognize the park's past.

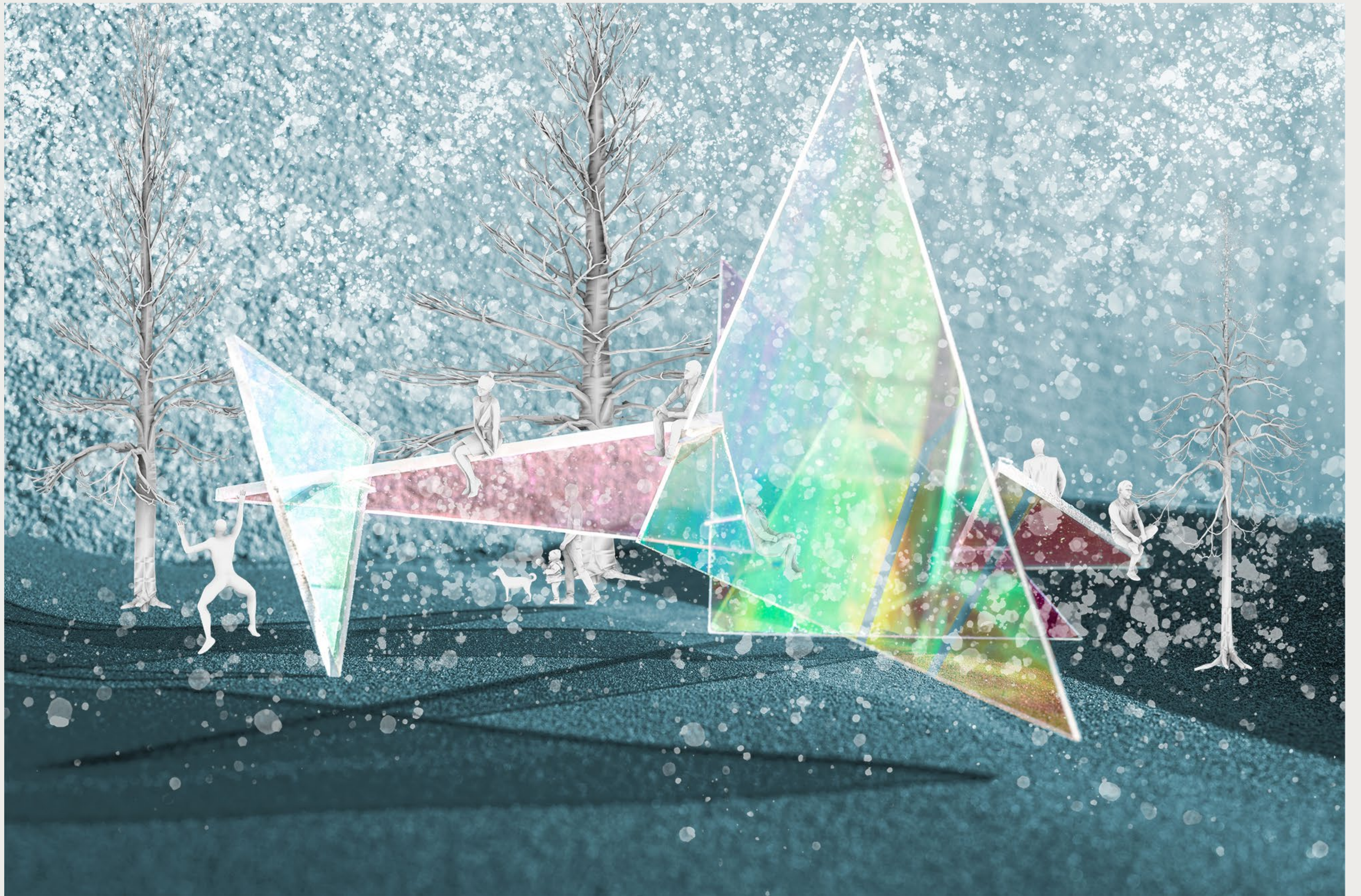
The design and size of the main structure, in tandem with the experience of user-controlled lighting in the sphere's individual panels and urban furniture, draw from neuroscience research that indicates experiencing awe can foster conflict resolution and open mindedness—traits that were sorely lacking in the park's past life, and that still require much attention today.



PLAN PANORAMIC

SECTION

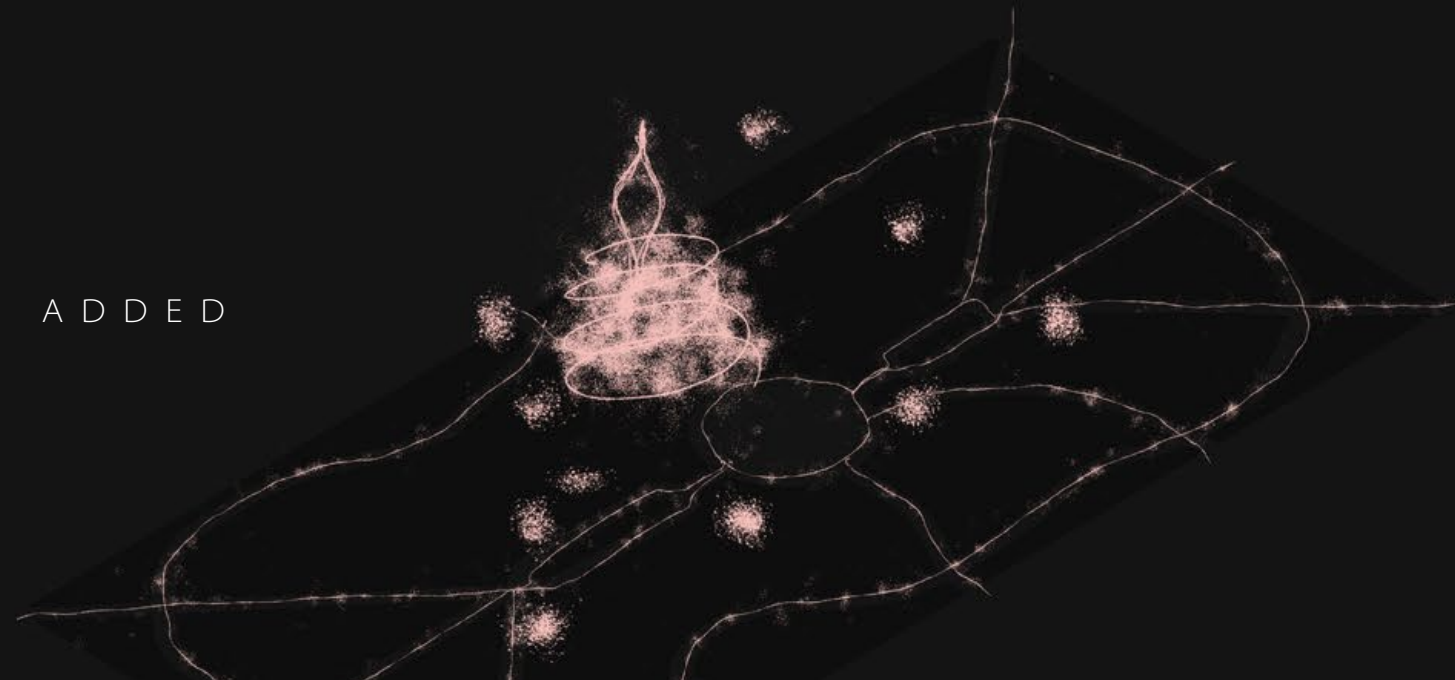




URBAN FURNITURE

EXPLODED PLAN-AXON

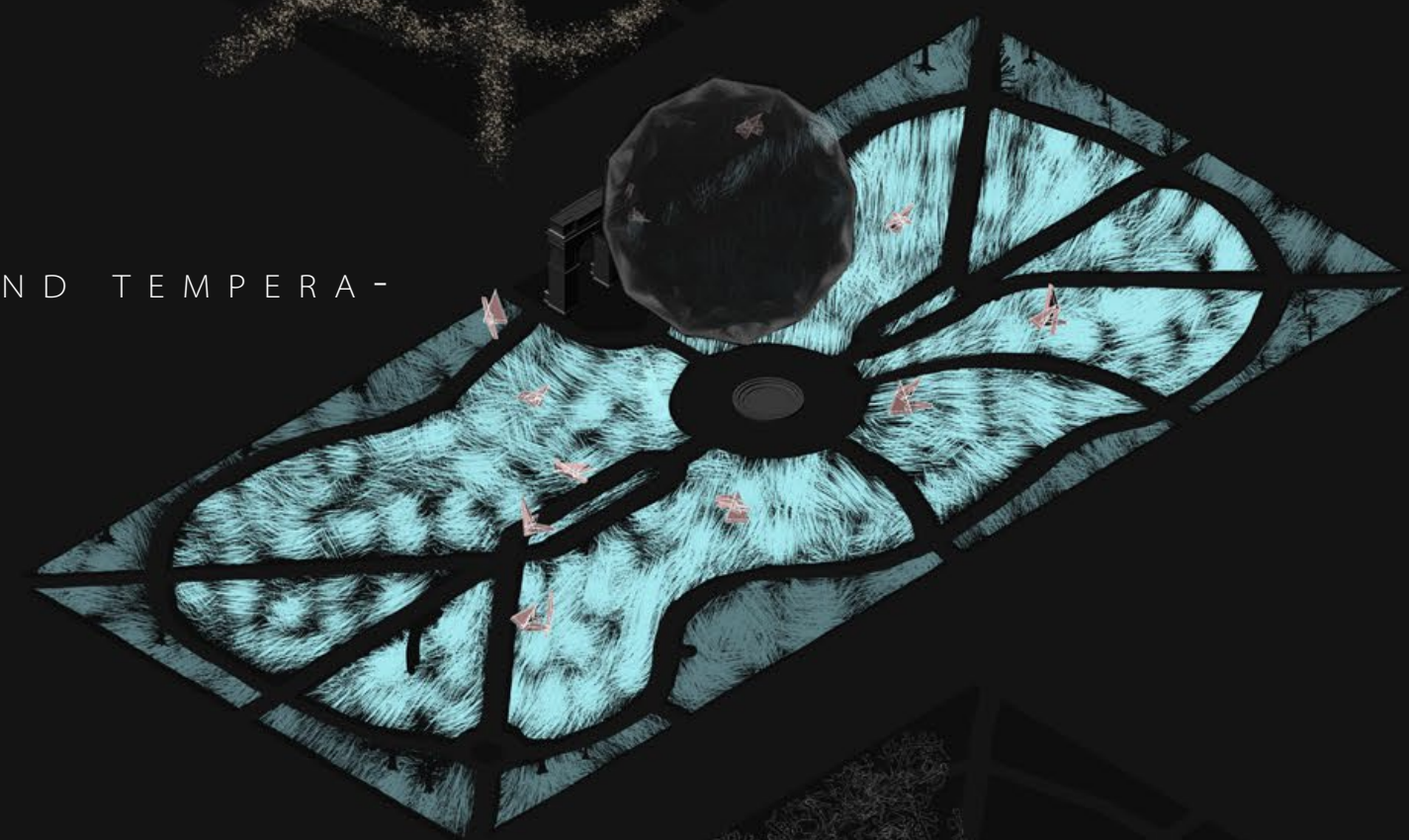
HEAT ADDED



LIGHT ADDED



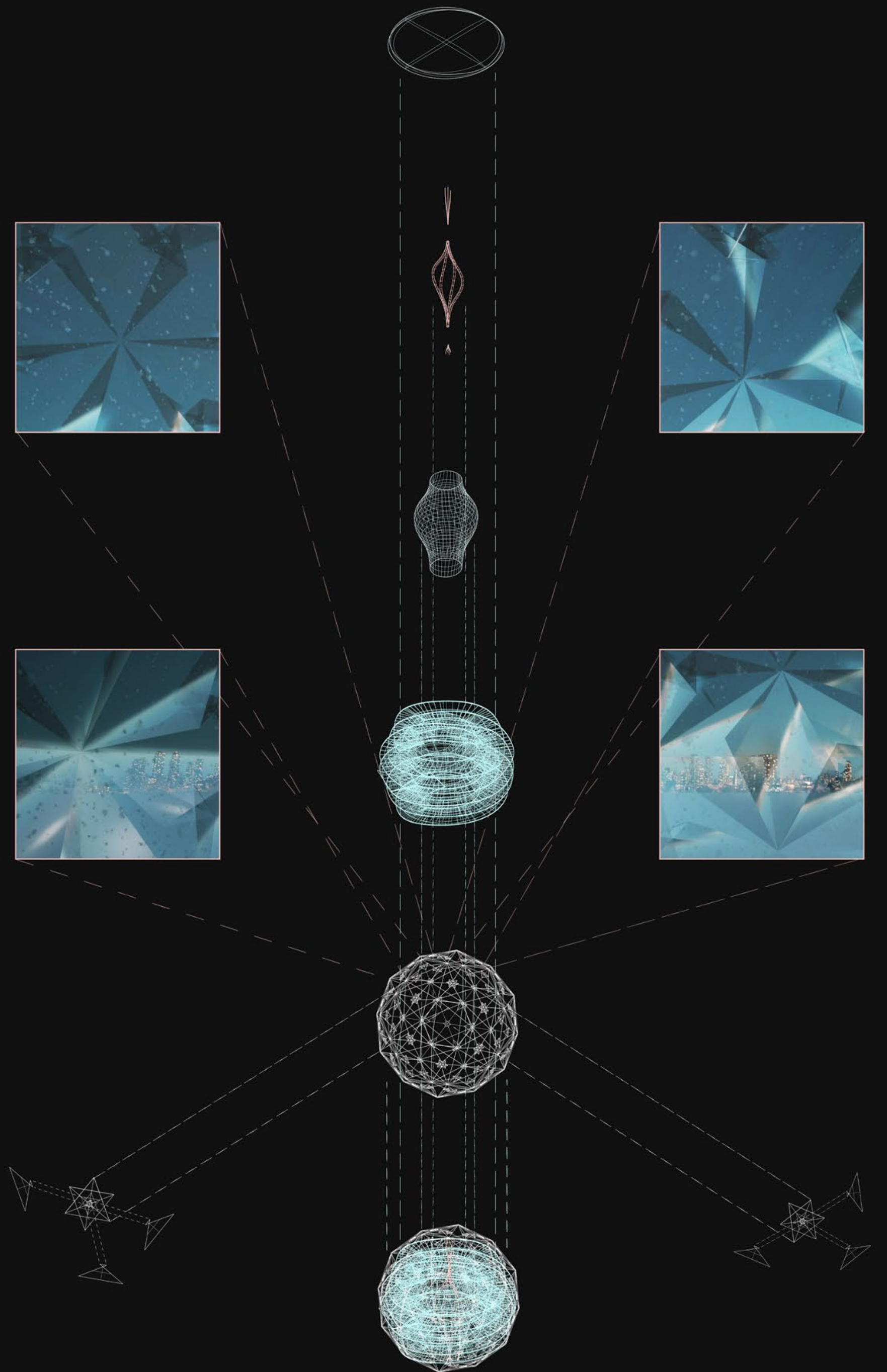
GROUND TEMPERA-



UNDERGROUND



EXPLODED AXON + VIEWS



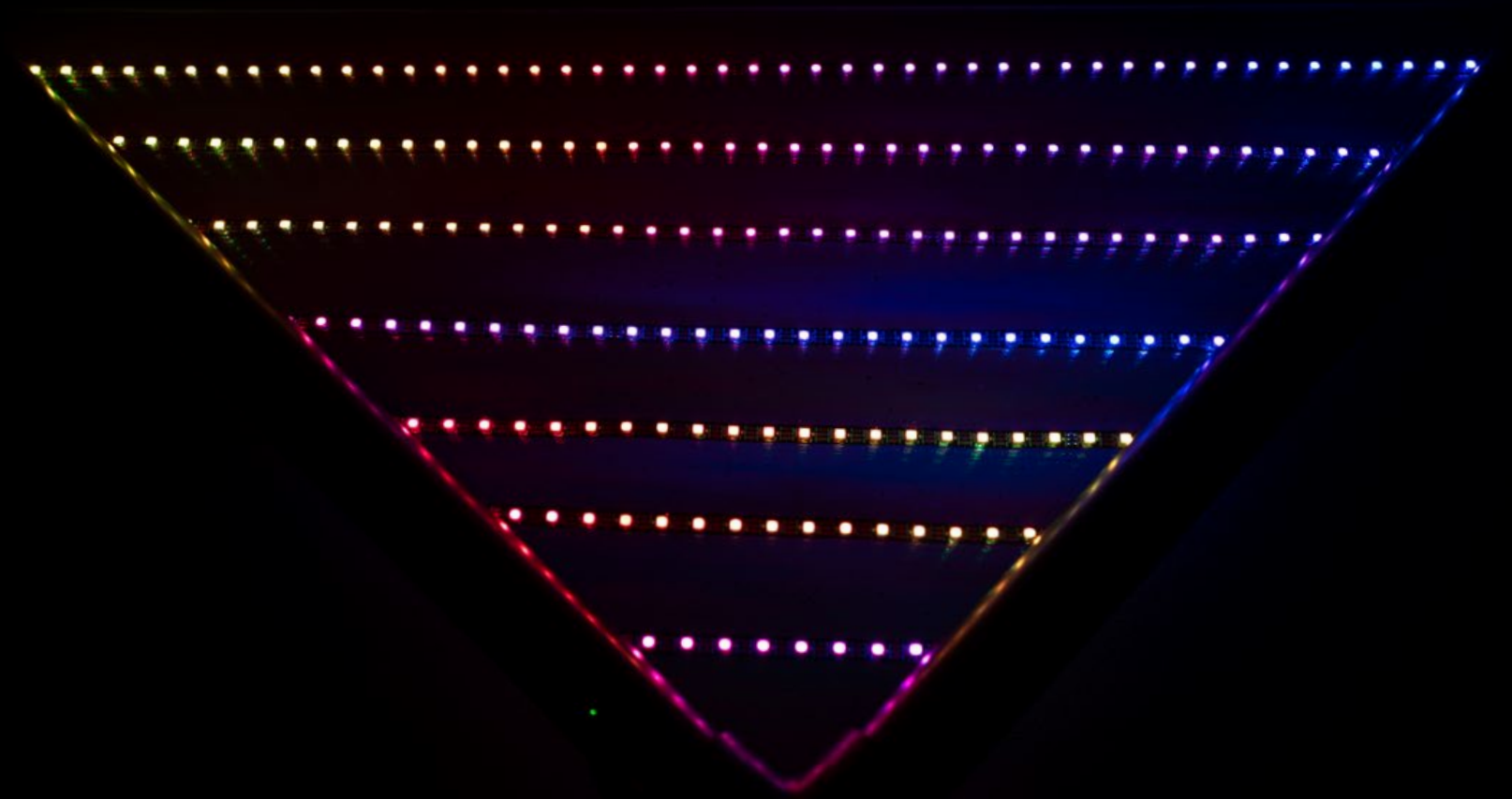
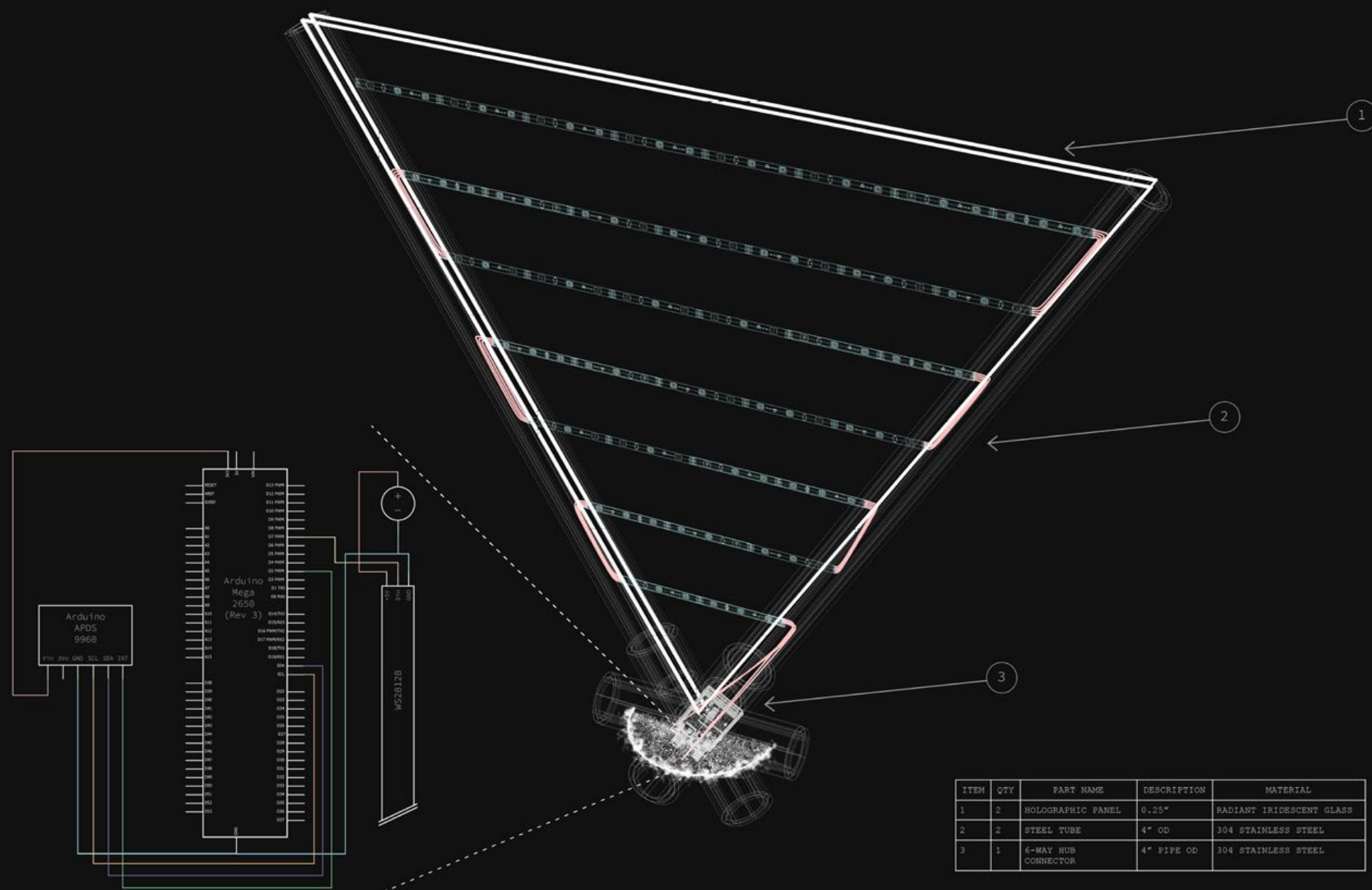
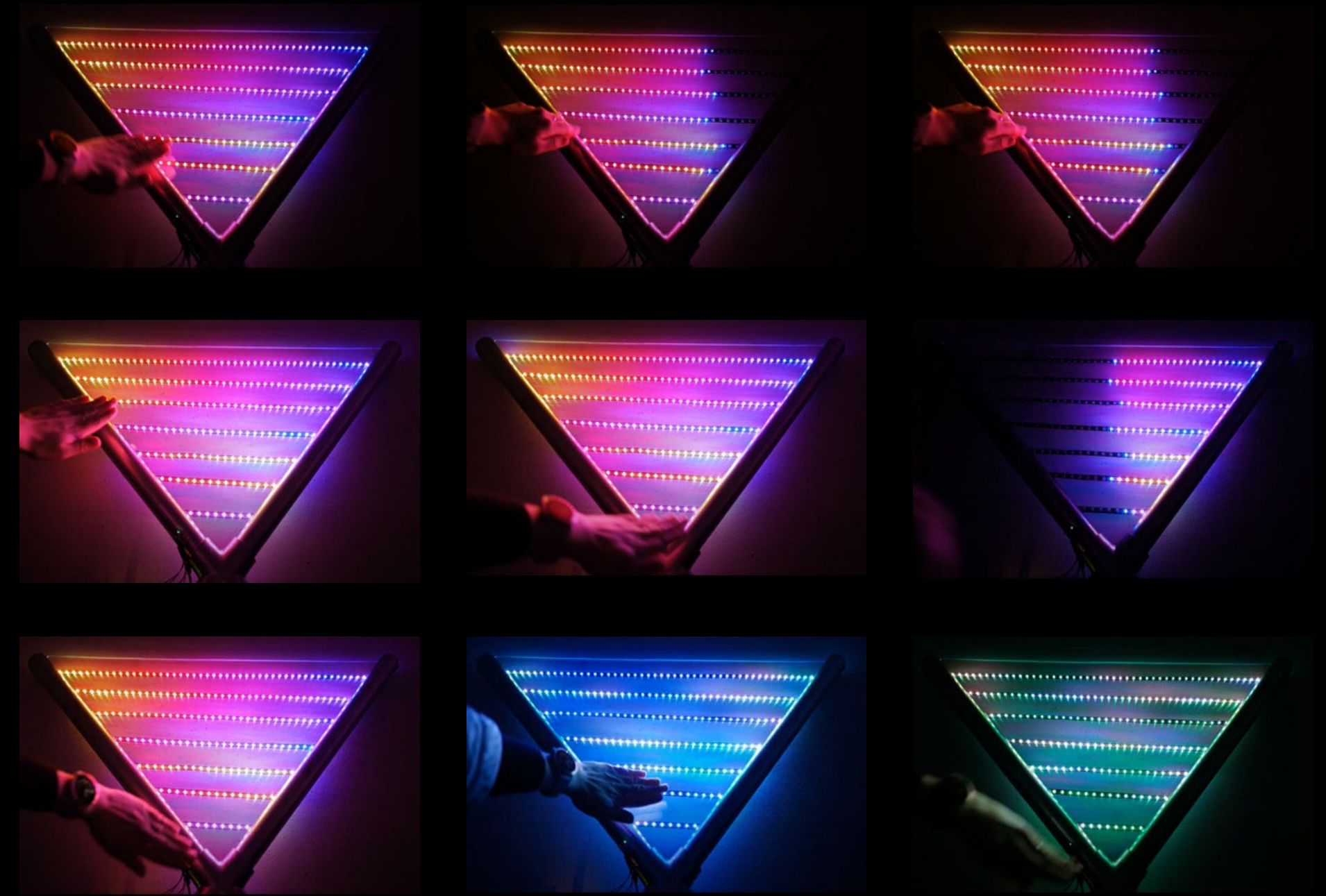


# GESTURE-CONTROLLED PANEL COMPONENTS

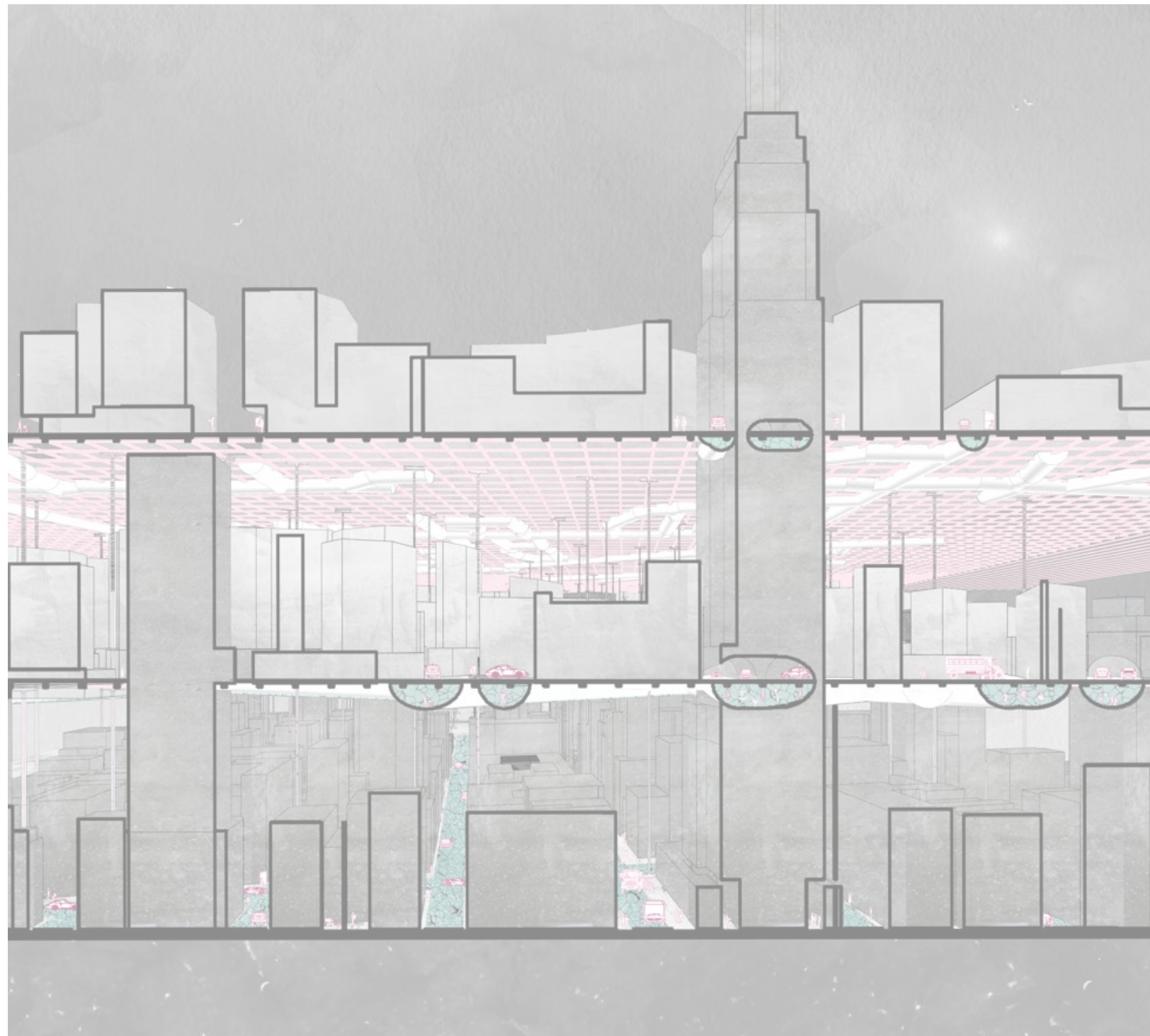
In an effort to engage and give agency to visitors of this space, both the dome and urban furniture feature gesture-controlled panels. A 1:1 mock up of a single panel's electrical design is featured here.

Using Arduino components, each individual LED is programmed such that swiping the hand right over the sensor moves the lights to the right, and swiping the hand left moves the lights to the left. Swiping the hand up or down changes the color scheme of the lights.

Future directions include utilizing the 'near' and 'far' capacity of the gesture sensor such that moving the hand toward the center triggers the lights to close in on the center from the outside, and moving the hand away causes the lights to explode out from the center.



```
void FillLEDsFromPaletteColors(uint8_t colorIndex) {uint8_t brightness = 255; for (int i = 0; i < 203; i++) {leds[i] = ColorFromPalette(PartyColors_p, colorIndex, brightness, cu
```



# OPTIMIZING DYSTOPIA

X-INFORMATION MODELING

SPRING 2022 | CRITICS: LUC WILSON & SNOWERIA ZHANG | GROUP WORK WITH CHRIS DEEGAN

<< fate >> << opportunity >>

## OPTIMIZING DYSTOPIA

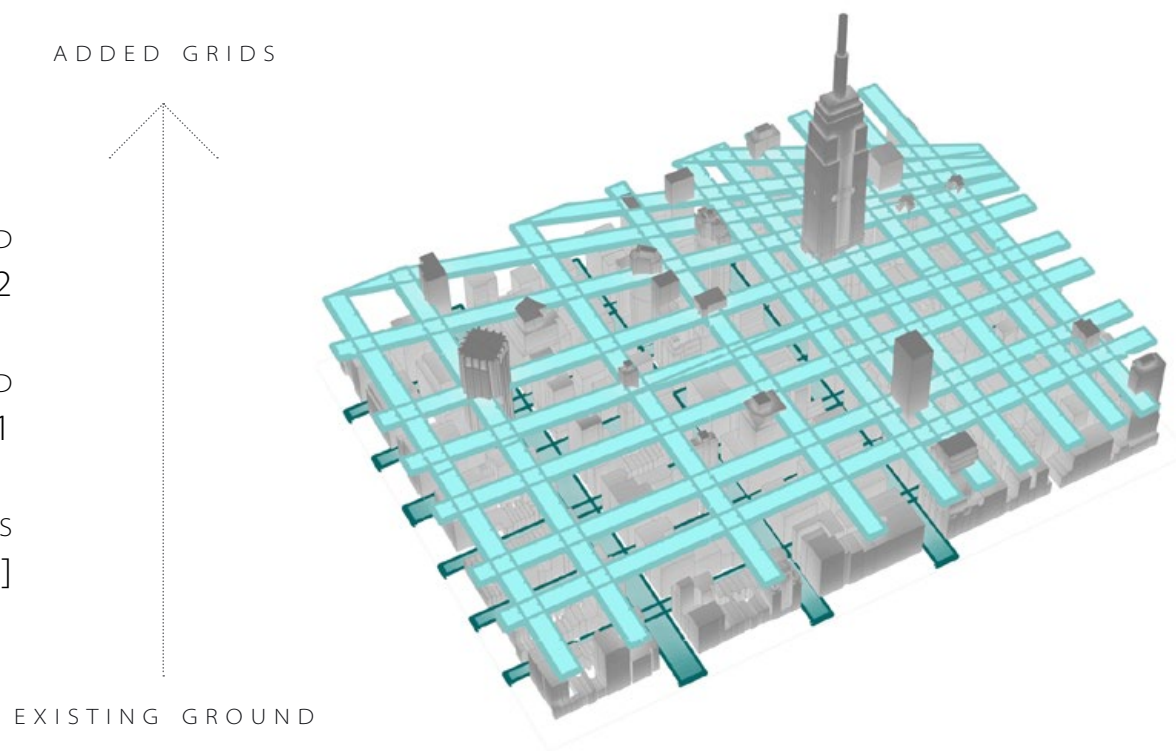
Cities around the world are becoming more dense to accommodate ongoing urbanization. This project explores a speculative way of understanding how this condition might manifest in a future New York City that adopts the serendipity of other cities around the world, introducing new, hybrid urban conditions.

While the design space of this project is speculative, it addresses very real and emerging issues that architects, urban planners, and developers face. This project takes qualitative experiences and quantifies them, thus providing an initial framework for understanding what makes cities livable and joyful, despite hyper-dense conditions.

One additional goal for the provocative and speculative nature of this design space is that it will generate thoughtful discussion and exploration.

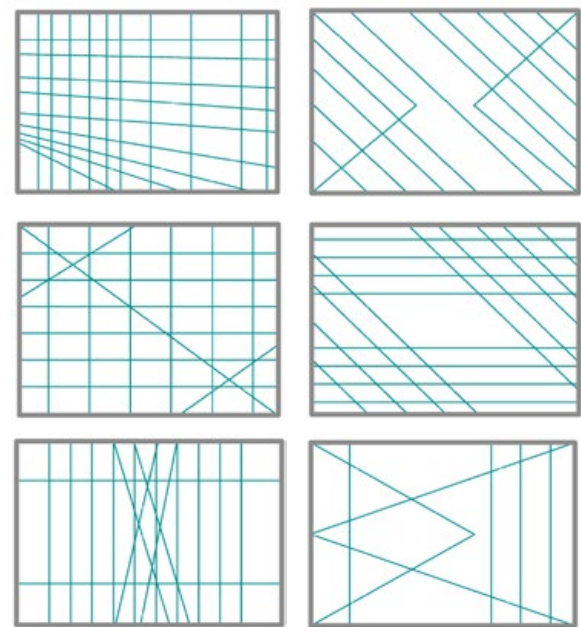
# DESIGN SPACE GENERATION

- 3) PROCEDURALLY GENERATED GRID + BUILDING ARRAY 2
- 2) PROCEDURALLY GENERATED GRID + BUILDING ARRAY 1
- 1) EXISTING NYC GRID + BUILDINGS [MANUAL INPUT]

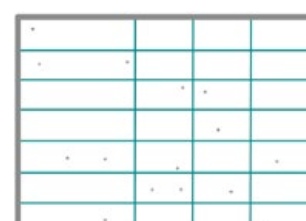
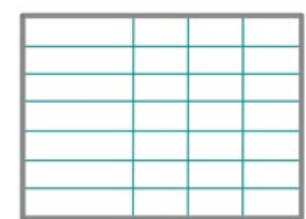
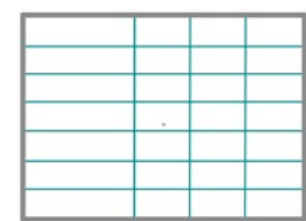


## INPUTS

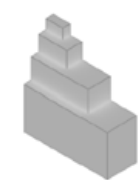
### 1) GRID TYPE



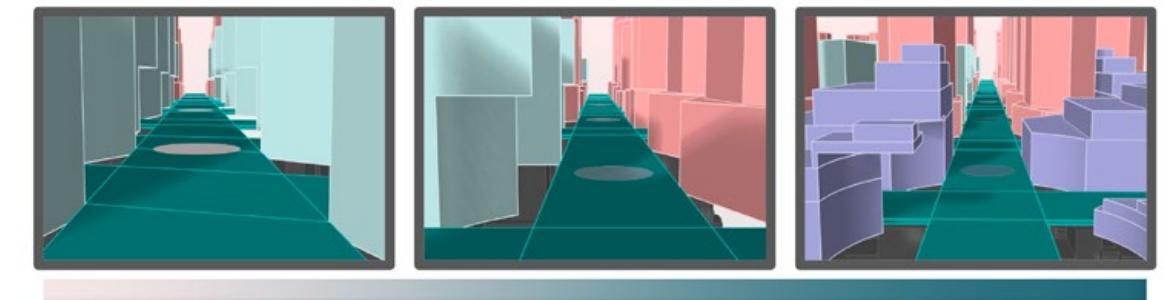
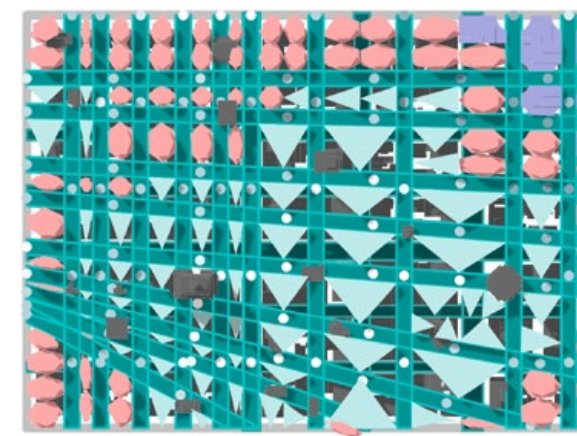
### 2) DENSITY ATTRACTORS



### 3) BUILDING TYPES



# CUSTOM ANALYSIS TOOL: VIEW VARIETY



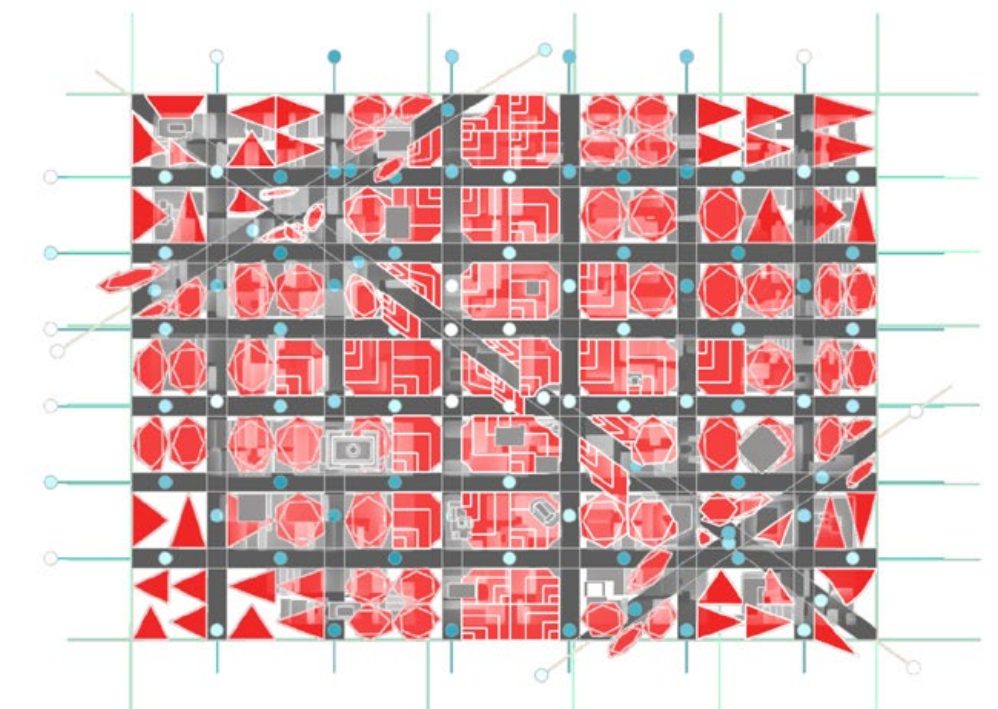
POOR VIEW VARIETY

MEDIocre VIEW VARIETY

EXCELLENT VIEW VARIETY

This self-developed tool measured view variety from evenly spaced points across the street grid. ray-casting determined the number of different building types visible at each of these points, and assigned them a numeric view variety score. Each score is correlated with a color along the gradient shown above and is represented visually as a circle at each analysis point.

# DESIGN SPACE EXPLORATION



GRID TYPE: 2

DENSITY ATTRACTOR: CENTER

VIEW VARIETY SCORE: 0.59

## CONCLUSIONS

### TOOL UTILITY

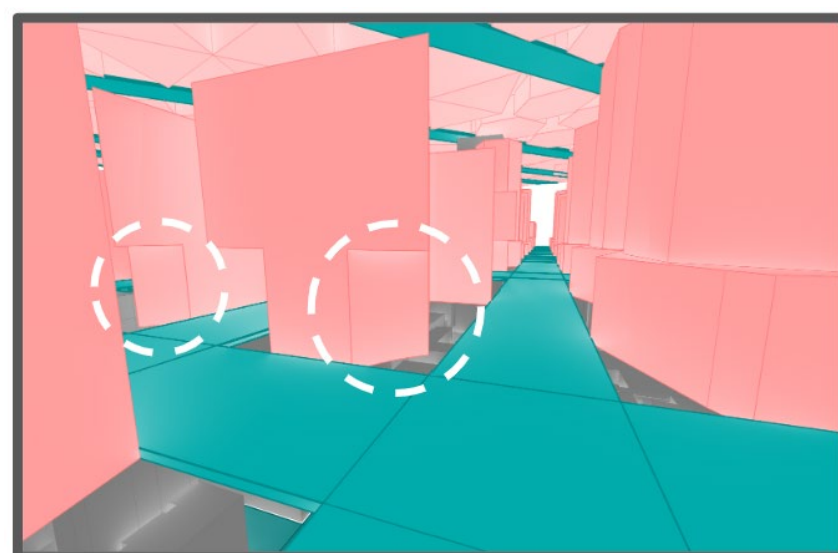
Even in non-hyper-dense conditions, these custom analysis tools can be used during the design phase of urban planning to inform street-level conditions that create more visually and experientially intriguing and joyful cities.

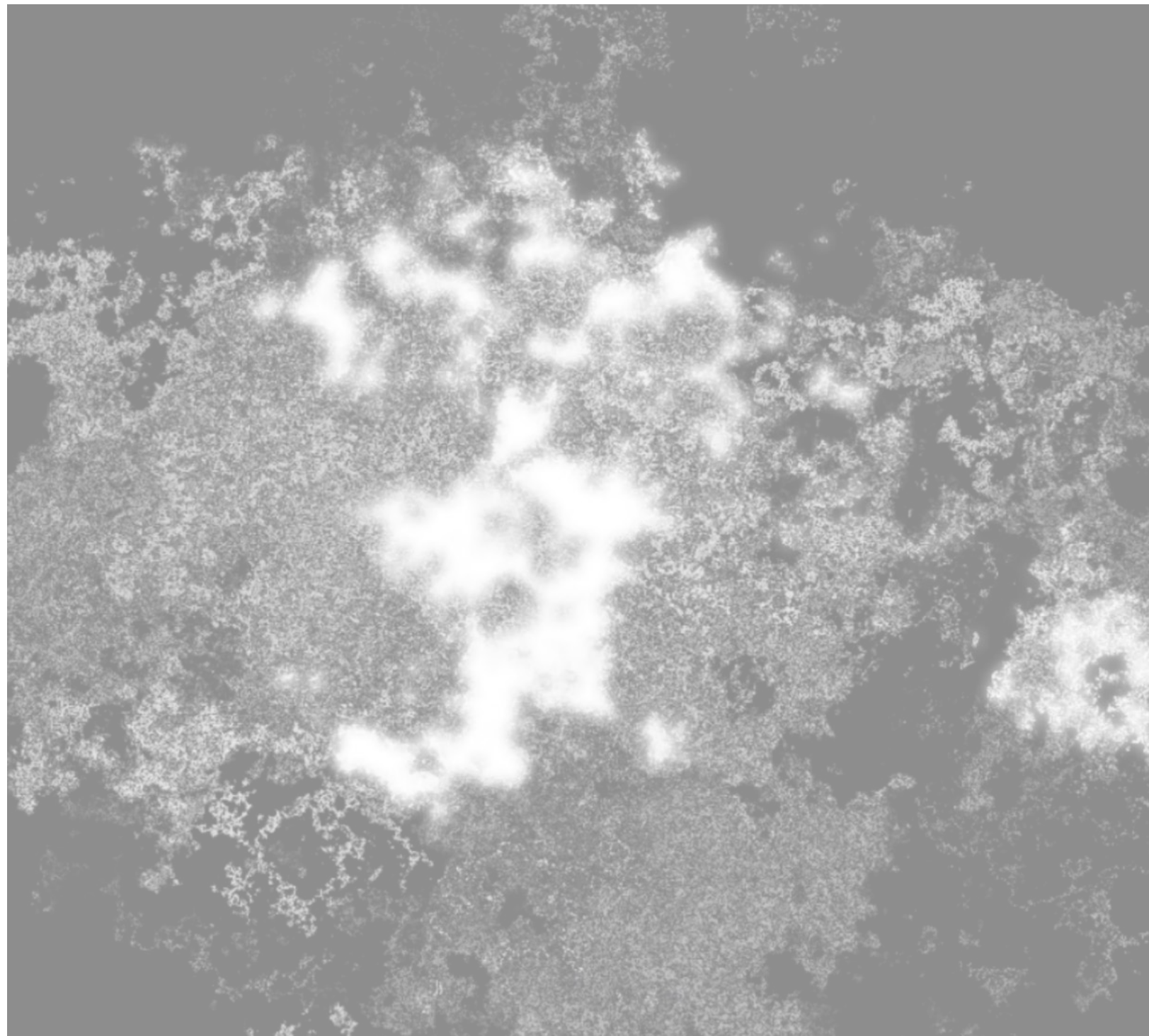
### DESIGN SPACE UTILITY

As we tackle design for climate change, shading streets and urban areas will become more important. this project speculates ground conditions that have little exposure to daylight, yet still provide visual intrigue.

## PROCEDURAL RULE: BORING BLOCKS

At boring blocks [defined as 90-degree angle intersections], cut out part of the building at street level. These conditions are unique to each block generate a new urban experience similar to that of Barcelona's intersections.





# VISUALIZING SOUND

ARCHITECTURAL DRAWING & REPRESENTATION II

SPRING 2022 | CRITIC: DAN TAEYOUNG | INDIVIDUAL WORK

<< listen >> << perceive >>

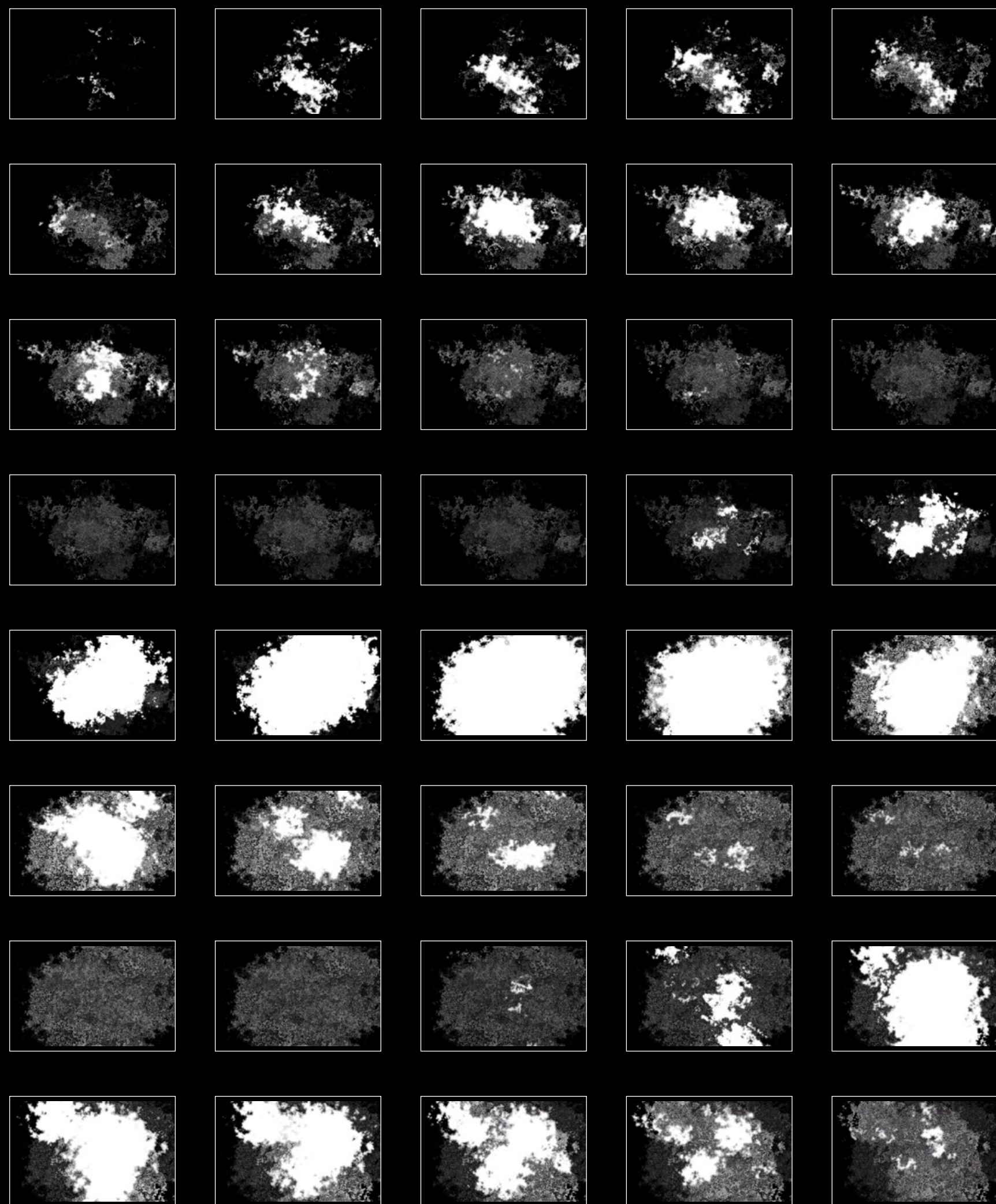
## VISUALIZING SOUND

Architectural representation focuses almost exclusively on visuals; however, our experience of the built environment is multi-sensory. What would it look like if we could represent the non-visual senses?

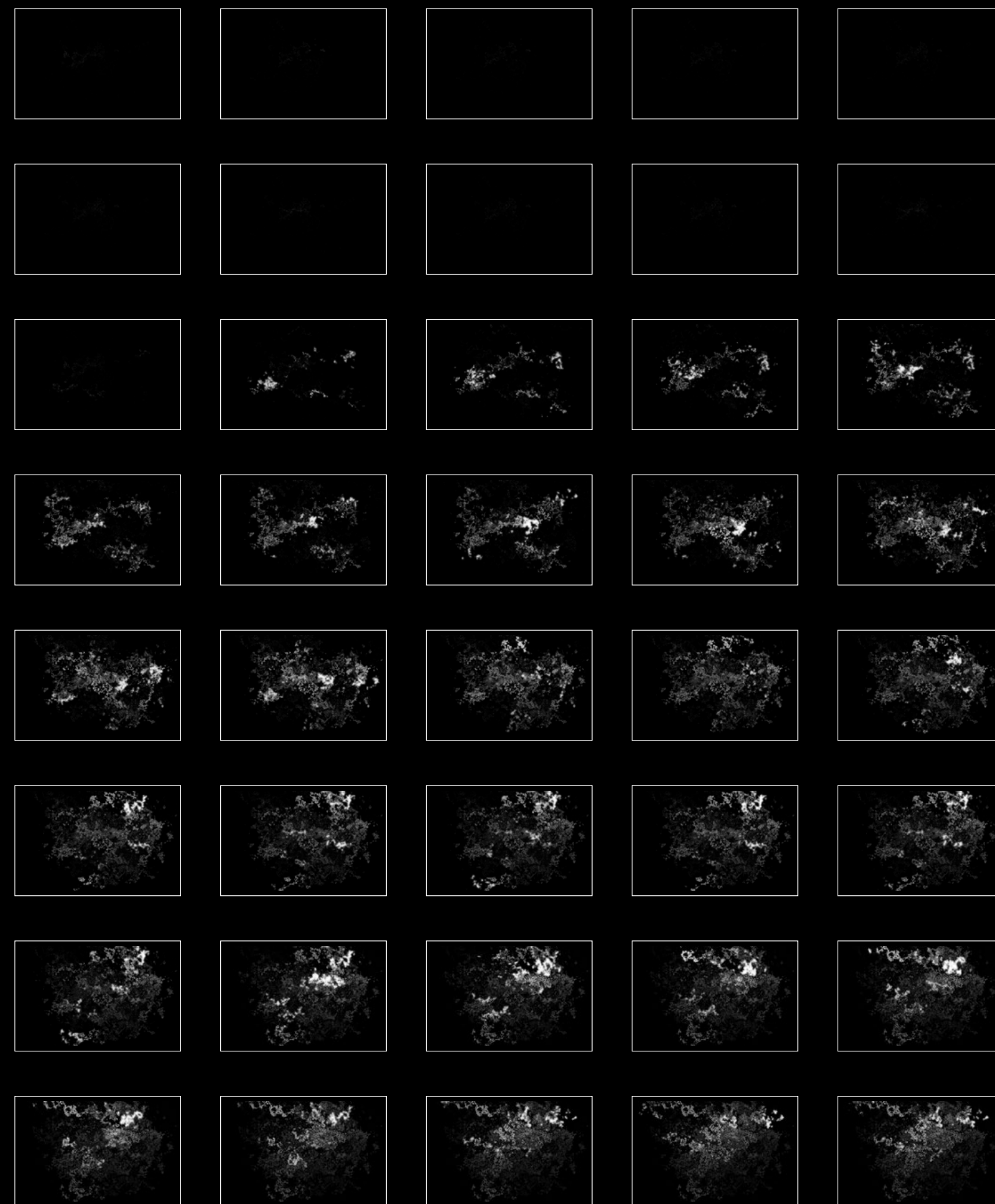
As part of an exploration in representation of conflict and resolution, I compared one minute of audio from the 1974 Turkish invasion of Cyprus, and one minute of the sounds of the Mediterranean shores in Cyprus that same year before the invasion. The two audio inputs are run through a TouchDesigner interface to produce the screen captures of the final video output on the following pages.

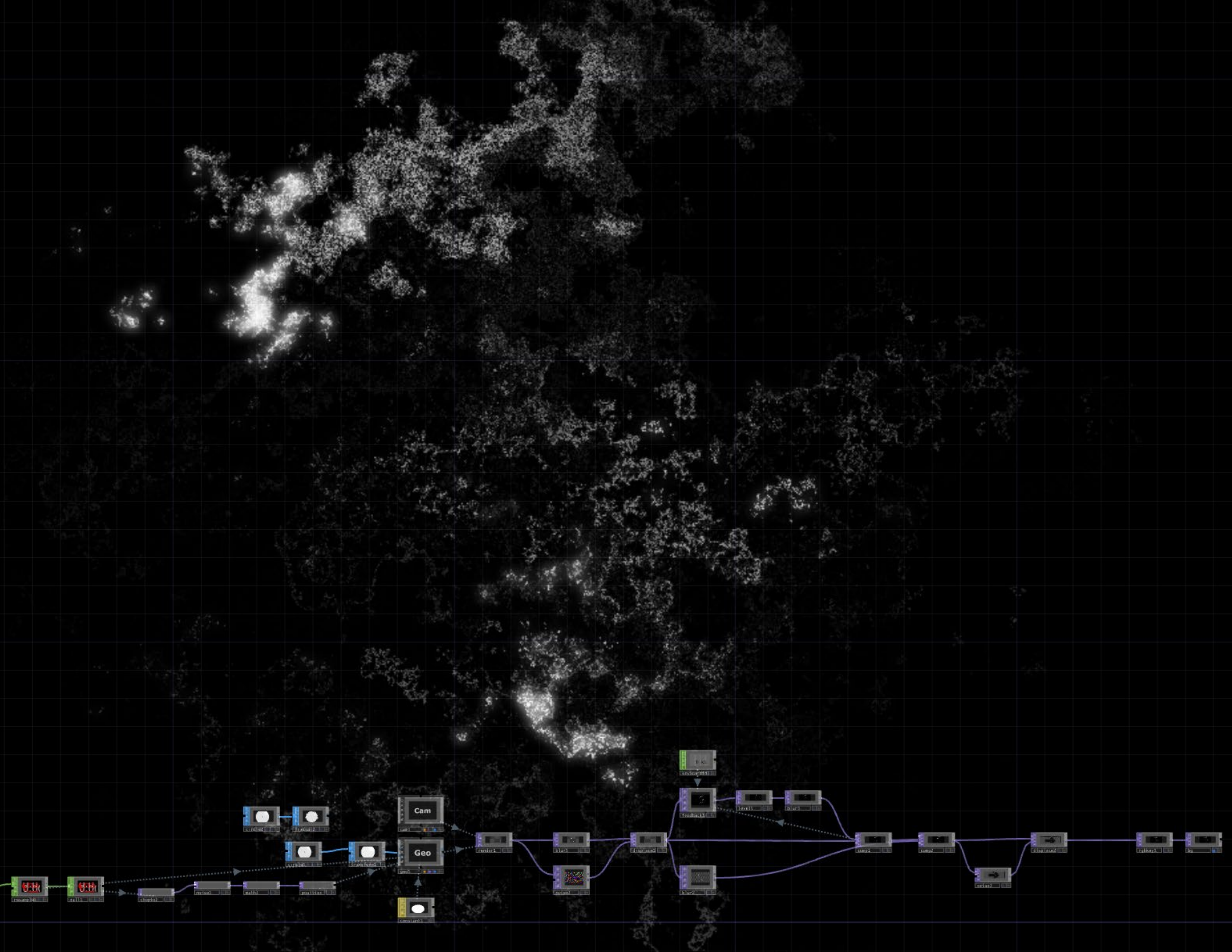
This project uses TouchDesigner to generate a system that takes sound as an input and outputs a correlated visual abstraction. The system also explored visualizing live/ambient sound inputs in class.

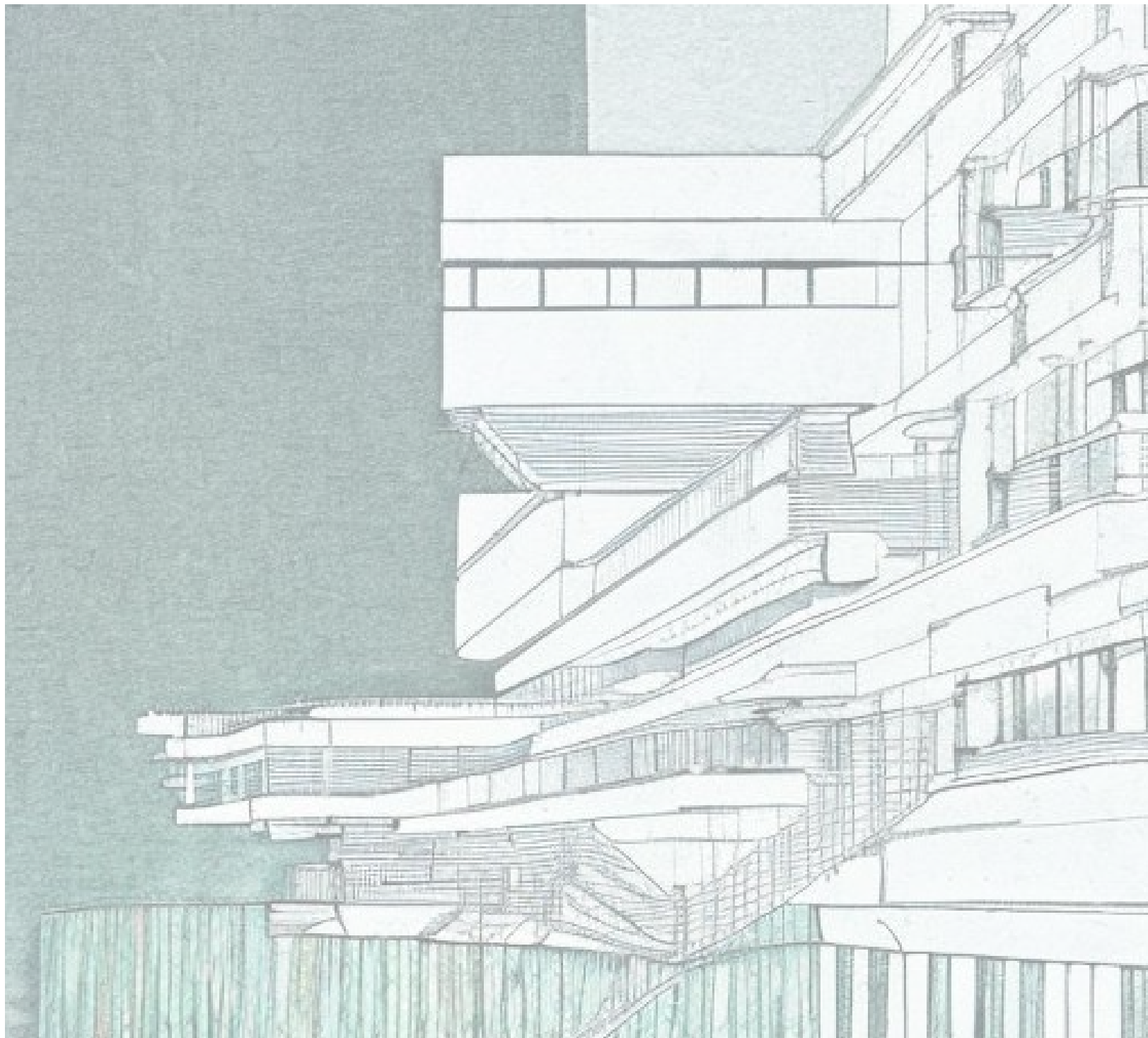
WAR



PEACETIME







# CODED PRACTICE

METATOOL I

SPRING 2023 | CRITIC: DAN TAEYOUNG | INDIVIDUAL WORK

<< routine >> << invent >>

## CODED PRACTICE

Architects have increasingly relied on the use of AI for idea generation and visual inspiration. Even starchitect firms such as Zaha Hadid Architects have admitted using AI to generate most of their project concepts. At this stage, many AI generation engines seem to be a black box, with “successful” outputs a product of luck of the draw at input, or many hours of trying to nail down the exact combination and order of words to get a desired output.

This project uses a combination of Rhino and TouchDesigner in an attempt to peel back some of these layers, giving control back to the designer while still providing a platform for visual inspiration and ideation. Users can input both a shape from Rhino and/or Grasshopper for the physical form base, as well as a texture image in TouchDesigner for the aesthetic base.

# RHINO-TOUCHDESIGNER INTERFACE

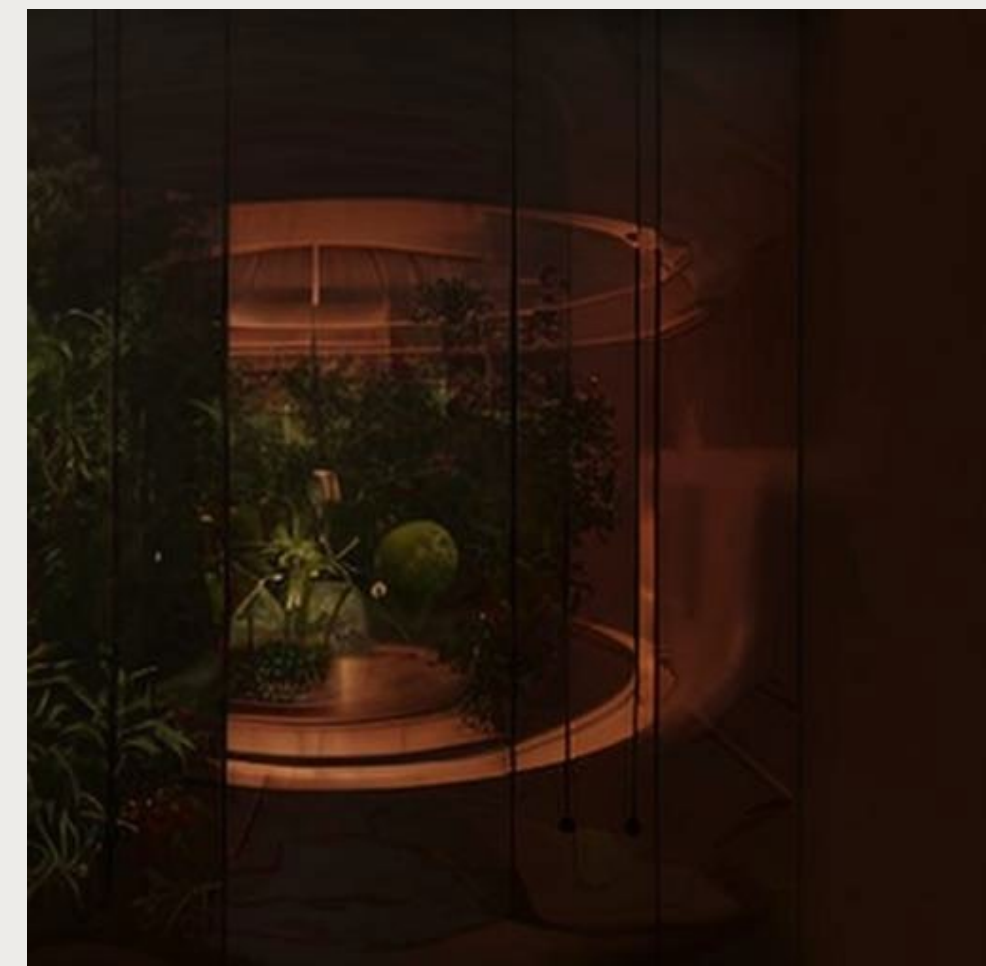
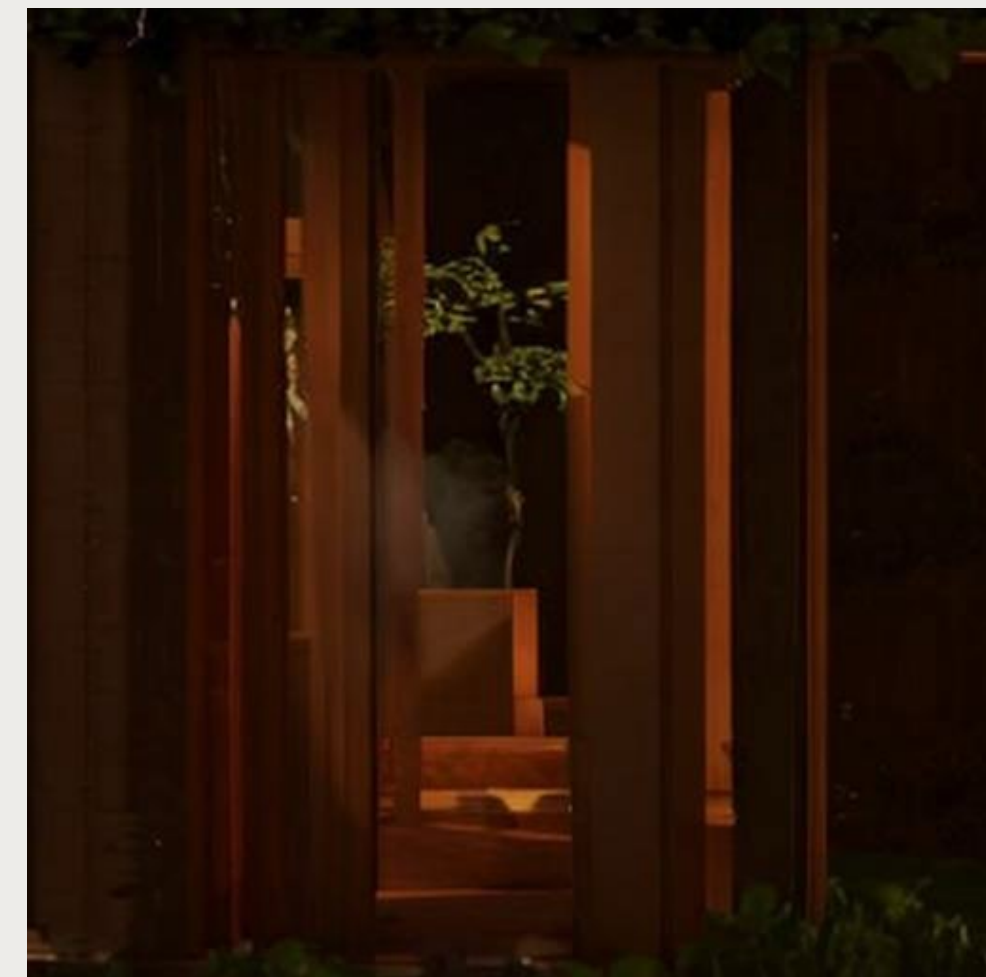
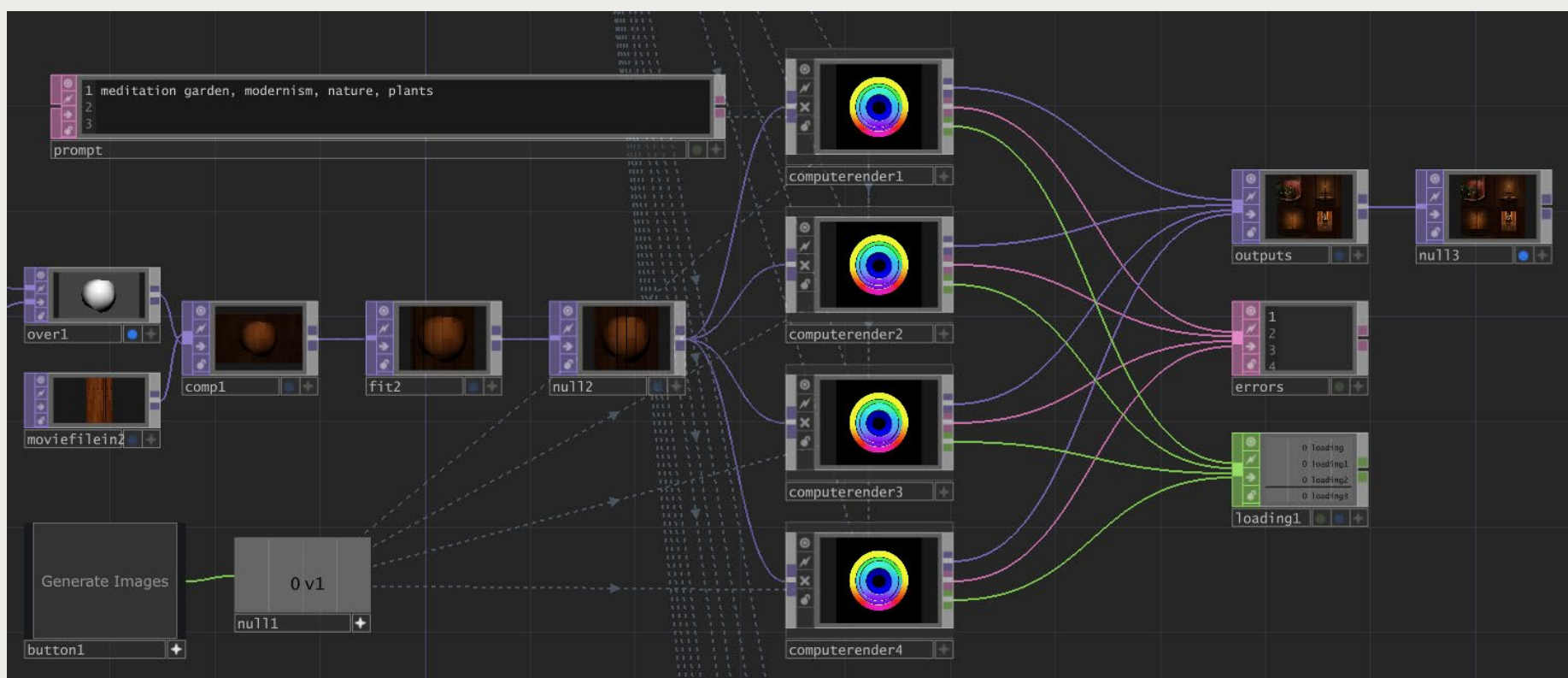
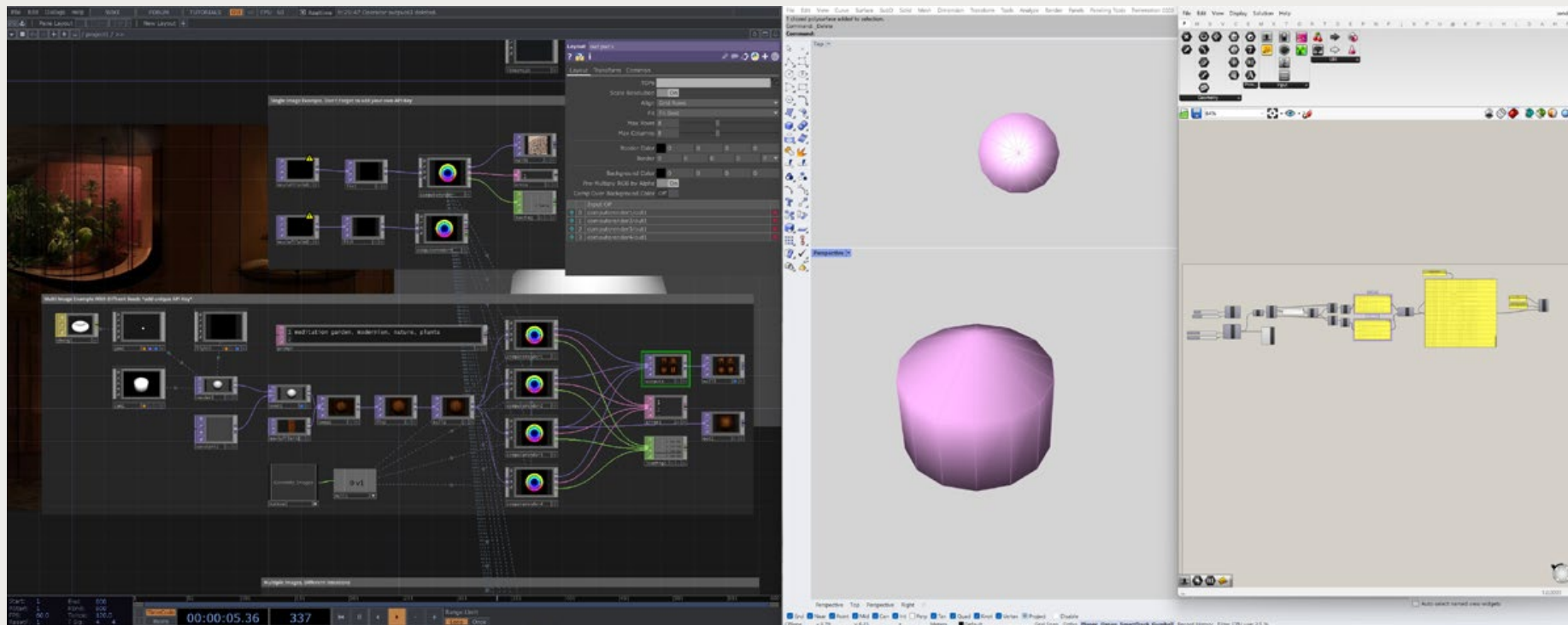
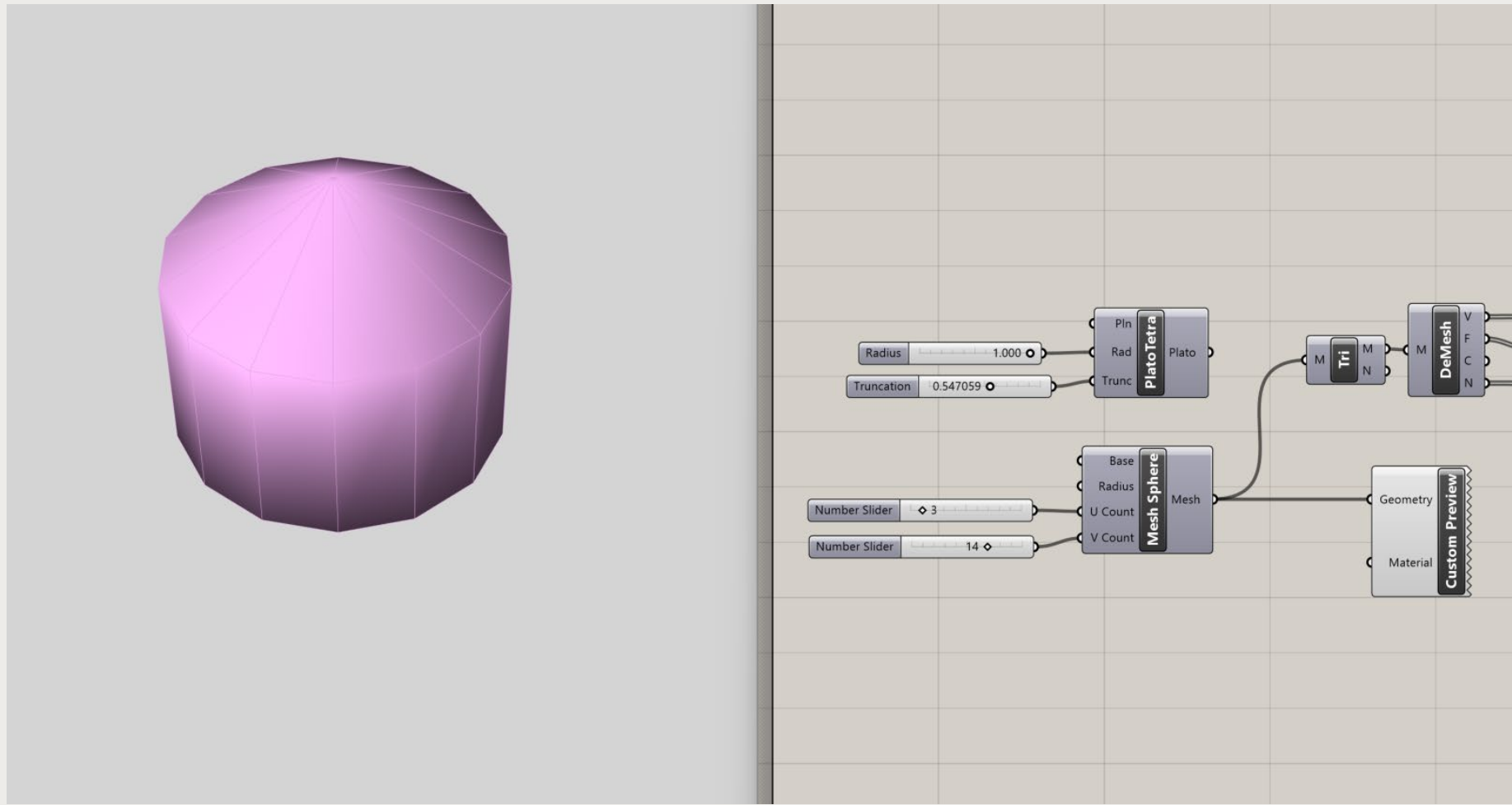


IMAGE GENERATION



DO GOOD



DREAM ON

Katerina Gregoriou  
2021-2024