1:1

A collection of ideas conceived at GSAPP that distinguish design relative to scale, use and a sustained vision.

Anoushae Eirabie

BREATHE AGAIN

Donna Haraway in her lecture Staying with the Trouble: Making Kin in the Chthulucene states that “we require each other in unexpected collaborations and combinations, in hot compost piles. We become with each other, or not at all.”

Breathe Again envisions a future in Manhattan if we grew with one another across different species, and how diverse and complex narratives may evolve in accordance with our inevitably changing climate. The project, based in Chinatown’s Manhattan, investigates systems that render a physically built environment and mines these realities for unique conditions of care and kinship: A system of collective ownership represented in the association building typology when interrogated reveals complex familial and intergenerational dynamics; a robust produce market is built on relationships requiring deep trust between farmers, wholesalers and vendors; a model for ventilation in a humid tropical climate fundamentally changes the programmatic profile of spaces that exist in a typical tenement building.

Breathe Again is presented over a timeline of 75 years designed to represent care as a collective assemblage.

Critic: Anna Puigjaner
Collaborator: Ava Sierra Heckman
Semester: Spring 2022

1
At the scale of the neighborhood the connections between association buildings using the established horticulture path are visibly disturbing the hierarchy of the original street.

6
The ownership structure that allowed multiple families to own property in Chinatown Manhattan is also the only reason gentrification has not been able to penetrate the neighborhood.

Pell St., shown in these photos has maintained its character since 1970.

3
At the scale of the block, horticulture connects the areas behind buildings and cores and ventilation shafts between buildings are seen combined. Subtle shifts in the massing reveal cooling tower mechanisms at association/ residential balconies.

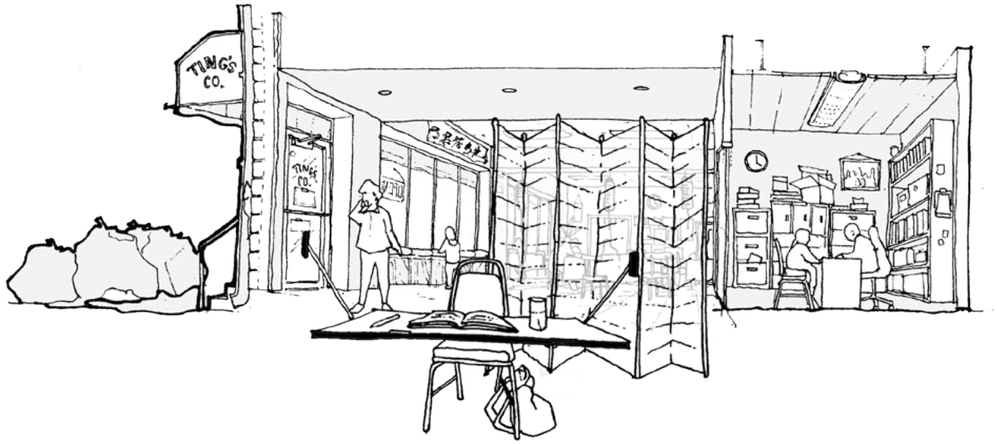
2
The locations and quantities of various produce distributers (wholesalers, and vendors) across the neighborhood.

4
A section cut through the Lin Sing Assocation buildings reveals how pressure change affects air flow inside the typically reconfigured tenement building.

By converting the central core to a moment frame system, more accessibilty is given to allow hot air to travel upward to an.

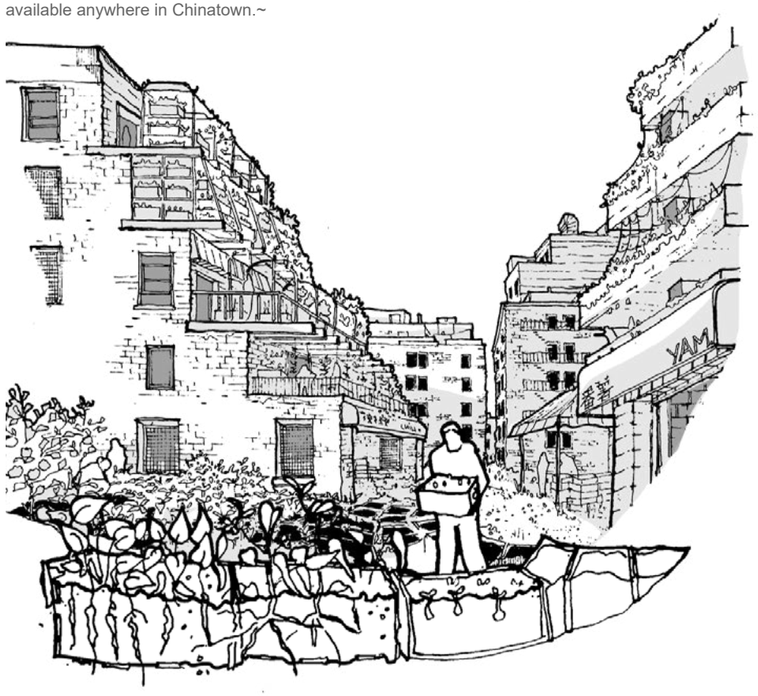
5
A typical association building contains a commerical ground floor; a second level gallery or meeting area that culminates into the balcony; and rent controlled residential units.

7
This association is home to a community center, and a dedicated Chinese school for young children. It is also a representation of what happens behind the decorative walls of Chinatown.



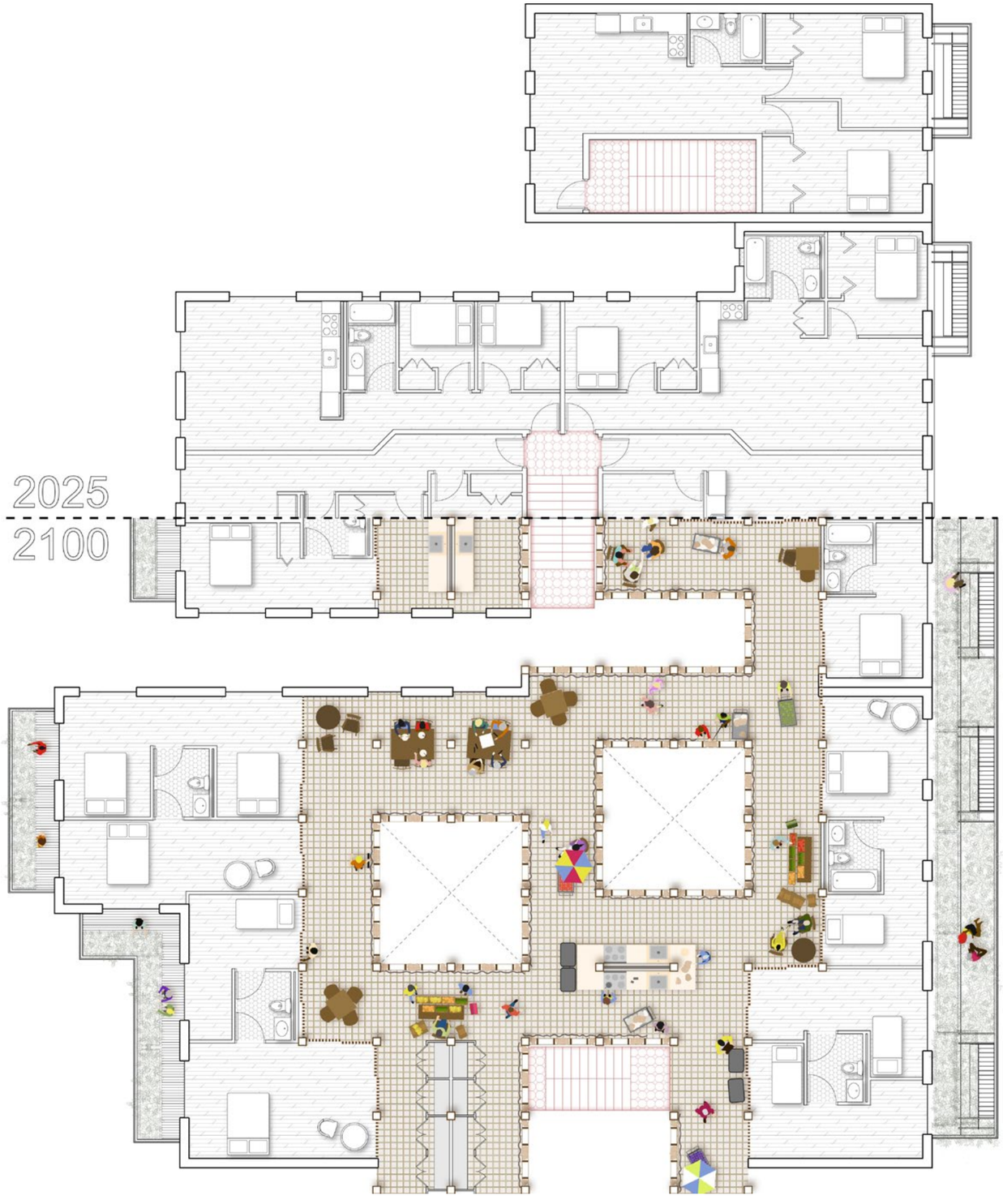
2025

My mother never yells in front of the customers, so the day she did is stuck in my memory. It was a February evening and I was supposed to be reading behind the check-in counter at the small desk mom installed for me to do my homework, but instead I was distracted by the snow, it was one of the last days I remember the snow falling in the city, it was so pretty when we walked to the restaurant after school. My sister and I always came to the restaurant to help mom, and to take Chinese lessons with grandpa on the weekdays. It was where all the best things happened…birthdays, my grandma's famous dumplings, playing with cousins... But the day my mom was yelling wasn't a good day…she was angry because we had to take our best-selling chicken dish off the menu. It was a spicy recipe but no chili peppers were available anywhere in Chinatown.~



2075

David Ting was particularly happy the fennel was gone. He leaned over to place the marjoram he had traded just a moment ago into the empty slot in the family garden and took a deep breath, the smell of the neighbors' yuzu trees leaving him feeling refreshed. His grandmother was hoping marjoram would keep aphids away from the chili plants the family was known for cultivating and maybe then they could bounce back from a very difficult year of agitated crop. It was definitely a bad tip, trusting farmers was a difficult business, many of them were upset that associations had taken it upon themselves to start growing and trading their own crop, but it was becoming difficult to wait for supplies, the water level alone was enough justification to take matters into their own hands. Next time David would try companion planting on a balcony before planting in the garden.




FRESH PRODUCE

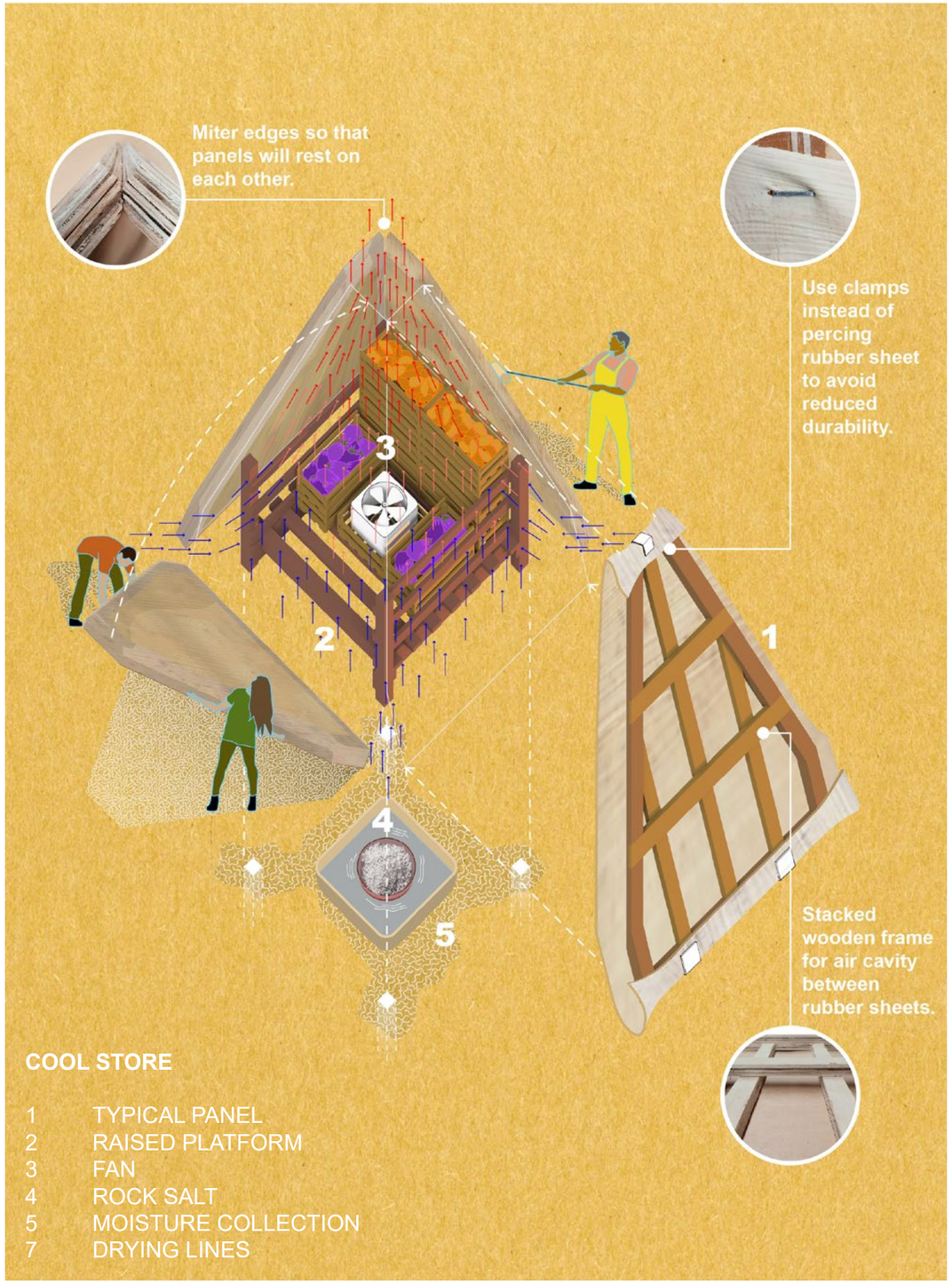
RESET: RUBBER

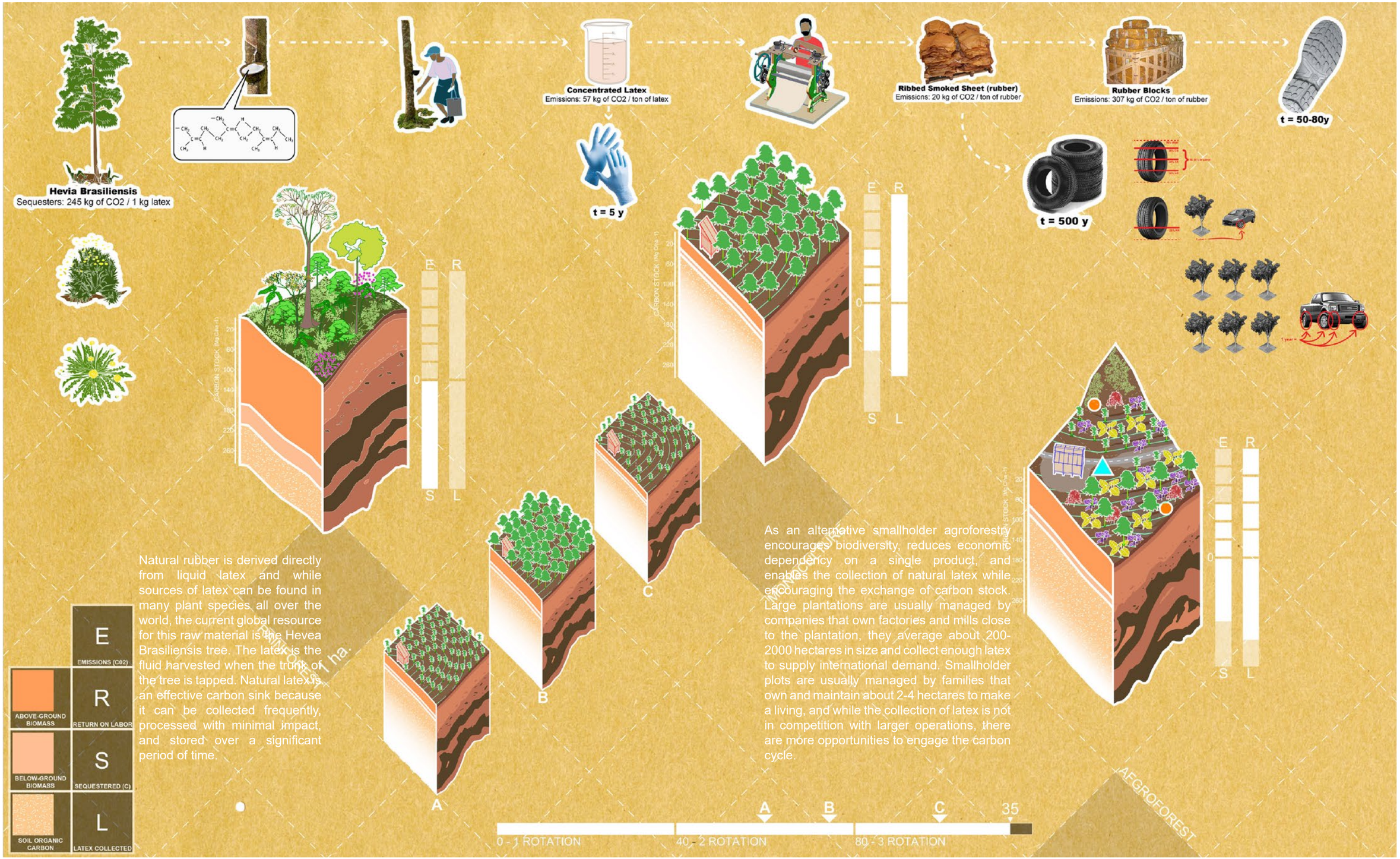
RESET: RUBBER recognizes the compounding negative impact monoculture farming has on the environment, and the robust carbon sequestration potential of natural rubber and its byproducts. The project argues for a wider methodological redefinition of sustainability through the design of products and processes that encourage continuous exchange and maintenance while deploying localized methods of cultivation and production.

The imbalance between short-term human needs and the maintenance of long-term ecosystems compromises a monoculture's ability to supplement systems like biodiversity and soil fertility. The solution isn't just about sequestering as much carbon as possible, but retaining an active carbon cycle.

One such way to achieve this is to focus on a scale of use that is continuous, or necessary. The sustainable alternative to a monoculture farm is an agroforest, though crop spoilage is a major challenge for the average farmer. Rubber is an excellent insulator, so RESET: RUBBER proposes the design of a cool store that uses a rubber skin to control the container's environmental properties. A conical shape forces warm air out the open top encouraging cooler air to come in through the base. Using rubber reduces the amount of power needed to operate a fan to assist air flow when necessary.

Critic: David Benjamin
Semester: Fall 2021




Hevia Brasiliensis
Sequesters: 245 kg of CO2 / 1 kg latex
Concentrated Latex
Emissions: 57 kg of CO2 / ton of latex
t = 5 y
Ribbed Smoked Sheet (rubber)
Emissions: 20 kg of CO2 / ton of rubber
Rubber Blocks
Emissions: 307 kg of CO2 / ton of rubber
t = 50-80y
t = 500 y
E
R
S
L
0
CARBON STOCK (Mg C ha-1)
20
60
100
140
180
220
260
A
B
C
E
EMISSIONS (C02)
R
RETURN ON LABOR
ABOVE-GROUND BIOMASS
S
SEQUESTERED (C)
BELOW-GROUND BIOMASS
L
LATEX COLLECTED
SOIL ORGANIC CARBON
Natural rubber is derived directly from liquid latex and while sources of latex can be found in many plant species all over the world, the current global resource for this raw material is the Hevea Brasiliensis tree. The latex is the fluid harvested when the trunk of the tree is tapped. Natural latex is an effective carbon sink because it can be collected frequently, processed with minimal impact, and stored over a significant period of time.
As an alternative smallholder agroforestry encourages biodiversity, reduces economic dependency on a single product, and enables the collection of natural latex while encouraging the exchange of carbon stock. Large plantations are usually managed by companies that own factories and mills close to the plantation, they average about 200-2000 hectares in size and collect enough latex to supply international demand. Smallholder plots are usually managed by families that own and maintain about 2-4 hectares to make a living, and while the collection of latex is not in competition with larger operations, there are more opportunities to engage the carbon cycle.
A
B
C
35
0 - 1 ROTATION
40 - 2 ROTATION
80 - 3 ROTATION
AFGROFOREST

Slash + Burn

10L/trip

Housing

Selective Logging

Farmer's Market

Nursery/ Training Center

Processing Facility

5L/trip

MONOCULTURE

AGROFOREST

EMISSIONS (Mt CO2e/ha)

SEQUESTERED (Mt CO2e/ha/yr)

RETURN ON LABOR (Products sold) (kg/ha/yr) LATEX

400.2

0

735

2300

141.5

0

980

2500

1000 Mt CO2e/yr

RAINFOREST

MONOCULTURE

AGROFOREST

HEVEA_3Y

EGGPLANT

TILLING

HEVEA_10Y

COFFEE

TRANSPORT

HEVEA_30Y

TEA

FIRE

LUMBER

LEMON

YAM

MAINT.

COMPOST

BANANA

RICE

HOME

COOL STORE

Maintenance of the product is routine, the sheets require constant re-application of liquid latex to retain durability. As long as the processing is minimal, the sheets are constantly subject to erosion meaning the product is still an active member of the upcycling of carbon, bacteria are still feeding off the latex because it is exposed to the environment. If the rubber sheet lasts longer than 40 years in use, it has successfully outlived a rubber tree, and all the latex used to maintain it is considered sequestered carbon.

A farmer will prefer a size that doesn't compromise too much space because it needs to be used in the agroforest. If it can be assembled with a minimum number of people it maximizes return on labor, and should be designed to be deployed over a variety of terrain, small design changes, like mitering the edges, and using clamps instead of staples, helps create a more durable product.

COMMUNITY PROCESSING CENTER

1 TRADING POINT
2 PROCESSING
3 MATERIAL RESEARCH
4 PAINTING PLATFORM
5 CURED LATEX COLLECTION
6 SCHOOL HOUSE
7 DRYING LINES
8 ENERGY PROCESSING
9 WATERMILL

3

A balance of manual labor and mechanical assitance to prepare latex for production.

6

Generator converting hydro power and solar power into electricity sustaining processing center operations.

7

1

Farmers provide raw materials in exchange for credits toward purchasing finishing products.

2

4

A process that requires a large amount of space has to include the community to foster collective production.

5

Combining citric acid with water and latex allows for a faster curing time and increases the strength of the rubber product.

8

ARCH 6455

WHO CARES?

Who Cares?
Motivations and Intentions Driving Healthcare Developed in Early Modern Europe

An excrept from an essay written for the Military Urbanism class as part of the History and Theory sequence.

Professor: Victoria Sanger
Semester: Fall 2021

A quick Google search of ‘healthcare’ is all it takes to gain an understanding of the complexities that surround the topic. The third link down: hhs.gov (U.S. Department of Health and Human Services) proudly proclaims “Everyone deserves access to affordable, quality health care coverage and services.” But try going any further and one immediately needs to confront a competitive assortment of insurance plans and services all concealing specific caveats, that will no doubt save providers a few thousand dollars each time someone needs to rely on their services. This phenomenon highlighting mixed messaging surrounding healthcare is not unique to the United States of America, but it might be unique to a capitalist economy, where every service needs to maintain a profitable purpose in order to foster competition in the system. The difficulties society faces in acknowledging ‘health’ and human ‘care’ as a humane right free from a profit-bearing identity, has its origins in how the concept of care was reimagined through multiple historical challenges. It is intriguing then, to study these intentions surrounding healthcare as they evolved alongside a period of extraordinary military tactical and technical advancement.

The use of gunpowder and the innovation of artillery weaponry was responsible for the reconfiguration of fortification towns and cities in the Early Modern era. The purpose of the research is to uncover or discover the complexities that motivated logistical mechanisms of care as they were organized/built into infrastructure in use between the fifteenth and nineteenth centuries. The methodology involves using a critical health issue to agitate the original infrastructure’s purpose so that it might be read in relation to wider theoretical questions about intentions surrounding human care.

The first set of analyses is driven by the implications of contagious infection, referencing the rapid circulation of widespread disease. It is important to note that this argument does not link injury sustained in warfare directly to the cause of infection, but rather correlates the formal arrangements and siege tactics characteristic of the physical fortress with the propagation of infection. Where the spread of pathogen was concerned, parameters such as: proximity, capacity and circulation would have been used to quantify the success or failure of containment.

CONTAGIOUS INFECTION: THE FORTRESS

On the one hand the sense of security a fortress provided was a necessary response to the incominoffensive, but on the other it worked to confine, constrain and “direct the movement of people around and between cities.” An unfortunate recurring circumstance of siege warfare was the increase in the population of non-combatants seeking refuge within the walls of the fortress. Ironically, though they would have perished had they stayed outside the walls, the risk of infection increased as capacity inside the fortress increased, reducing proximity between bodies. An example that demonstrates this struggle succinctly occurred at the Great Siege of Malta in the year 1565: “A great number of corpses and mangled human remains buried under the rubble attracted huge swarms of flies; an epidemic of high fever that occurred within the Birgu fortifications was attributed to the presence of these flies.” This scenario reveals that not only was their a risk in an overpopulated and overconstrained fortress in terms of immediate mass casualty, there was also the logistical issue of leaving large amounts of corpses to rot until the siege was over (which did take several months) culminating in conditions that put besieged towns in danger from the inside out. Those who had the power to shape the fortress town and its contents had to contend with a blurring of social order and military discipline resulting in frequent overlapping and friction between civilian and military intentions surrounding care. The spread of infection paints the fortress wall in two different lights, one as a protection against an oncoming siege, and the other as a container for disease.

To conclude, clear intentions as they pertain to mechanisms of care in the service of society have a tendency to be incredibly subjective depending on who funds them, who needs them and who they are benefitting. But as these motivations and intentions are challenged by unexpected, unbiased unilateral occurrences such as infection, or mass injury they begin to unravel and reveal priorities or opportunities that can be criticized and built upon.

In her text, Cities at War in Early Modern Europe, Martha Pollack eloquently states, “Military urbanism involves a monumentality of composition no longer proportioned to the size of the individual...This non-anthropomorphic scale system then abandons the human body as a standard of measurement.” But what is most captivating about the research conducted to uncover complexities that motivated mechanisms of care is the emphasis on the human body as a catalyst for disruption. It is the body that carries infection, and it is the body that requires care and as such demands its right to be the standard of measurement.

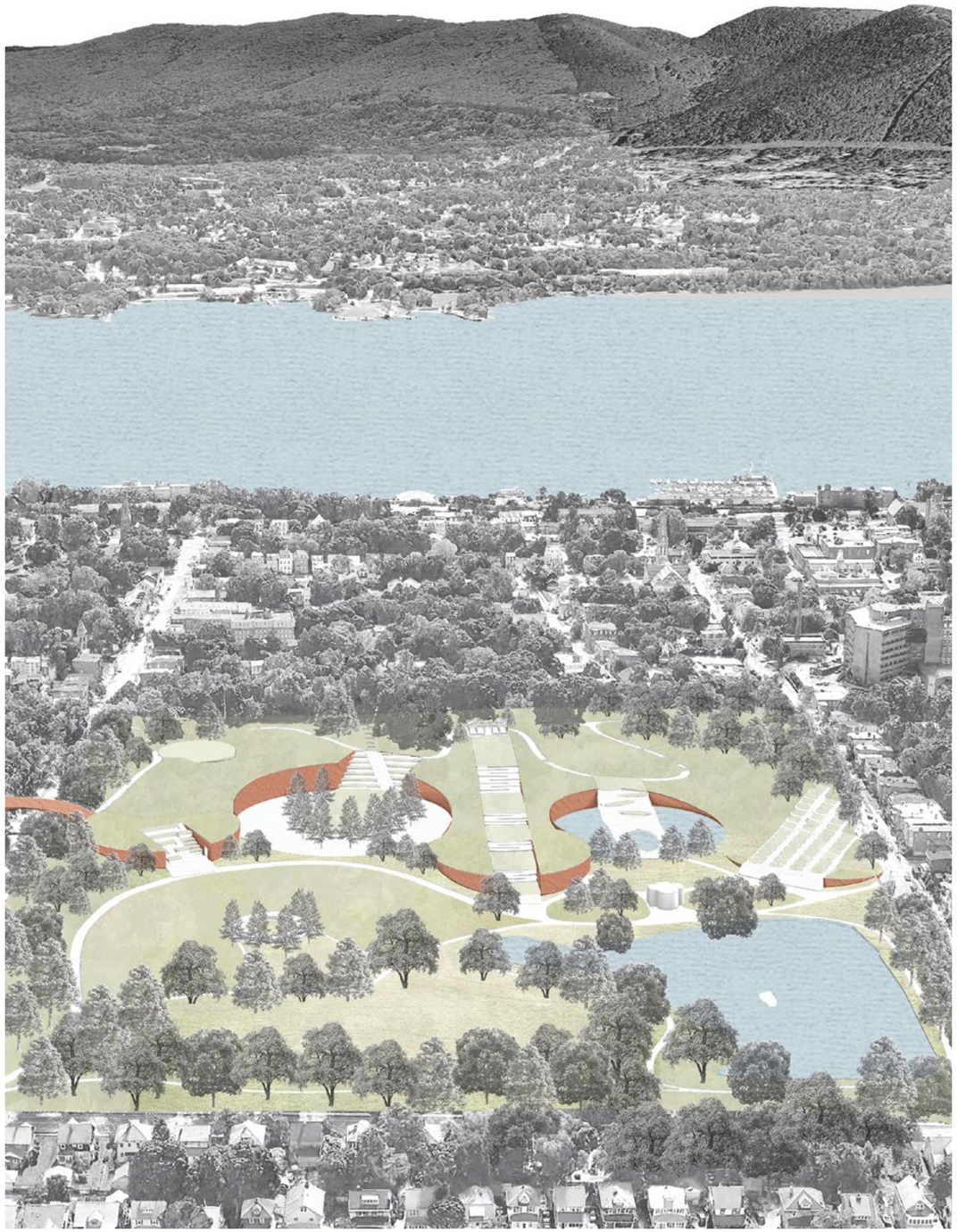
SLOW DOWN

‘Slow Down’ proposes to change the pace of Newburgh as it approaches and experiences Downing Park. A series of phased interventions anchored by existing community interests, give priority to the movement of the pedestrian and reinstate the park as a neighborhood destination rather than a transitory space.

The project posits the change in trade mobility from maritime to landbased (trucking) as a moment that exacerbated the decline of the city materializing in infrastructural moves that prioritized the vehicle over the pedestrian.

Exploring what these changes meant for the identity of a public space was vital to understanding how the local community might reconnect with the park.

Critic: Adam Frampton
Collaborator: Yaxin Jiang
Semester: Spring 2020

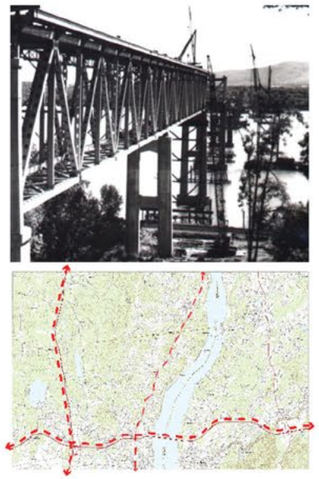


1880
Olmsted & Vaux Design Downing Park

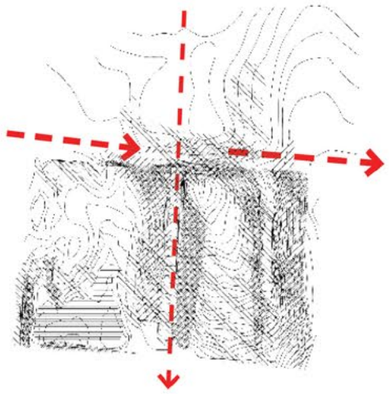
1897
The opening of Downing Park

1940/50s ~ Decline of the city

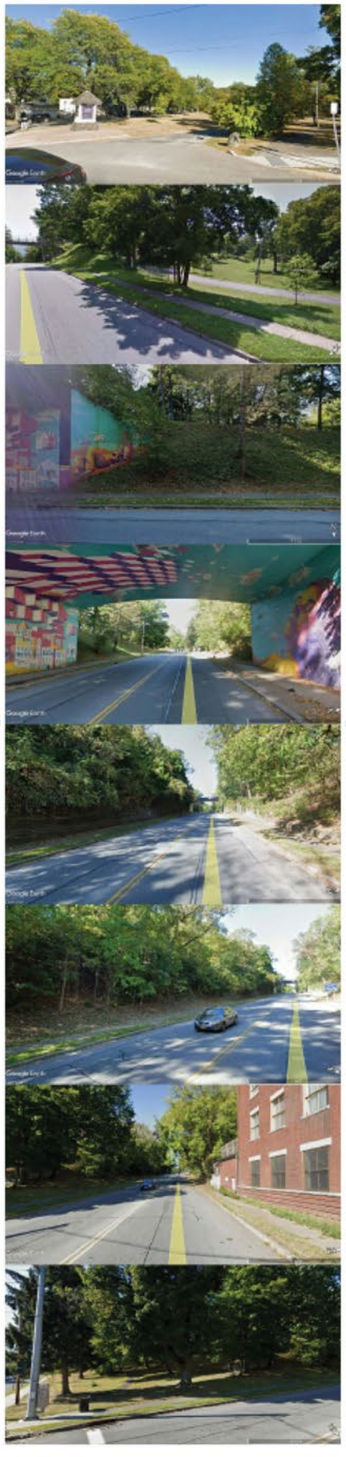
1954
Construcion of the NY State Thruway



1963
Construction of the Newburgh Beacon Bridge



2019
Topography, Downing Park



2020
Urban blight

1865
The 'City' of Newburgh

1896
Crowd in Clinton Square

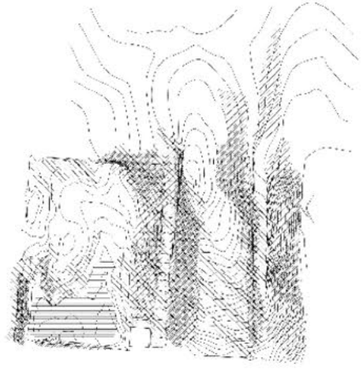
1940
Broadway

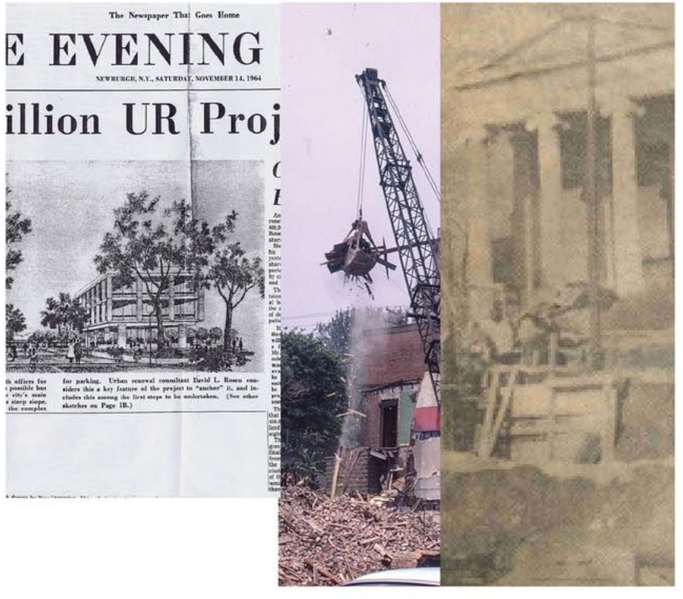
1957
Topography, Downing Park

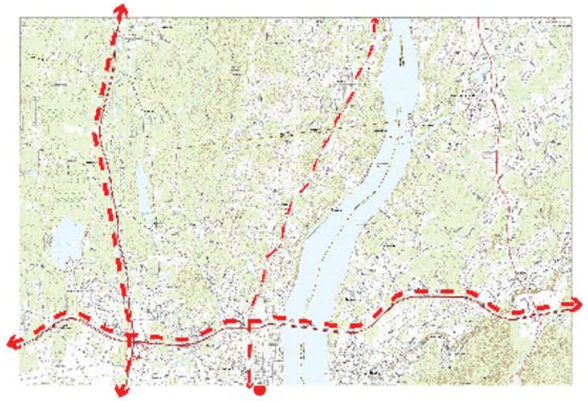
1964 (paper)
Urban Renewal (began 1960s)

1960s
Water Street demolition

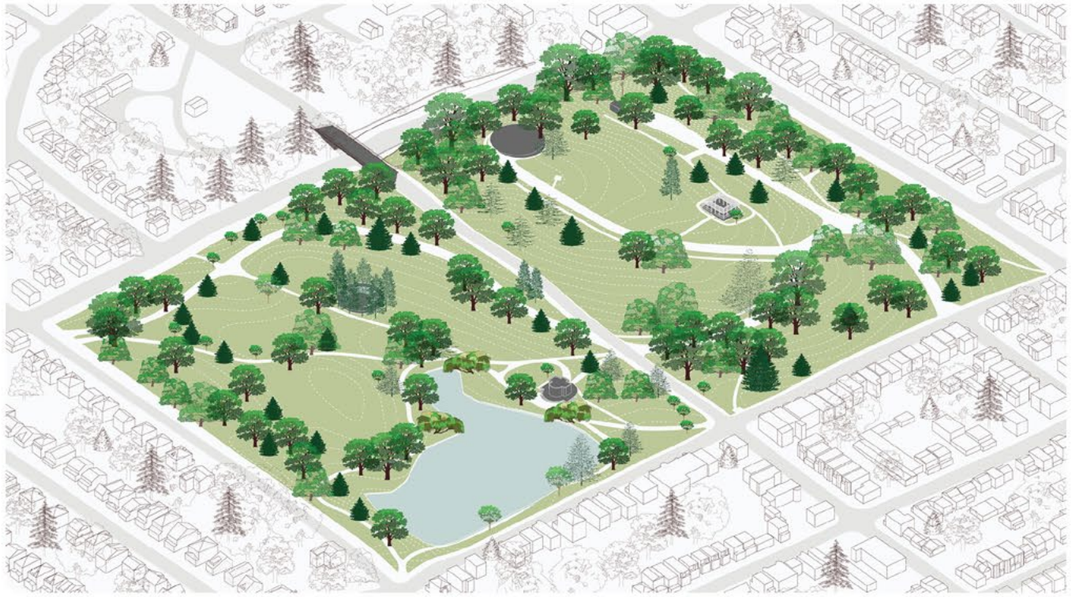
1974
Construction of library in front of Dutch Reformed Church





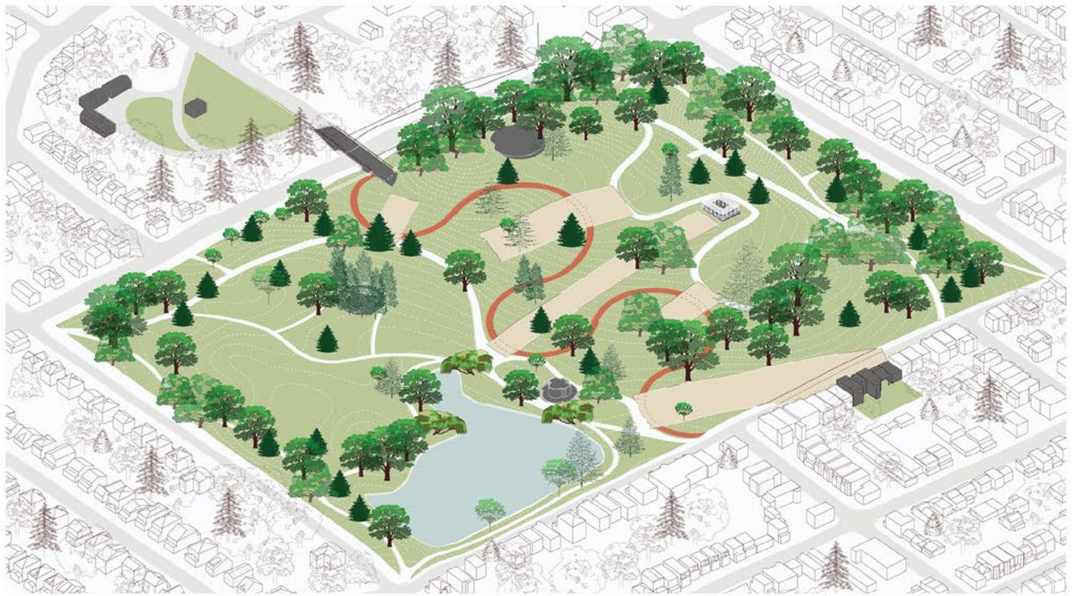


DOWNING PARK AS A MICROCOSM



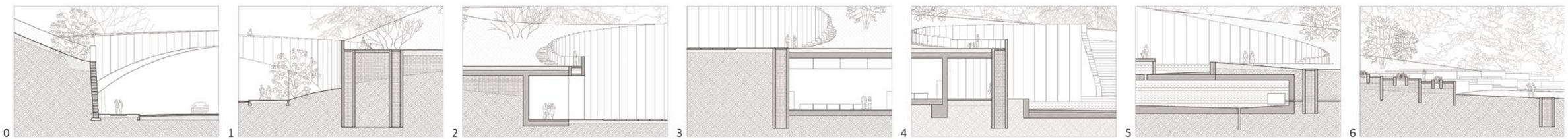
[TOP]
EXISTING PARK

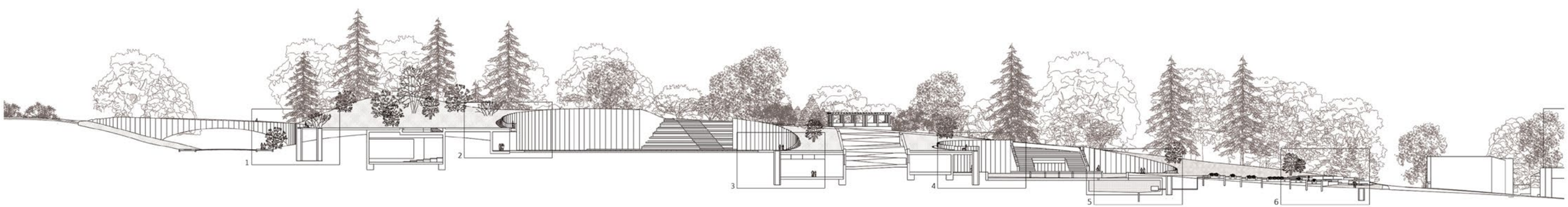
[BOTTOM]
PHASE 1 : PATH



[TOP]
PHASE 2 : WALL

[BOTTOM]
PHASE 3 : EXTENSIONS


0
1
2
3
4
5
6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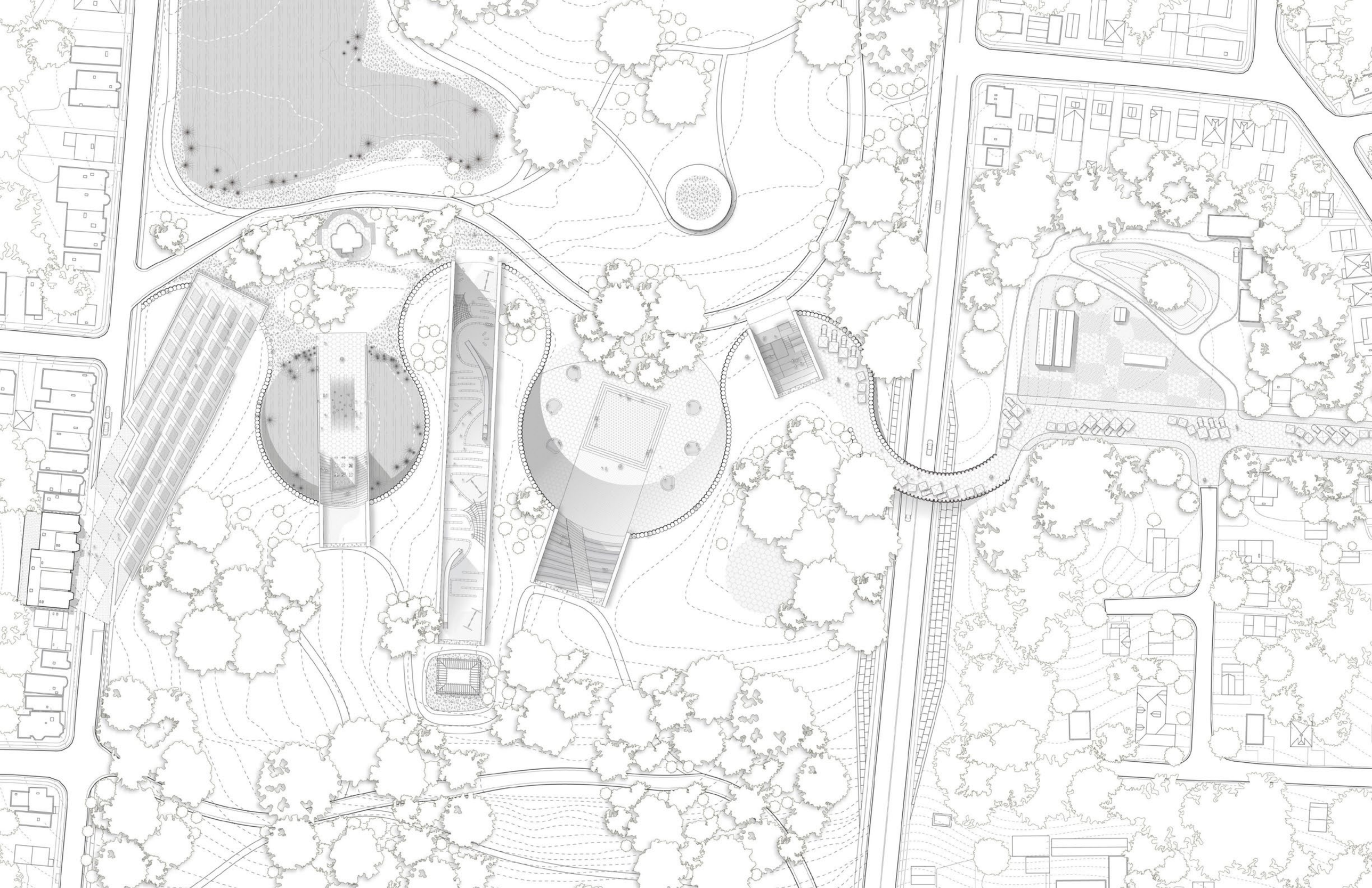


TRANSITIONAL GEOMETRIES

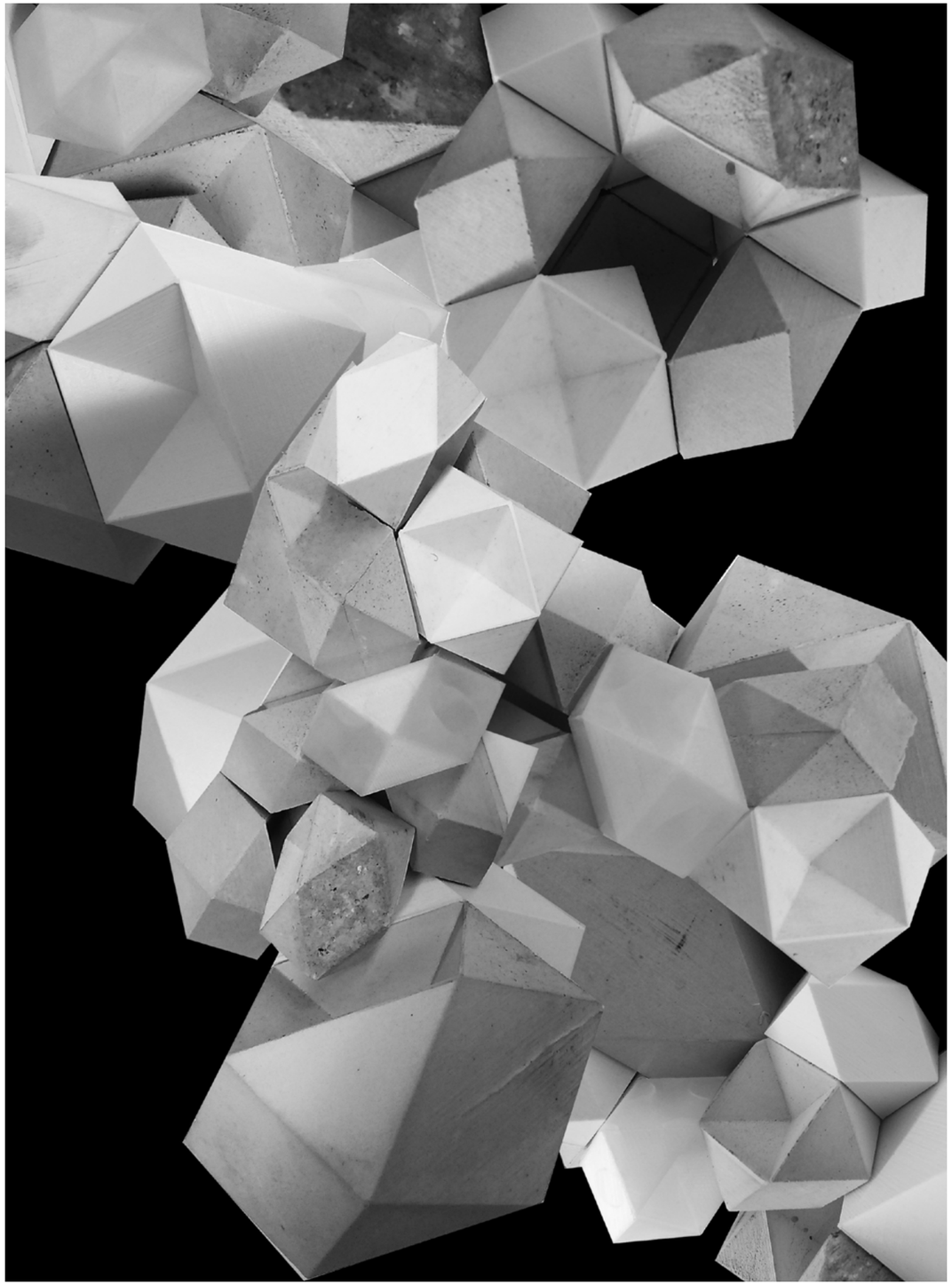
Experimenting with aggregation and fabrication.

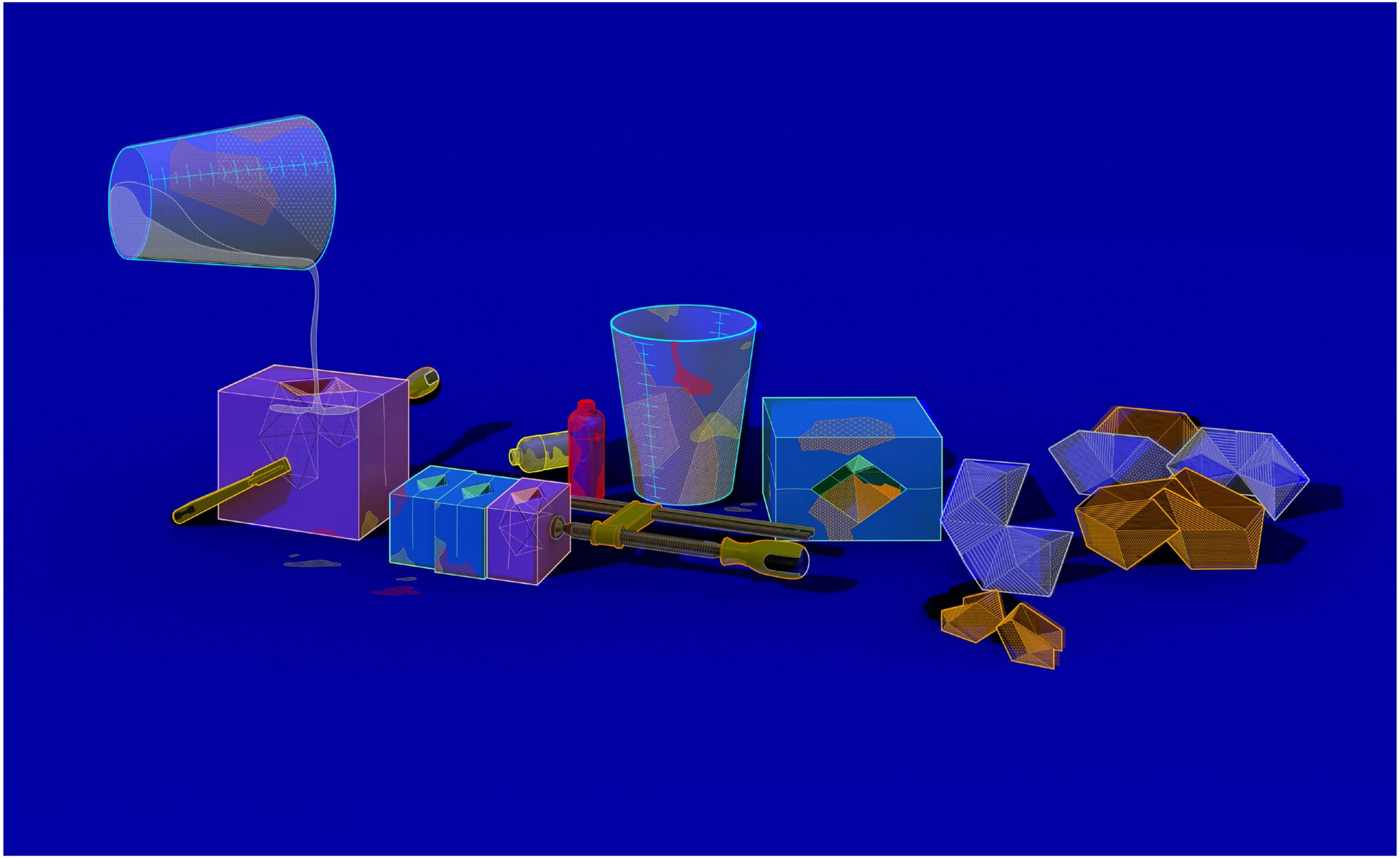
Instructor: Joshua Jordan
Semester: Fall 2019

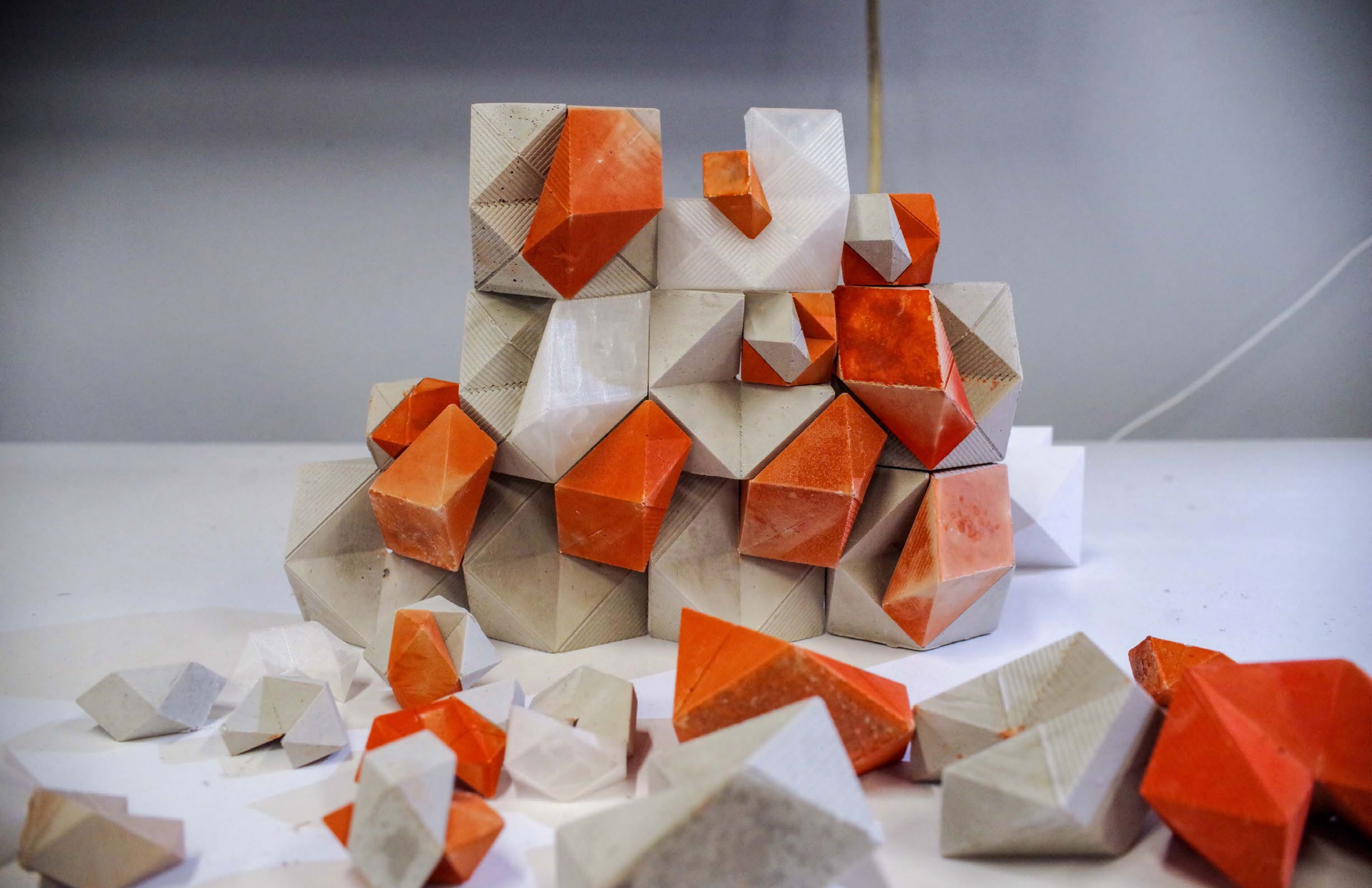
PAINT AND PLAY

A winning competition entry and recent installation for the Newburgh DESIGN FOR SIX FEET program held during the pandemic. The aggregated forms are redesigned for easy fabrication out of sheet material and are meant to be enjoyed independently. They can be brought back together to create a collective artwork, to demonstrate the spirit of collaboration that was lost during a difficult year for the community.

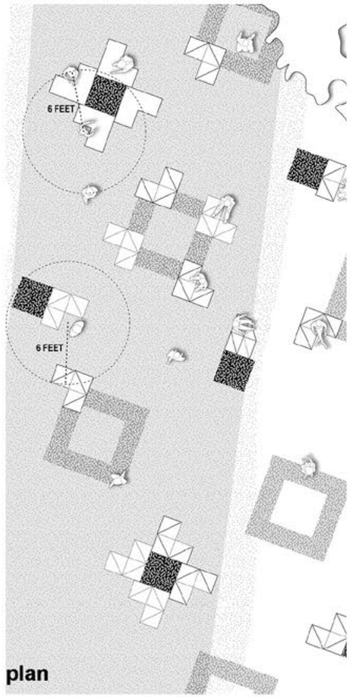
Collaborator: Yaxin Jiang

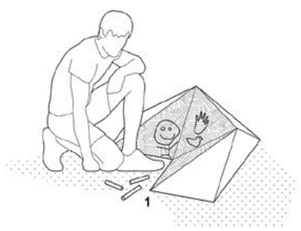


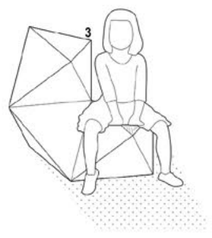


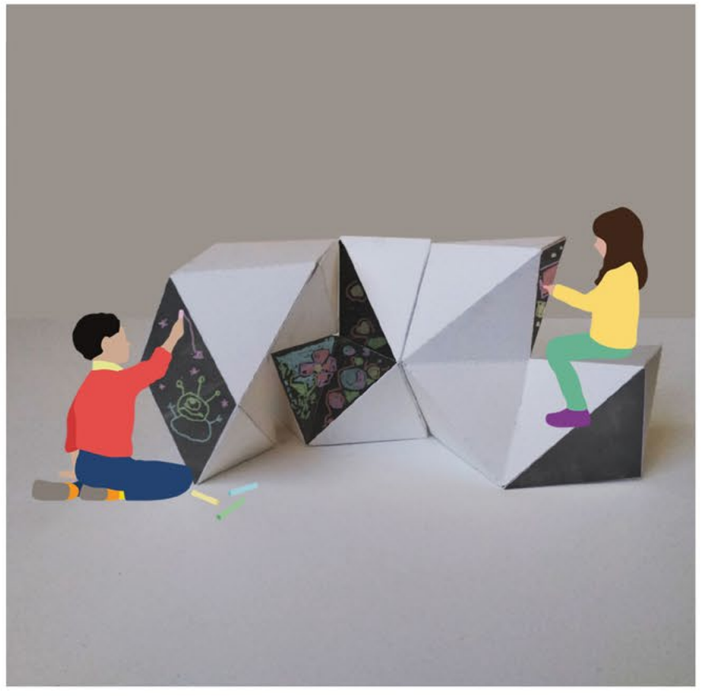


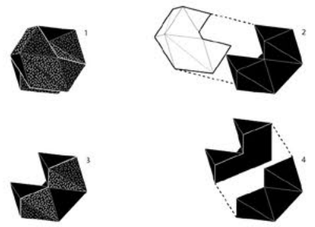

MADISON
CHANGE
WHAT





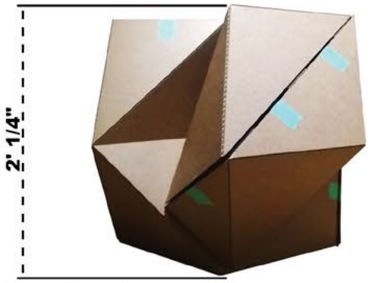




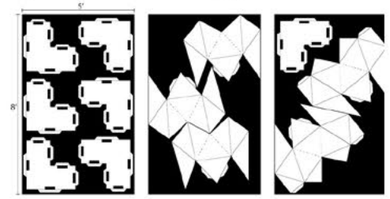


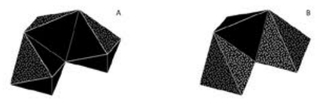
PROTOTYPING

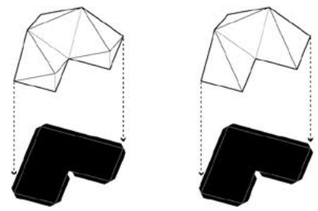
In order to make time, cost and resource assessments the modules were built at 1:1 scale. 5'x8' carboard sheets, utility knives, glue and painters tape were the materials used to complete the exercise.

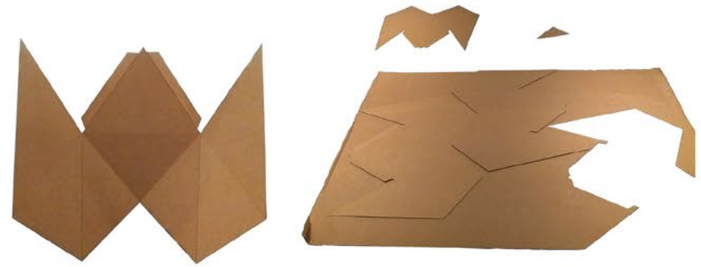


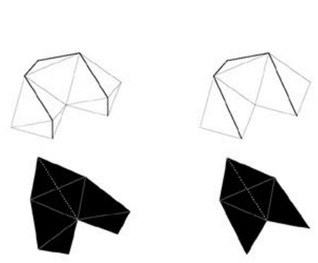
A full module is broken into halves, and then into quarters. There are two types of quarter pieces to create, both types of quarters need to be duplicated in order to create a 3D display. If only one is duplicated a 2D display is possible.

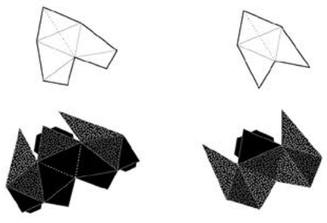












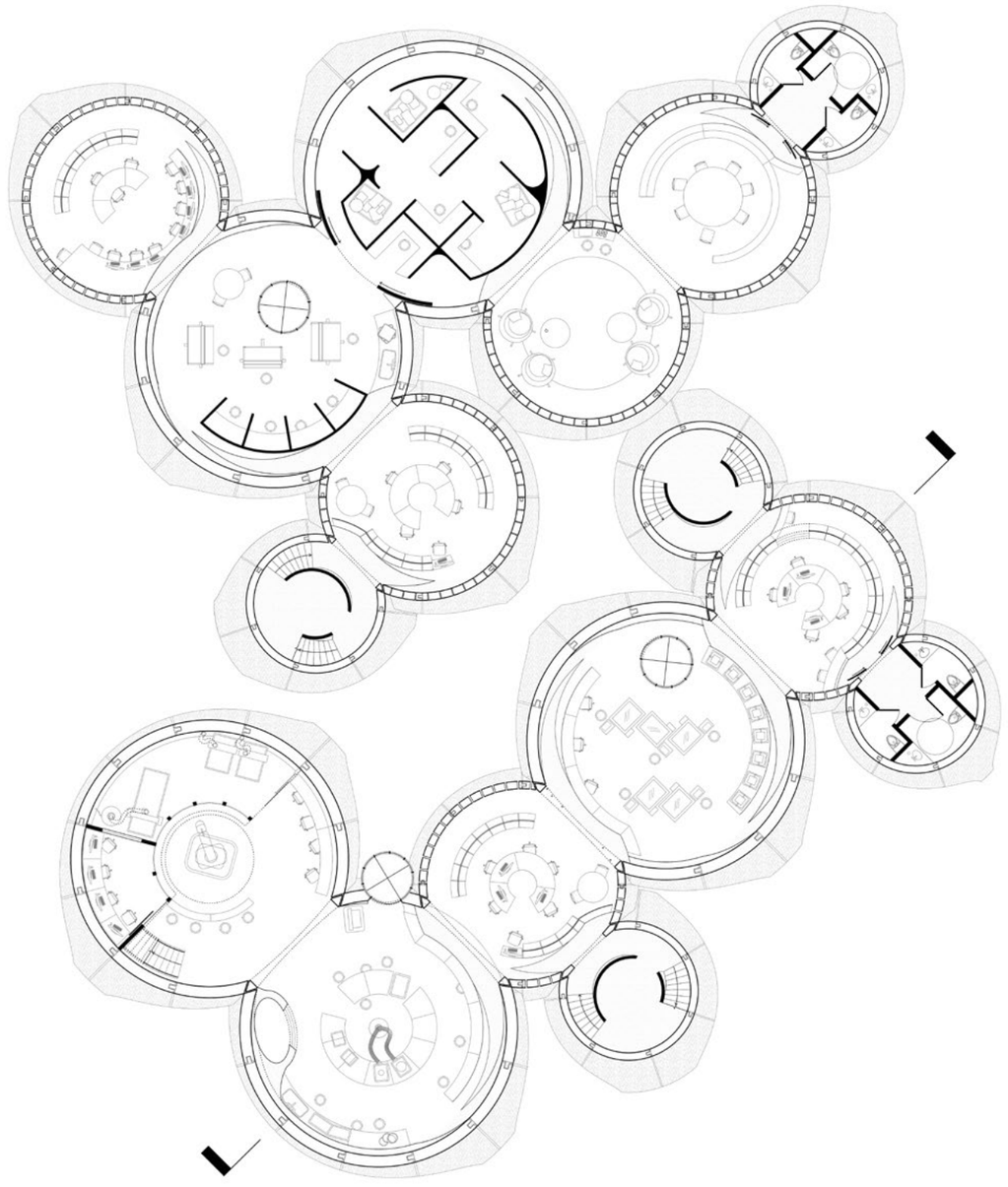
If the bases are made removeable the pieces can be flattened for storage. The pieces are folded along scored creases.

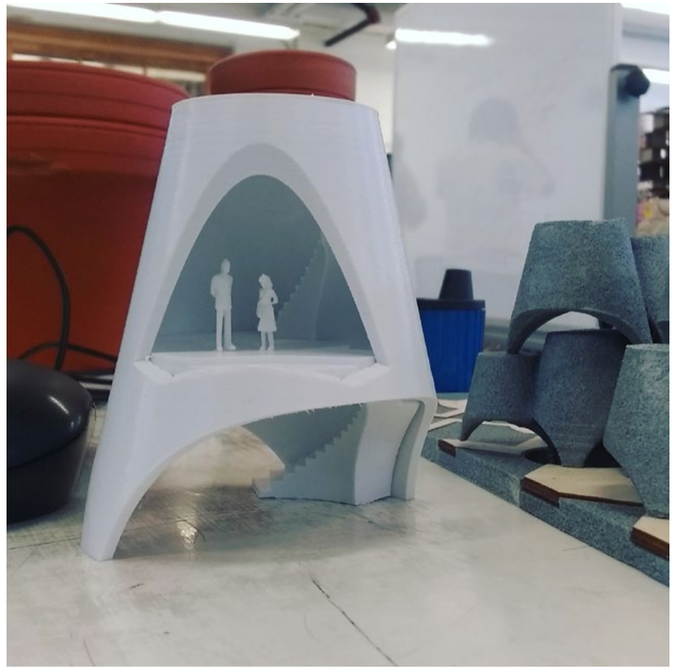
Under a $1000.00 (USD) budget, 100 sheets of corrugated carboard would yield app. 172 quarter modules and 43 full modules.

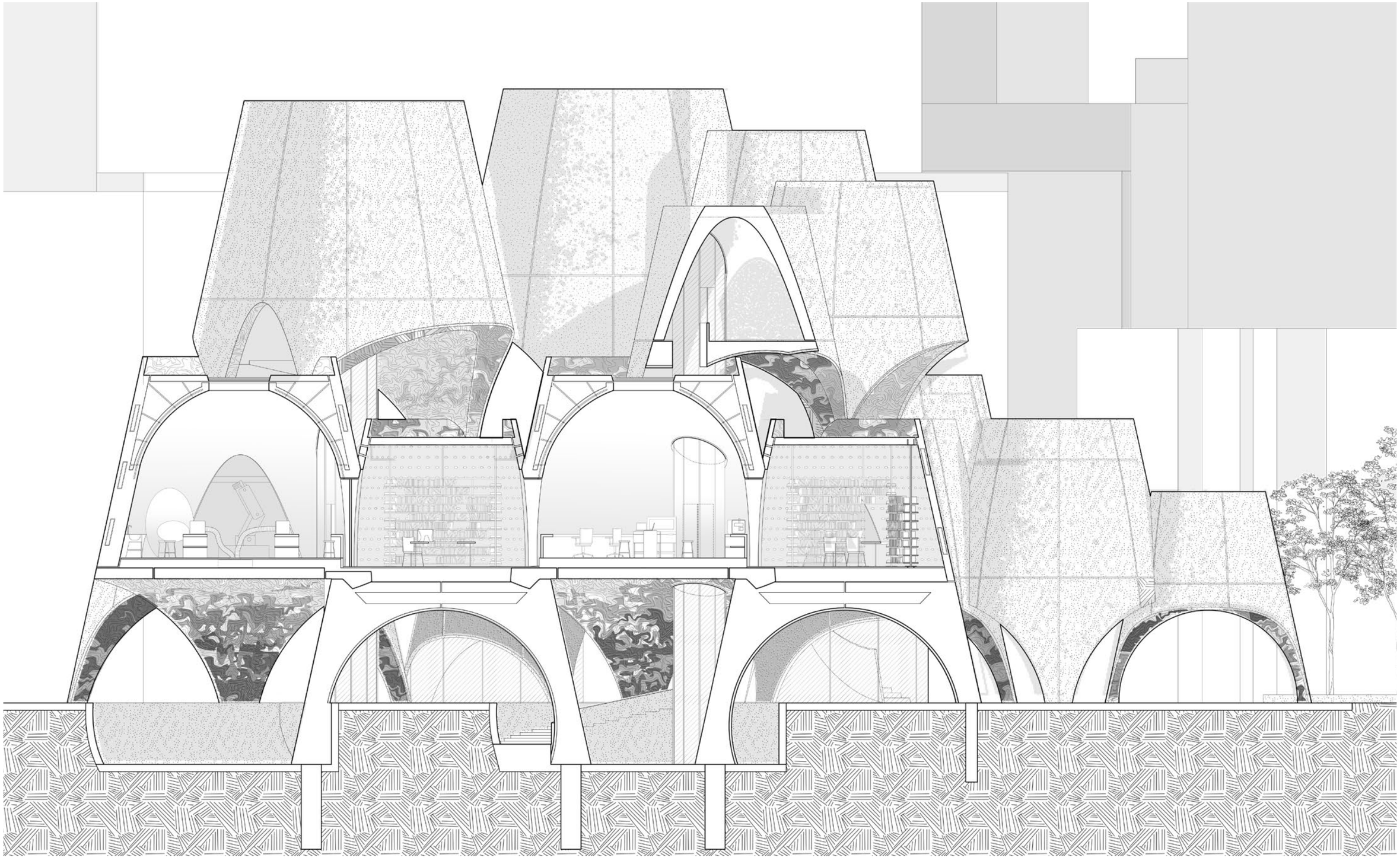
ROOSEVELT PARK PUBLIC LIBRARY -

The design for this public space explores notions of phenomenology as they relate to formal tectonics. Found objects, such as terracotta pots were notched and made to stack, relying on their own weight distributions and the locations of notches to stay upright. By exhausting the notching of these objects, new spatial arrangements gave way to poetic moments in a library.

Critic: Emmett Zeifman
Semester: Spring 2019







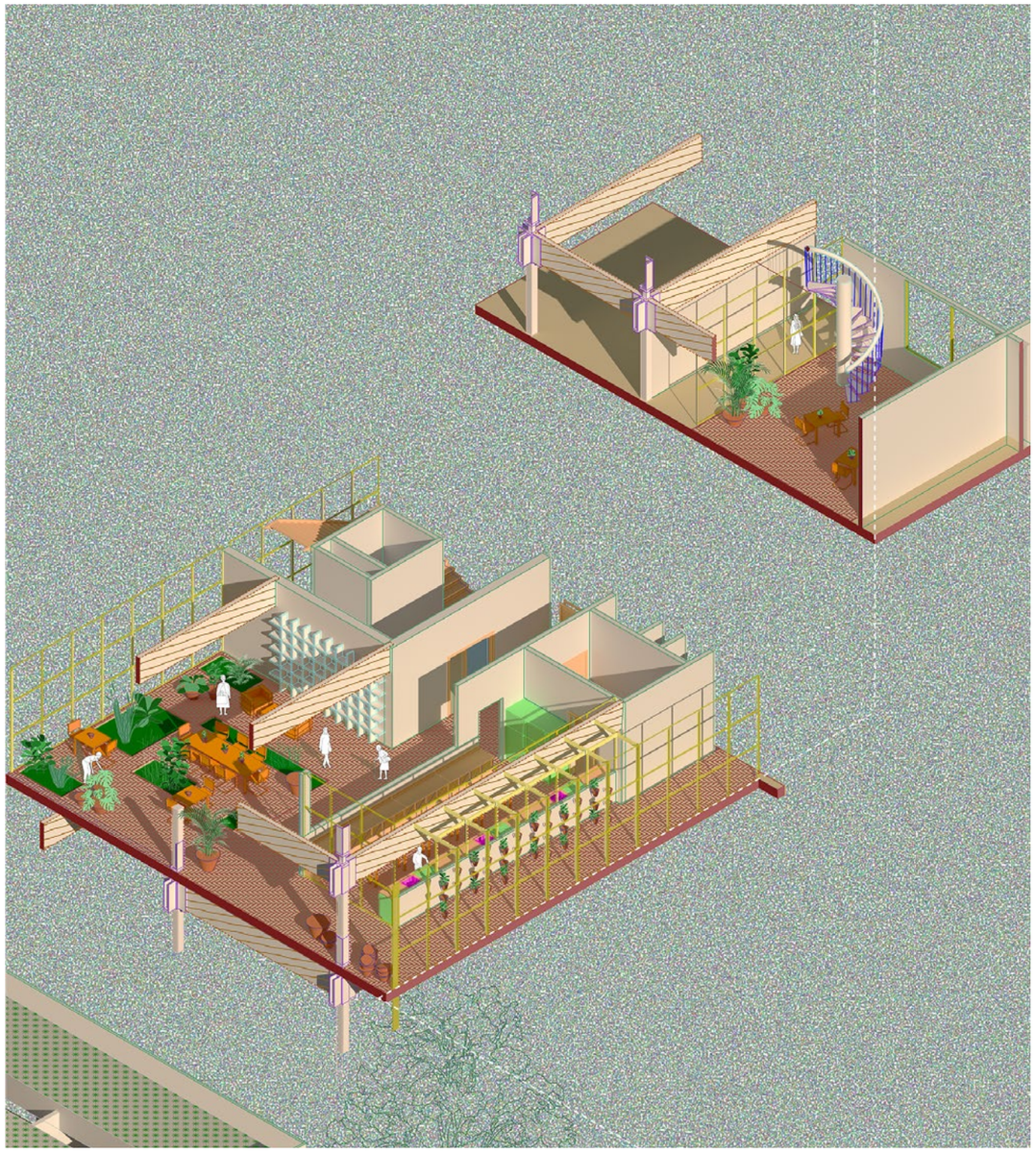
616 COURTLAND AVENUE, THE BRONX -

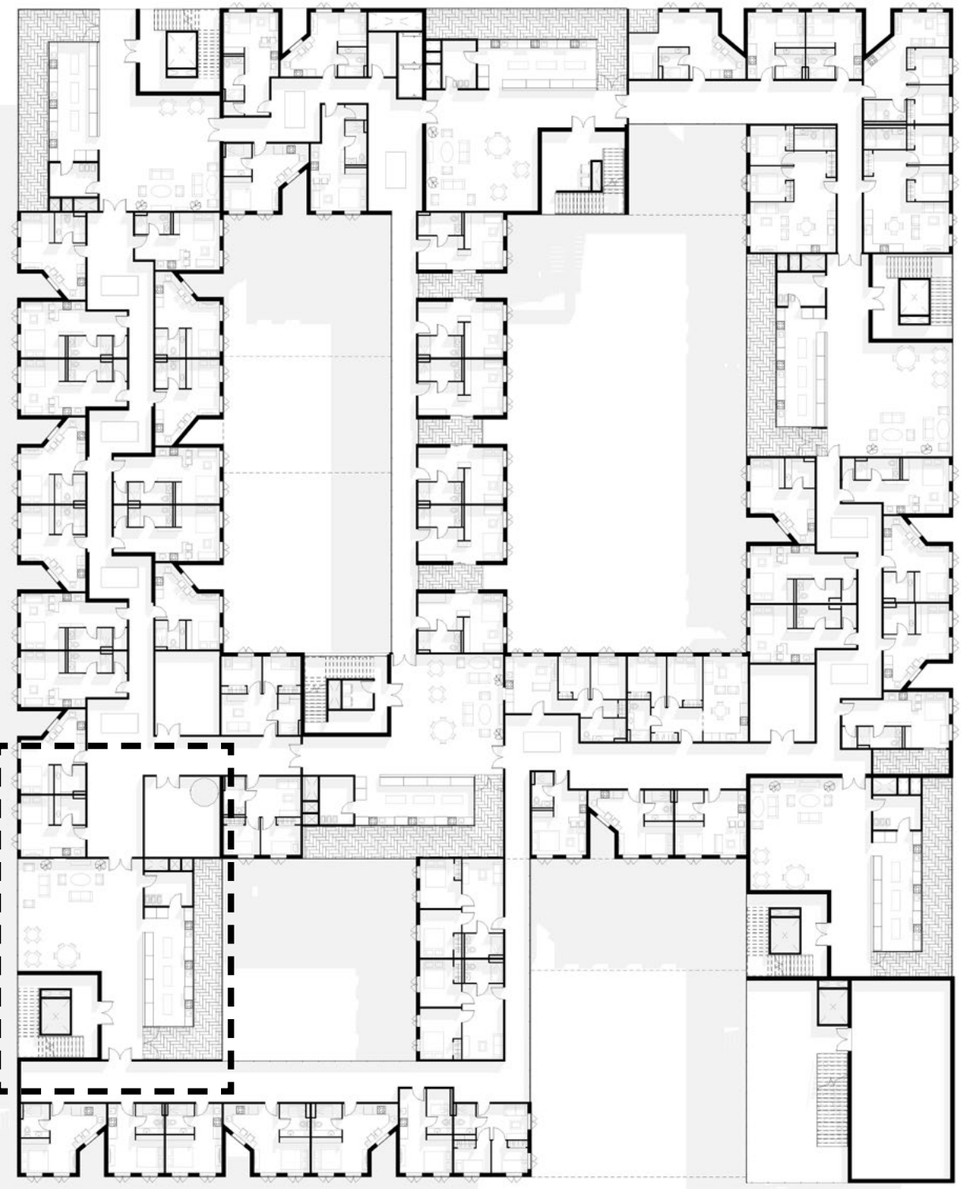
While the majority of the housing stock in New York is designed to suit the needs of a traditional nuclear family, it is important to recognize that these units may not suit the needs of New Yorkers with different lifestyles - the senior whose grown children have moved away, the young professional who's barely home and doesn't cook, or the artist who's willing to sacrifice their living area for work space. How can homes be redesigned to meet these new needs?

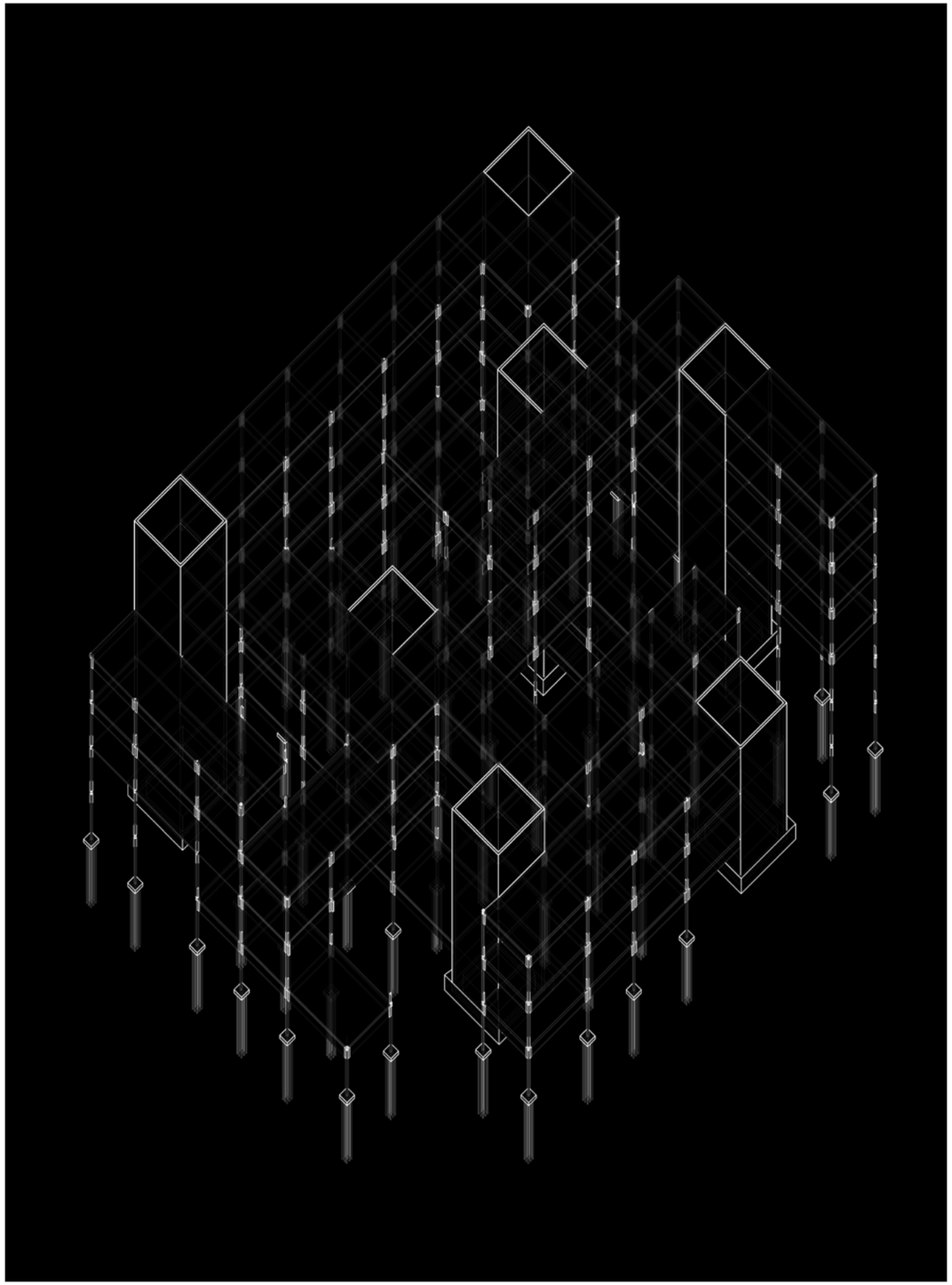
The project aims to use the courtyard typology to achieve different spatial conditions while maintaining a sense of scale, familiarity, and comfort. The 'courtyard' is redefined depending on the context within which it exists in the project: An intimate garden between two units; a larger auditorium that keeps space between the street and the inner ground floor of the complex; or an herb garden nestled at the helm of a communal kitchen.

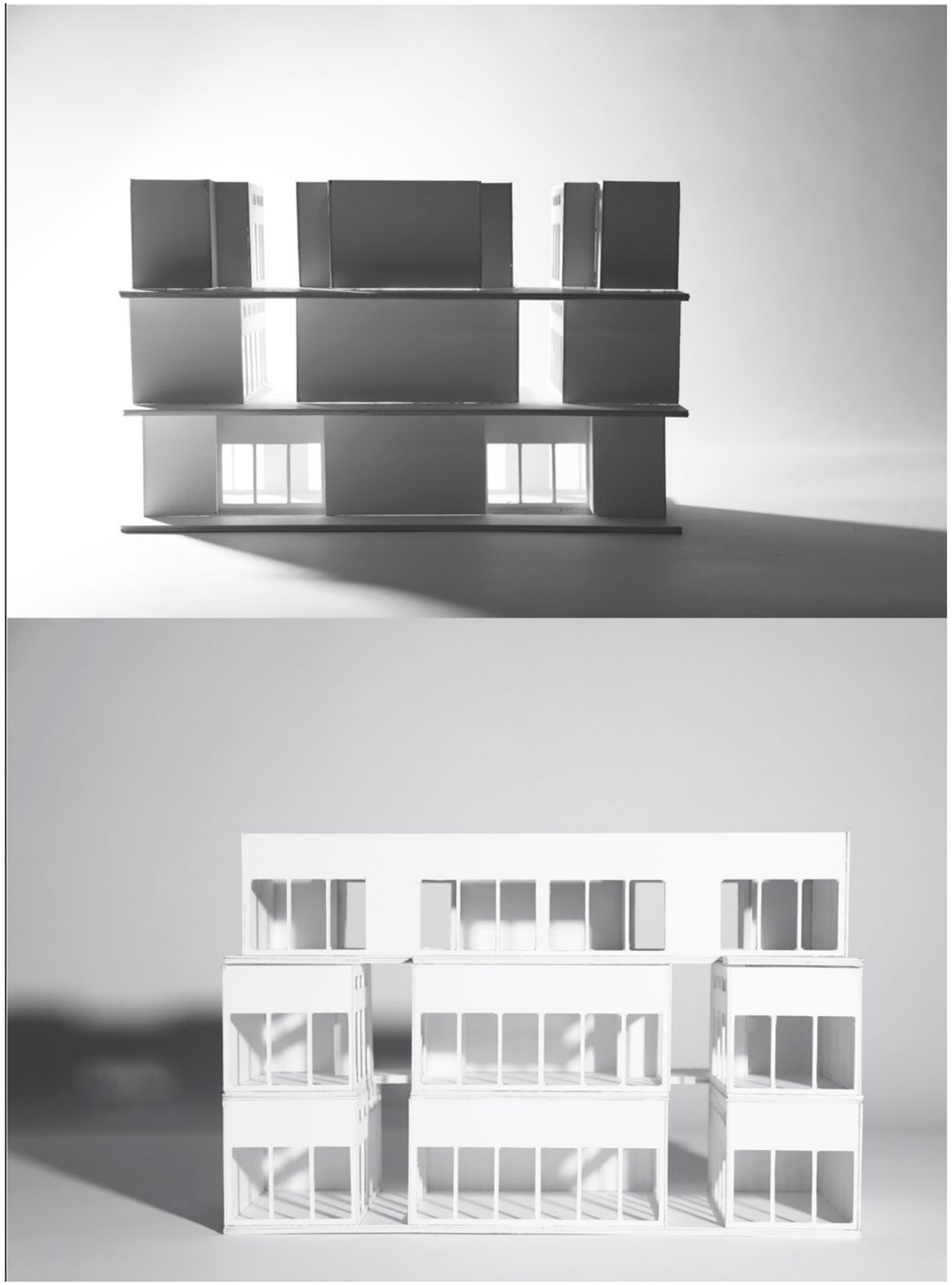
To improve cost efficiency and affordability, a prefab modular system with a basic tower and arm structural unit is adapted as the main framework by which expansion and reconfiguration might occur. The modules are arranged across the site to prioritize access to green space and sunlight.

Critic: Hilary Sample
Collaborator: Kassandra Lee Shuen
Semester: Fall 2019









FEEDBACK LOOP

A broadcast is a form of communication that reaches a large audience simultaneously. It is constructed, scripted and framed privately so that the viewers see only what is on display. It is then scattered into a public realm where it is accessible to anyone with a device to intercept it.

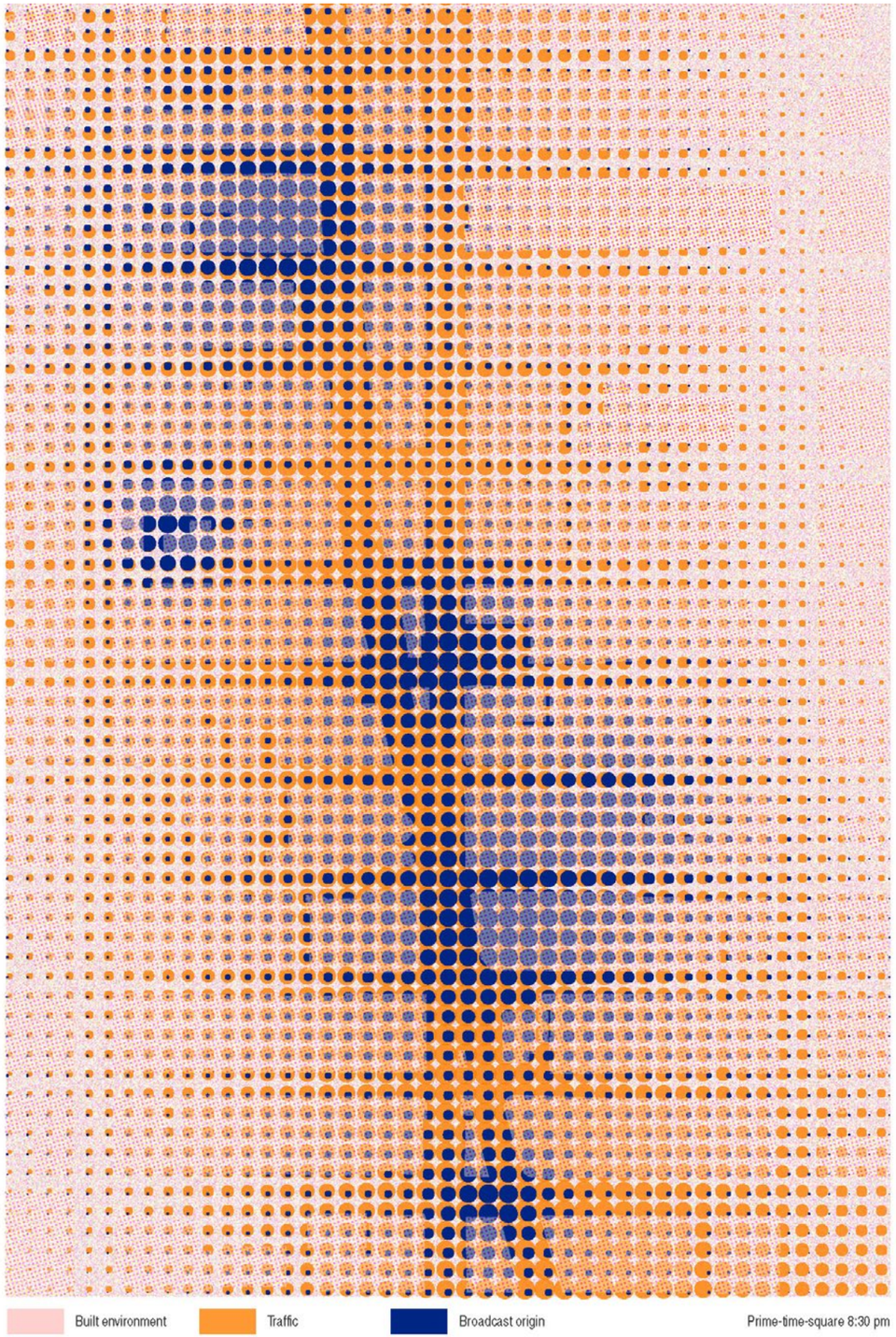
‘Feedback’ is an architectural typology that culminates from the notion of the broadcast as an agent of connection. It is a series of interventions that repurpose private waiting lobbies at broadcast facilities on Broadway Avenue because the spaces are grossly underused.

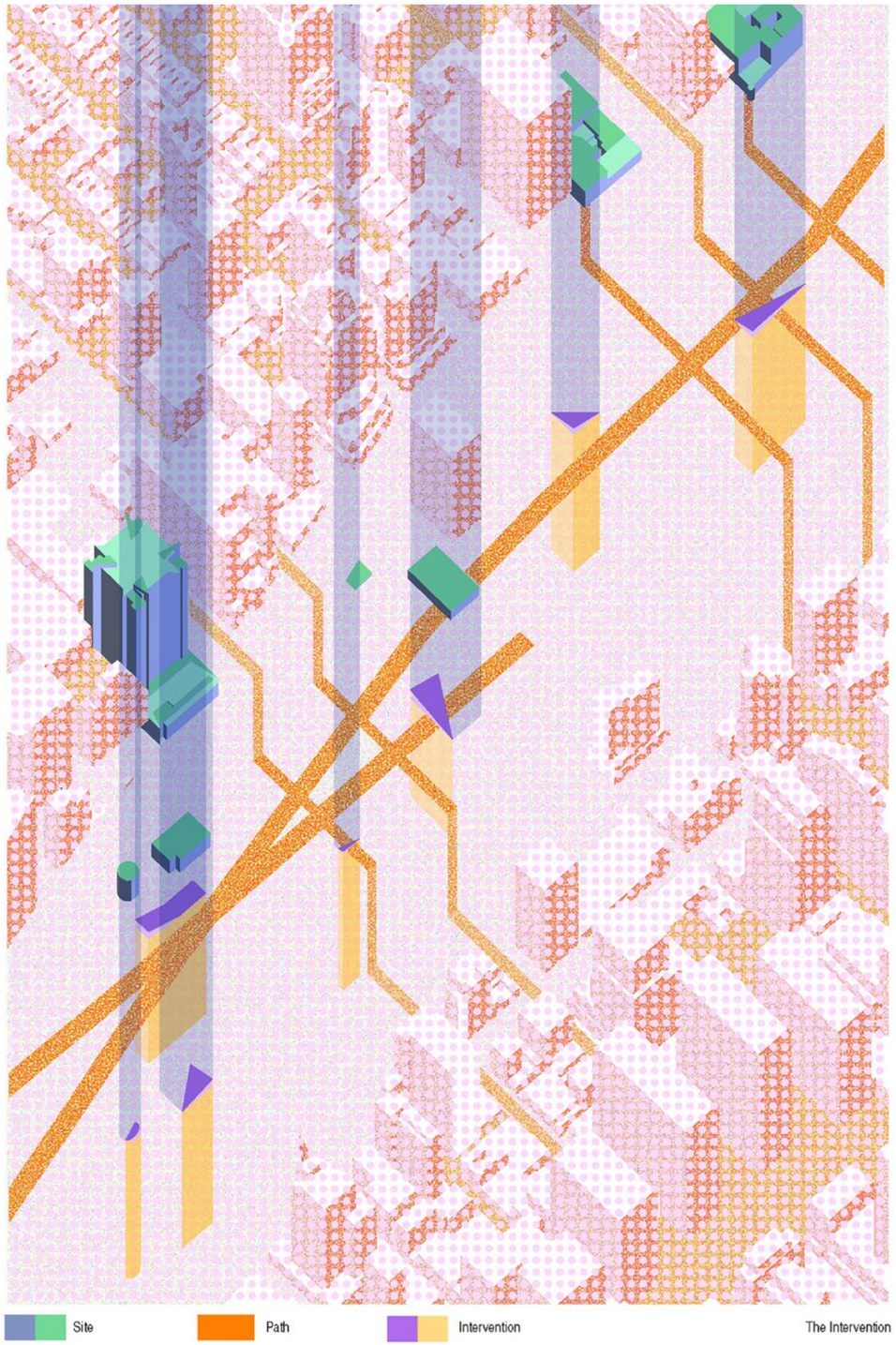
The design is derived by defining the audience and the performer in the context of public space and creating moments where each has an opportunity to engage leisure.

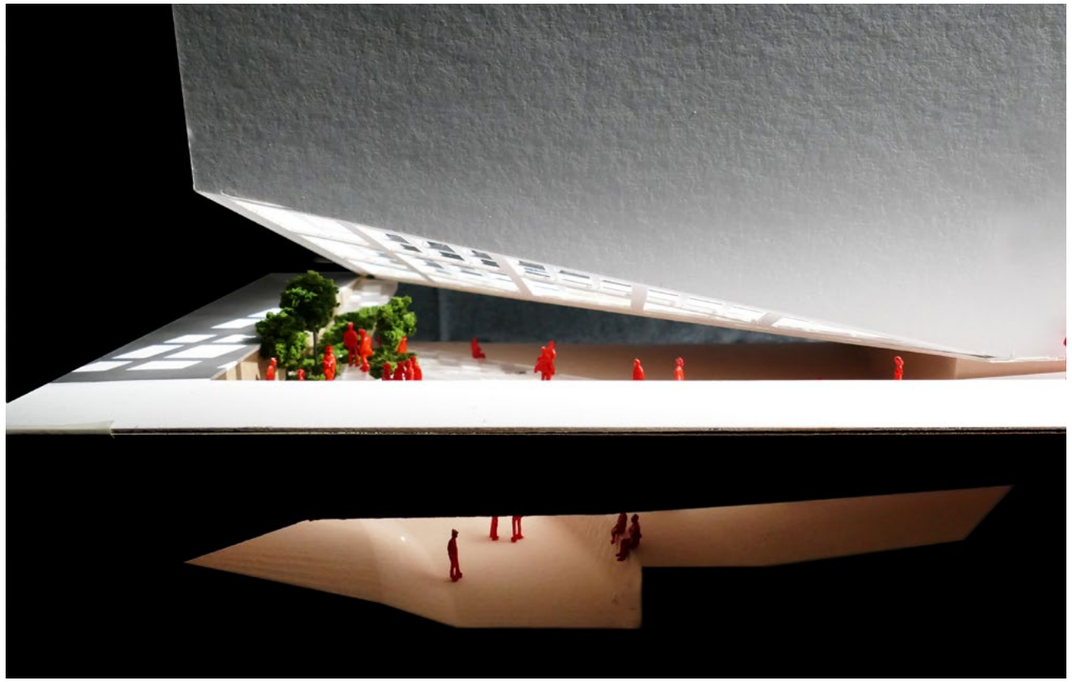
COLOURED DRAWING [RIGHT]

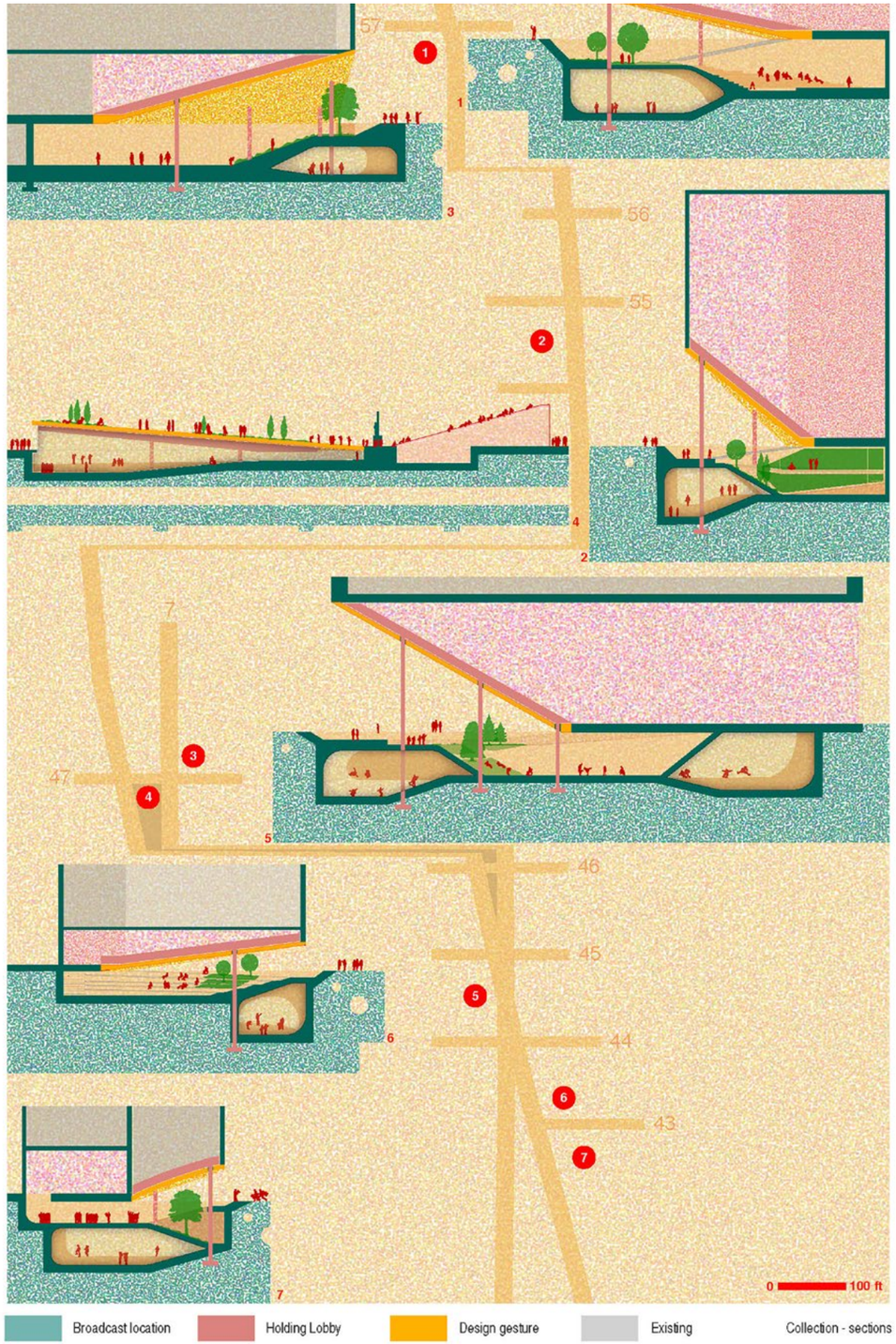
Prime-time-square 8:30 pm is a generative drawing created to represent the concentrations of information in and around time square. Colored cells that contain links to numerical data render the image, wherever anomalies occur the size of the respective “data dot” changes. These cells are exaggerated proportionally to clearly demonstrate the focus of the drawing.

Critic: Benjamin Cadena
Semester: Fall 2018




Site
Path
Intervention
The Intervention




57
56
55
47
46
45
44
43
7
1
2
3
4
5
6
7
0
100 ft
Broadcast location
Holding Lobby
Design gesture
Existing
Collection - sections

END