

S A R A H
BISIGNANO
Z A M L E R

*Columbia GSAPP M.Arch
Graduate Portfolio, 2021*

SYSTEMS	STRATEGIES	STUDIES	STRUCTURES
<p>Grow Culebra with Aria Ling critics: Richard Plunz & Doug Woodward Advanced IV</p> <p>04</p>	<p>Staying Power: An Anti-Eviction Toolkit with Nelson De Jesus Ubri critic: Laura Kurgan Advanced V</p> <p>17</p>	<p>Accumulation & Spread critic: Karla Rothstein Core II</p> <p>43</p>	<p>Nameless Theater with Alina Abouelenin, Shuang Bi, & Camille Brustlein</p> <p>52</p>
<p>Public Escape critic: Stephanie Lin Core III</p> <p>12</p>	<p>Marktown Futures critics: Justin G. Moore & Alicia O. Ajayi Advanced VI</p> <p>31</p>	<p>Expo 2000 Redux critic: Bika Rebek ADR I</p> <p>45</p>	<p>Archive of Absence critic: Karla Rothstein Core II</p> <p>56</p>

SYSTEMS

Grow Culebra
with Aria Ling
critics: Richard Plunz
& Doug Woodward
Advanced IV
04

Public Escape
critic: Stephanie Lin
Core III
12

STRATEGIES

STUDIES

STRUCTURES

Grow Culebra

with Aria Ling (UP)

critics: Richard Plunz & Douglas Woodward

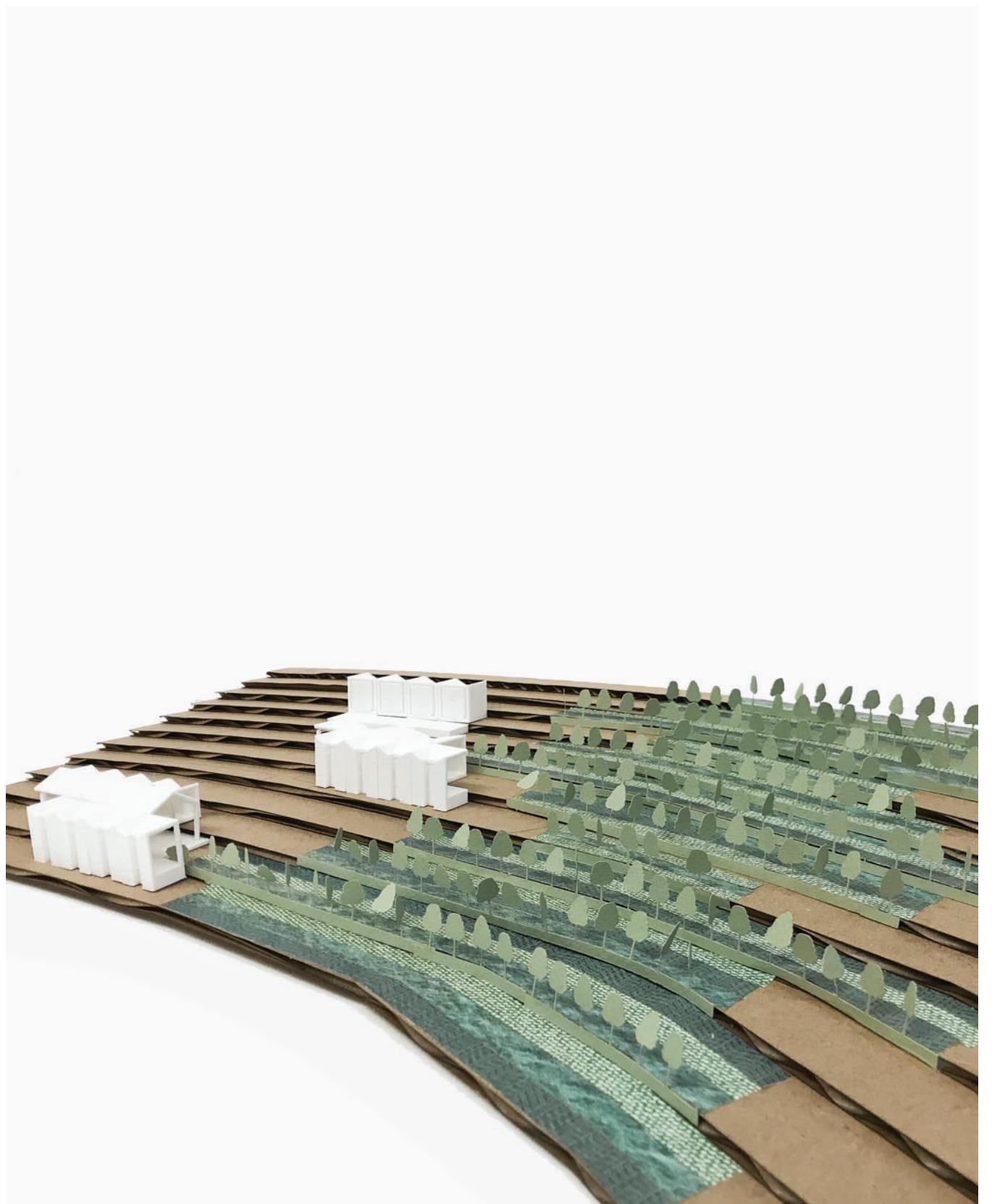
client: Dulce del Rio & Mujeres de Isla

advanced IV: Caribbean Reconstructions, Spring 2020

additional work: Footprint: Carbon & Design, Fall 2020

Grow Culebra is sited on a small island off the east coast of Puerto Rico's main land. Currently, Puerto Rico imports around 85% of their food and nearly all of Culebra's food supply must pass through the main island first, which leads to many obstacles and risks in the food supply chain. Additionally, the island's landfill is at capacity and without other strategies in place, it will continue to overflow and pollute the land.

Presently, food production is a small but growing interest on the island so our proposal aims to provide Culebra with an adaptable and scalable strategy for a more sustainable food system. We conducted an island-wide analysis to identify prime agricultural land that is well suited to new farming ventures. To support this industry growth, we've designed several modules which can combine to make market halls, composting facilities, greenhouses, tool sheds, and gathering places. These combinations are then distributed around the island to make a system of hyper local food production and organic waste recycling centers that can grow and expand as community participation does.

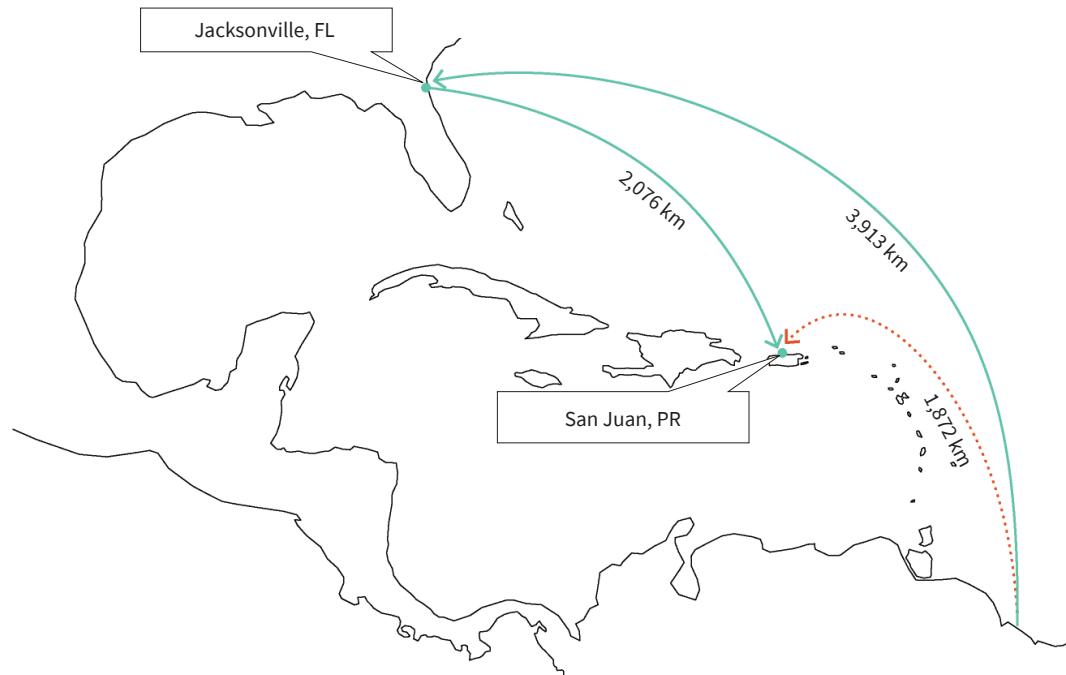


study model: 3d print, paper, cardboard

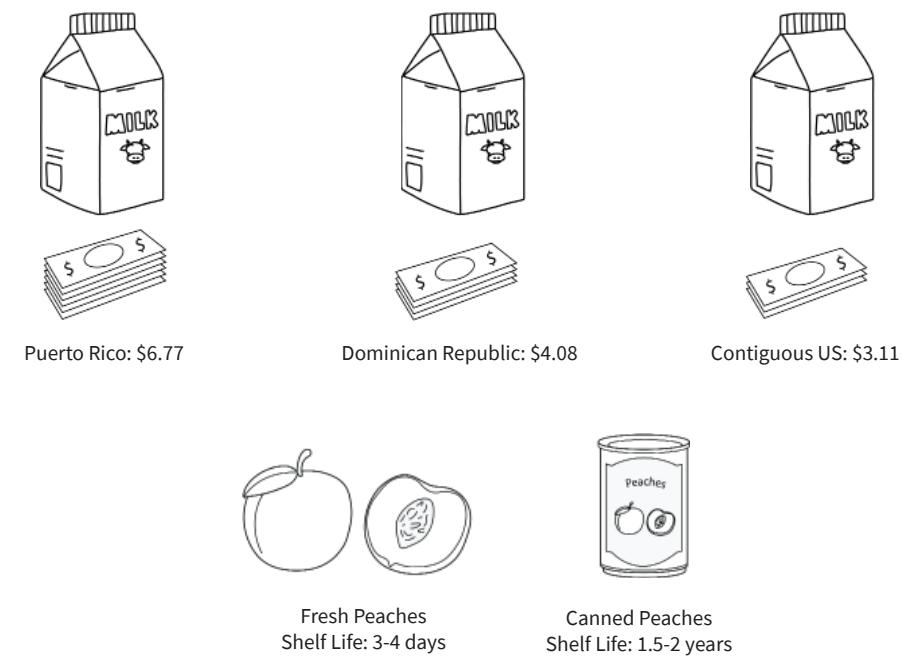
Around 85% of Puerto Rico's food is imported



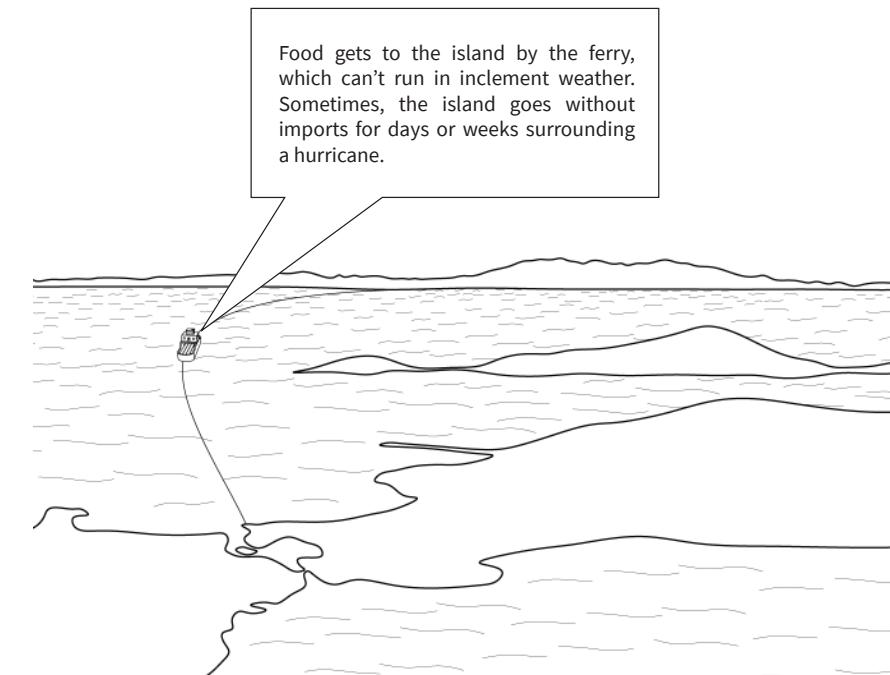
The Jones Act “bars foreign vessels from shipping goods between U.S. ports [which] adds shipping costs to imports of basic goods like food and fuel.” (Reuters, 2017)

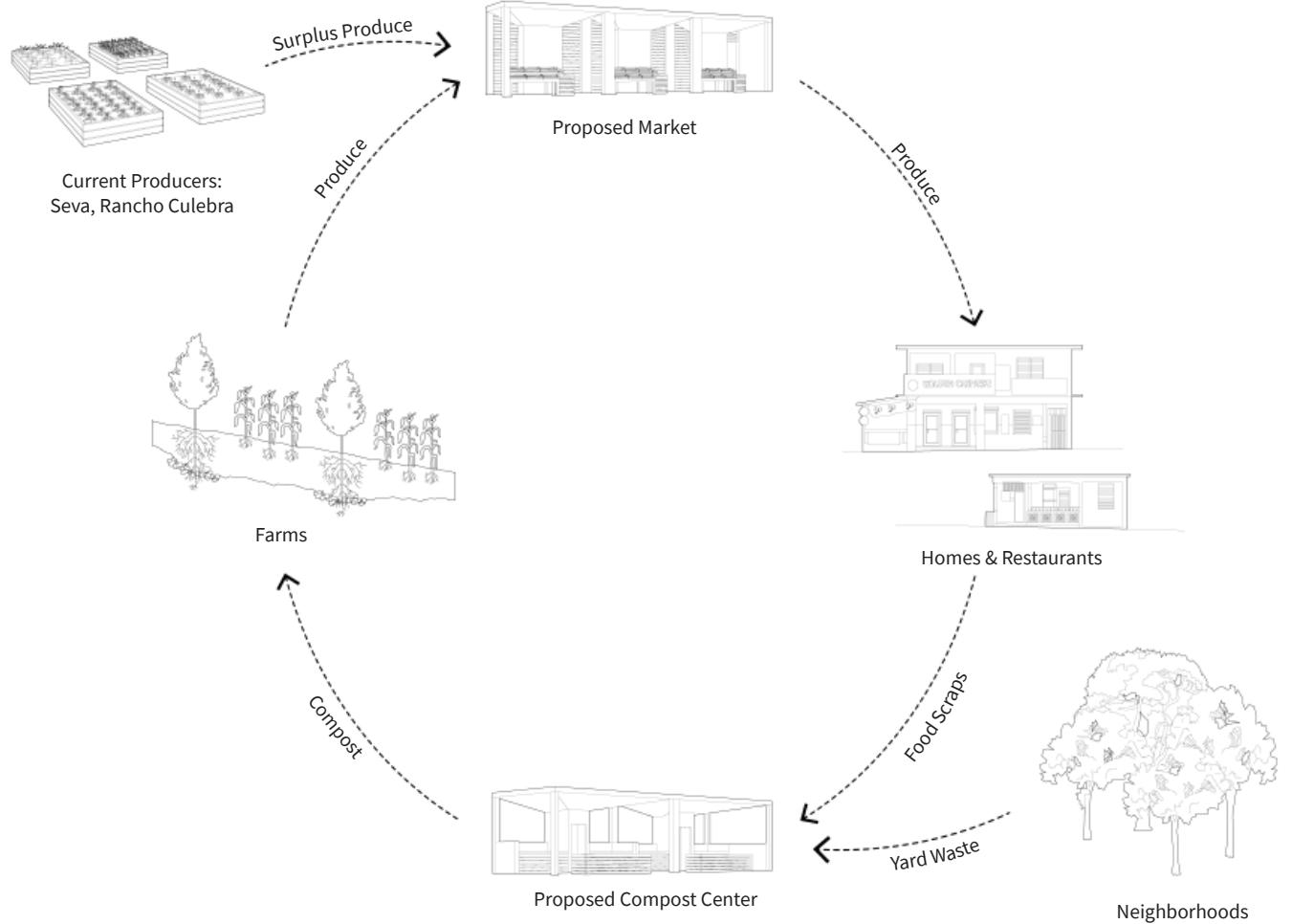


As a result, the costs of basics are inflated and access to fresh food can be limited

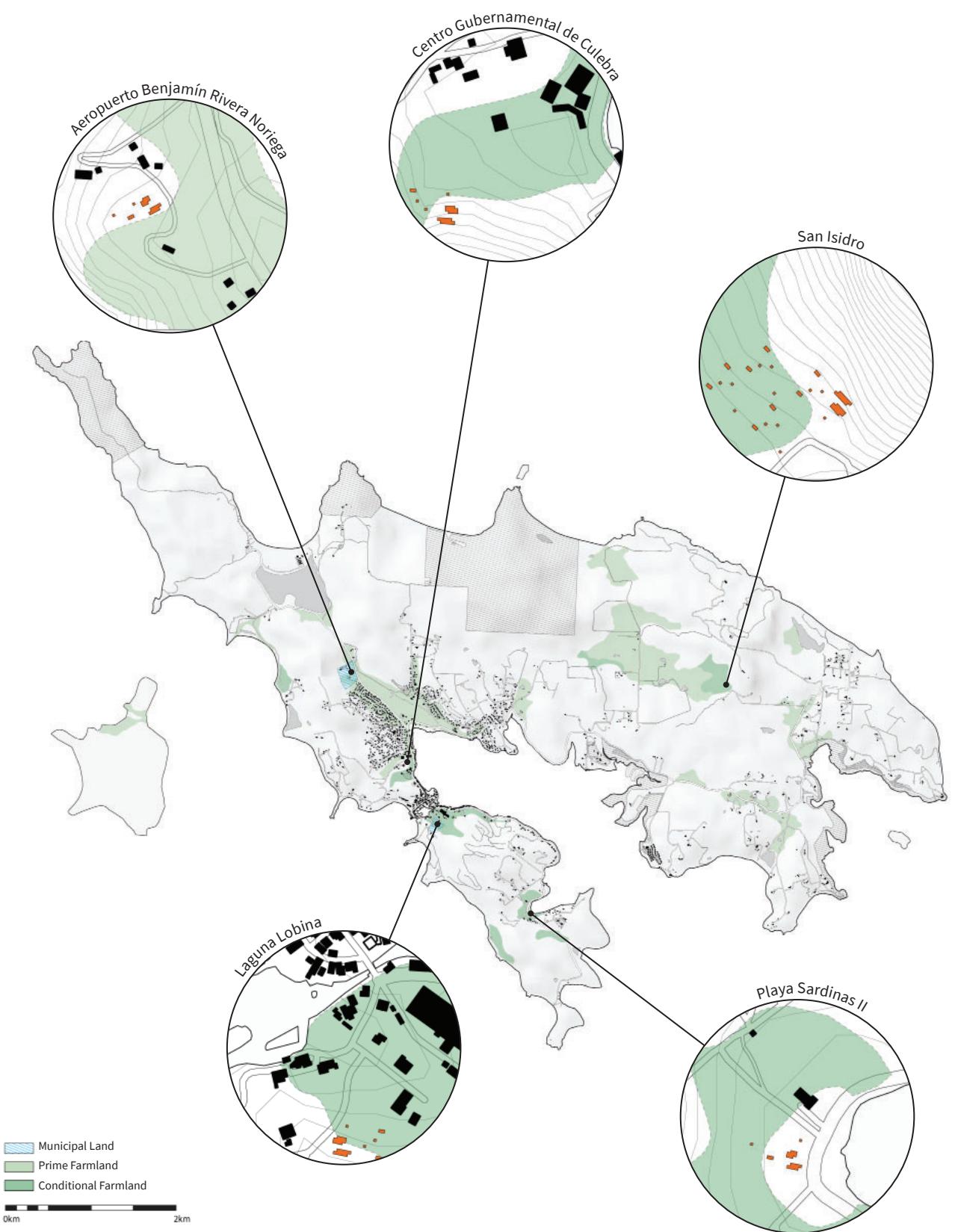


Additionally, the supply chain is vulnerable to extreme weather

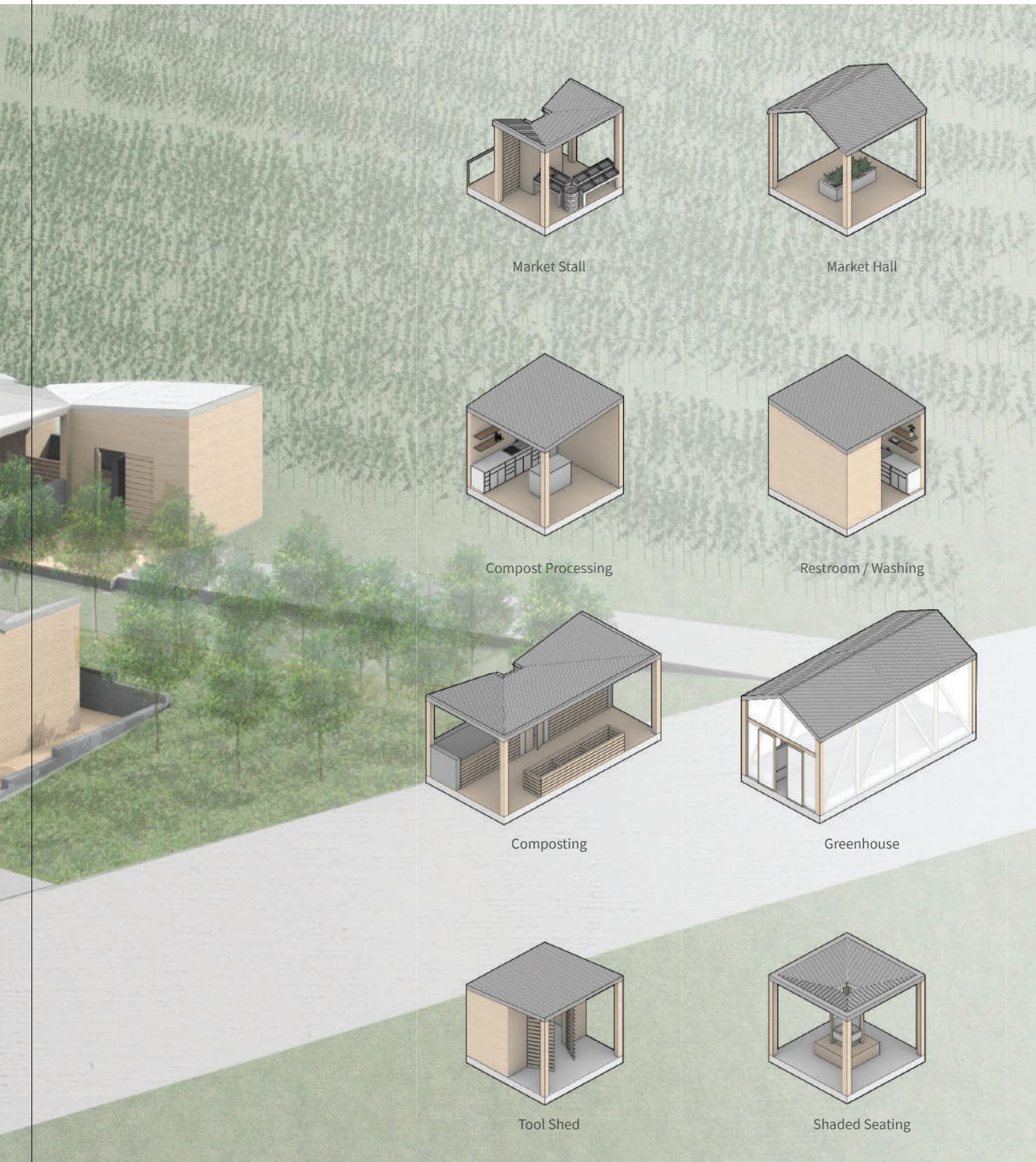




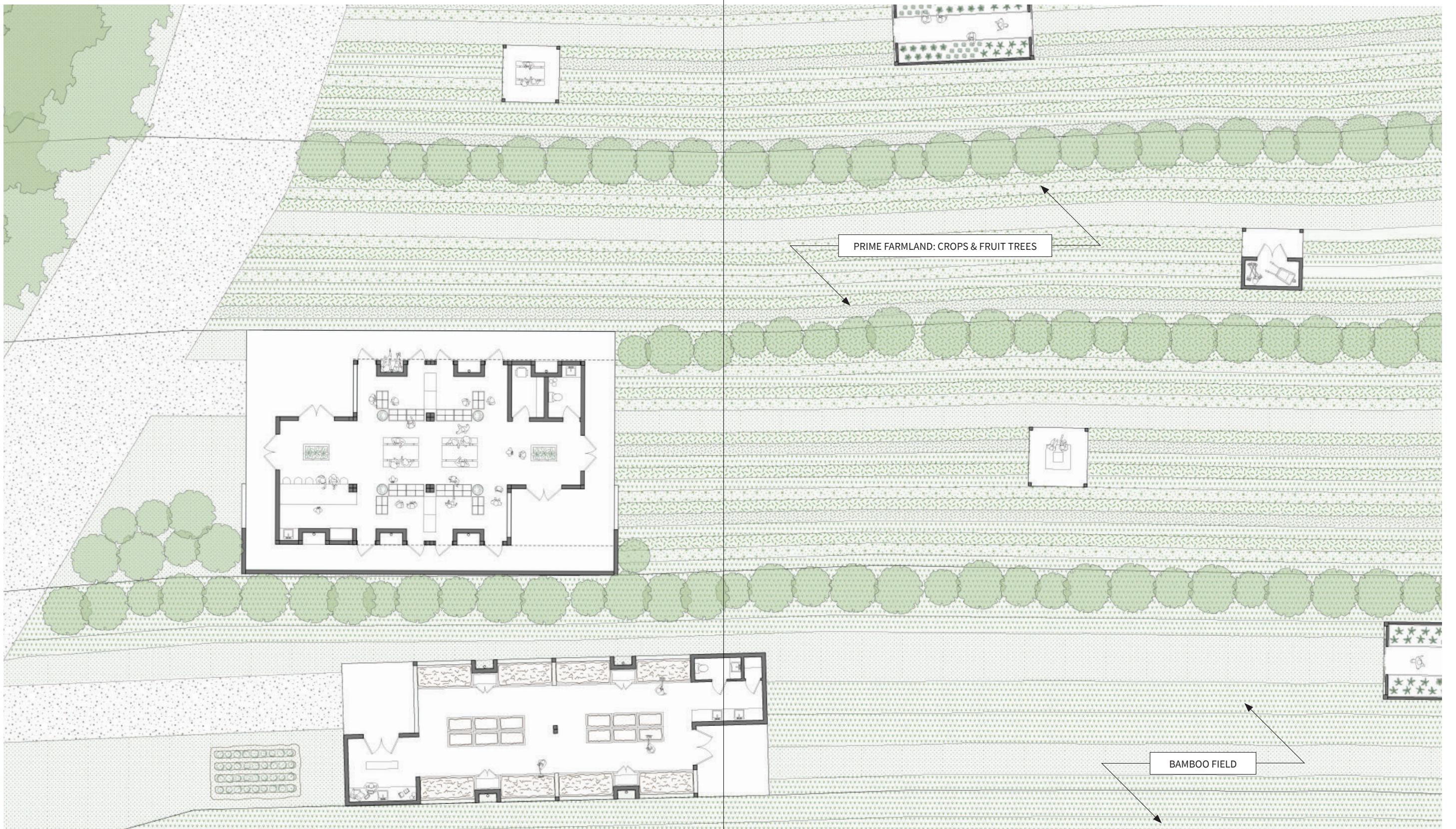
proposed system diagram



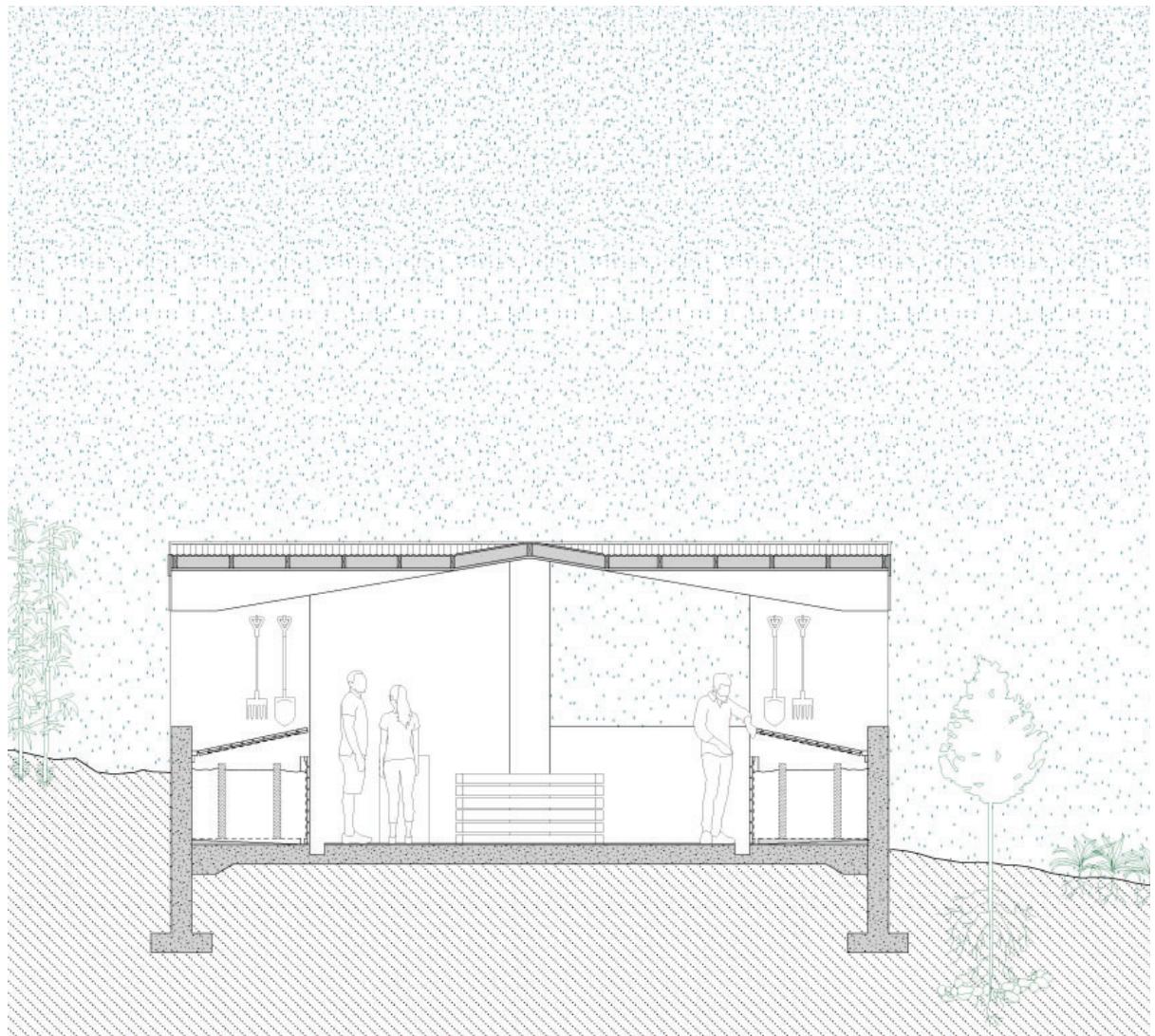
mapping the proposed locations for Grow Culebra centers



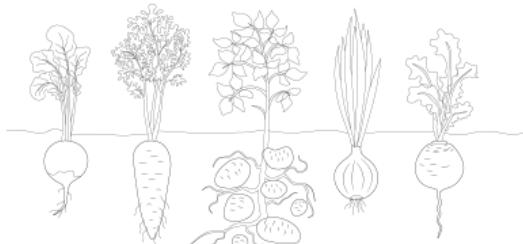
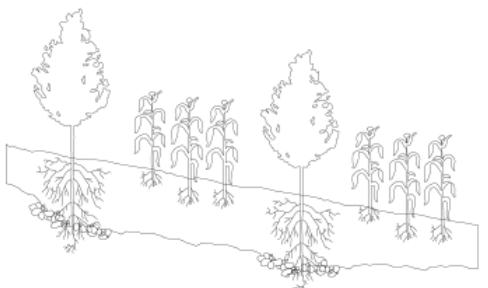
Laguna Lobina Grow Culebra Center & component modules



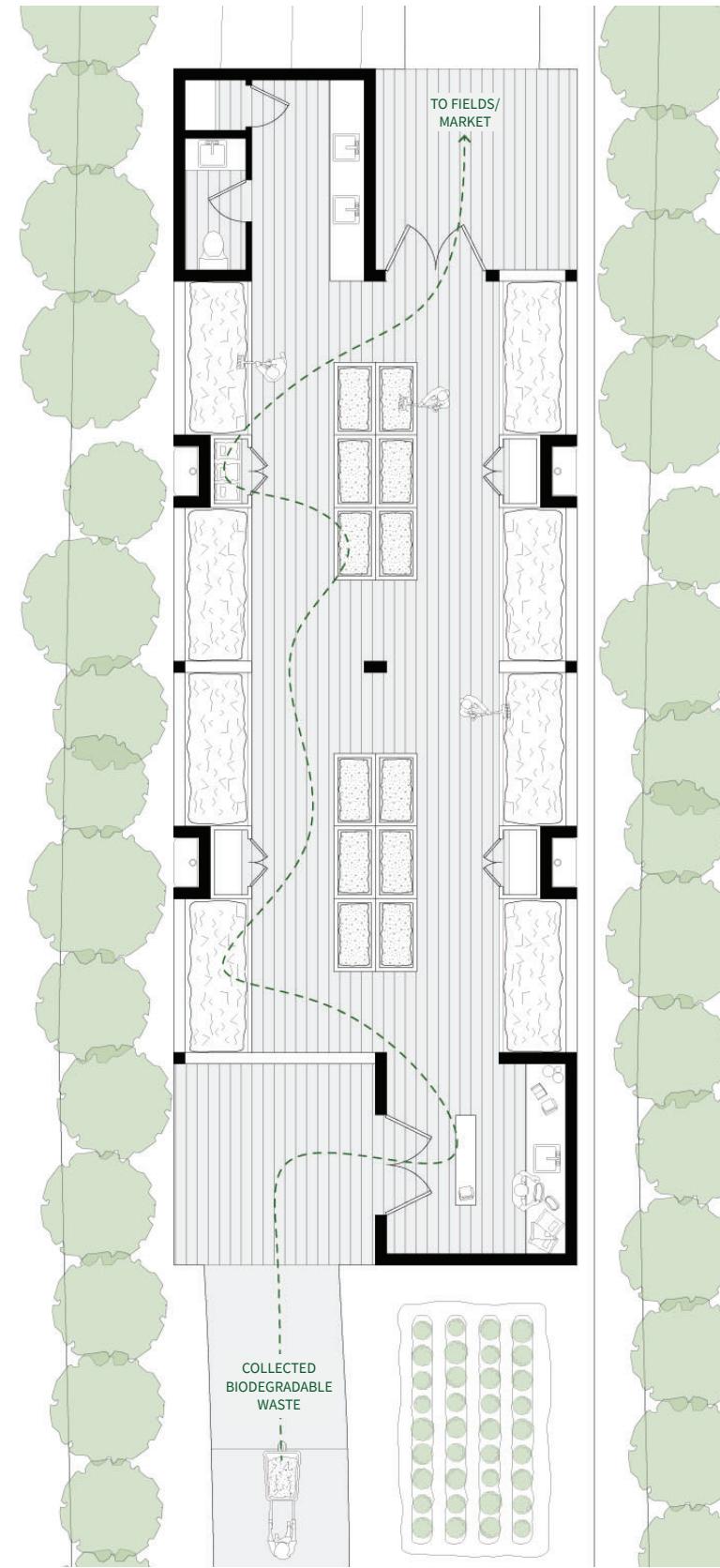
Laguna Lobina Grow Culebra Center, site plan



ALLEY CROPPING & ROOT VEGETABLES
STABILIZE SOIL & WITHSTAND EXTREME WEATHER



composting center, section

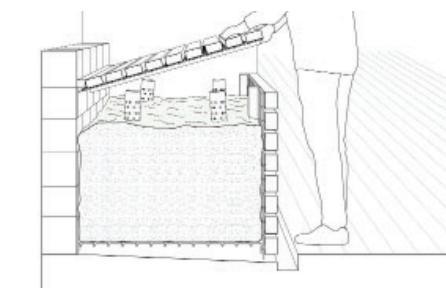


1.) SORT, SCREEN, AND WEIGH WASTE
Remove any non-biodegradable waste.
Mix waste using a 25:1 carbon nitrogen ratio

2.) COMPOST BOX: 45-50 DAYS
Place mixed compost into box
with aeration tubes



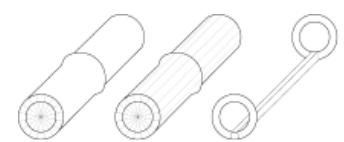
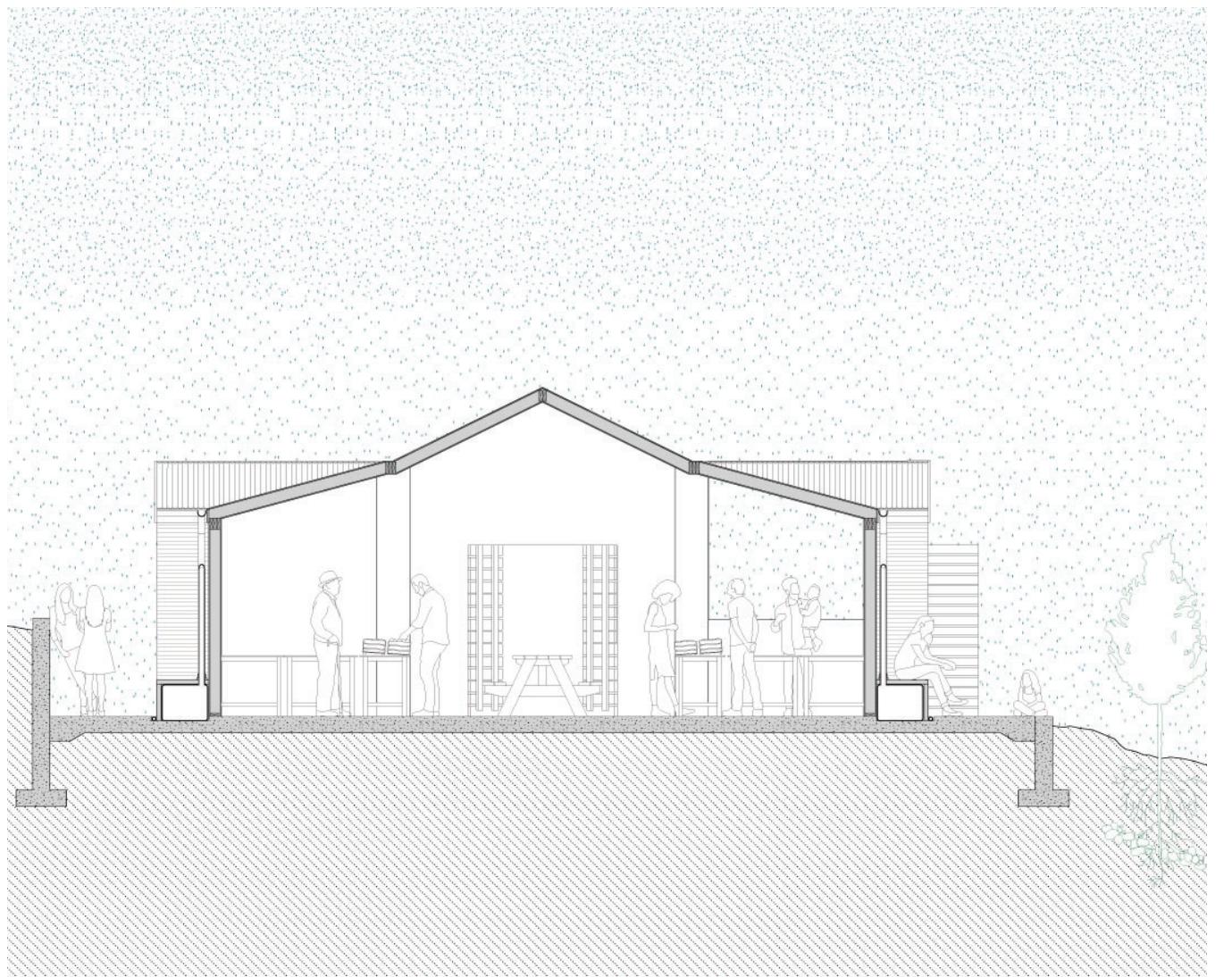
3.) MATURING BOX: 15-20 DAYS
Boxes should be subdivided to allow
for a consistent input stream



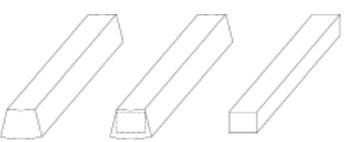
4.) STORE FINISHED COMPOST
Dry product using sunlight or blowers,
then bag or take to field for use



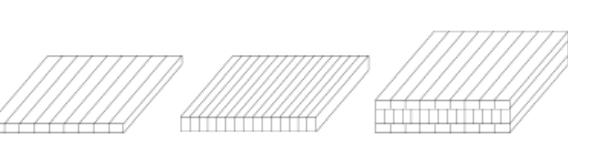
composting center, sample plan



1.) TREAT WITH BORIC ACID,
SPLIT BAMBOO INTO STRIPS

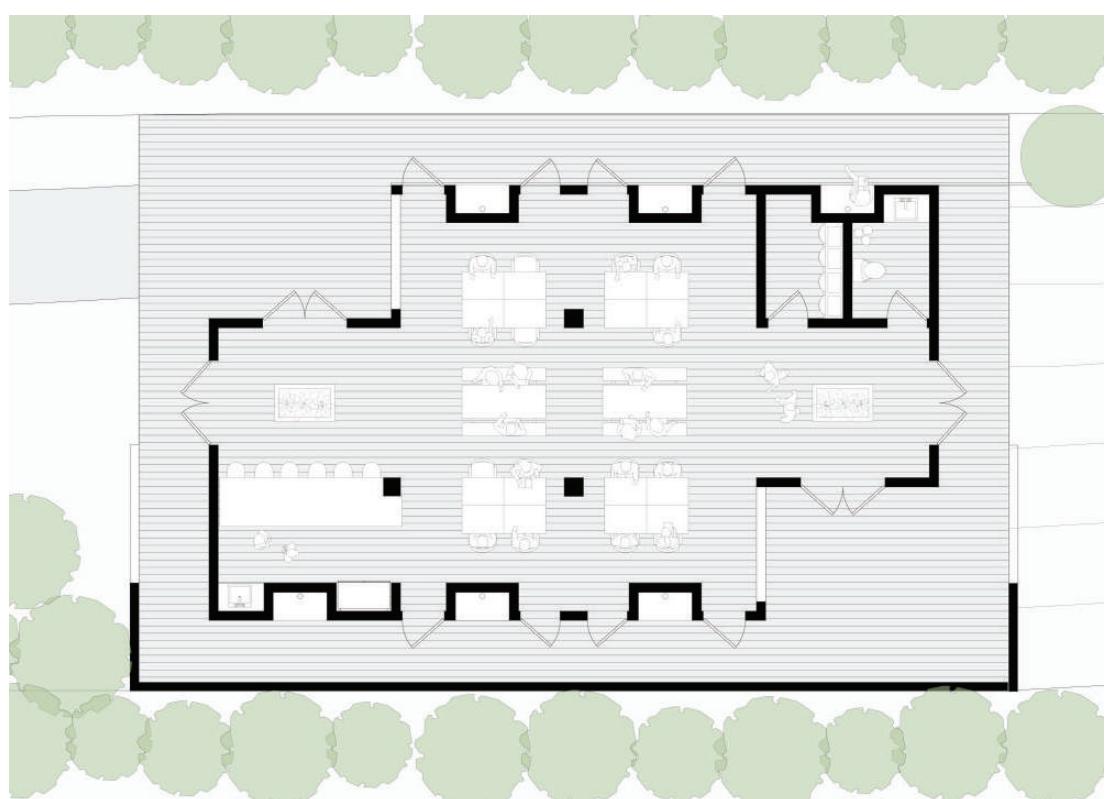
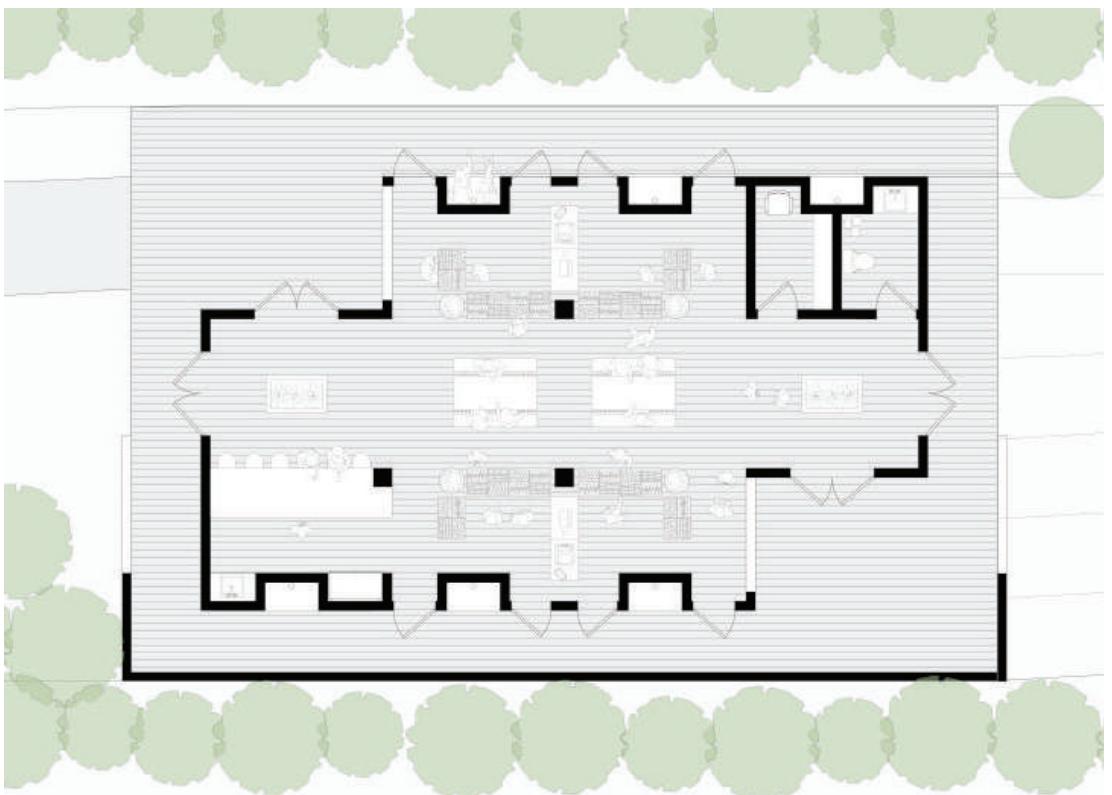


2.) PLANE STRIPS INTO
RECTANGLES



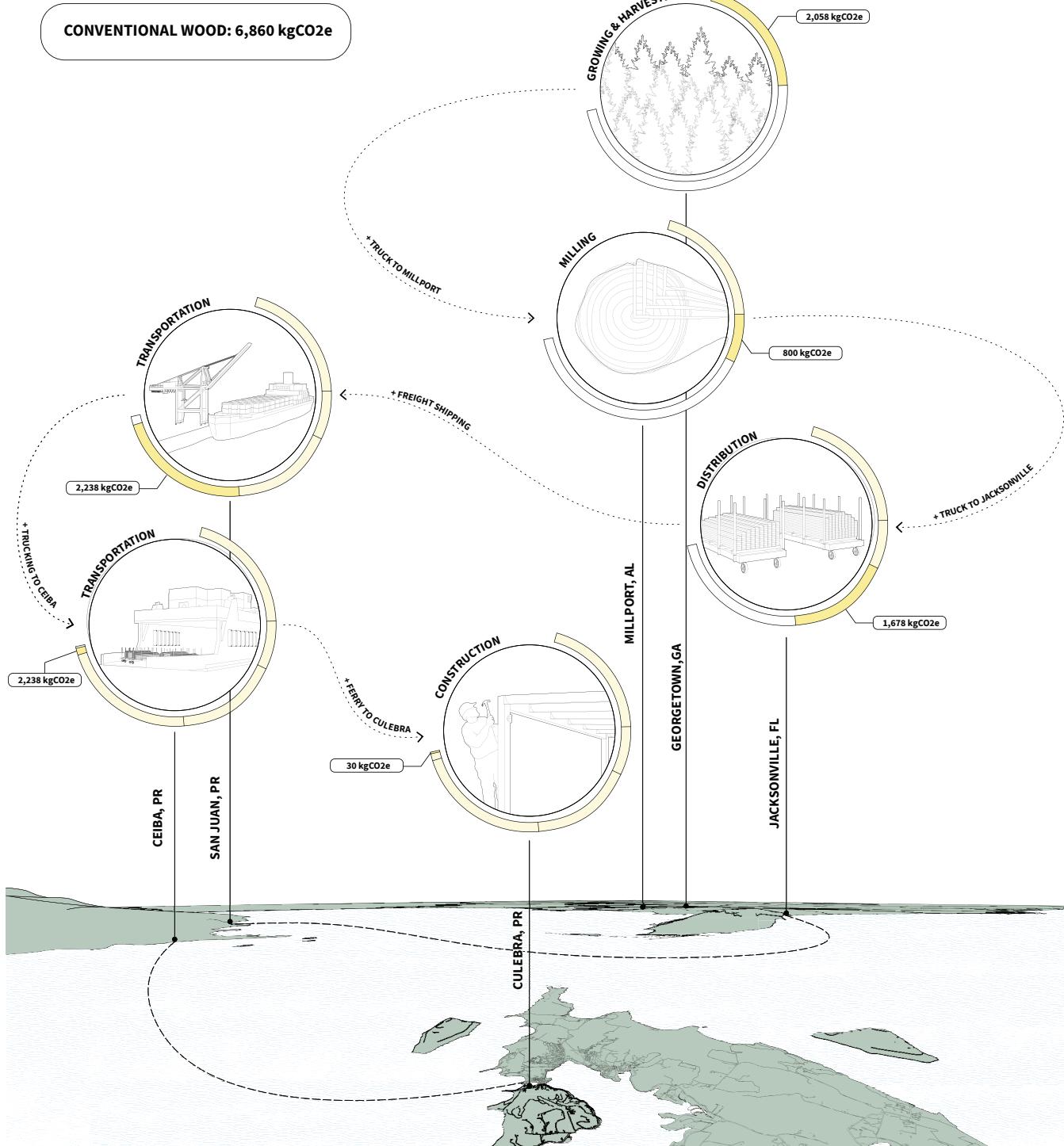
3.) LAMINATE HORIZONTALLY,
VERTICALLY, AND STACK

LAMINATED BAMBOO
A MORE STORM-RESILIENT WOOD

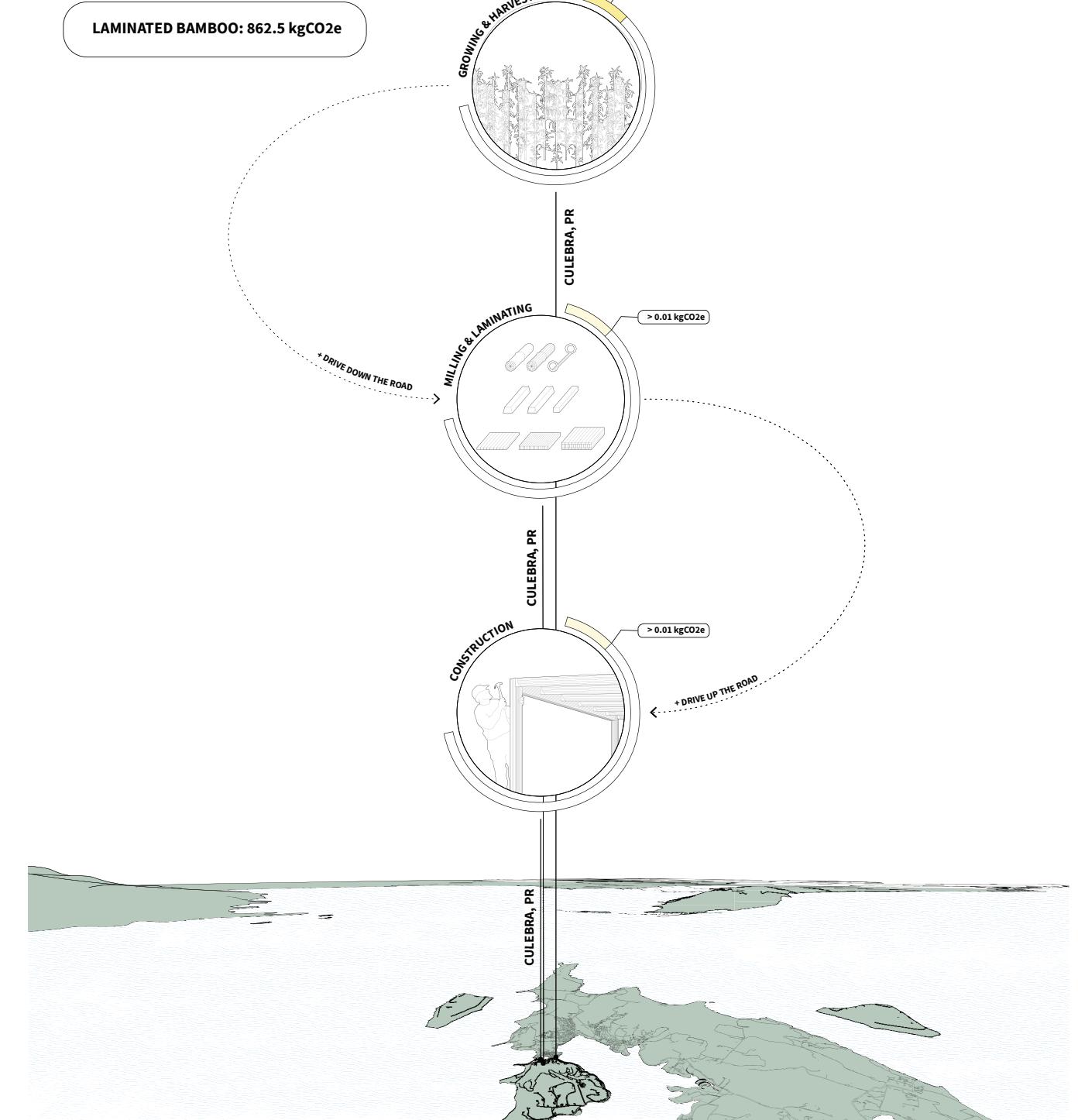


market hall, section

market hall, sample plans in market & gathering configurations



carbon footprint analysis, conventional wood



carbon footprint analysis, local bamboo

Public Escape

critic: Stephanie Lin

core I: Broadway Stories, Fall 2018

“...Something fundamental has changed in the way in which we see, or fail to see, the world.”

*-Jonathan Crary,
24/7, Late Capitalism and the Ends of Sleep*

Public Escape focuses on the area of Broadway around Madison Square Park and its history as a center of image production. Currently, the neighborhood is characterized by a wide range of disparate programs, spanning from high end hotels to manufacturing.

Despite their adjacency, these programs largely operate without overlap. As a response to this disconnect, the intervention fills the space behind and between existing buildings with a network of pathways and flex spaces—referencing New York City fire escapes—in order to bridge the gap both physically and socially.

In conversation with the area’s legacy of image production, the pathways are shrouded in a system of cables that create a unique visual experience. The shifting alignment of cables obscure and reveal as one moves through the space, occasionally peeling back to allow views across the void and out into the city. This intervention aims to disrupt our current mode of perception and in this disruption encourage a searching to discover new spaces, new visual experiences, and new connections.

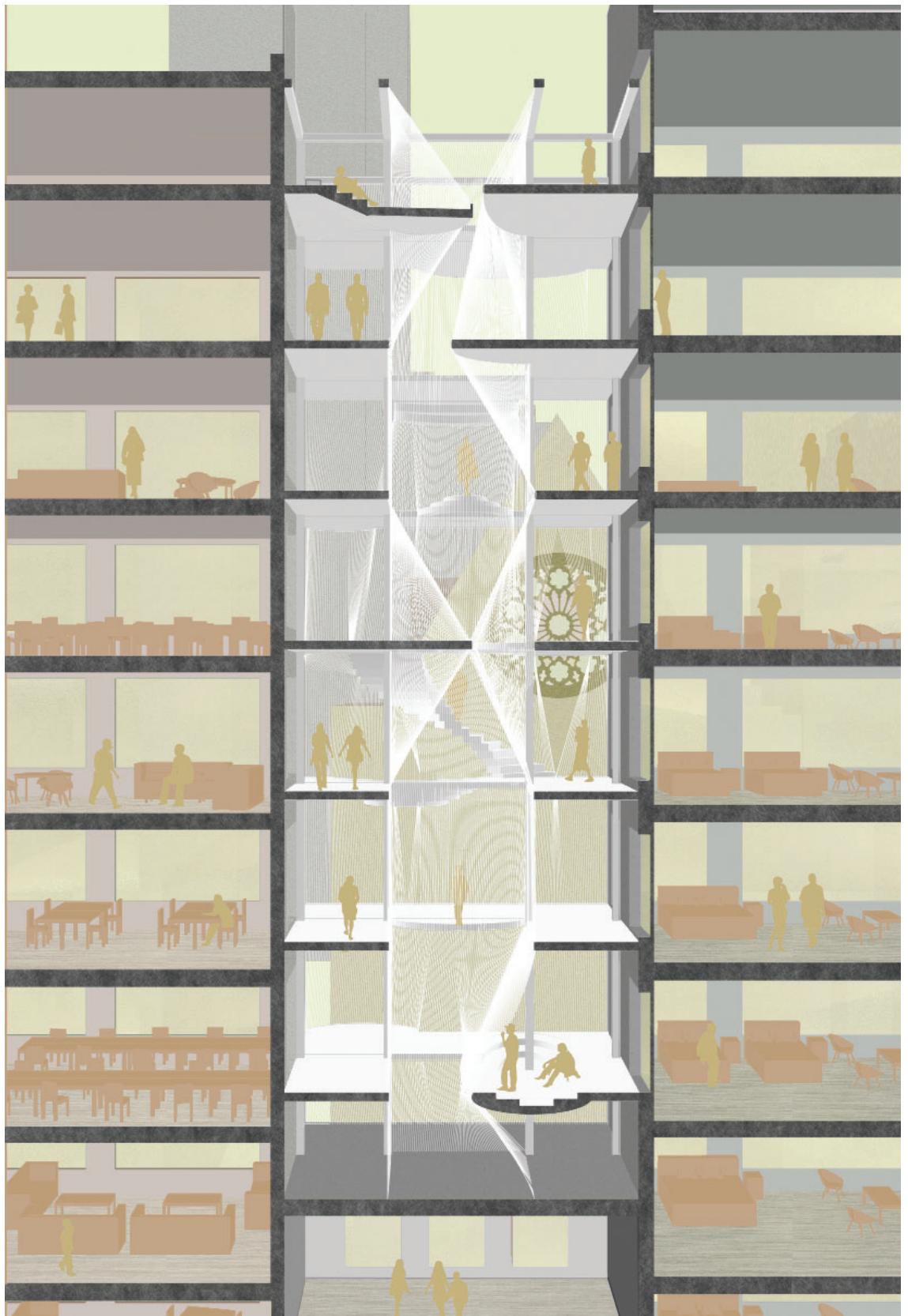




balcony system model: acrylic, string, chipboard



balcony system model: acrylic, string, chipboard



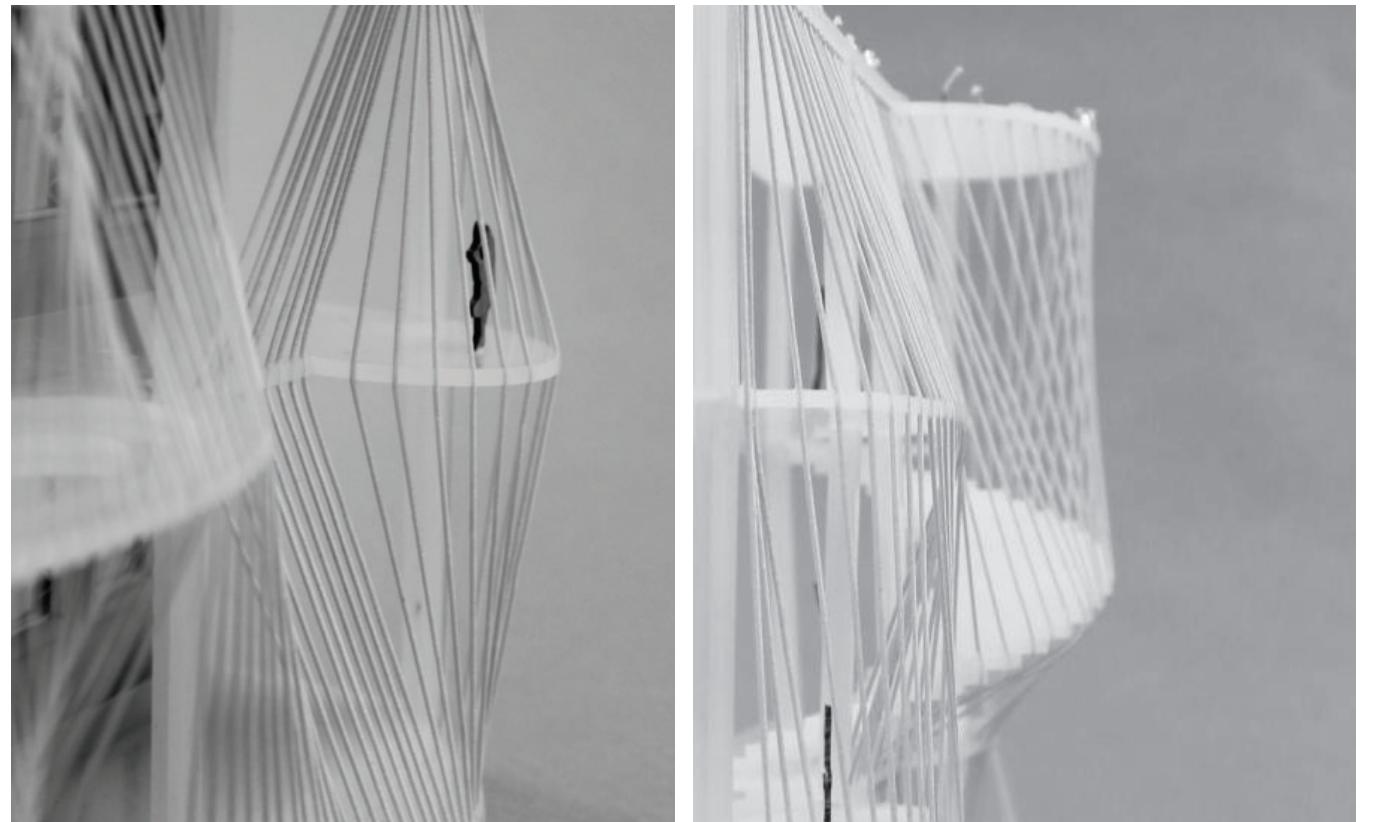
balcony system, section perspective



balcony system, sectional axon



1:1 material model: metal cable, wood frame



balcony system model: acrylic, string, chipboard

SYSTEMS

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**Staying Power:
An Anti-Eviction Toolkit**

with Nelson De Jesus Ubri
critic: Laura Kurgan
Advanced V

17

Marktown Futures

critics: Justin G. Moore
& Alicia O. Ajayi
Advanced VI

31

Staying Power: An Anti-Eviction Toolkit

with Nelson De Jesus Ubri

critic: Laura Kurgan

advanced V: Networks of Care, Fall 2020

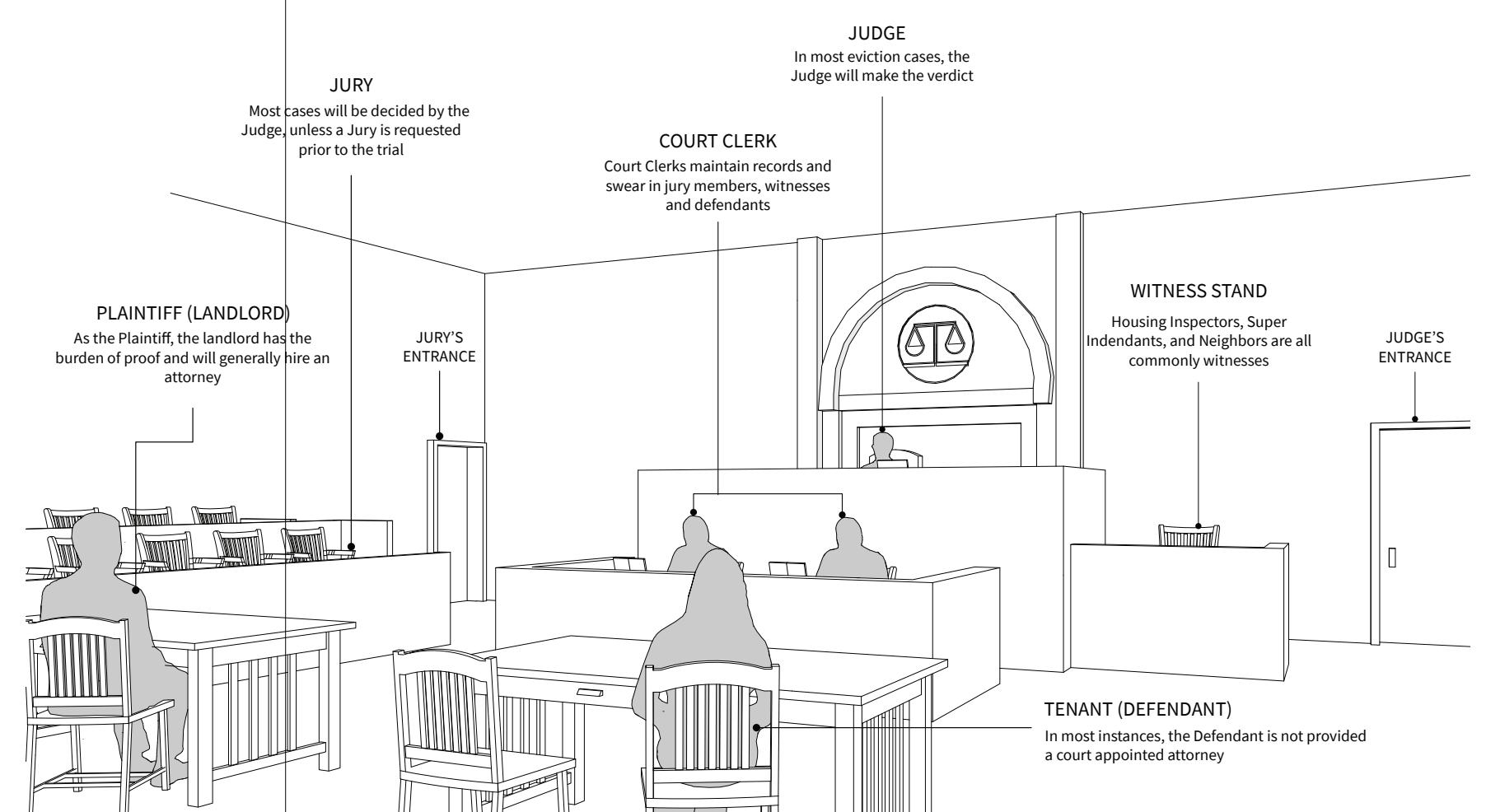
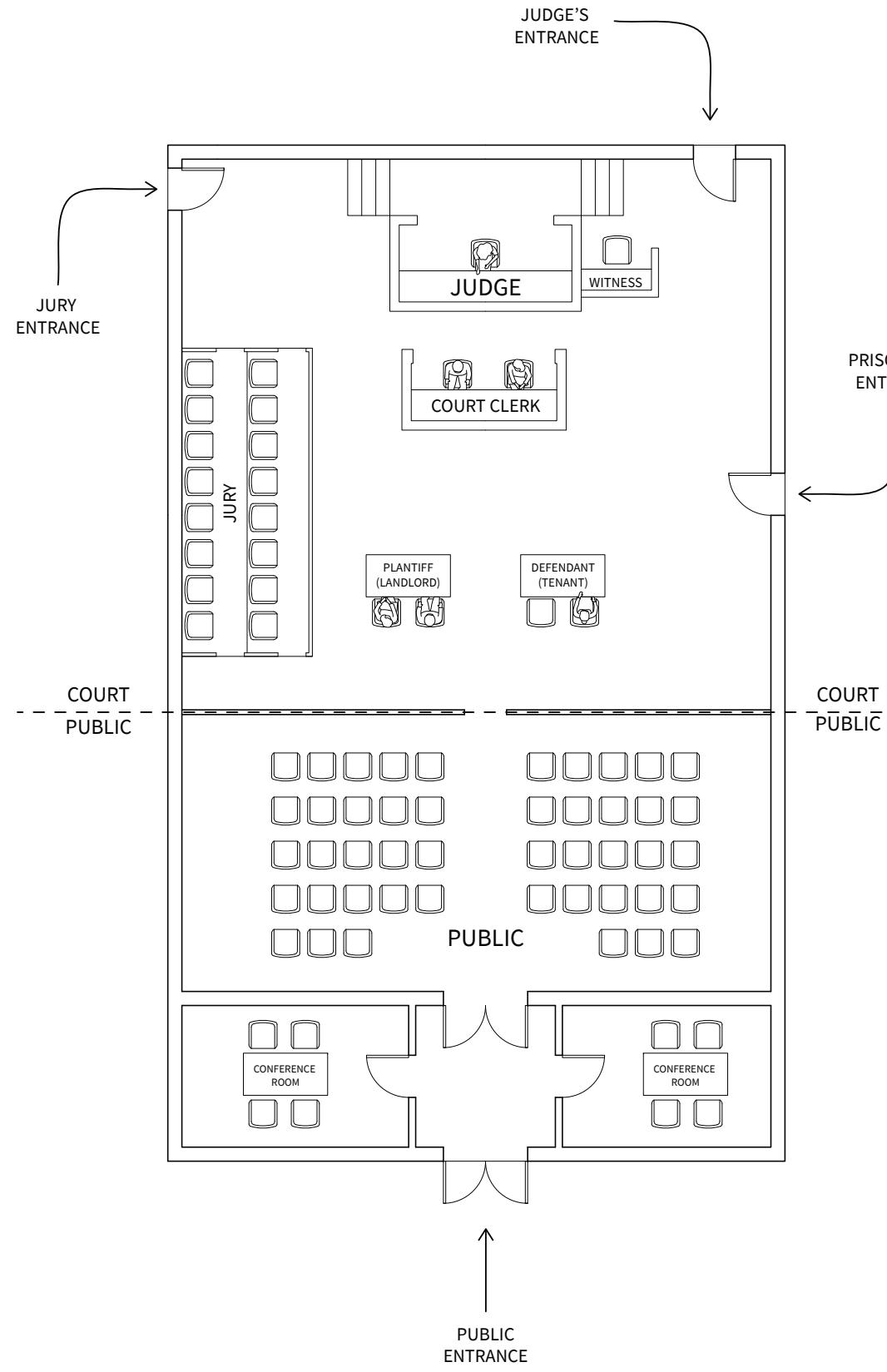
additional work: Power Tools, Spring 2021

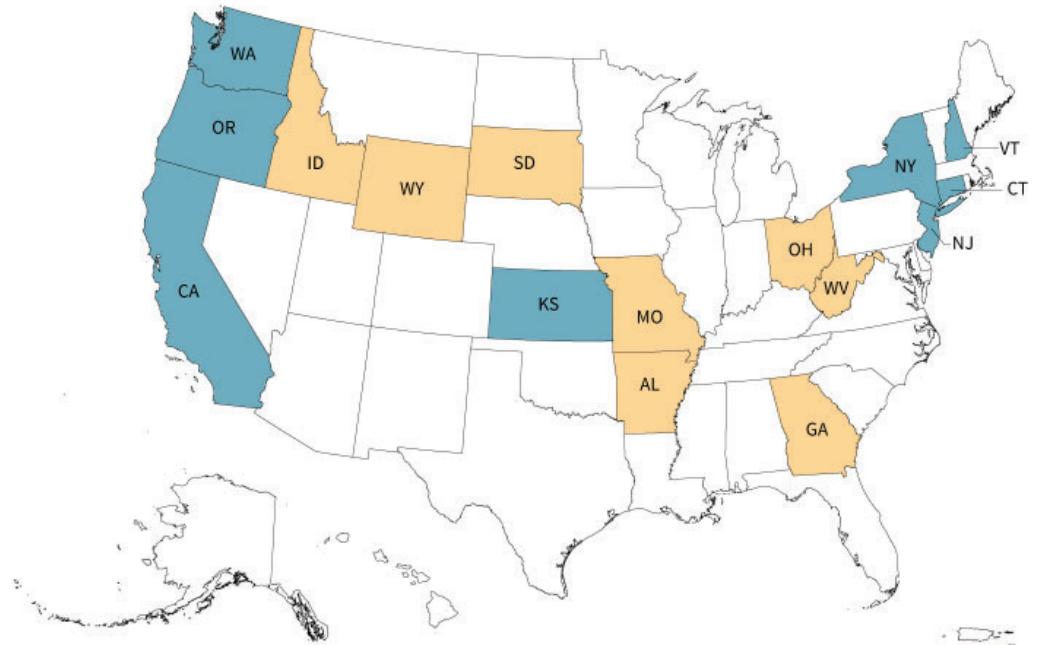
Since the start of the pandemic, several local and state governments have put temporary moratoriums on eviction and in September the CDC declared a nationwide “halt in residential evictions to prevent the further spread of COVID-19.”

Within this context, Staying Power: An Anti-Eviction Toolkit, is a body of research and set of proposals aimed at fostering a network of care to both prevent evictions and empower tenants who are in the process of being evicted. The project analyzes systems of eviction before and during the COVID-19 pandemic and used nationwide health data to identify areas of extreme vulnerability. Building on this research, Staying Power offers a set of interconnecting action oriented proposals designed specifically for the Bronx.

The set of proposals, which respond to identified ‘leverage points,’ includes activating existing care networks with Community Health Workers, utilizing empty storefronts for organizing and tenant-landlord resolution, deploying an information campaign to better connect tenants and available resources, and an installing an exhibit of interviews and collected data to raise awareness of the risks of eviction.







(Most) Renters in [New York](#), [New Jersey](#), [Connecticut](#), [Vermont](#), [Kansas](#), [Washington](#), [Oregon](#), and [California](#) as **protected at least through the New Year**.

While Renters in [West Virginia](#), [Ohio](#), [Georgia](#), [Missouri](#), [Arkansas](#), [Idaho](#), [South Dakota](#), and [Wyoming](#) have had **no state level protections at any point** during the pandemic.

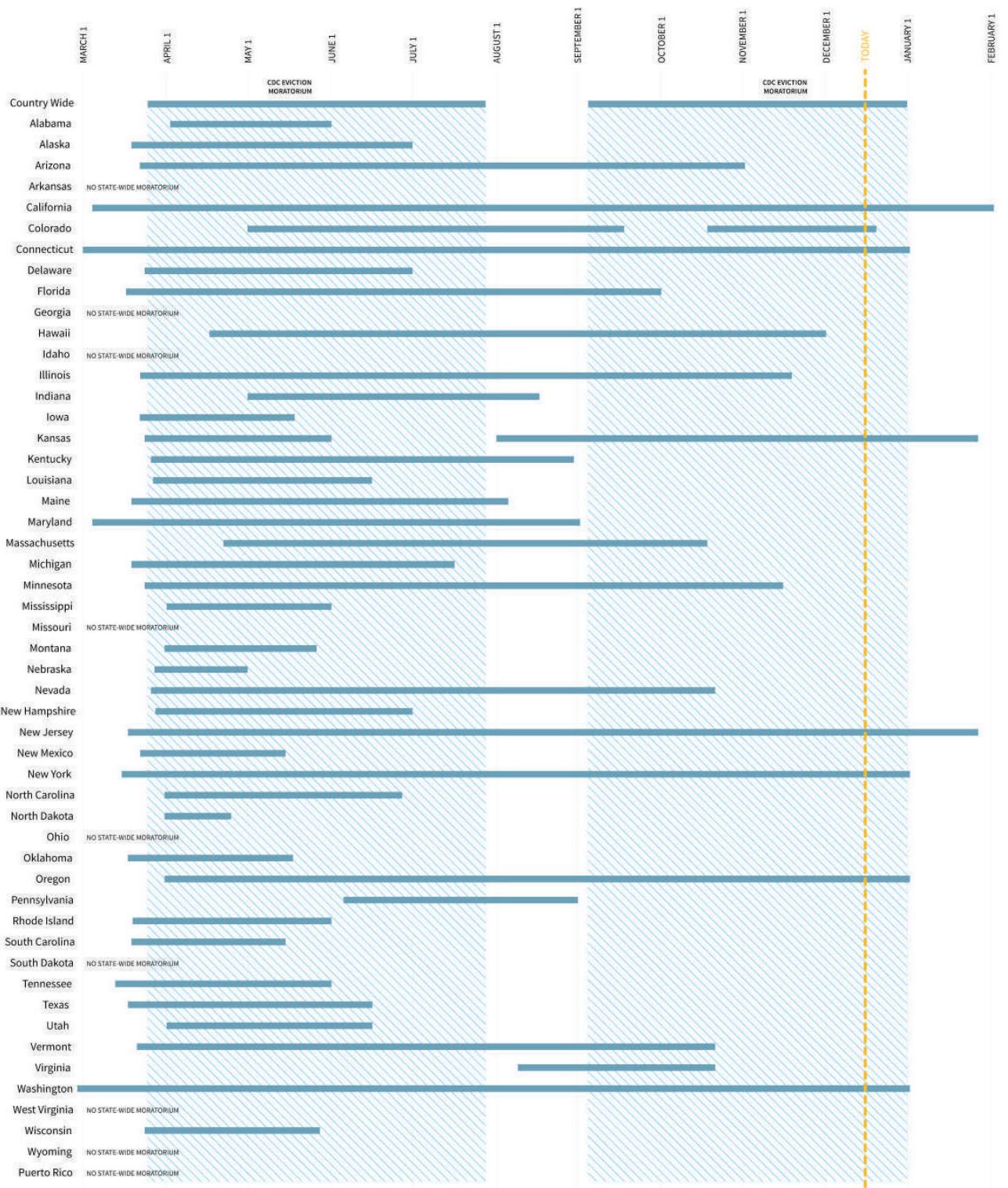


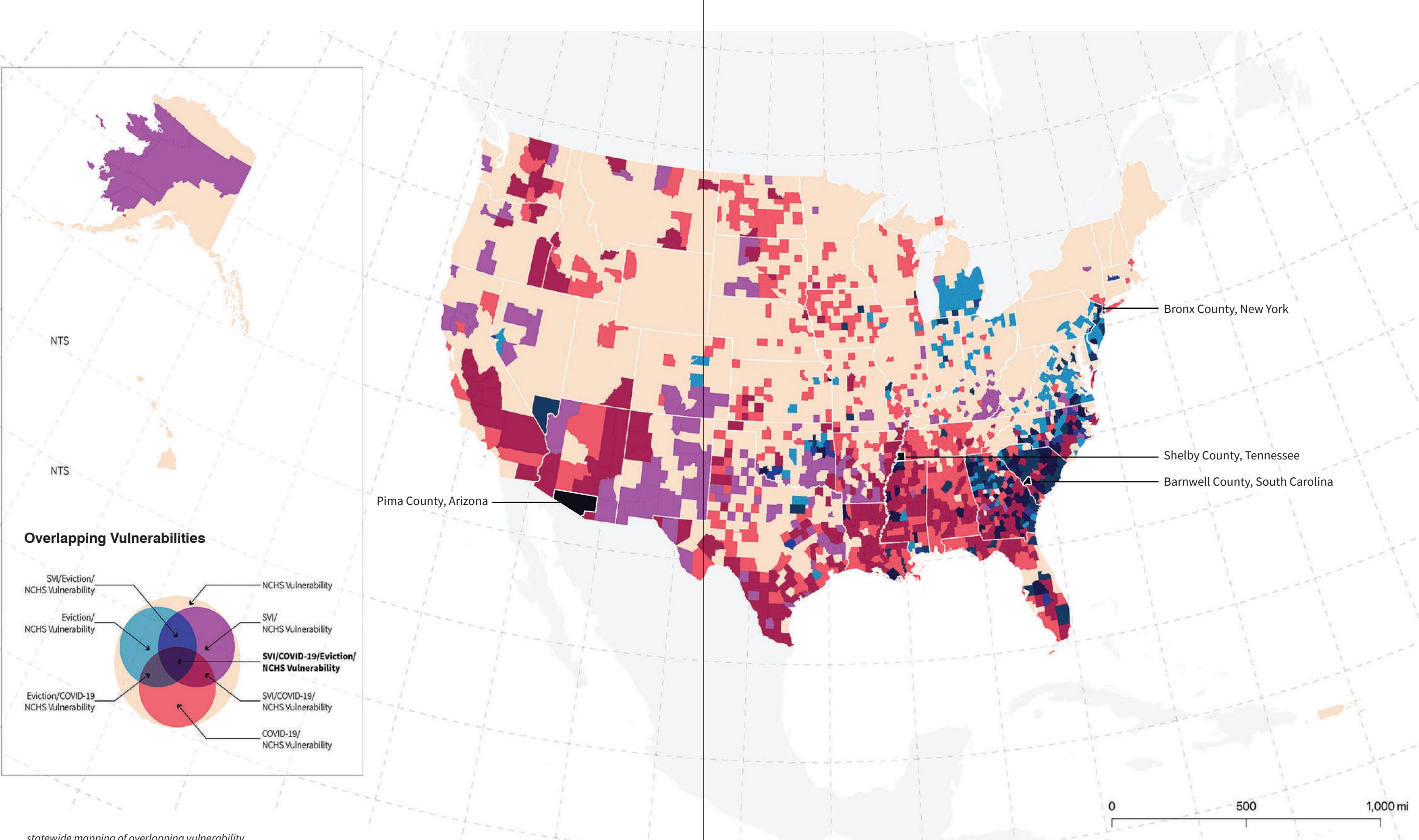
A Renter in [Alabama](#) may only have **8 days** between eviction notice & being forcibly removed from their home.



A Renter in [New York](#) can have **over 1 year** between eviction notice & being forcibly removed from their home, giving the renter more time to access care.

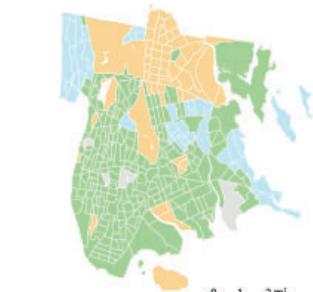
COVID EVICTION MORATORIUMS BY STATE







vulnerable counties sorted by urban classification

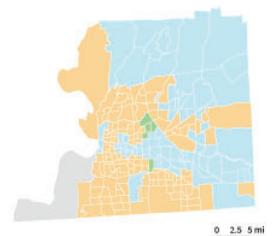
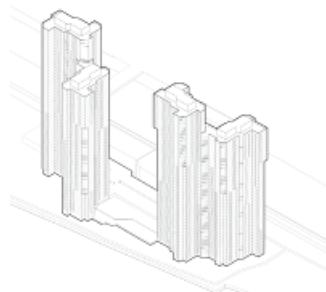


Bronx County, NY

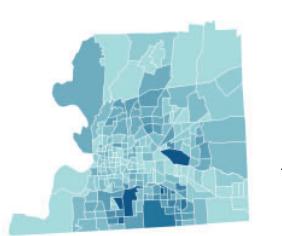
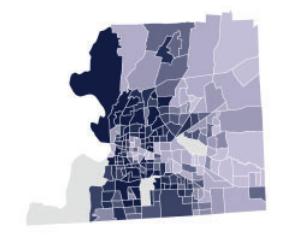


Bronx County - Census Tract 53

Population: 4483
Demographics:
 White: 2.95%
 African American: 50.68%
 Asian: 0.16%
 Hispanic: 44.08%
 American Indian/Alaska Native: 0.51%
Household: 1,694
 Persons per Household: 3
Structure Type:
 Single Family Unit: 3.3%
 Multi-Unit: 96.7%

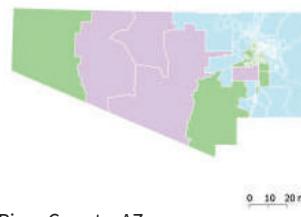
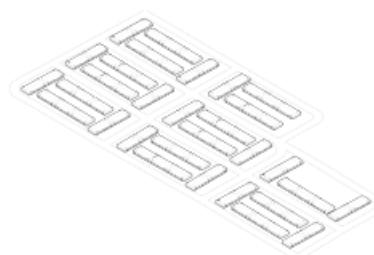


Shelby County, SC

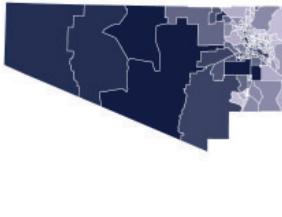


Shelby County - Census Tract 220.22

Population: 3,928
Demographics:
 White: 1%
 African American: 97%
 Asian: 0%
 Hispanic: 1%
Household: 1,300
 Persons per Household: 3
Structure Type:
 Single Family Unit: 15.1%
 Multi-Unit: 84.9%

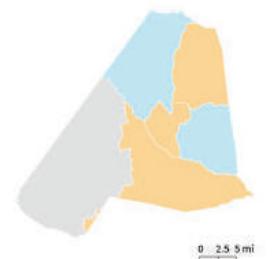
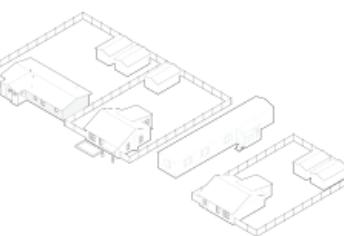


Pima County, AZ

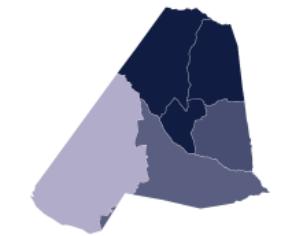


Pima County - Census Tract 26.03

Population: 3,389
Demographics:
 White: 30%
 African American: 11%
 Asian: 5%
 Native: 4%
 Islander: 1%
 Hispanic: 45%
Household: 1,219
 Persons per Household: 2.8
Structure Type:
 Single Family Unit: 32.2%
 Multi-Unit: 60.8%
 Mobile Home: 6.5%

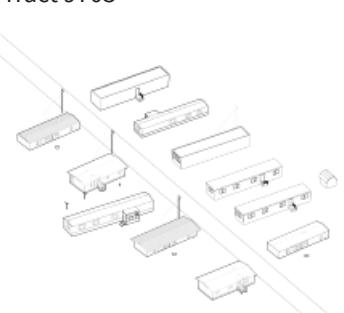


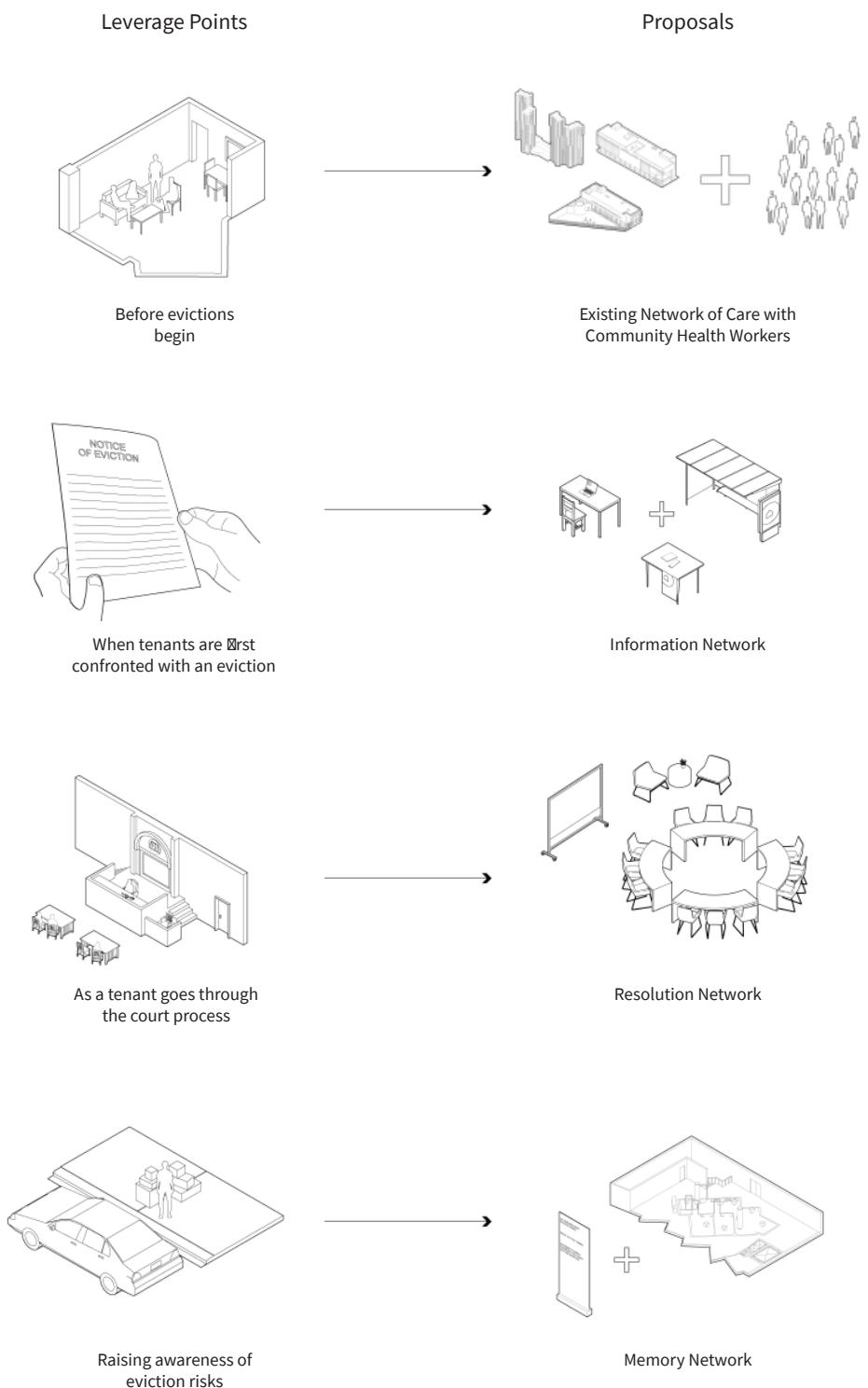
Barnwell County, SC



Barnwell County - Census Tract 9703

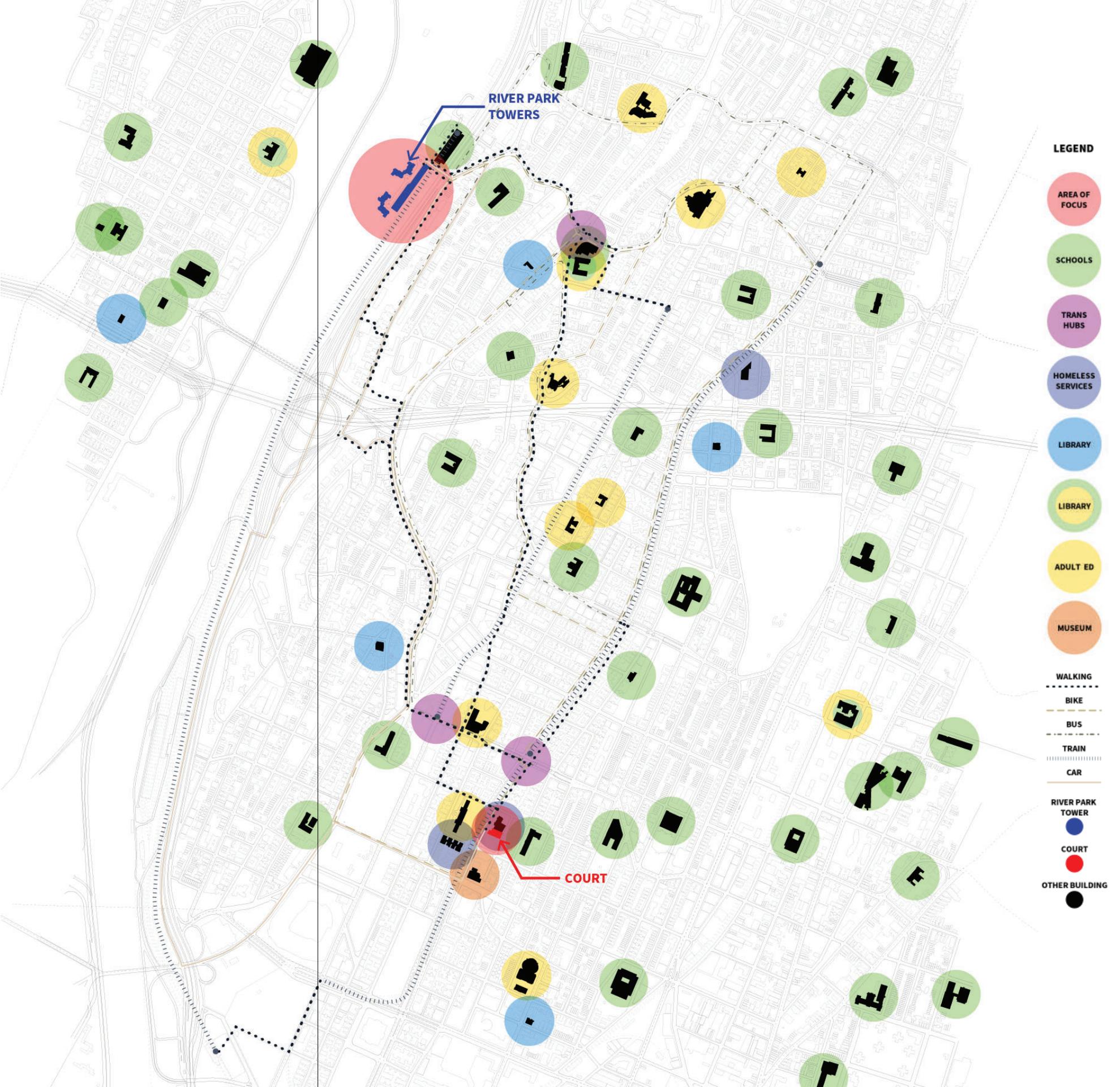
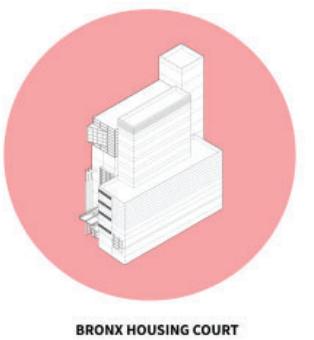
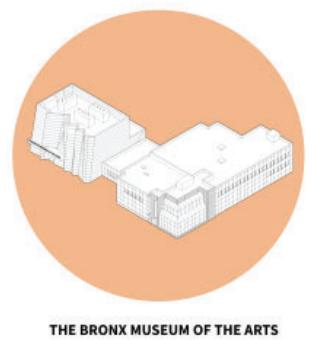
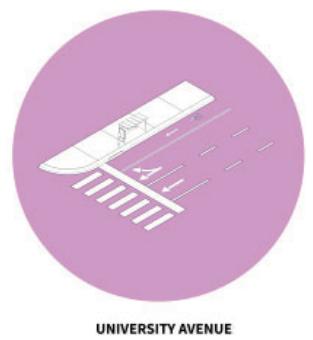
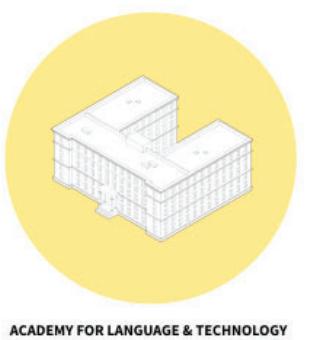
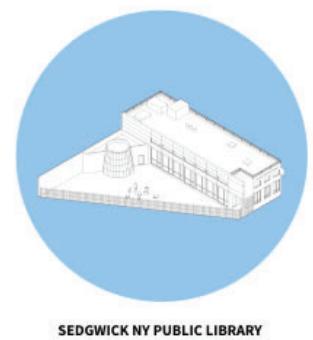
Population: 3,983
Demographics:
 White: 37.77%
 African American: 59.93%
 Asian: 0.17%
 Hispanic: 1.49%
Household: 1,908
 Persons per Household: 5
Structure Type:
 Single Family Unit: 83.86%
 Multi-Unit: 16.14%





toolkit summary

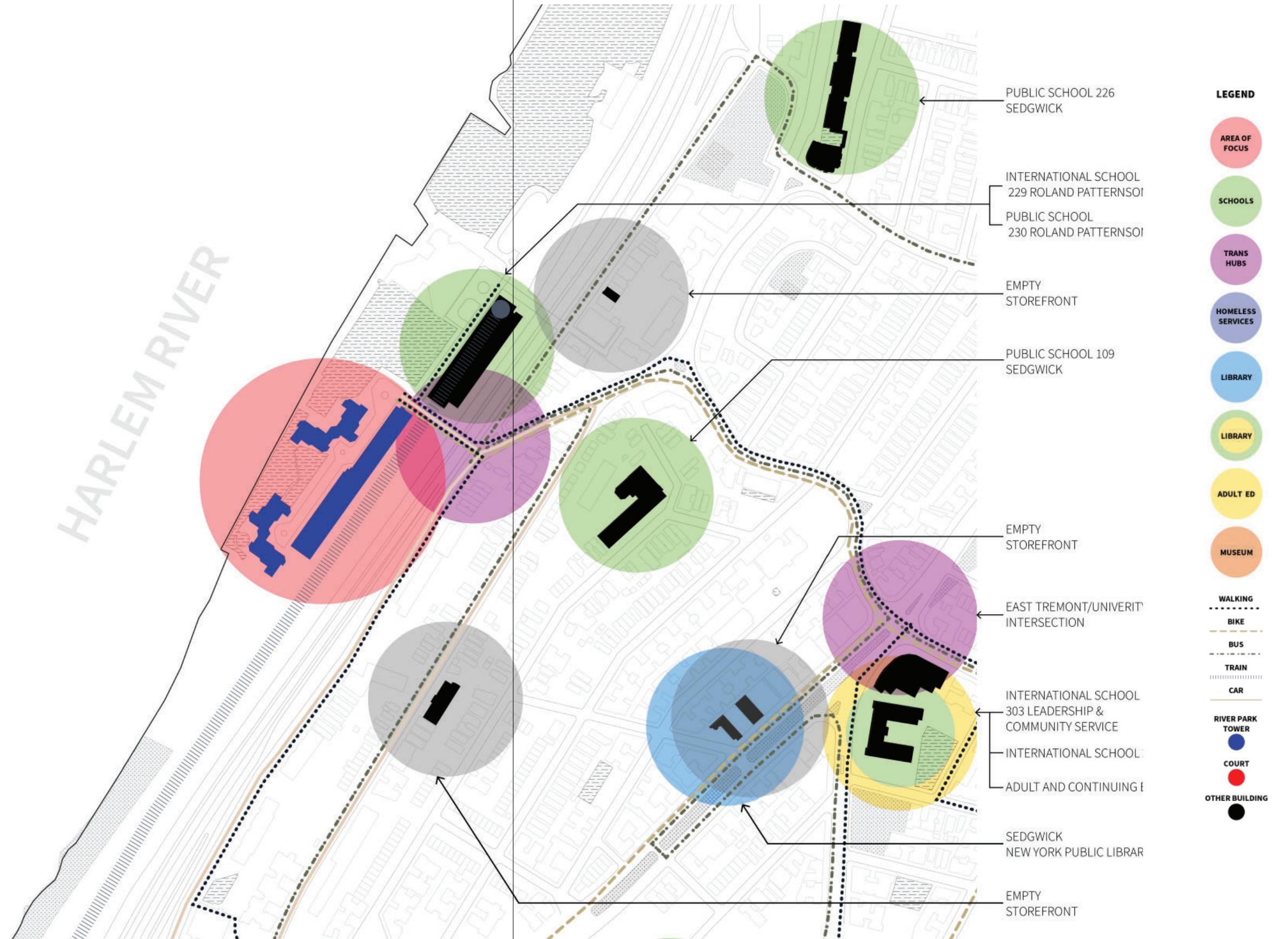
memory network at the River Park Towers



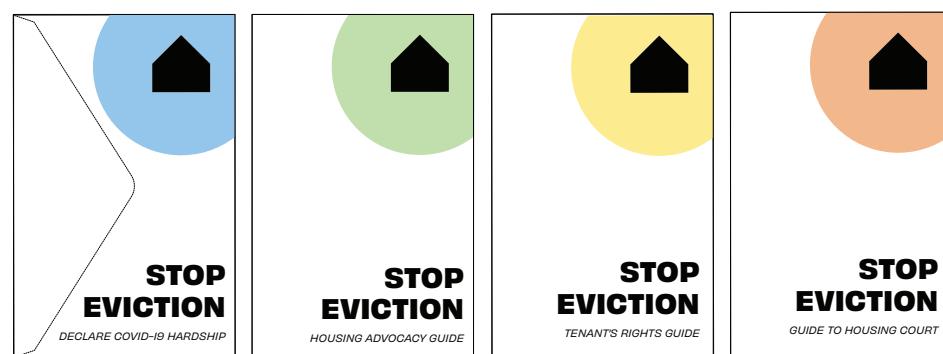
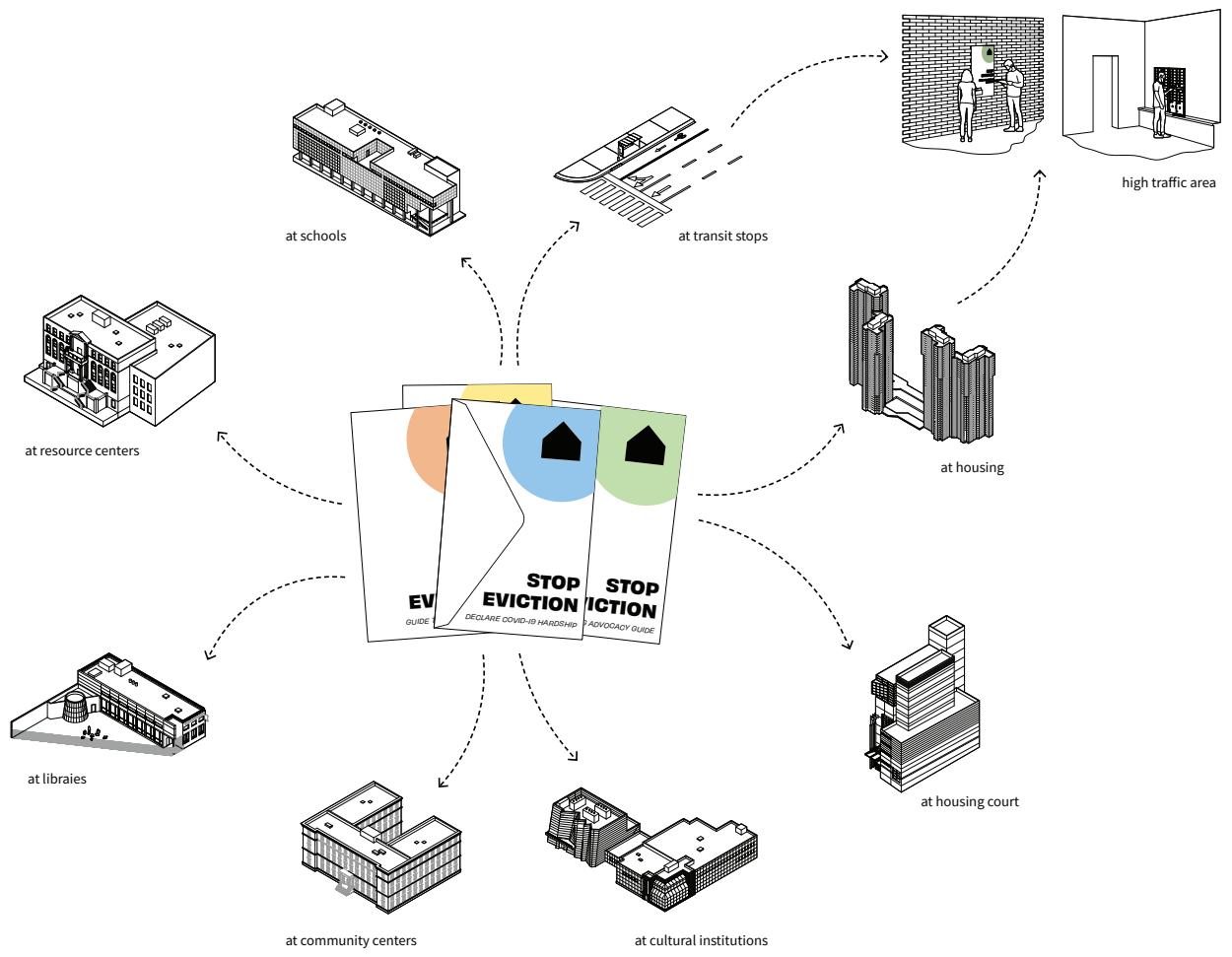
neighborhood node & transportation analysis map

LEGEND

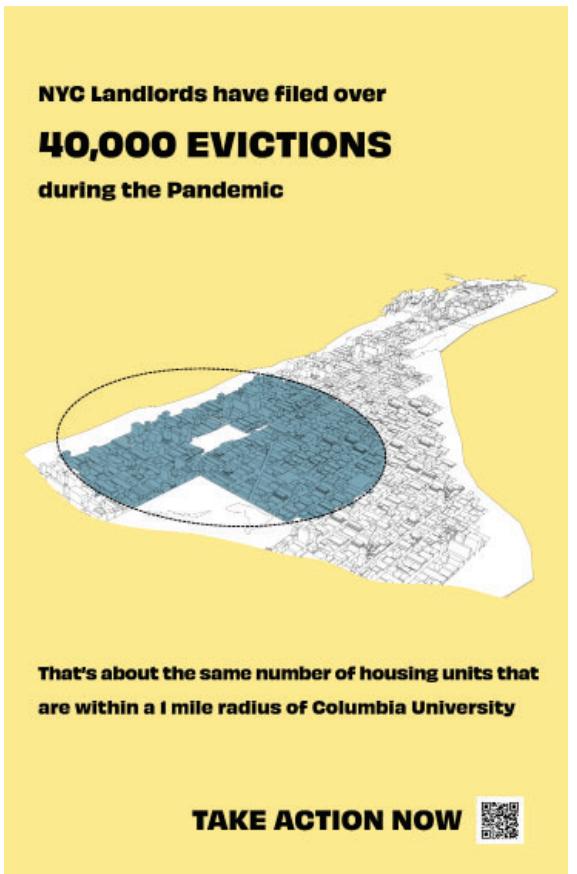
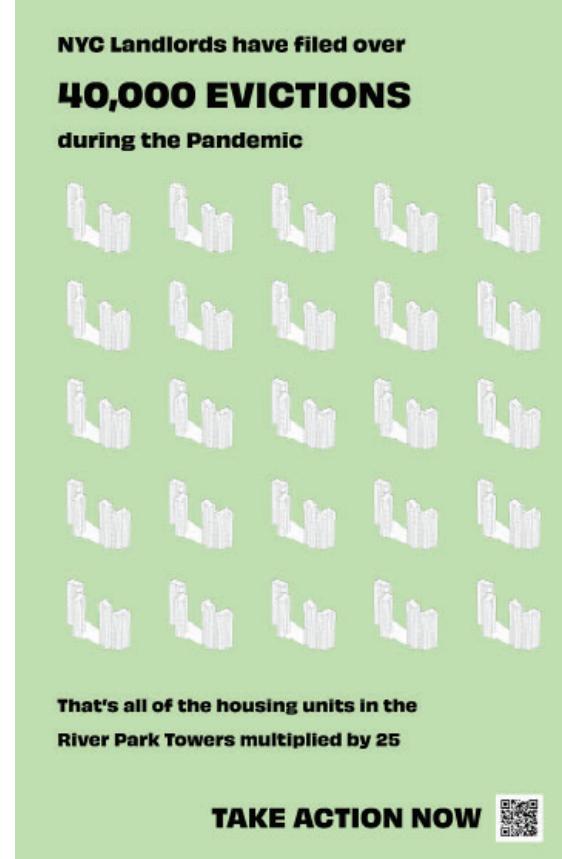
- AREA OF FOCUS
- SCHOOLS
- TRANS HUBS
- HOMELESS SERVICES
- LIBRARY
- LIBRARY
- ADULT ED
- MUSEUM
- WALKING
- BIKE
- BUS
- TRAIN
- CAR
- RIVER PARK TOWER
- COURT
- OTHER BUILDING



area node & transportation analysis map



information campaign: sample pamphlets



information campaign: NYC-wide sample posters

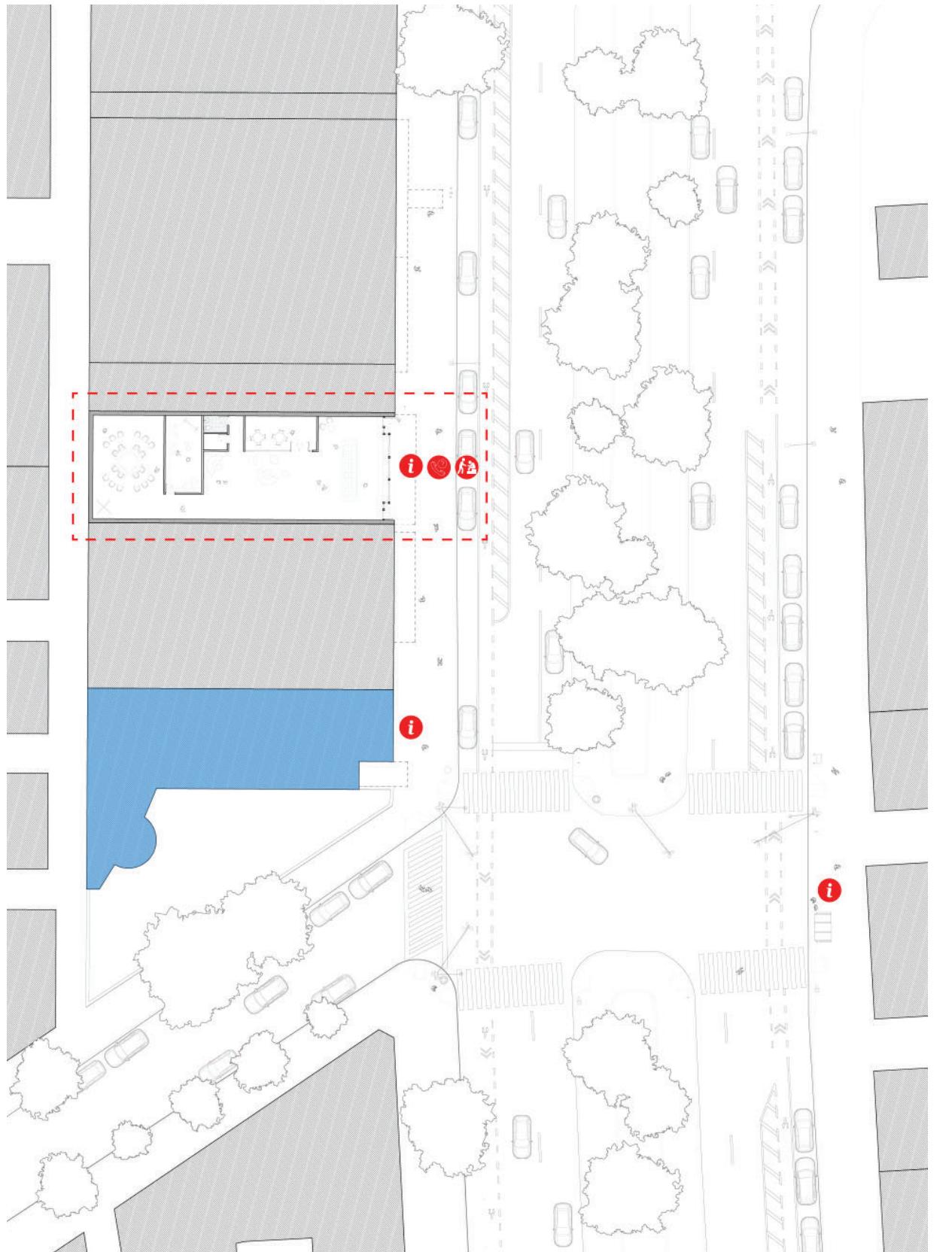


information campaign: sample poster

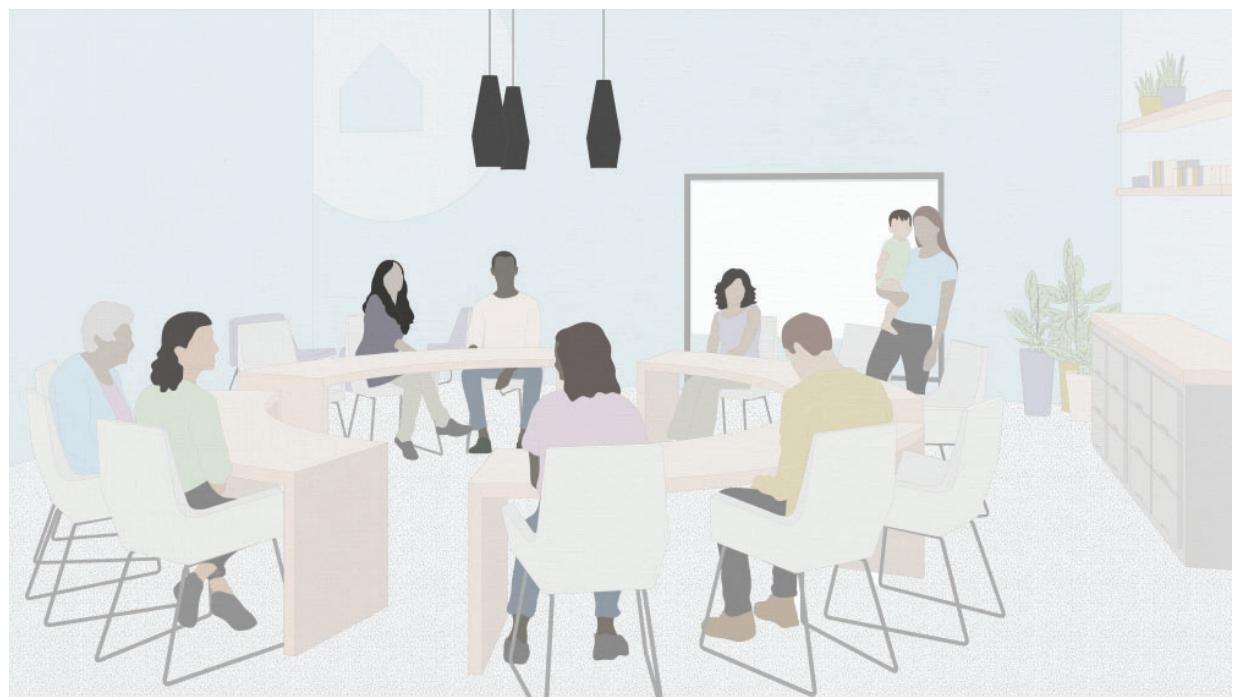


information campaign: sample deployment locations

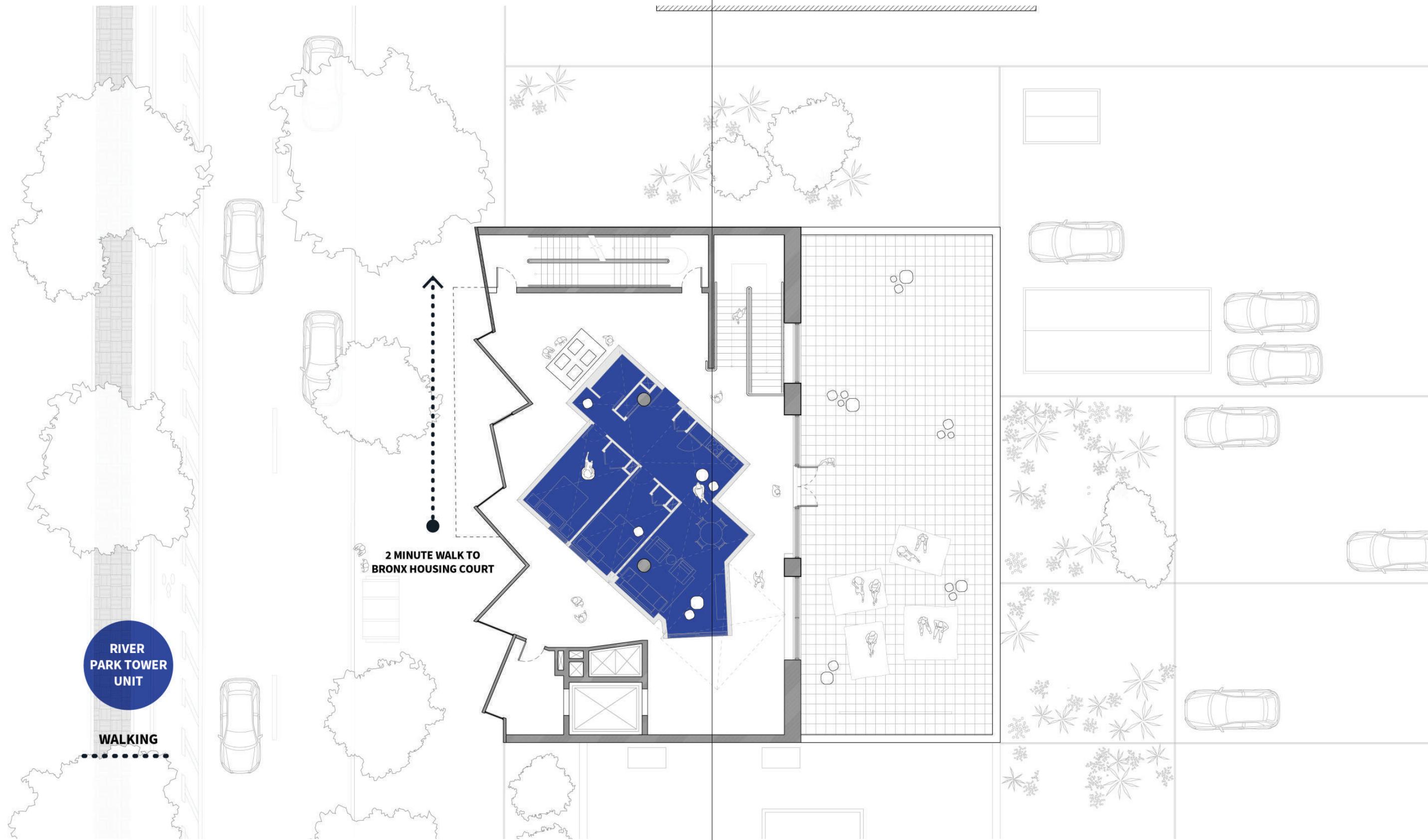




resolution network sample plan



resolution network in empty storefront





Marktown Futures

critics: Justin G. Moore & Alicia O. Ajayi

advanced VI: Place Keeping & Mark Making, Spring 2021

Marktown is a historic community in the heart of the Indiana Harbor. It's completely surrounded by heavy industry (oil & gas, and steel), exposing its residents to unsafe levels of pollution. Since 2013, BP has been buying and demolishing residential property in the neighborhood, exacerbating displacement in the community. If left unchecked, BP will continue to degrade the quality of life for Marktown Residents and slowly but surely, erase their neighborhood.

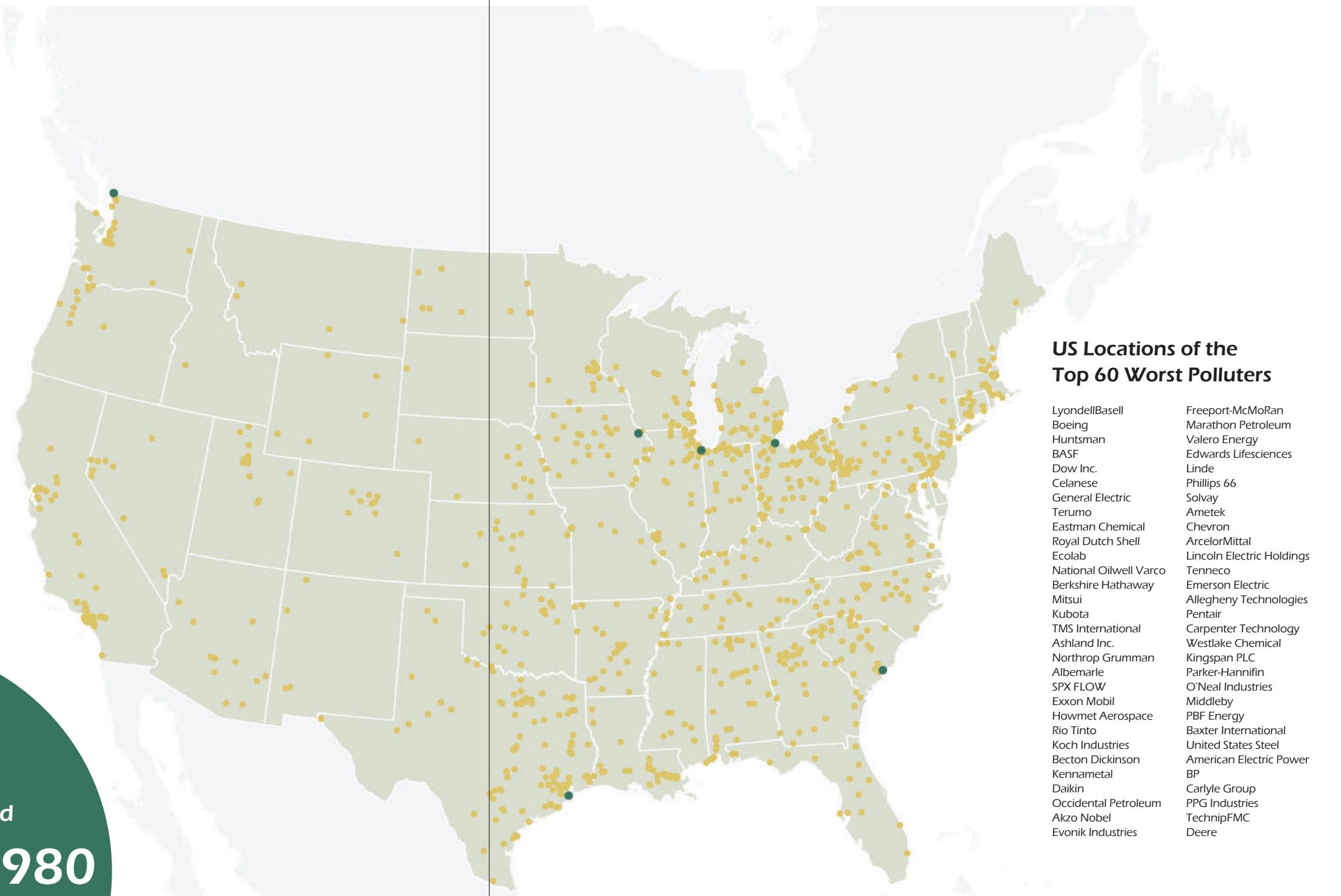
Marktown Futures seeks justice for a community at the intersection of environmental and economic displacement. The project is strategy, not solution, based and aims to facilitate the power of choice in a community that is currently running out of options. The proposals activate environmentally challenged spaces, hold the community's industrial neighbors accountable, and enable sustained community connection at a variety of timescales (today and in the future).

The tactics consider the health risks of staying and the social risks of leaving and range from explicitly spatial (utilizing vacant homes and the space between vacant homes as gathering, organizing, and community documentation space) to economic policy (adapting Indiana's Qualified Allocation Plan for displacement funding from BP). This set of tools aims to facilitate action today that can enable a totally alternate—but possible—future. A future in which we value the health of communities over our dependency on oil and gas.





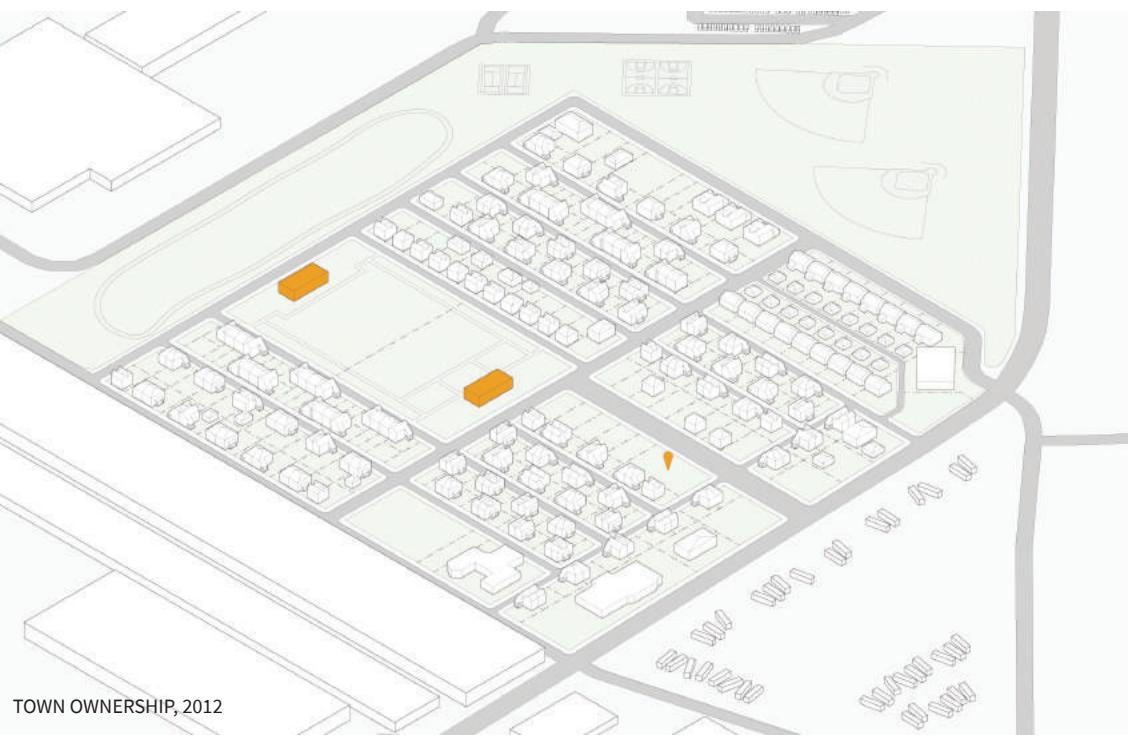
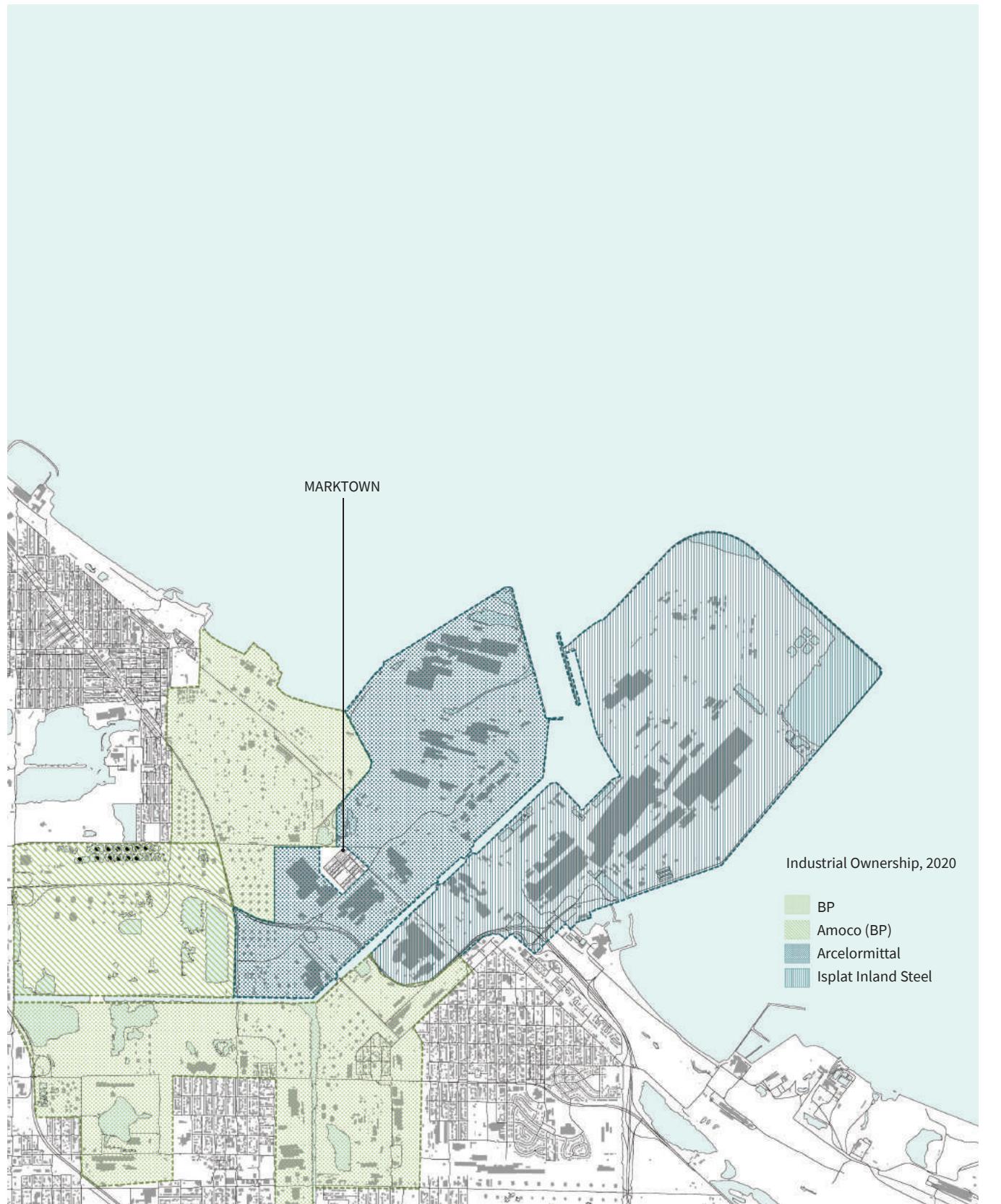
Since 2001, BP has paid
\$27,828,442,980
in environment-related offenses



US Locations of the Top 60 Worst Polluters

LyondellBasell	Freeport-McMoRan
Boeing	Marathon Petroleum
Huntsman	Valero Energy
BASF	Edwards Lifesciences
Dow Inc.	Linde
Celanese	Phillips 66
General Electric	Solvay
Terumo	Ametek
Eastman Chemical	Chevron
Royal Dutch Shell	ArcelorMittal
Ecolab	Lincoln Electric Holdings
National Oilwell Varco	Tenneco
Berkshire Hathaway	Emerson Electric
Mitsui	Allegheny Technologies
Kubota	Pentair
TMS International	Carpenter Technology
Ashland Inc.	Westlake Chemical
Northrop Grumman	Kingspan PLC
Albemarle	Parker-Hannifin
SPX FLOW	O'Neal Industries
Exxon Mobil	Middleby
Howmet Aerospace	PBF Energy
Rio Tinto	Baxter International
Koch Industries	United States Steel
Becton Dickinson	American Electric Power
Kennametal	BP
Daikin	Carlyle Group
Occidental Petroleum	PPG Industries
Akzo Nobel	TechnipFMC
Evonik Industries	Deere

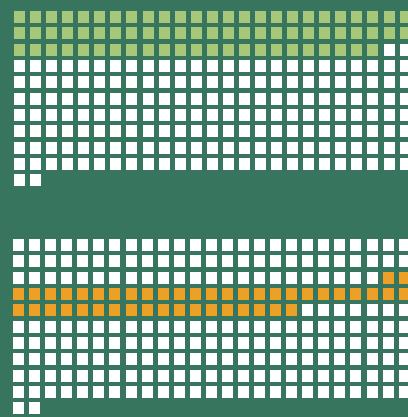
US locations of top 60 polluters



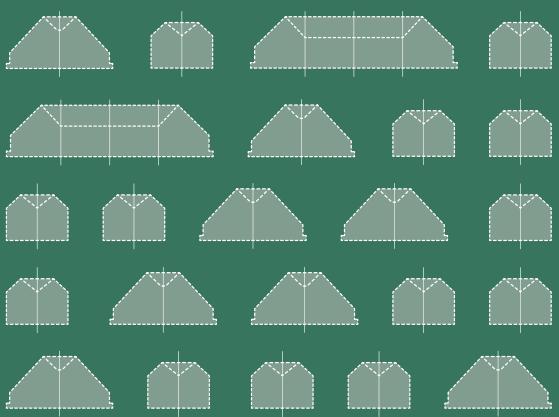
Privately Owned	City of East Chicago	BP	BP (demolished)
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town ownership 2012-2020

47% of Marktown Parcels are owned by BP or East Chicago



Despite listing on the National Register of Historic Places

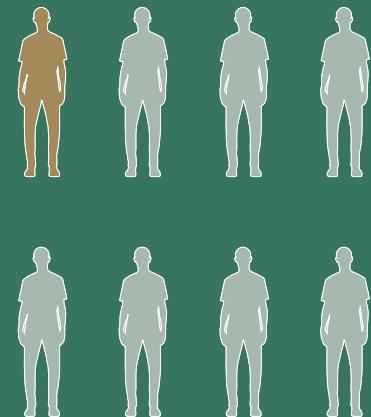


**BP has paid over
\$1,100,000
for property in Marktown**

**BP has demolished
50 HOMES
since 2014**

outstanding economic conditions

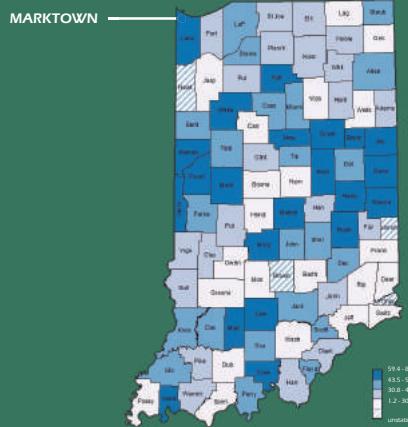
1 in 8 Residents Reported having Cancer



**Lake County residents have the
8th highest
risk of cancer in the US**

Hoosier Environmental Council

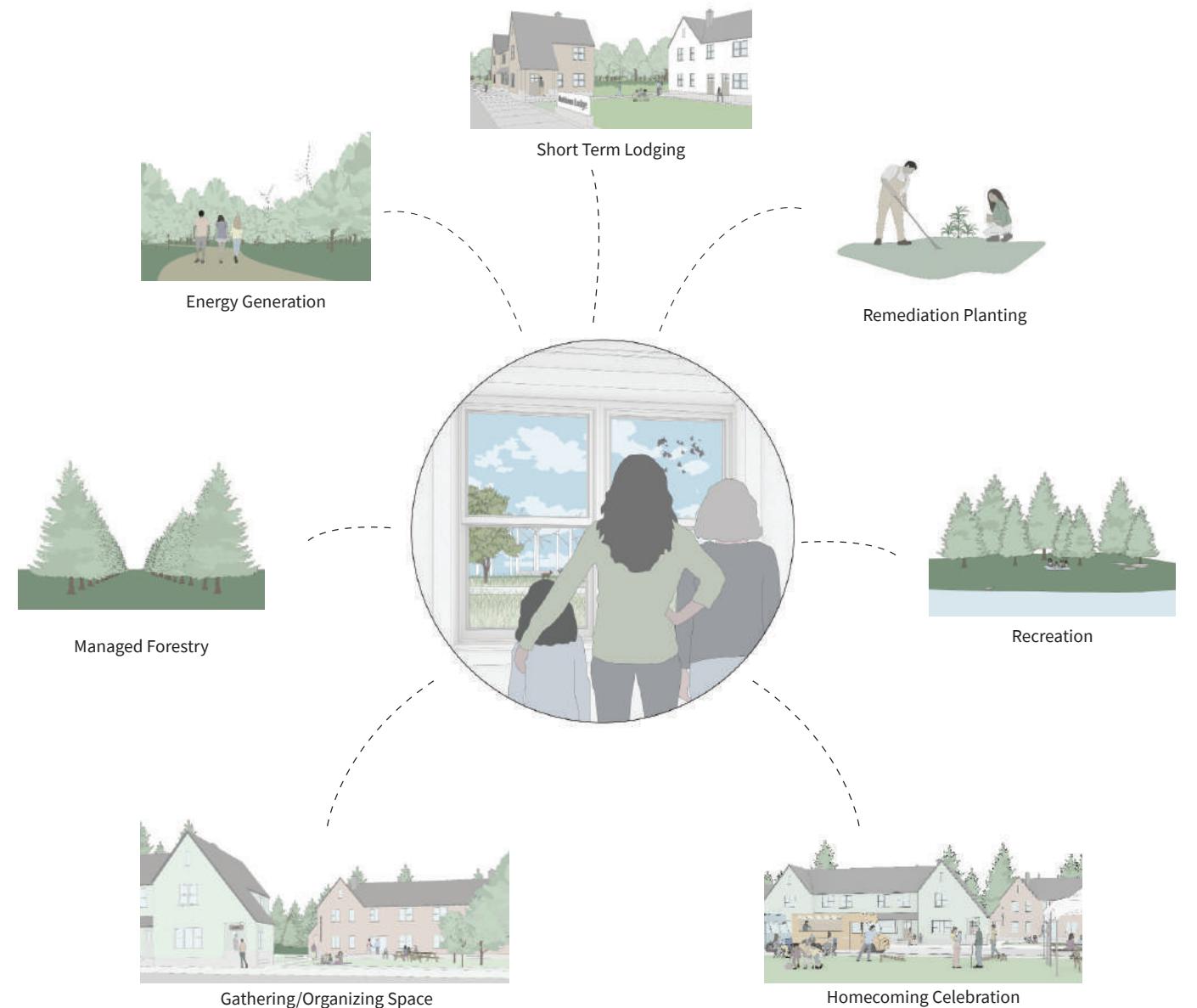
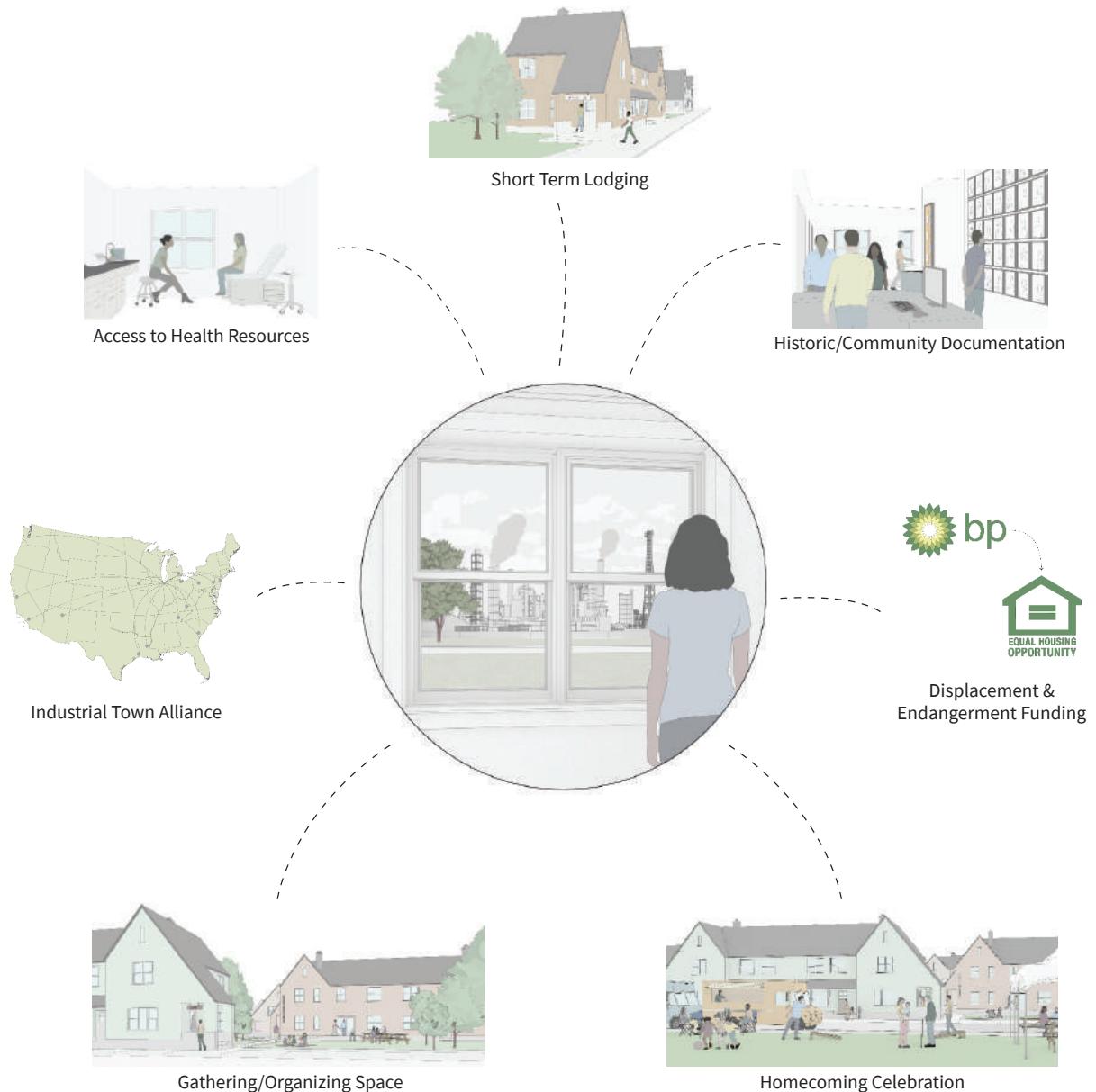
Asthma Emergency Department Visits, 2009



**Lake County Asthma Rates are
1.8 times
the state average**

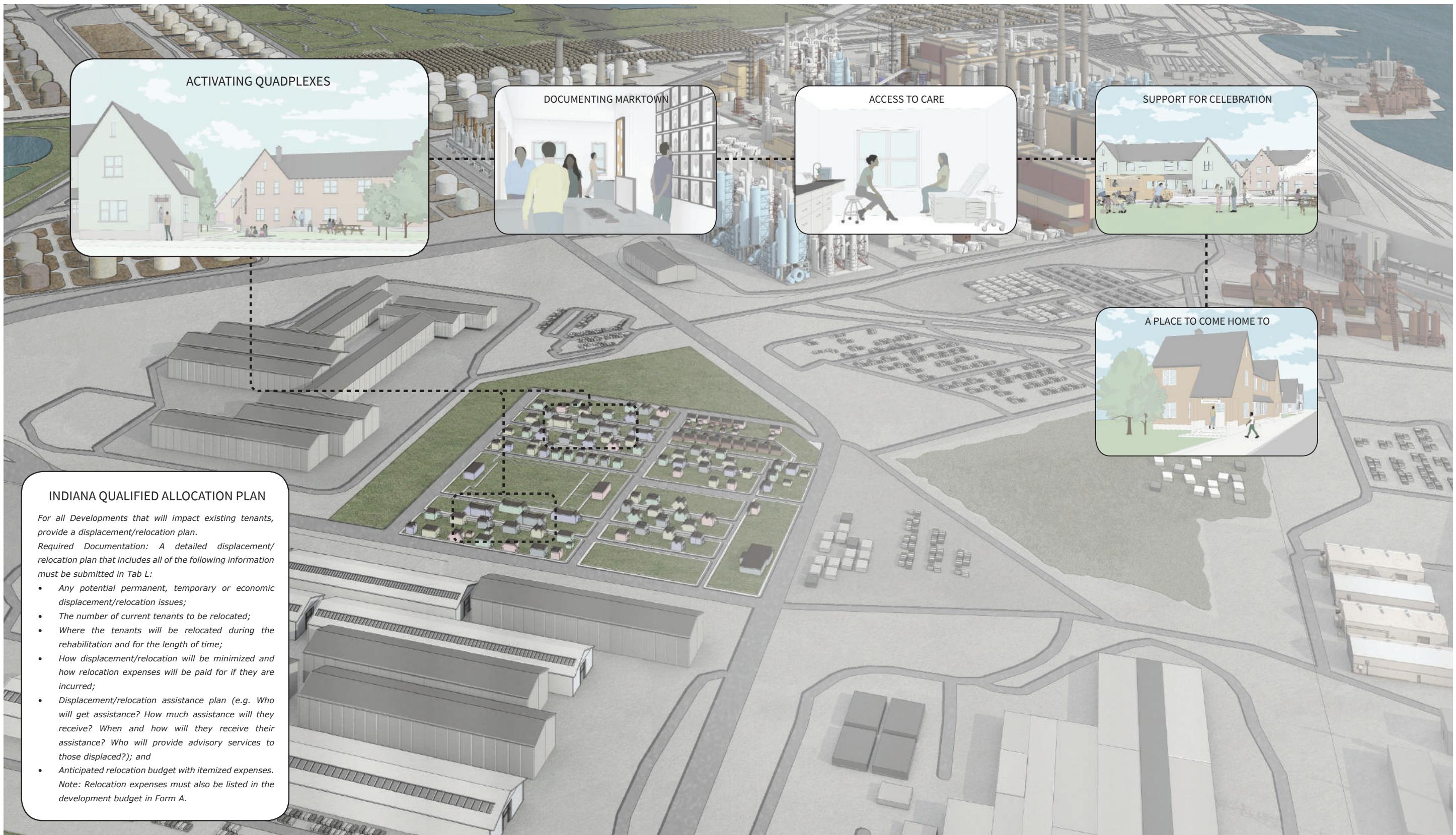
IHME & ISDH

outstanding health conditions



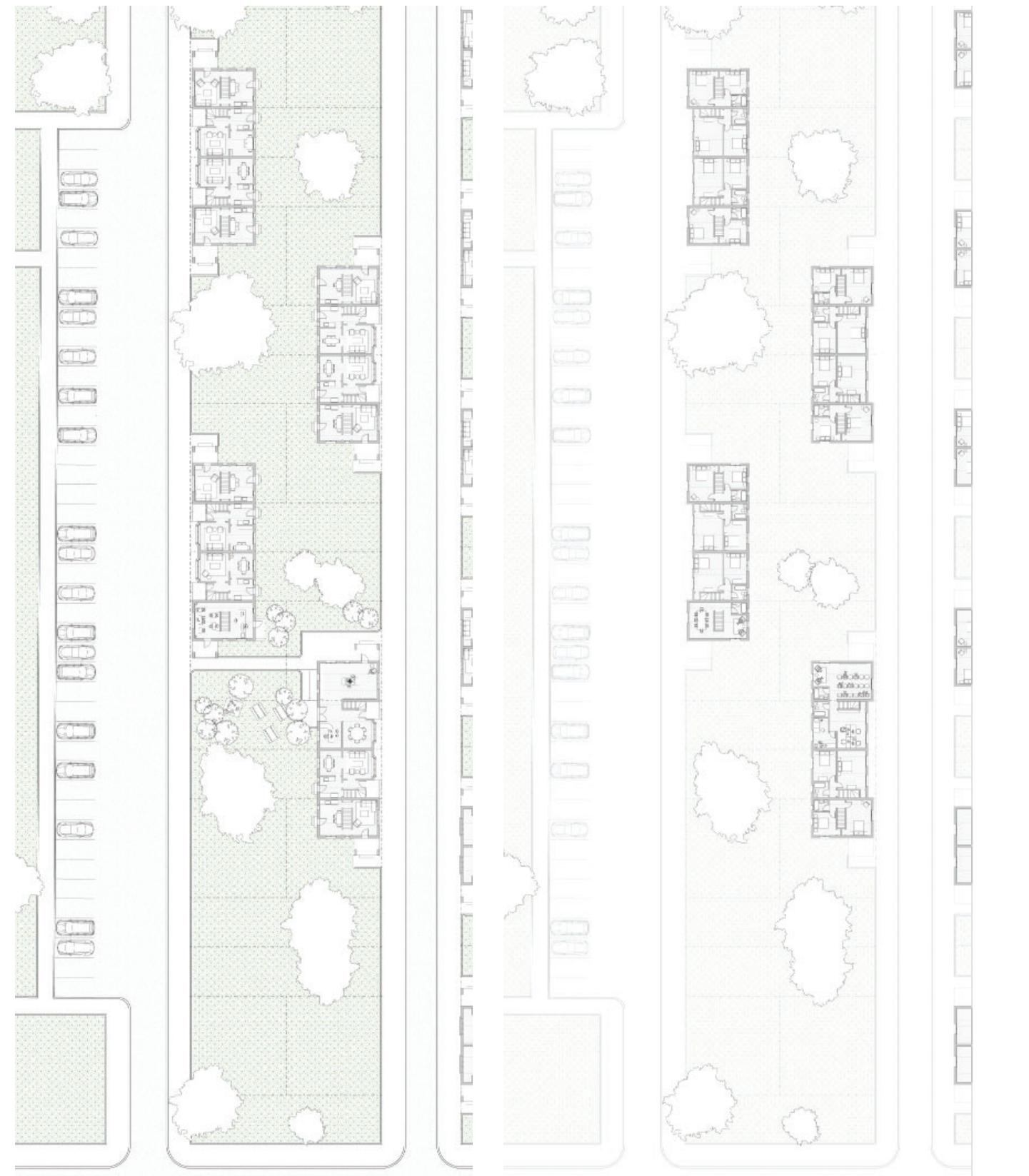
proposal summary for today

proposal summary for the future





Marktown center (today proposal)



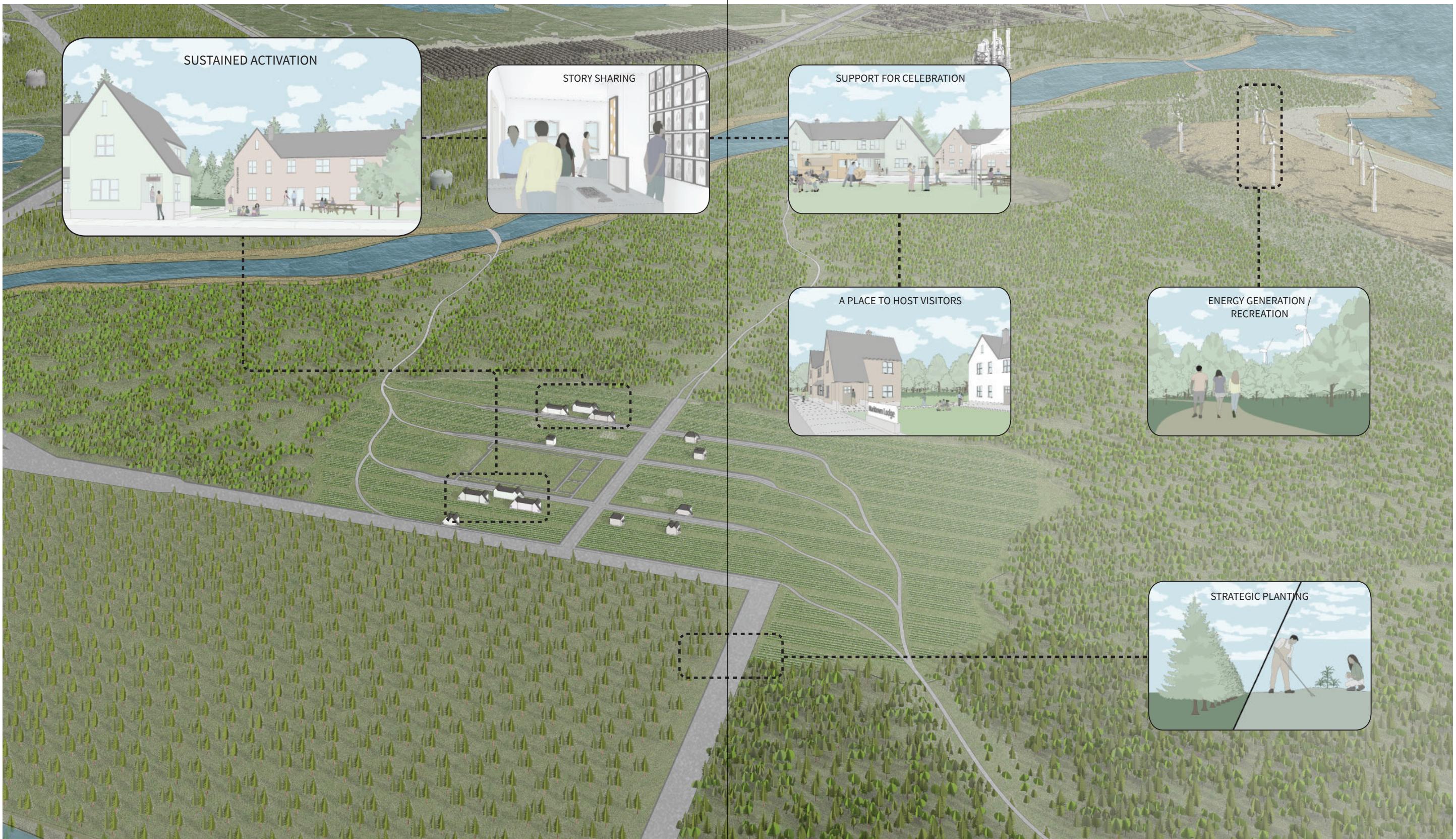
Marktown center (today proposal), plans



Marktown lodge (today proposal)



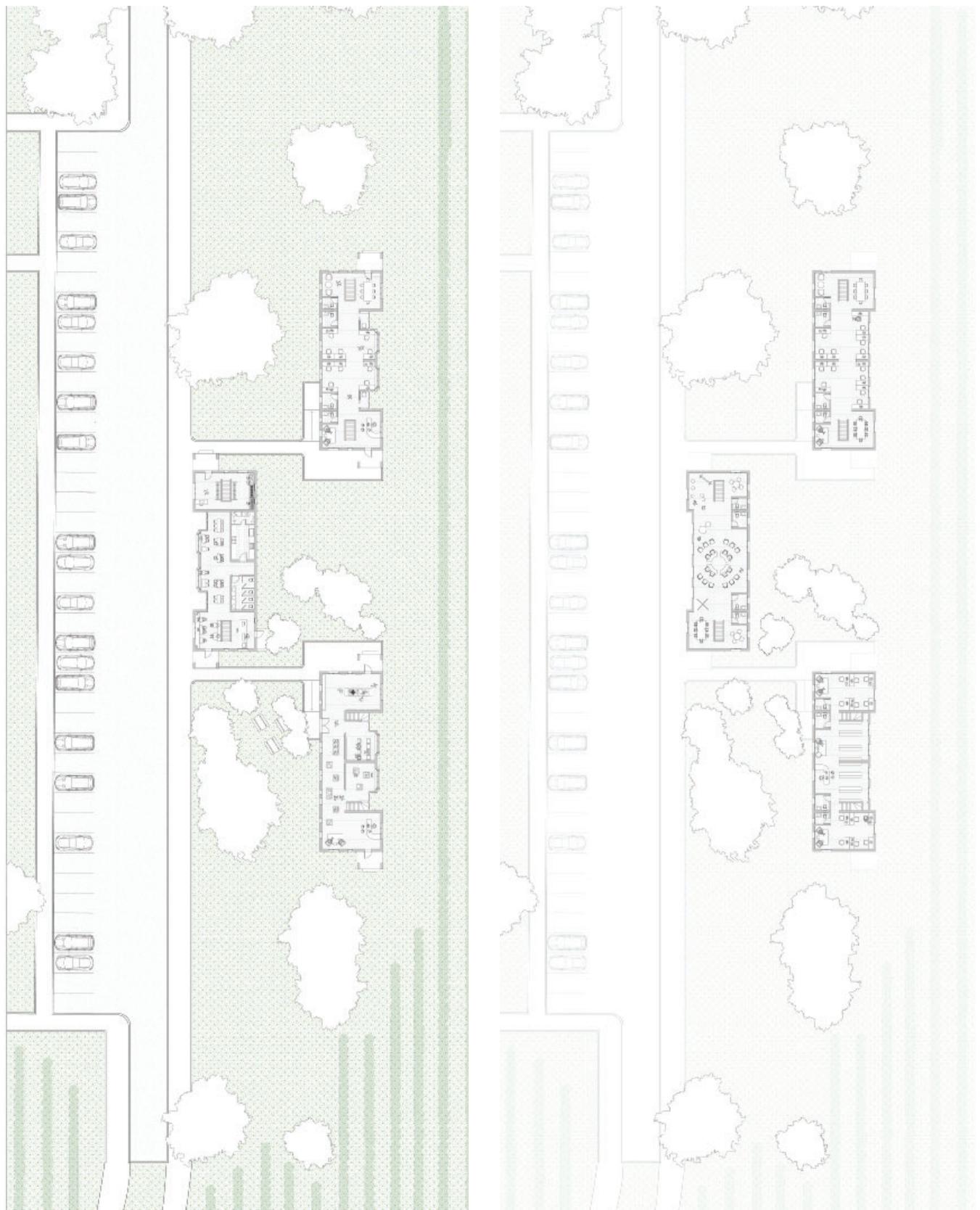
Marktown lodge (today proposal), plans



proposal summary for the future



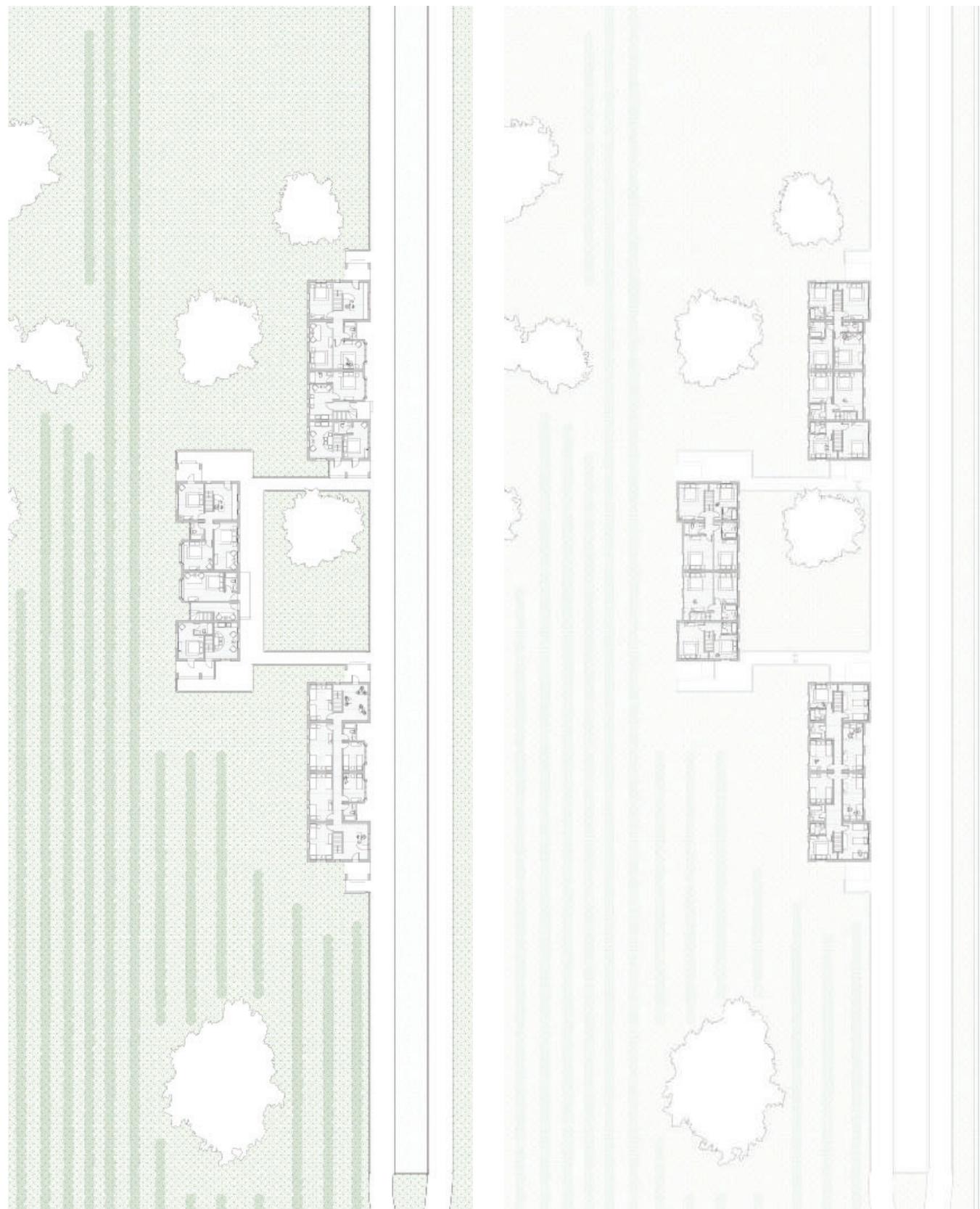
Marktown center (future proposal)



Marktown center (future proposal), plans



Marktown lodge (future proposal)



Marktown lodge (future proposal), plans

SYSTEMS

STRATEGIES

STUDIES

STRUCTURES

Accumulation & Spread

critic: Karla Rothstein

Core II

43

Expo 2000 Redux

critic: Bika Rebek

ADR I

45

**The Way Things
May Have Gone**

critic: Stephanie Lin

Core I

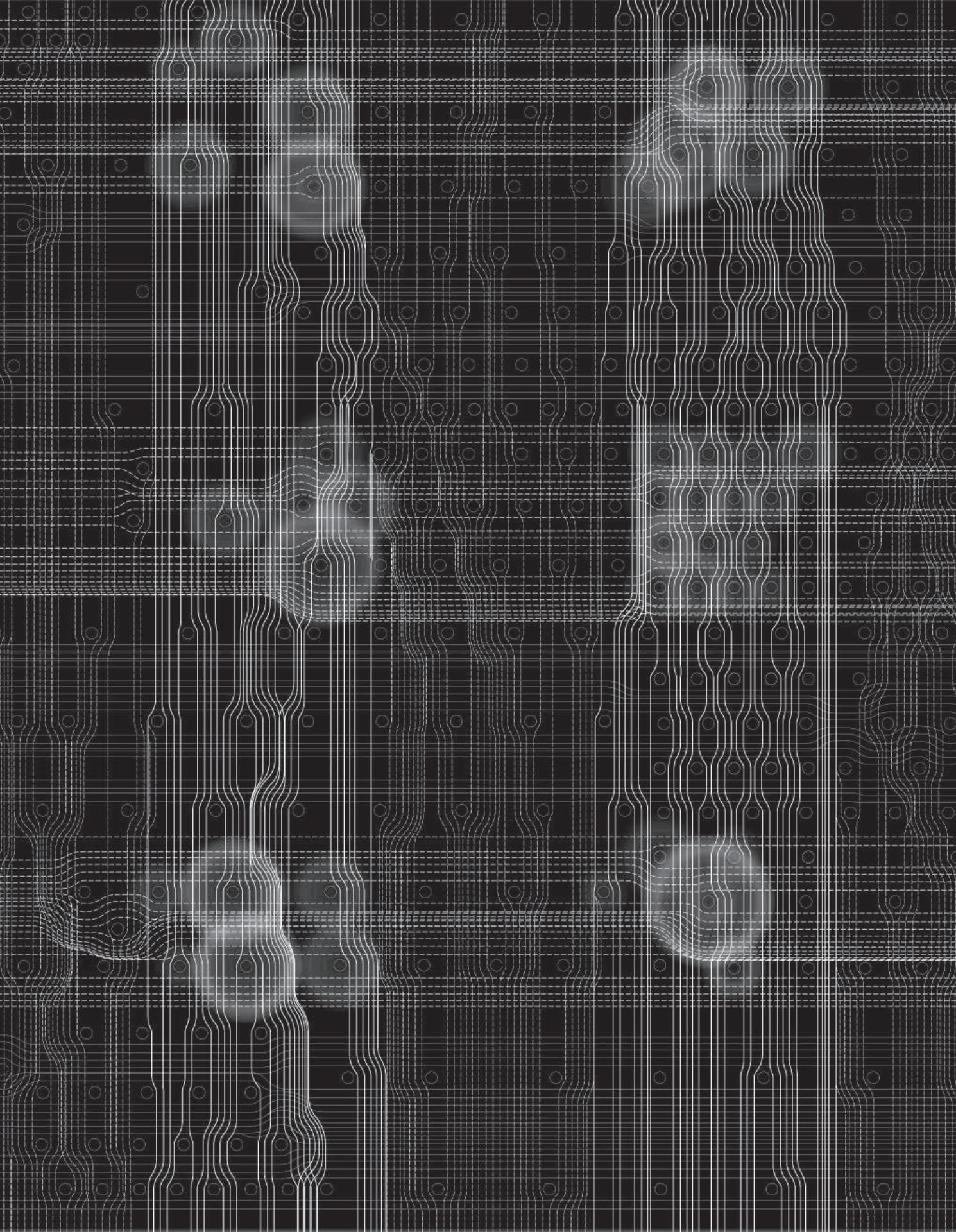
48

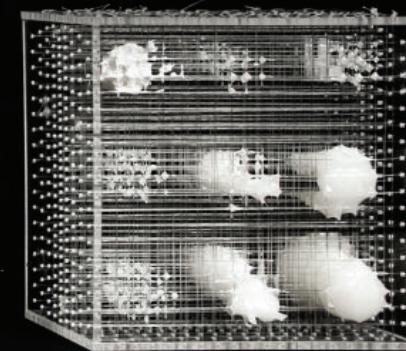
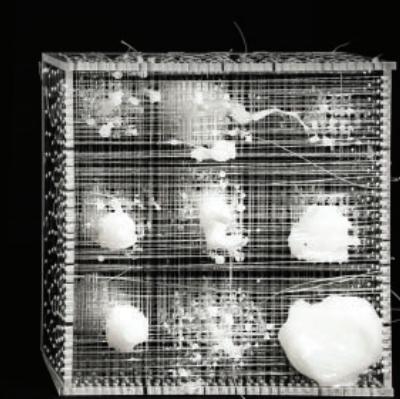
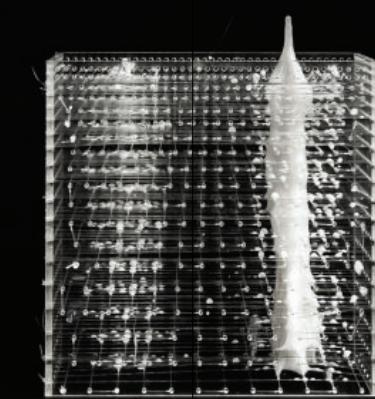
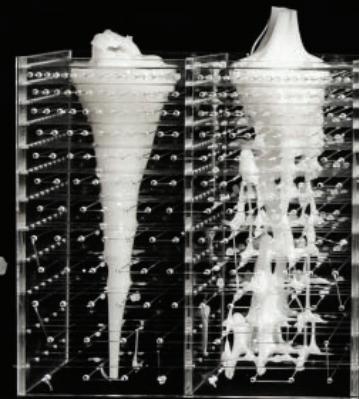
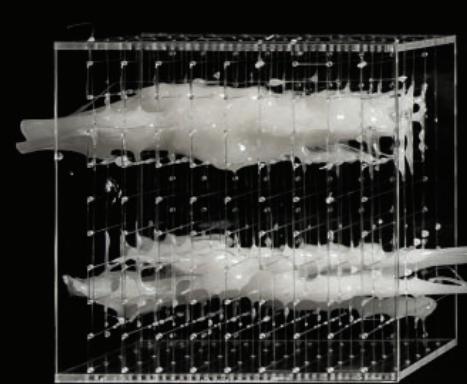
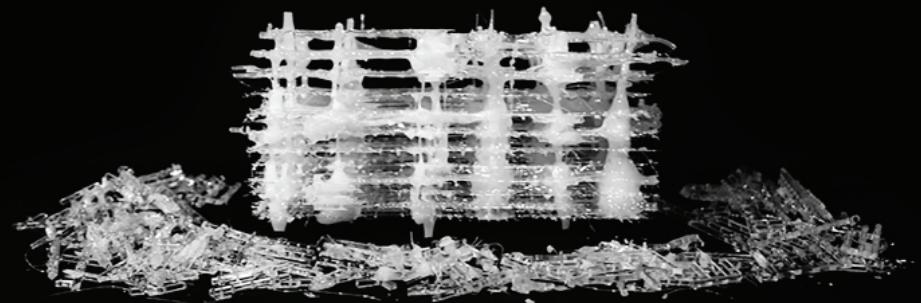
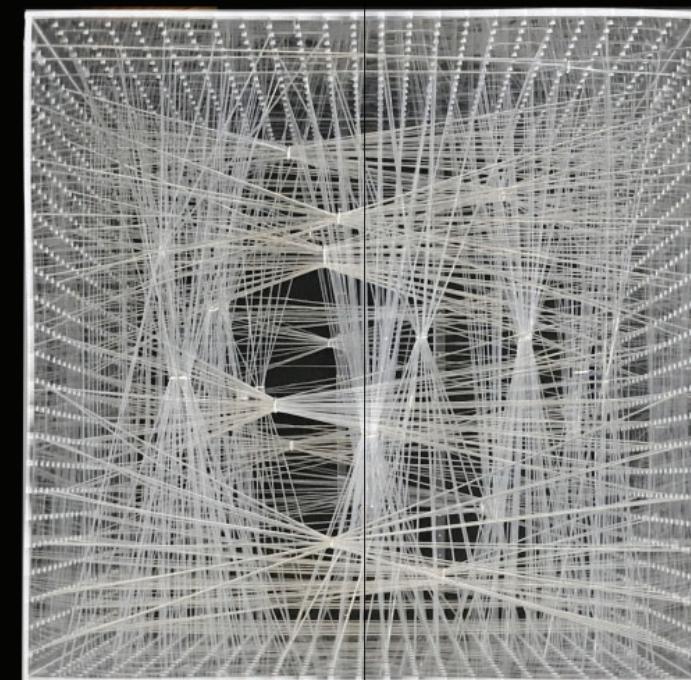
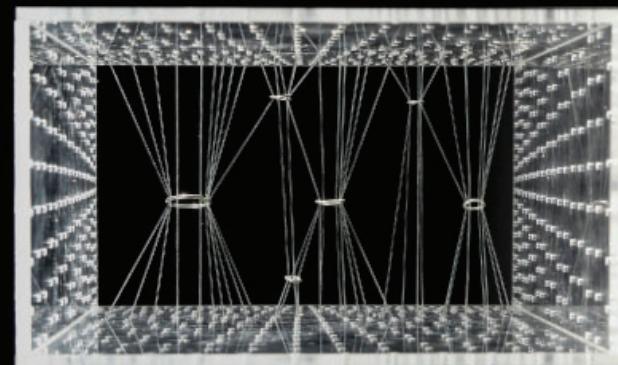
Accumulation & Spread

critic: Karla Rothstein

core II: Archive of Absence, Spring 2019

This series of material studies examines patterns of spread and accumulation utilizing filament, acrylic, metal fasteners, and liquid plastic. On the left is an operative analysis of liquid spread and accumulation. The following iterations range from explorations of string fields to studies of liquid spreading. The results are singular moments of movement frozen in time. The following exploration is formal, spatial, and interrogates grouping and intersection as an organizational logic.





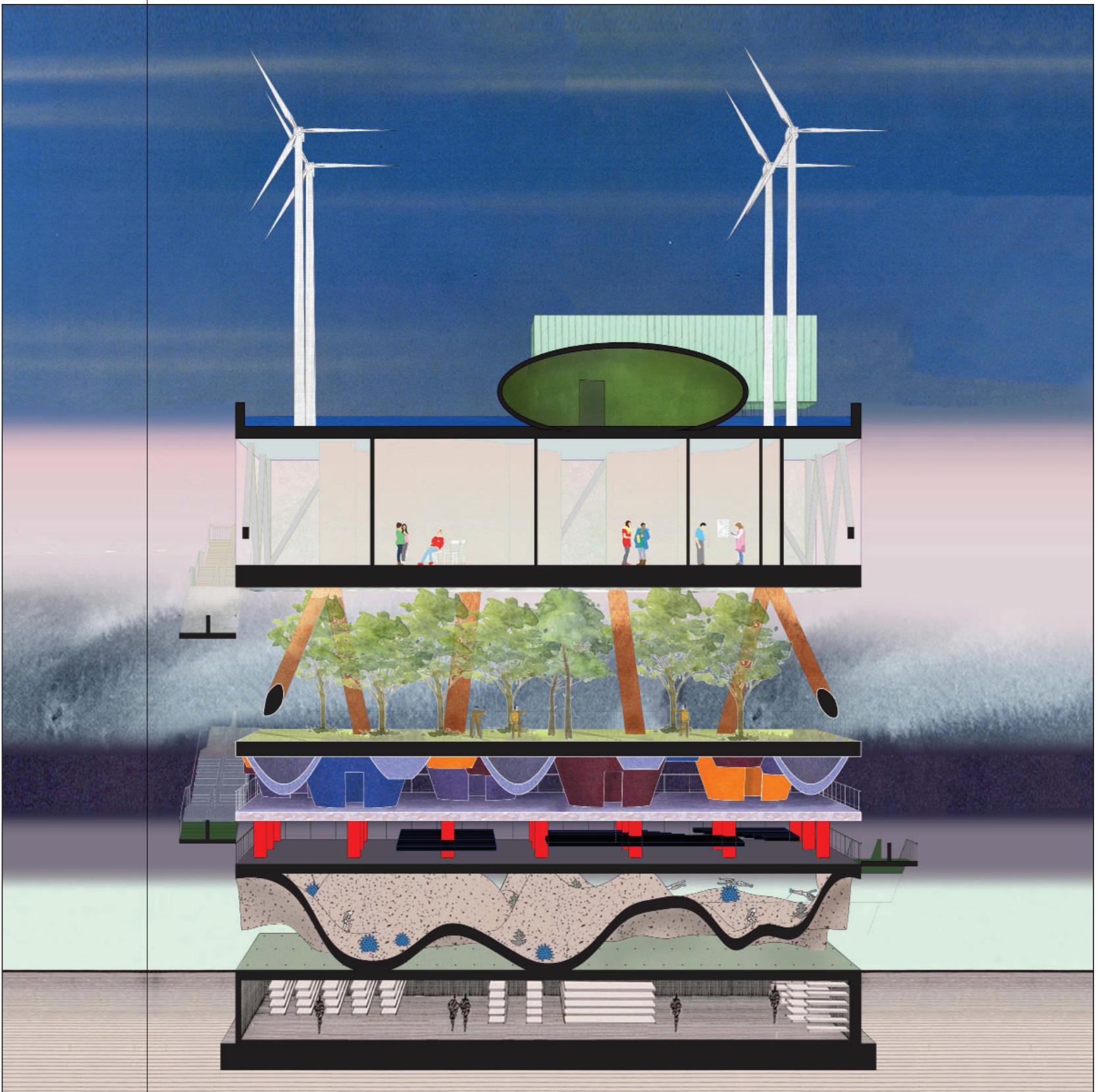
material models: string, acrylic, liquid plastic, metal fasteners

Expo 2000 Redux

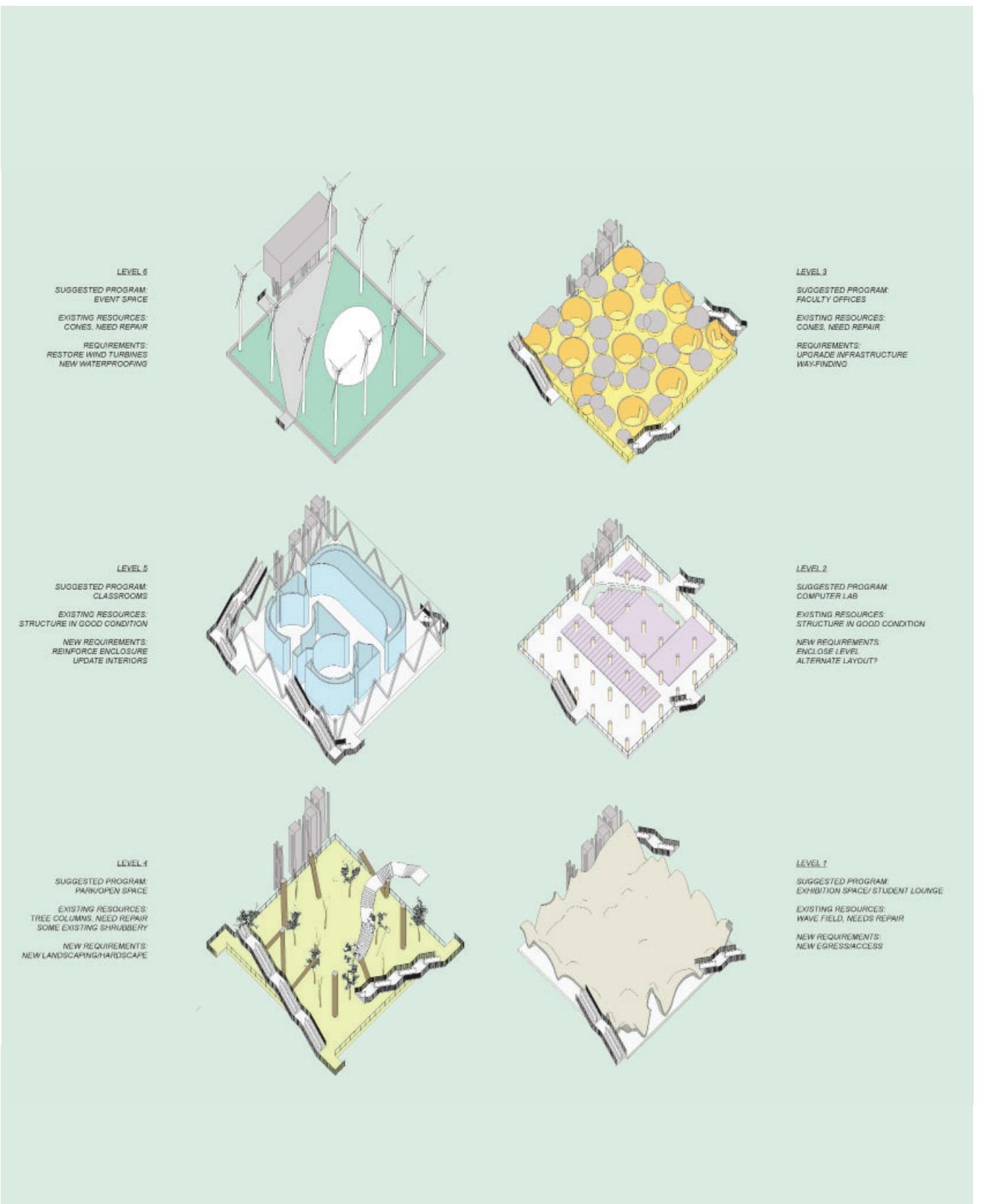
critic: Bika Rebek

visual studies: ADR I, Fall 2018

Since it's debut at the 2000 World Exposition in Hannover, the MVRDV Netherlands Pavilion has fallen into disrepair. As the firm and a new client aim to adapt the structure for new uses, this study explores representational styles and their relationship to design. The drawing set is formatted as a call for proposals, with a combined drawing borrowing representational styles for each distinct level of the pavilion. In translation to three dimensions, the model explores different methods of making and how each method lends itself to certain formal outcomes.

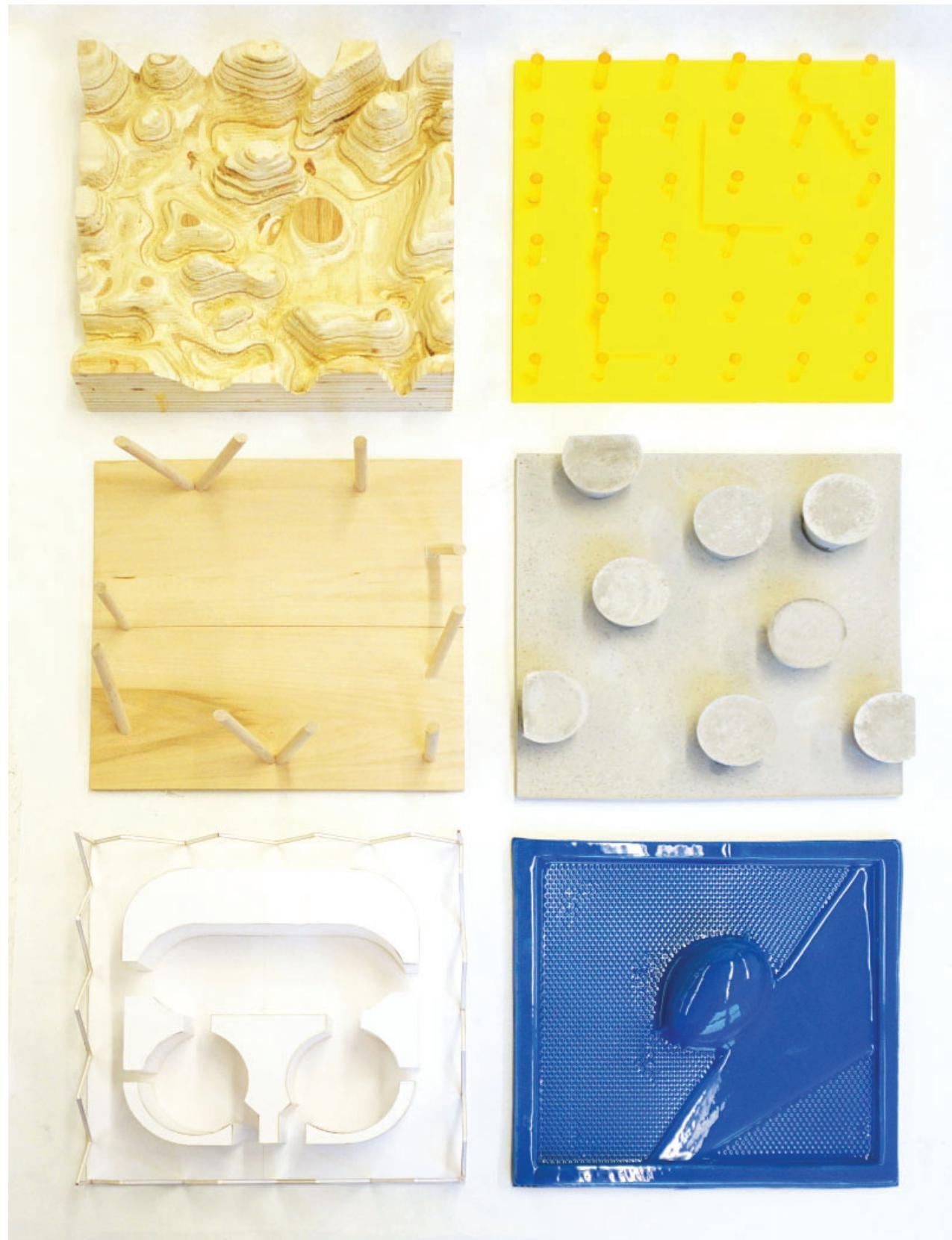


MVRDV pavilion reimagined through famous architect's drawing styles

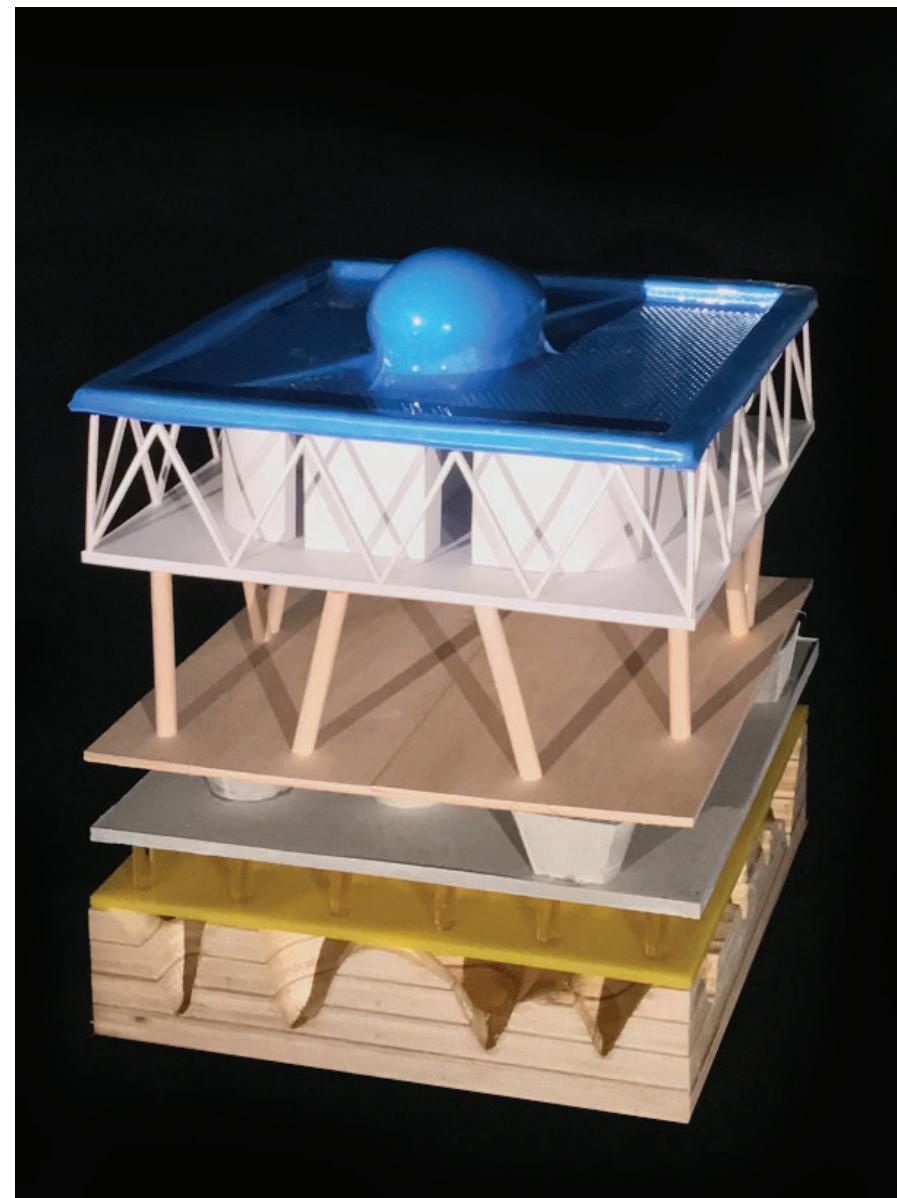


imagined call for proposals for MVRDV pavilion repurposing

MVRDV pavilion model details



MVRDV pavilion levels as different methods of making



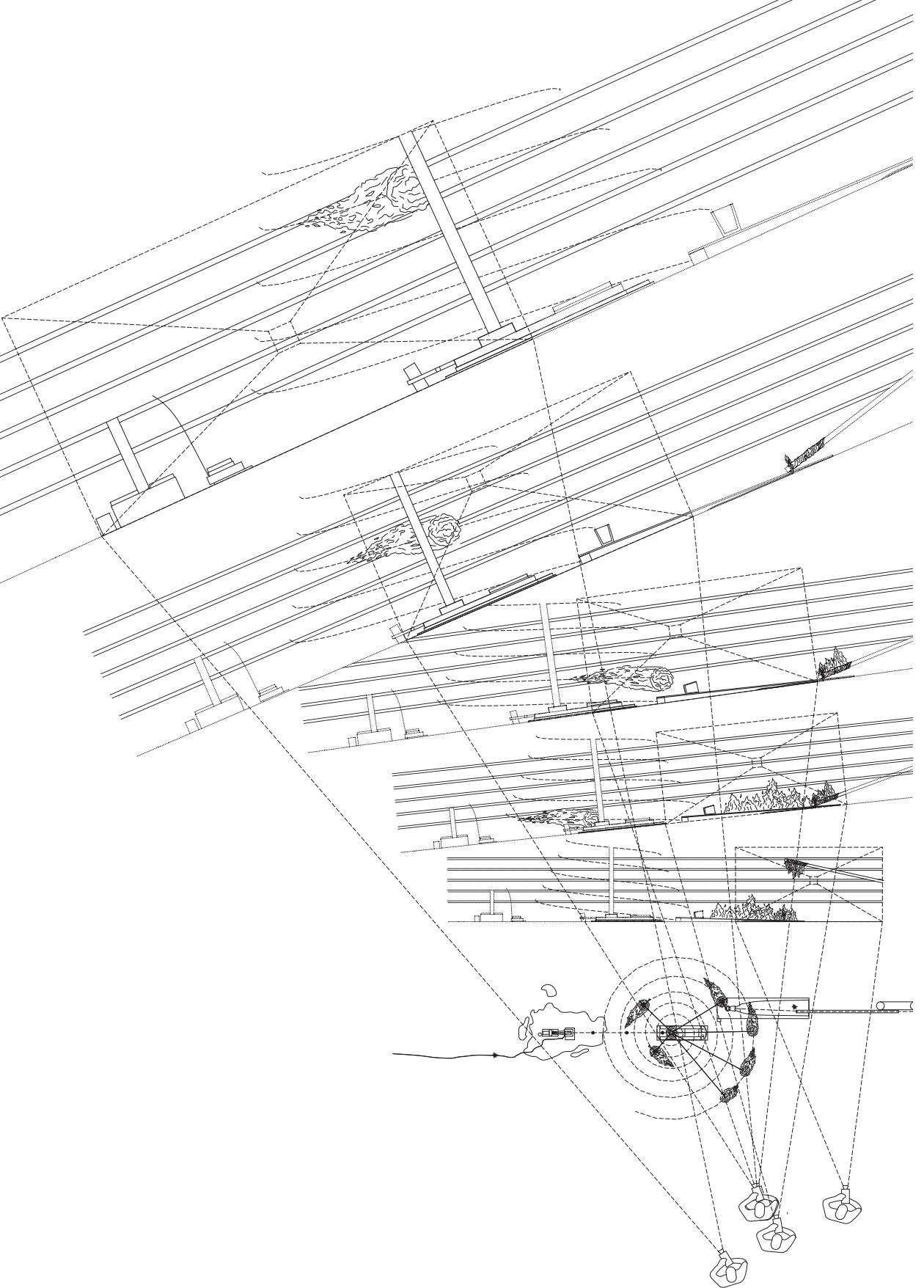
MVRDV pavilion model

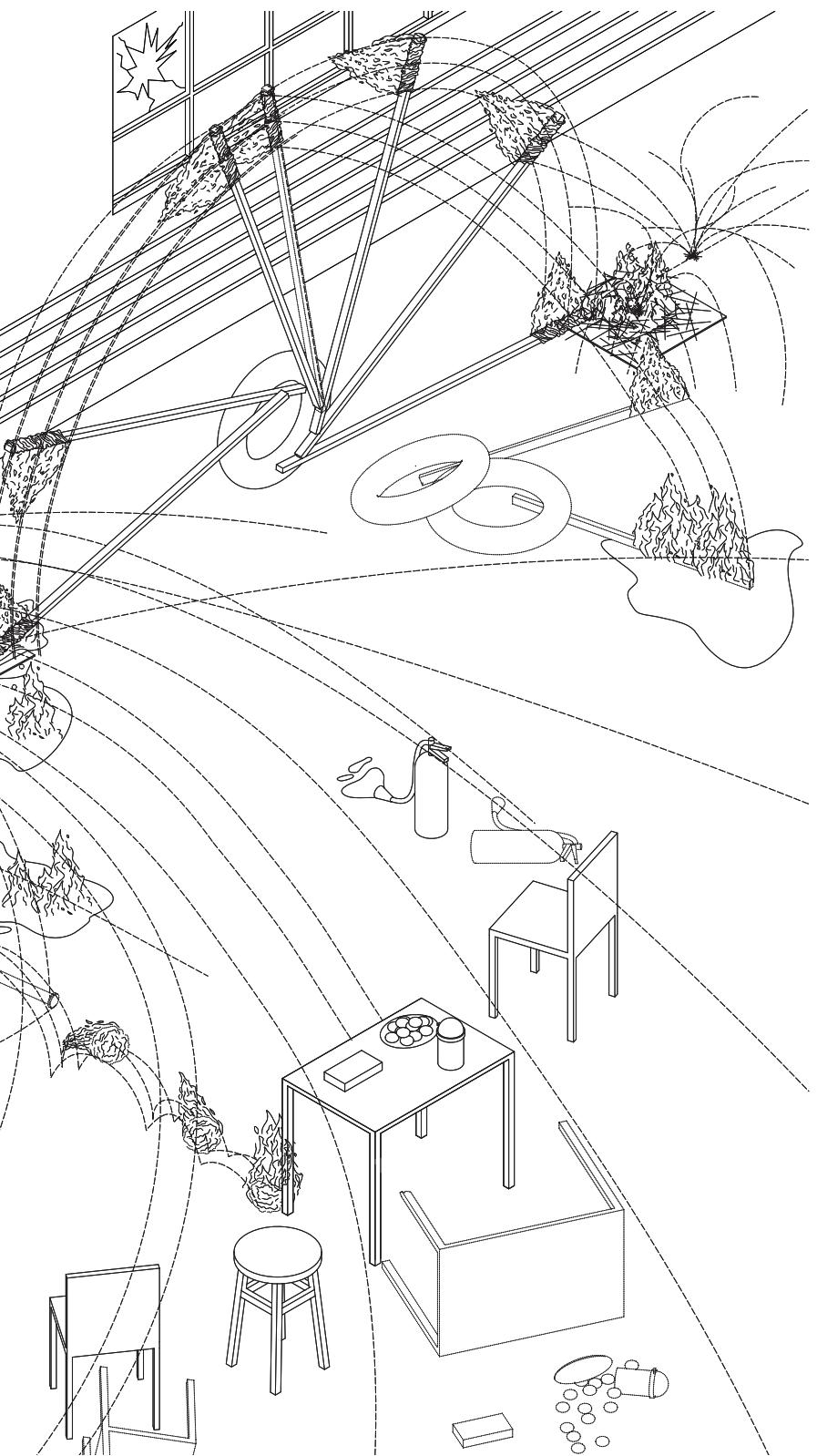
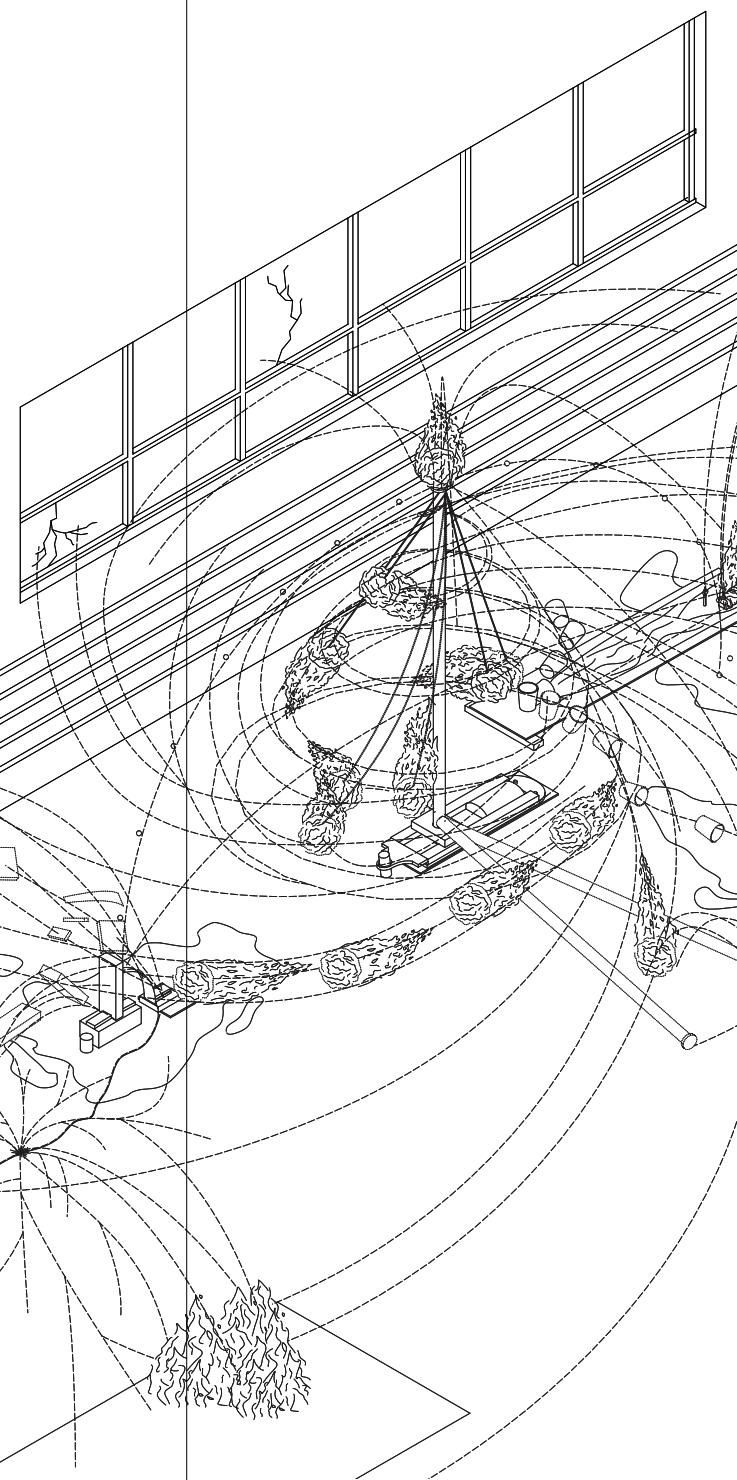
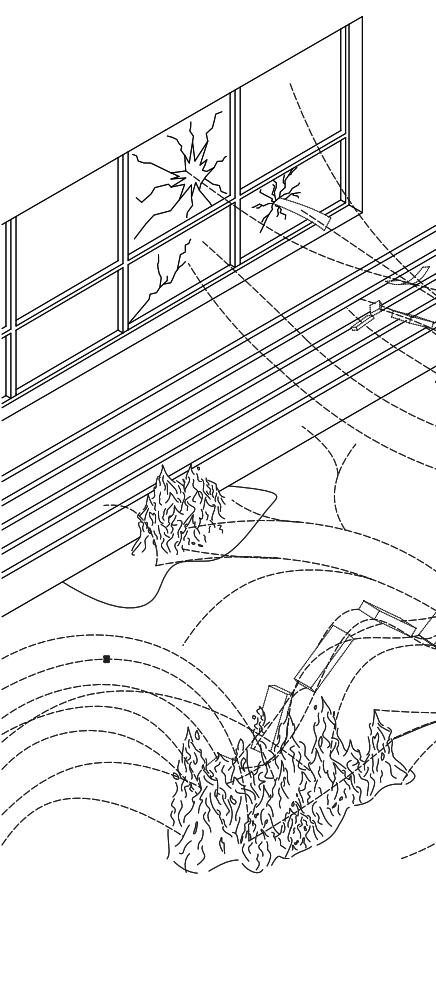
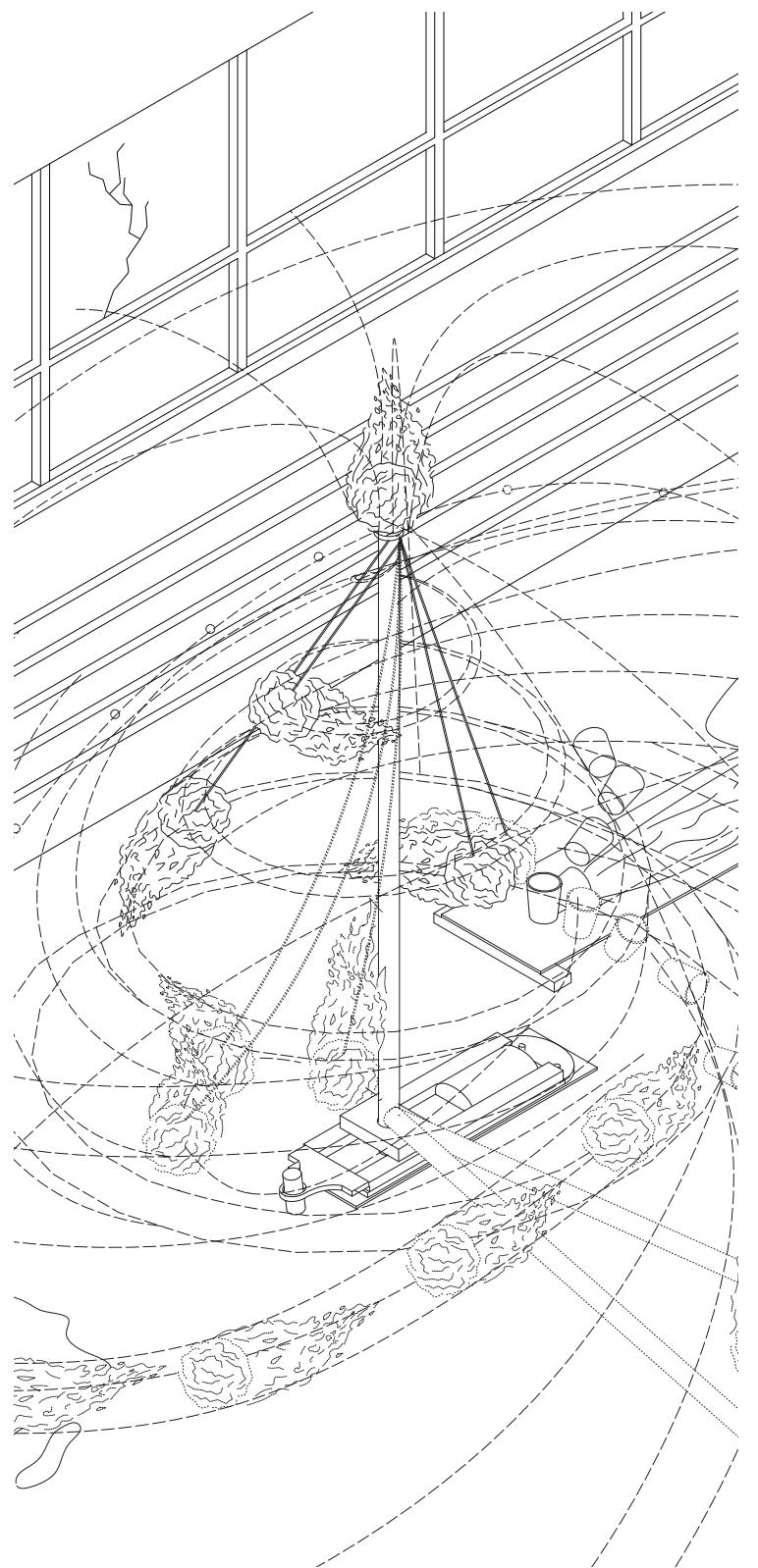
The Way Things May Have Gone

critic: Stephanie Lin

core I: Broadway Stories, Fall 2018

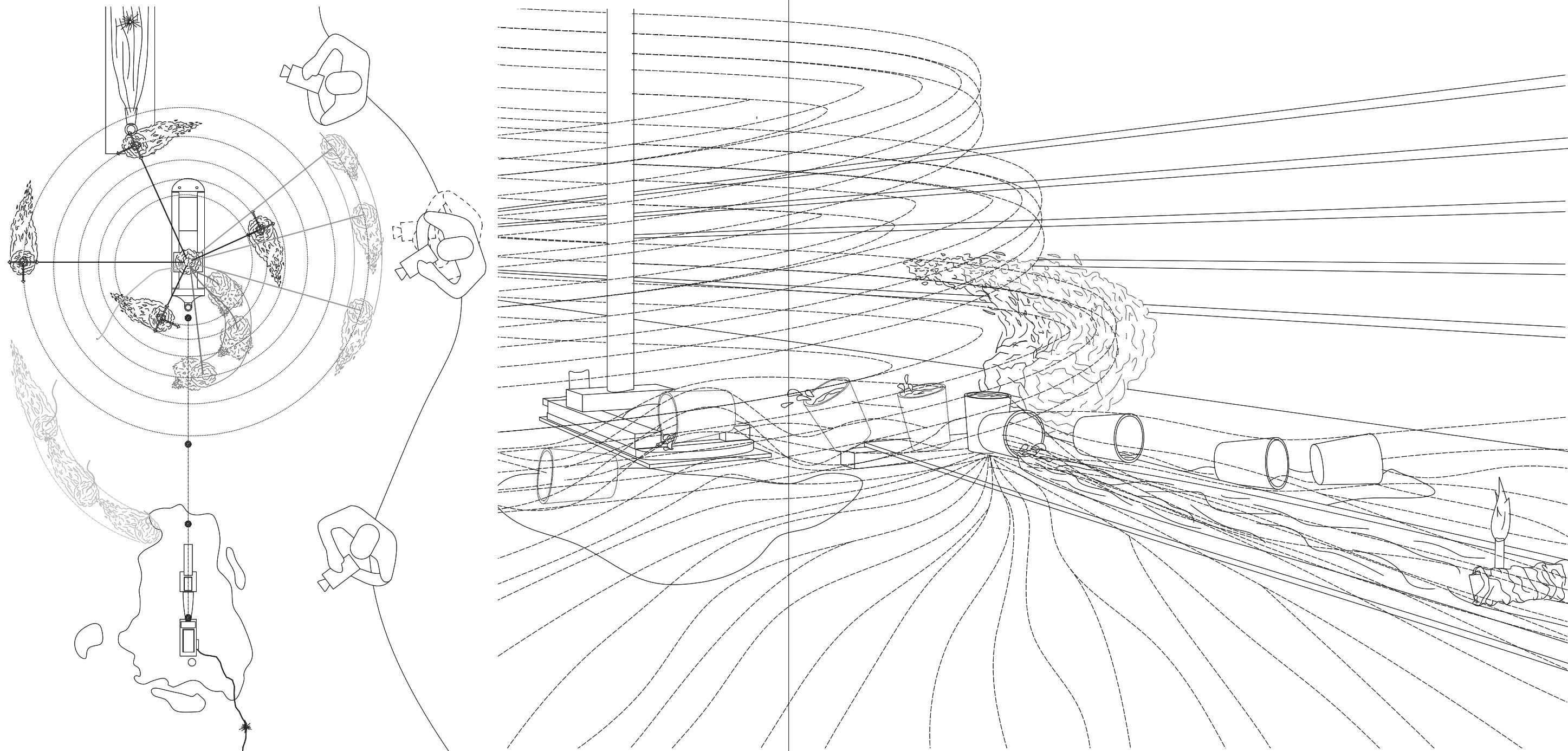
This series of drawings investigates the possible realities behind the 1987 film *The Way Things Go*, by Peter Fischli & David Weiss. While the film is edited to appear as seamless and independent as possible, in reality the artists complied the sequence from many takes and segments. Exploring methods of representation and translation, each drawing imagines these potential breaks in the film's highly cultivated chain.





simultaneous possibilities fragment

simultaneous possibilities



mapping camera & action

moment of imprecision

SYSTEMS

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STRUCTURES

Nameless Theater
with Alina Abouelenin,
Shuang Bi, & Camille Brustlein

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Archive of Absence
critic: Karla Rothstein
Core II

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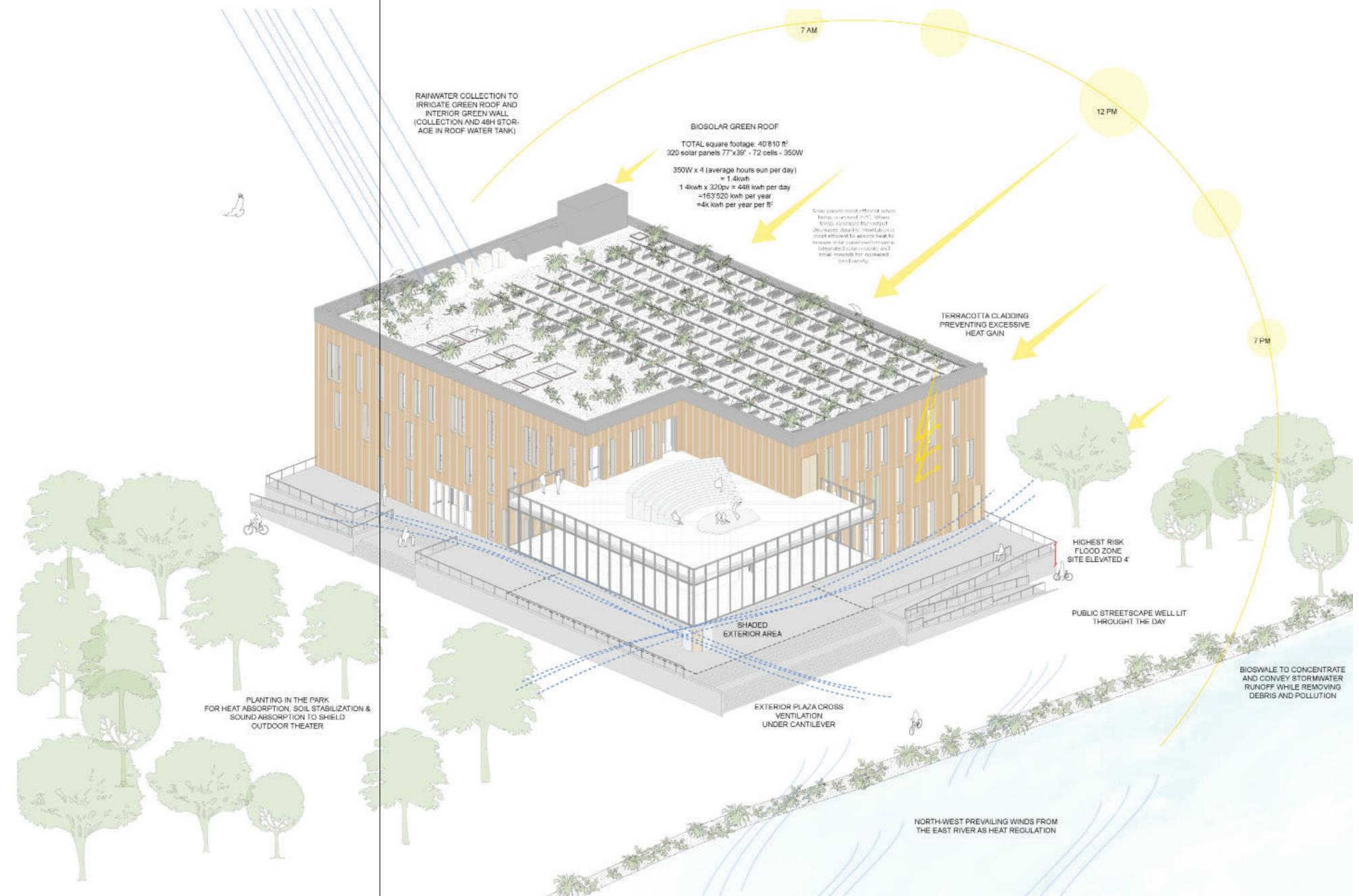
Melrose Housing
with Melissa Chervin
critic: Galia Solomonoff
Core III

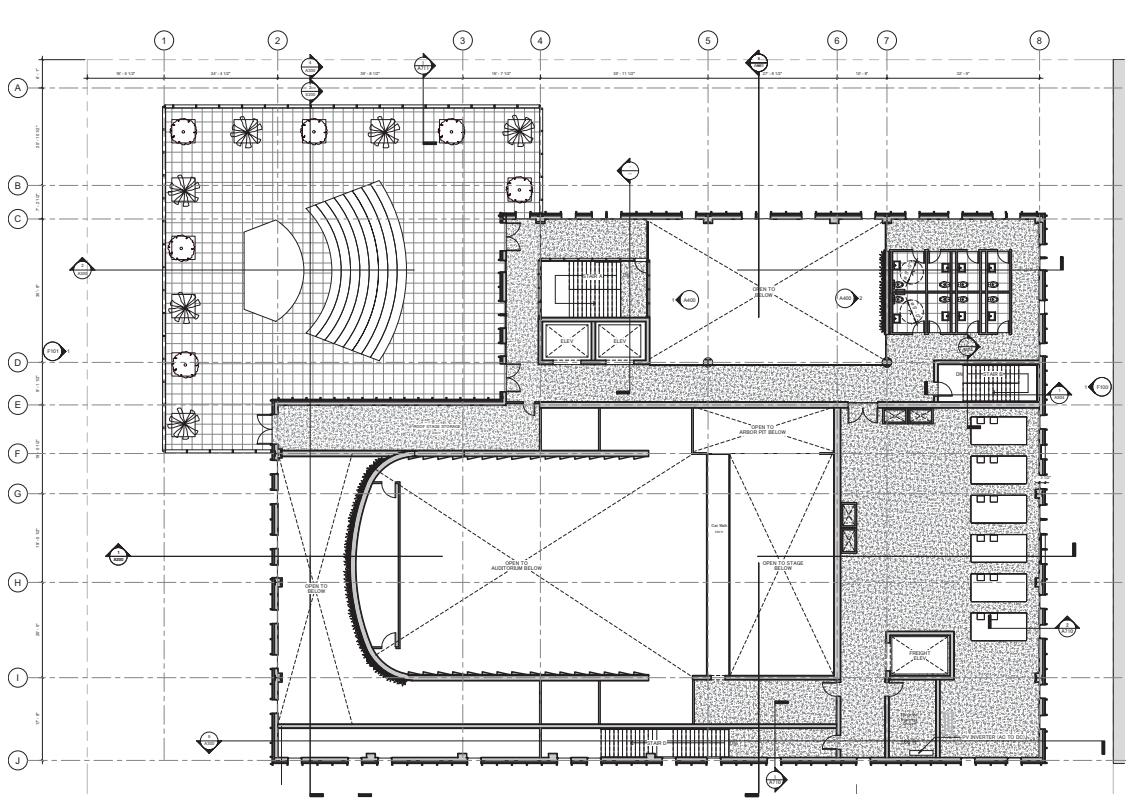
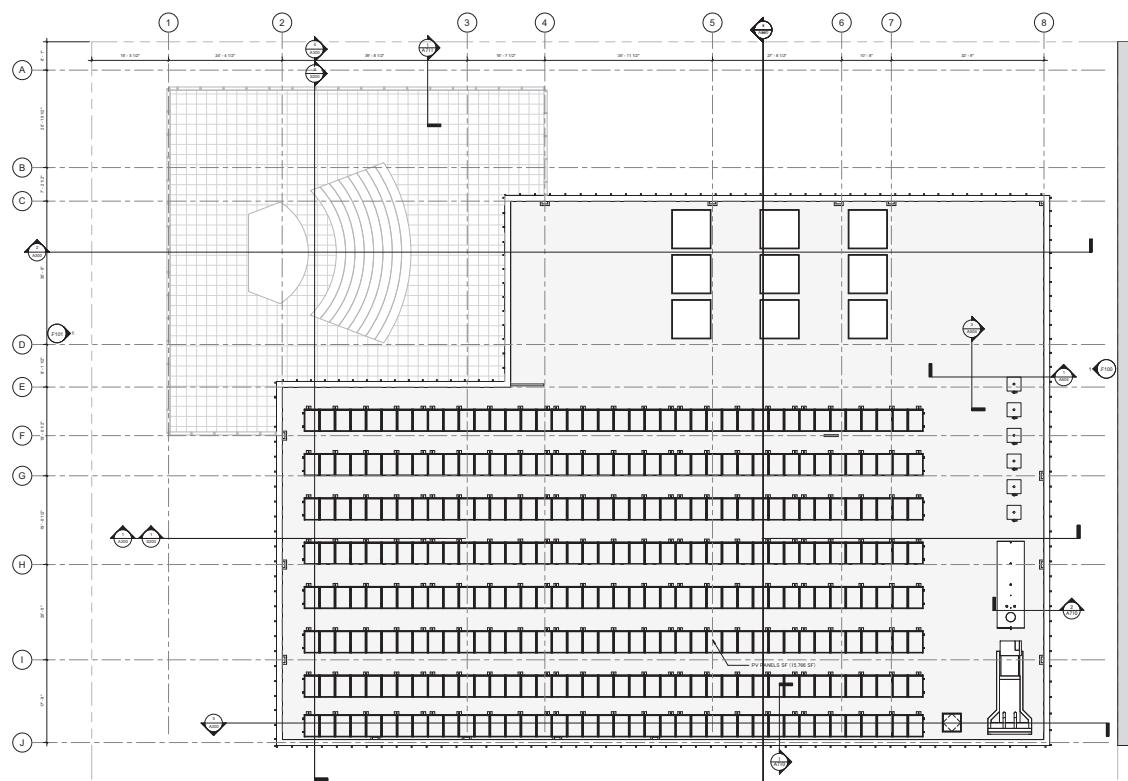
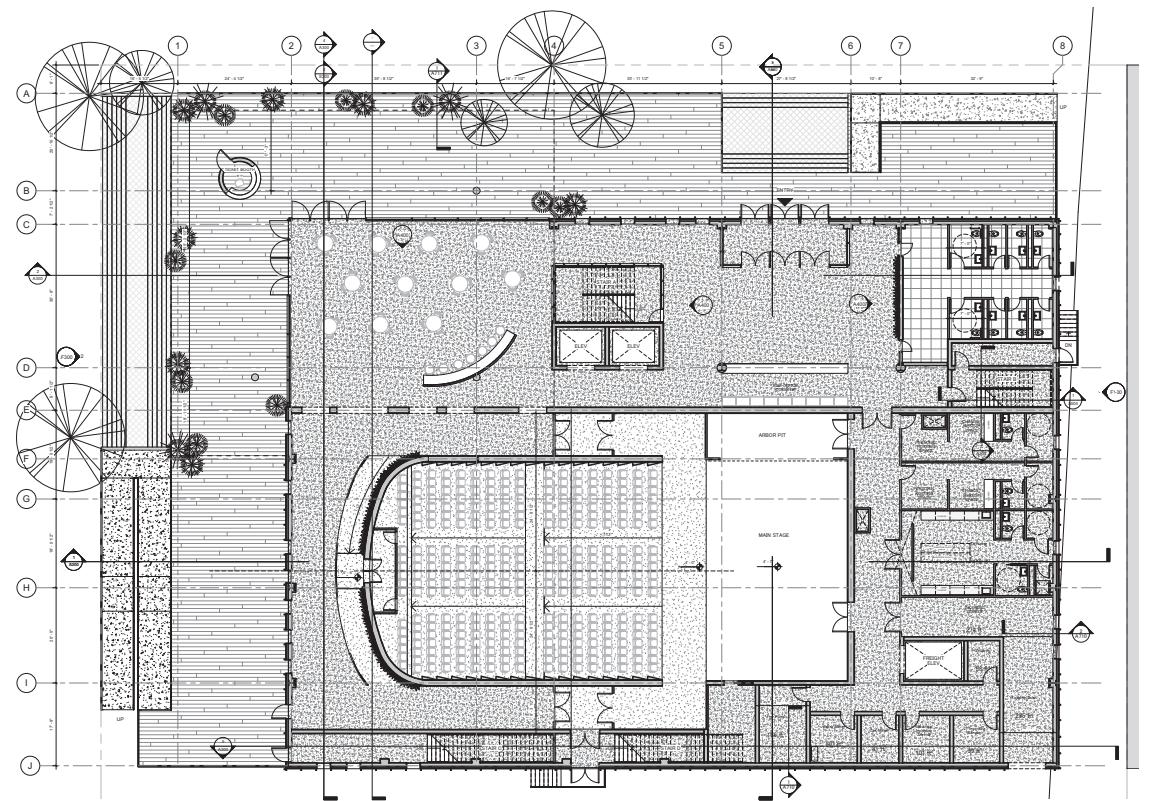
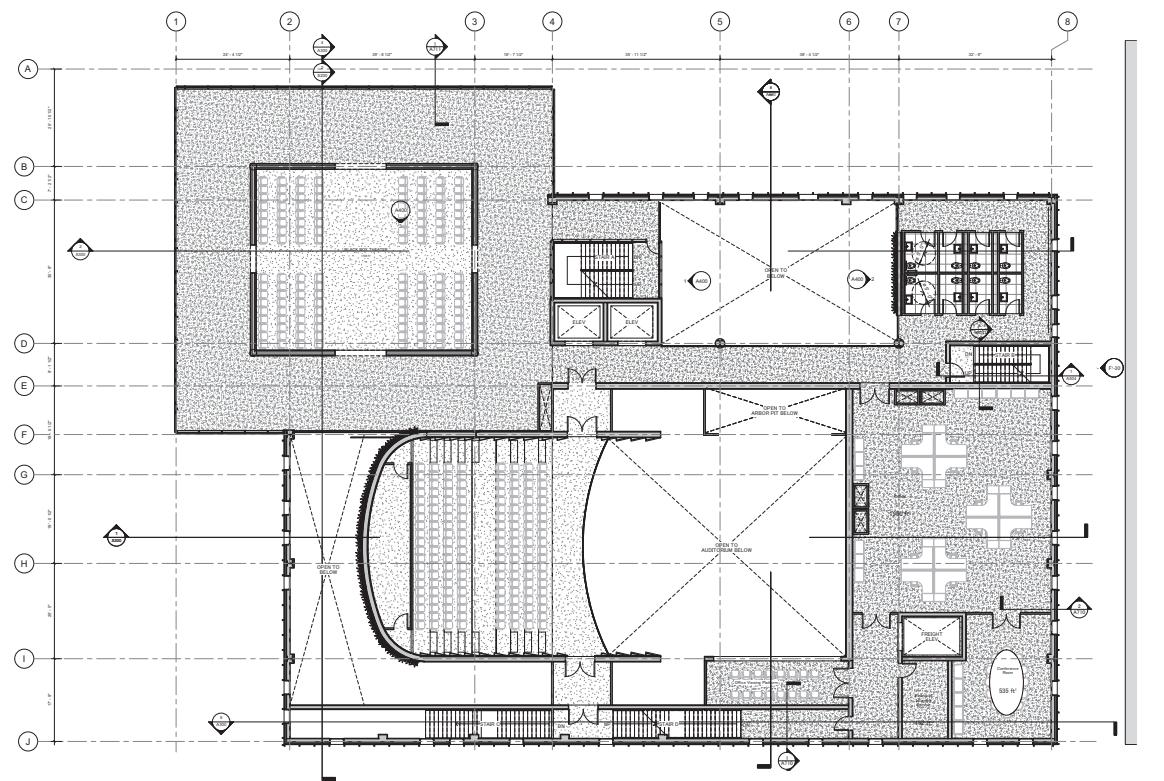
61

Nameless Theater

with Alina Abouelenin, Shuang Bi, & Camille Brustlein
course leads: Sarah Khan & Gabby Brainard
tech II & IV: Fall 2019

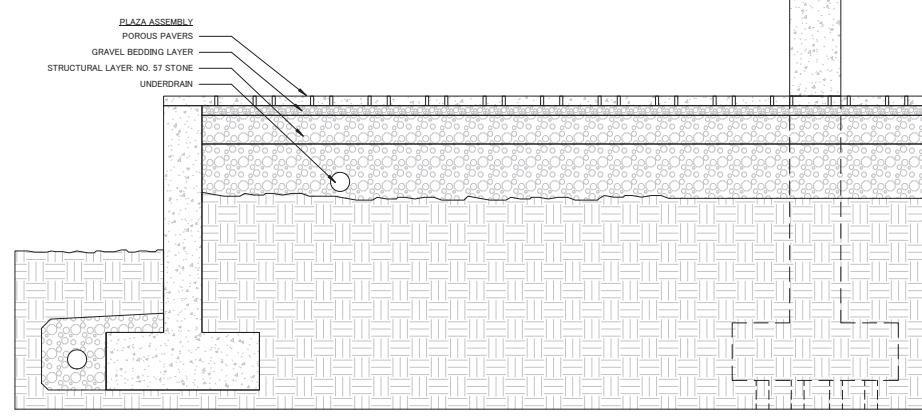
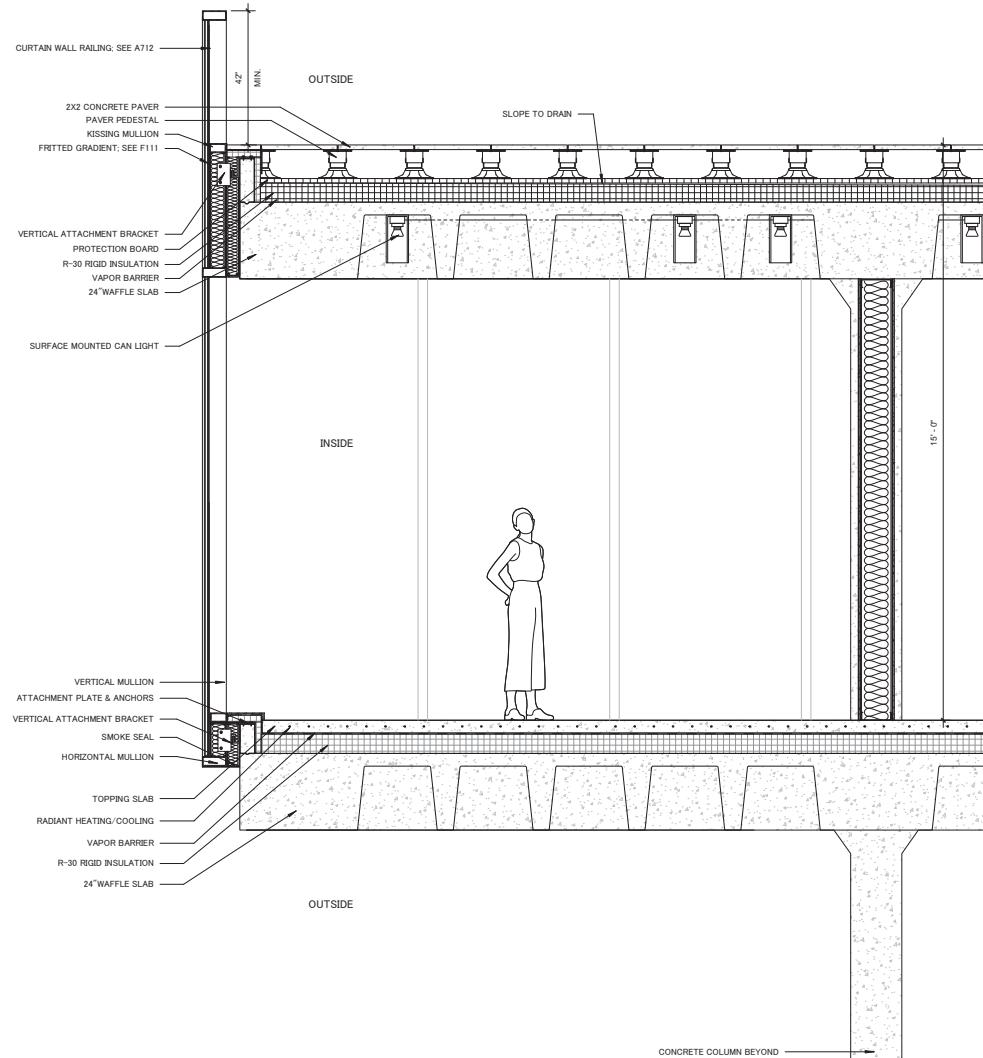
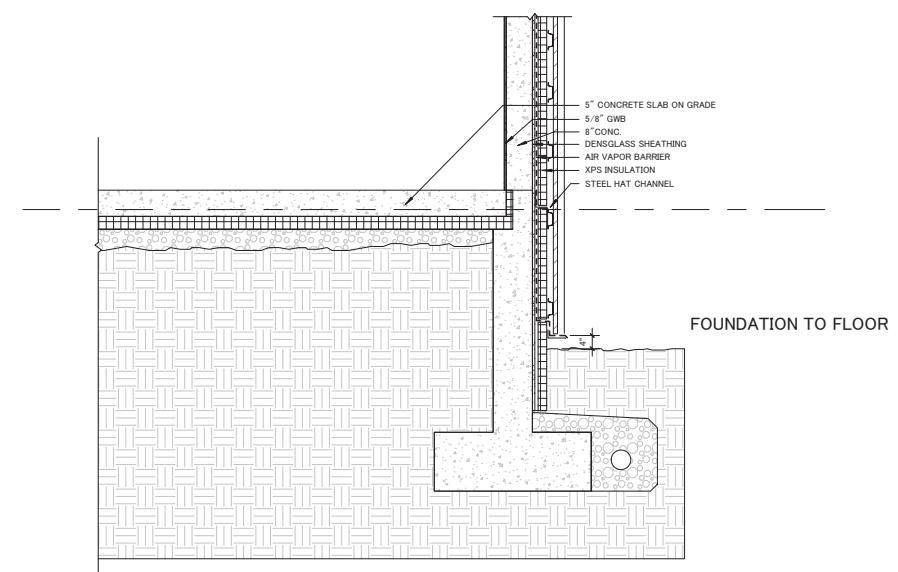
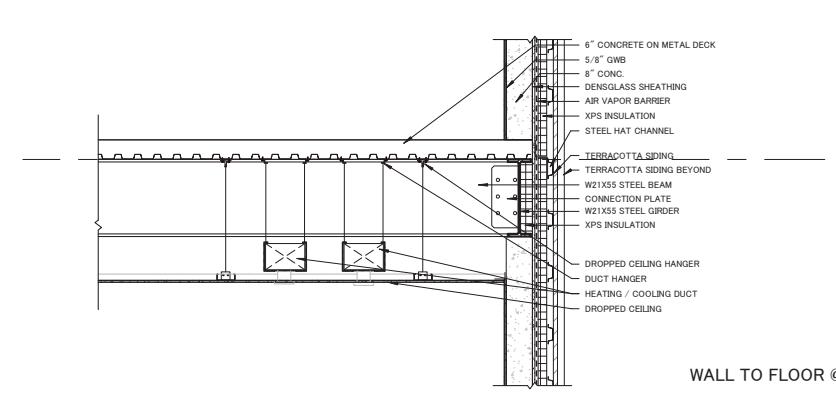
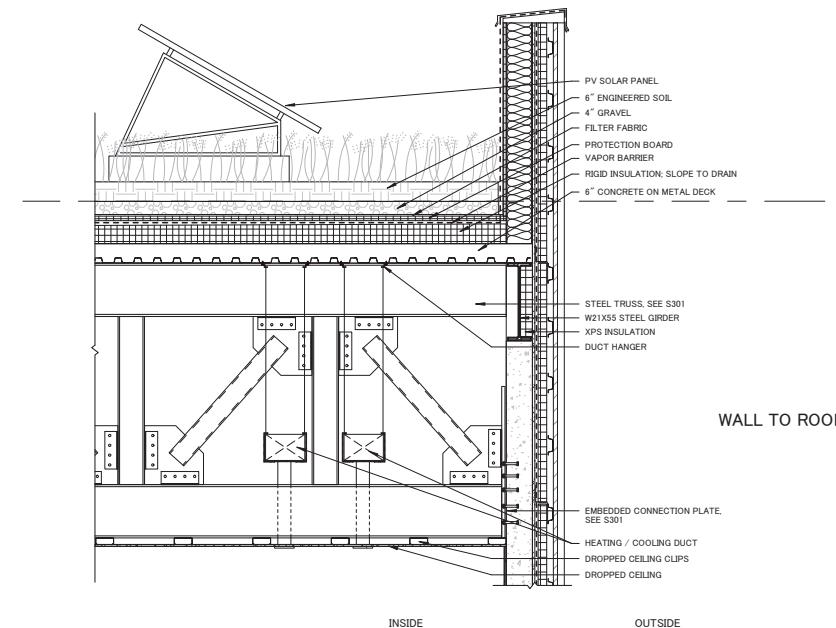
The Nameless Theater is a theater and gathering space adjacent to Transmitter Park in Greenpoint, Brooklyn. The building is comprised of three main forms, the plinth, the main theater, and the intersecting black box theater volume. Much of the design was driven by an attempt to reduce the footprint of this traditionally resource intense building type. Strategies included reducing glazing, raising the ground floor, including a biosolar green roof, and working with low carbon footprint building materials.





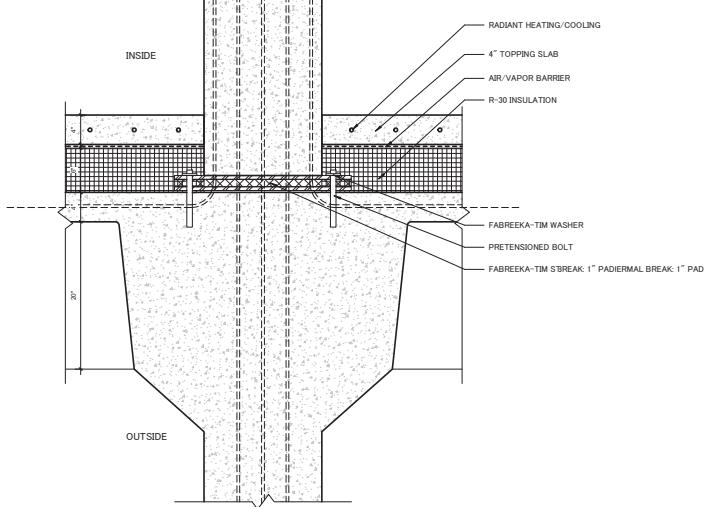
level 1 & level 2, plans

level 3 & roof, plans

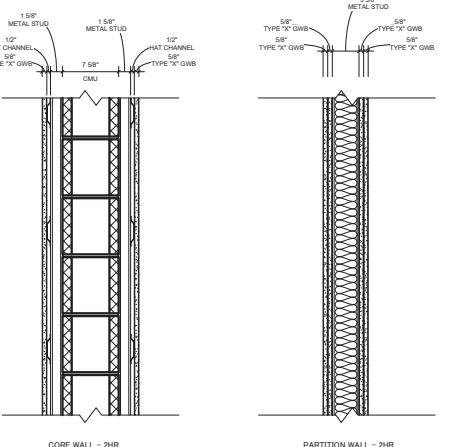


typical wall section at terracotta

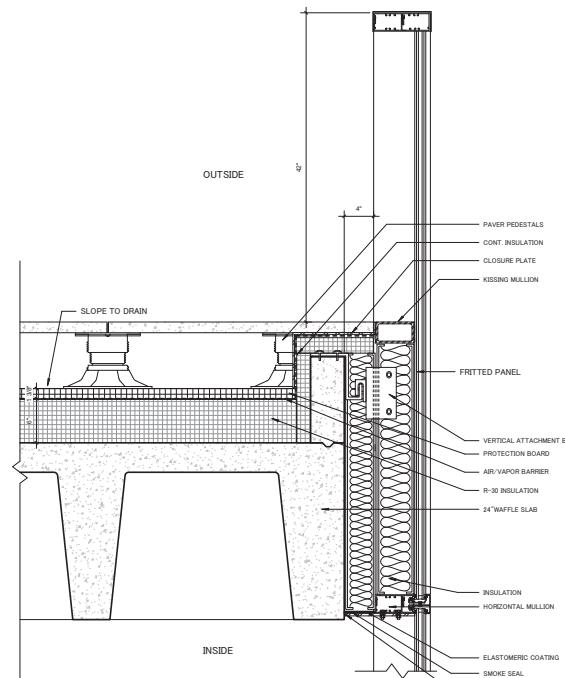
overhang wall sections at waffle slab



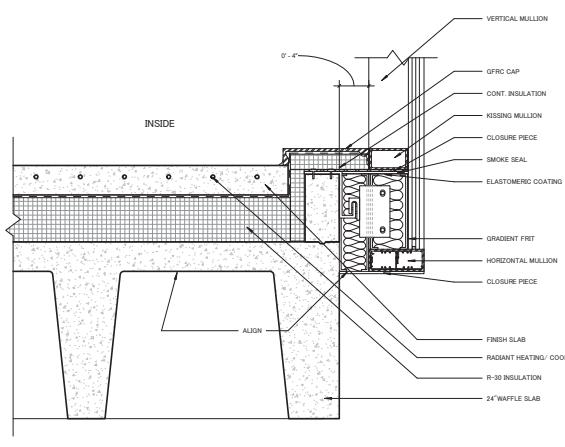
WAFLE SLAB & COLUMN THERMAL BREAK
1 1/2" = 1'-0"



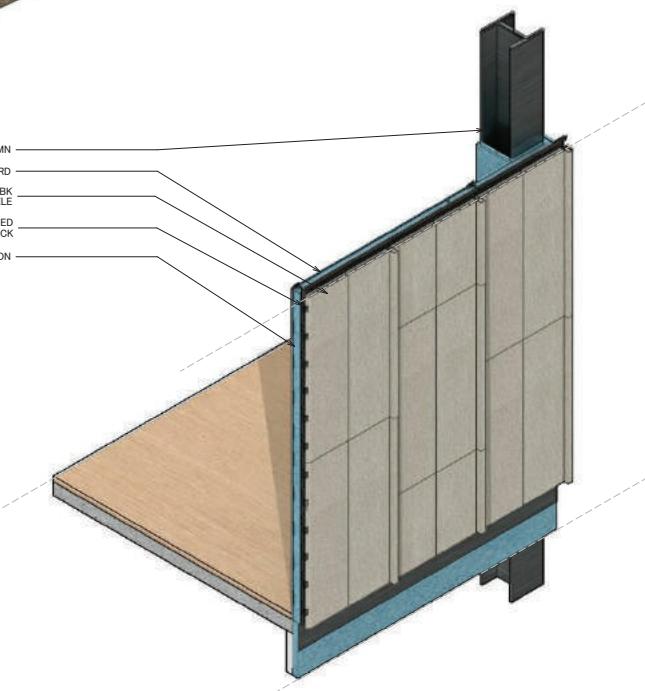
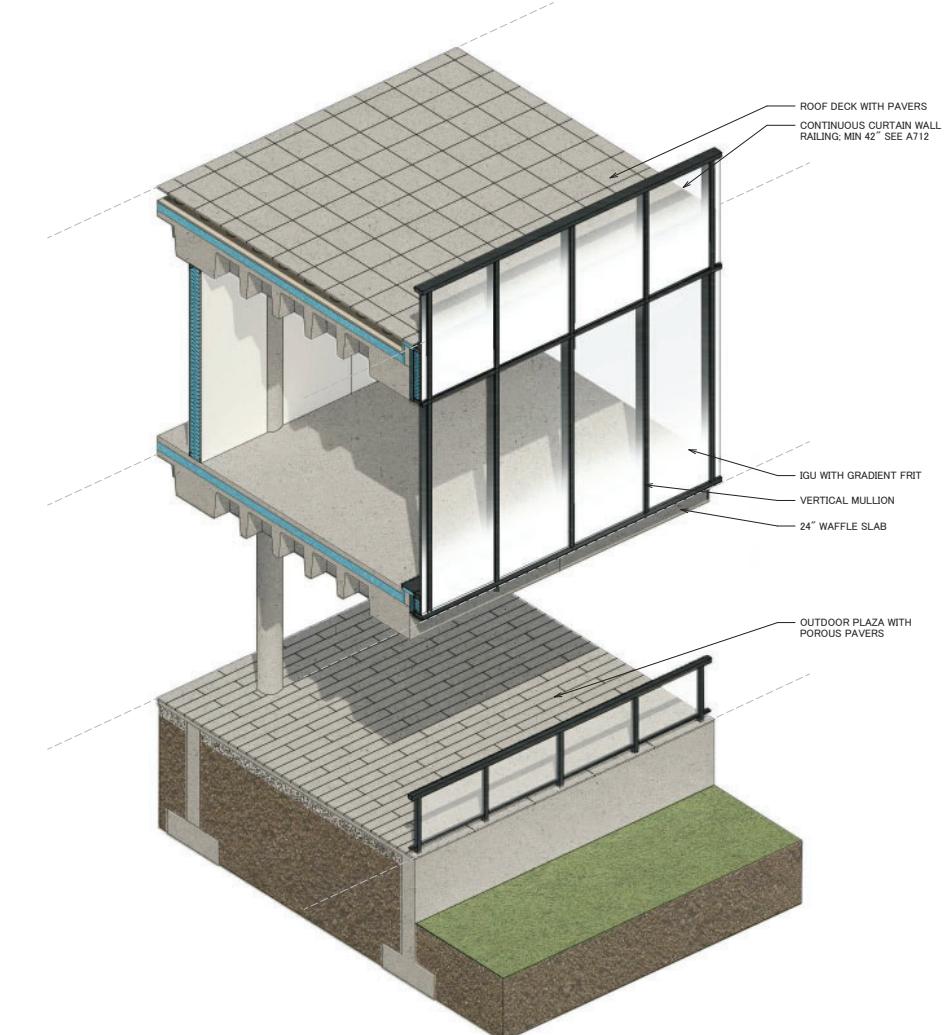
RATED WALLS
1 1/2" = 1'-0"



CURTAIN WALL AT ROOF
1 1/2" = 1'-0"



CURTAIN WALL AT WAFFLE SLAB FLOOR
1 1/2" = 1'-0"

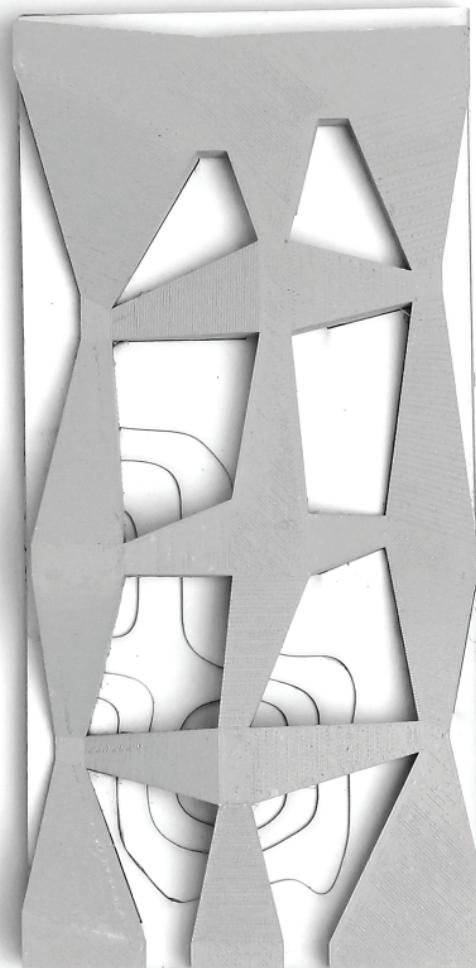
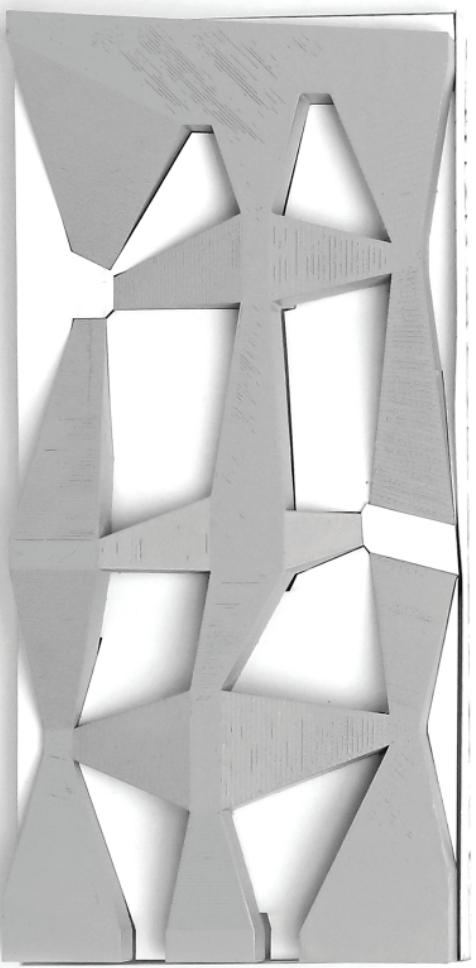
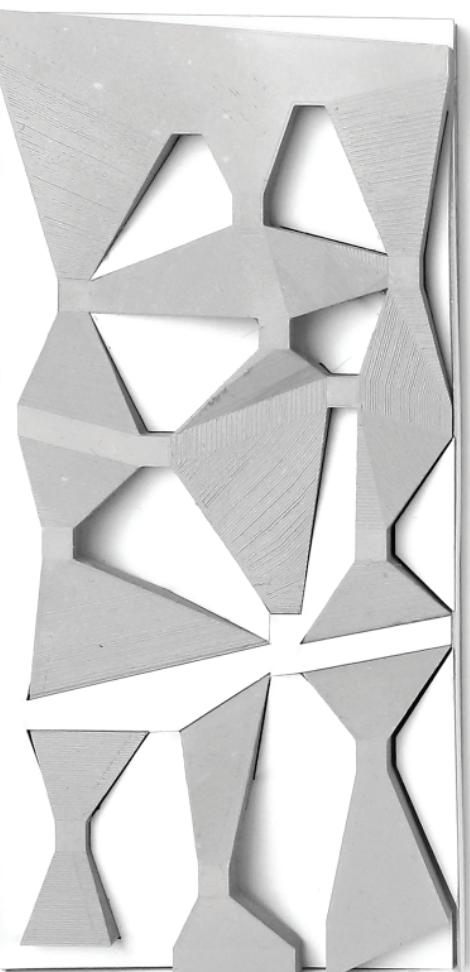


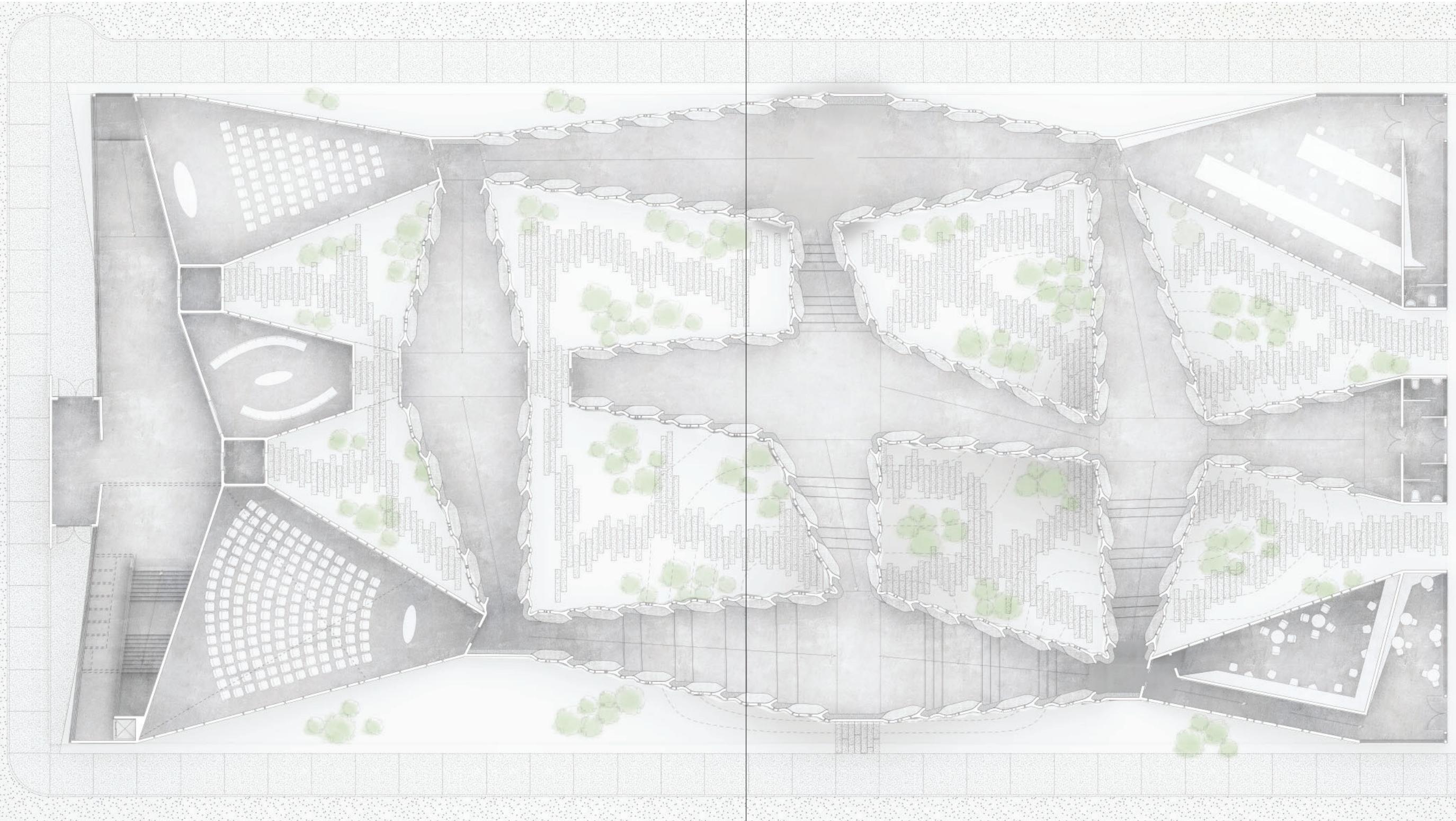
Archive of Absence

critic: Karla Rothstein

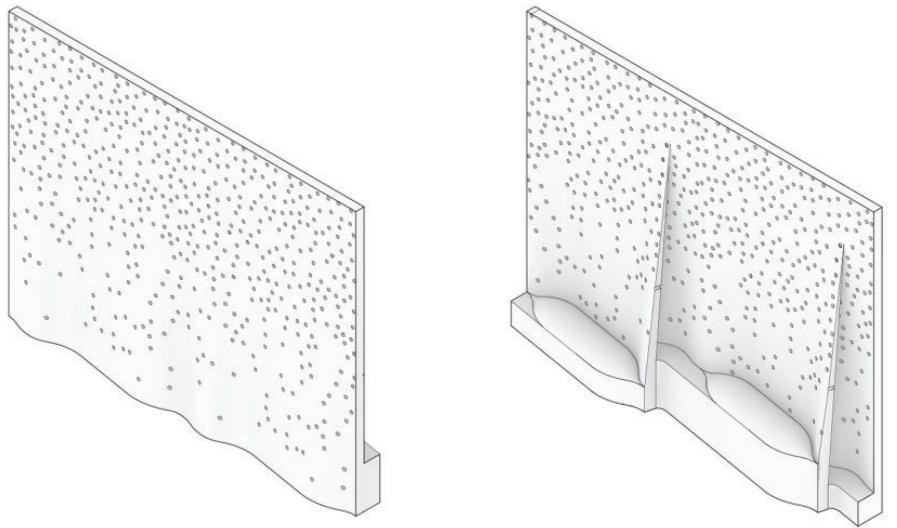
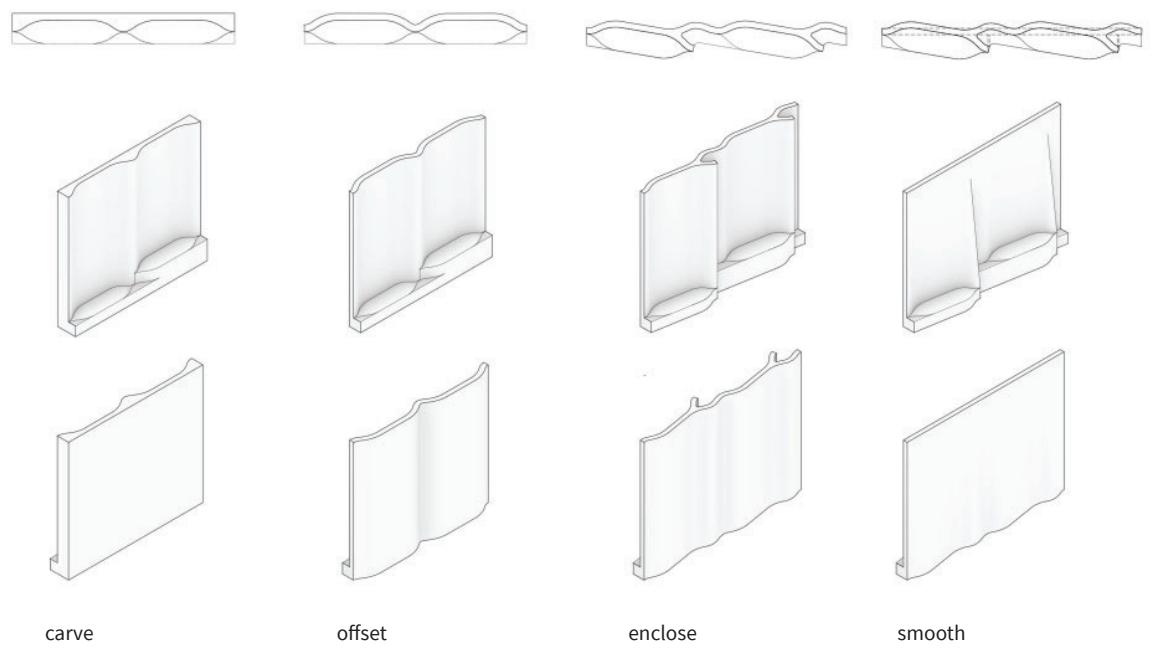
core II: Archive of Absence, Spring 2019

The Archive of Absence is comprised of a series of compressive and expansive interconnecting spaces that accommodate collective and individual remembrance, challenging the conception that sites of interment must be singular or static. The archive serves as a testing ground for sustainably returning our bodies to the earth. The interior houses ceremony spaces of varying scale, halls which hold vessels for anaerobic decomposition, niches for individual contemplation, and a laboratory to monitor the health of this potentially limitless system. The exterior, arranged as connected and semi-enclosed courtyards and roofscapes, features landscaped areas which receive the organic remains. The result is a network of space and landscape that creates intersecting frameworks of movement and repose, spreading and accumulating over time.



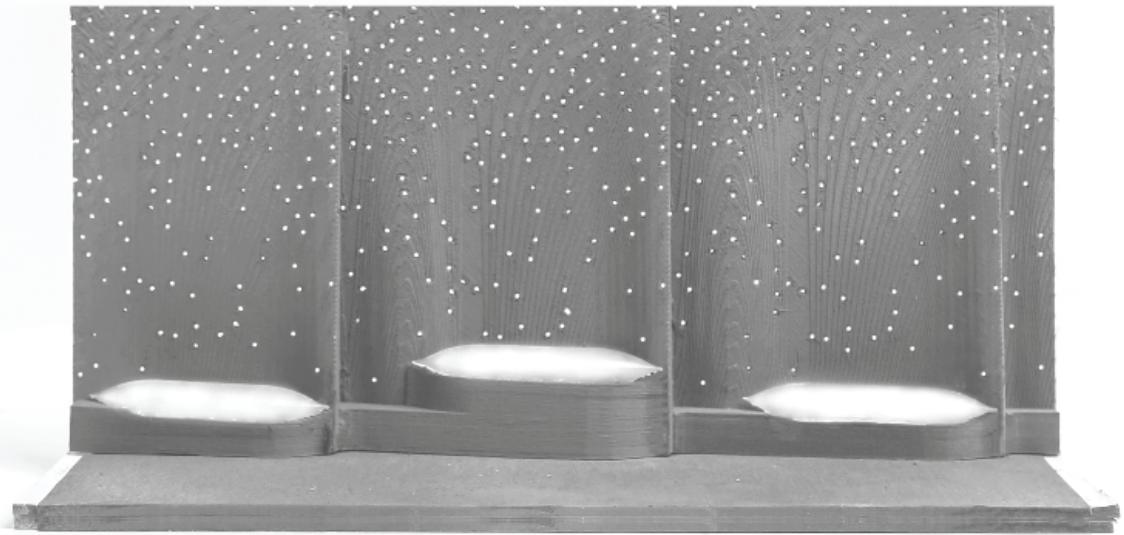


building plan

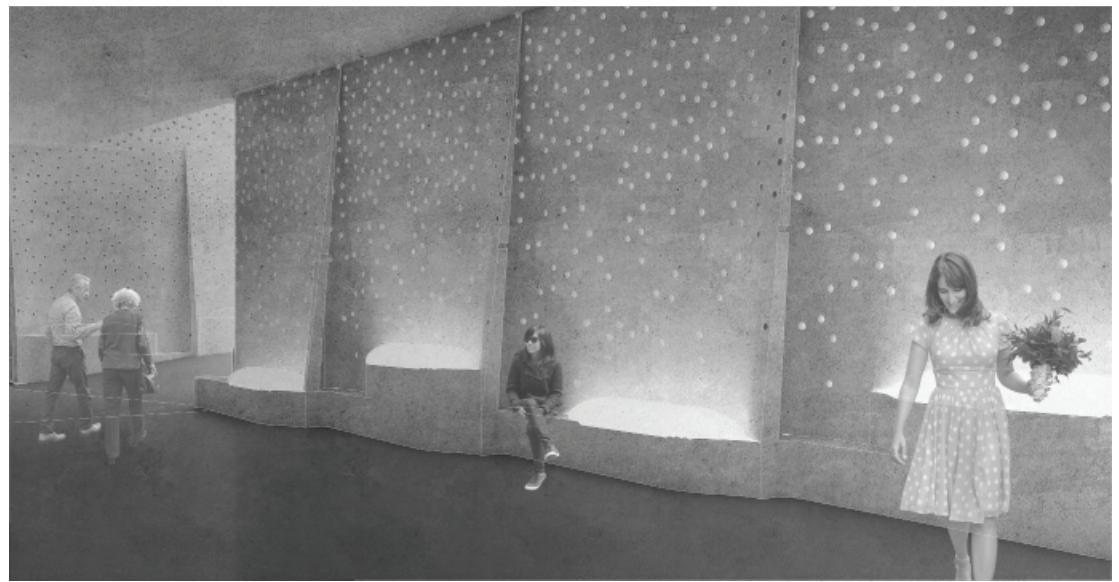


Wall with Perforation

wall detail study



wall detail model: resin, PLA, chipboard, paint



building interiors, decomposition hall, remembrance walls



roof plan, building section



courtyard, winter



courtyard, spring

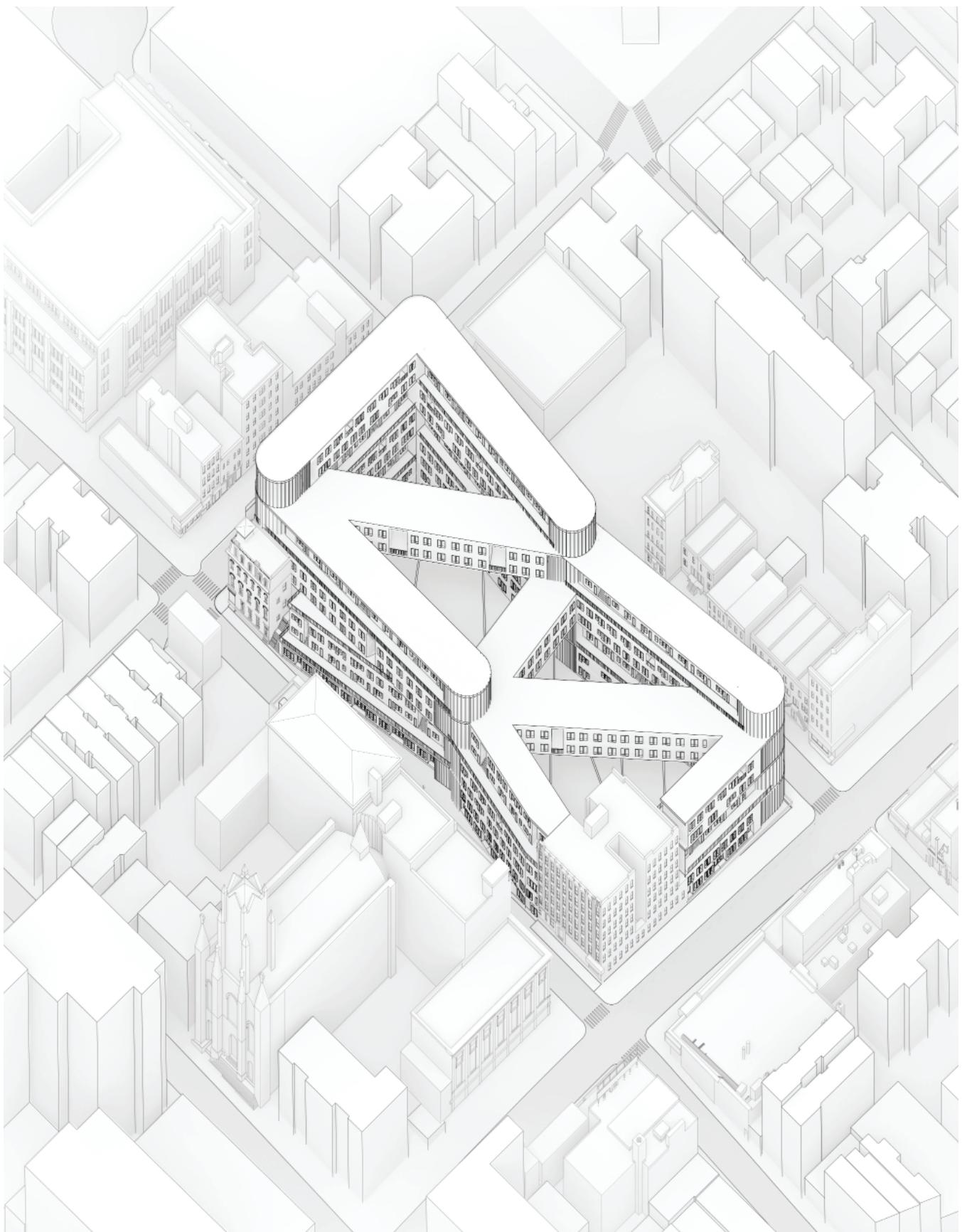
Melrose Housing

with Melissa Chervin

critic: Galia Solomonoff

core III: Housing the Commons, Fall 2020

The interlacing, necklace like form of the Melrose Apartments began with the idea of providing a network of shared amenities and services to better foster connections between residents. 5 circular joints located at the site's corners house the various shared amenities and the main stairs and elevators. These shared spaces vary from laundry, maintenance, and daycare services to more luxurious amenities such as gyms, libraries, and offices. The 9 story apartment building consists of 270 units making up the shifting bars that connect the joints. The building encourages sharing on a smaller scale providing each bar of units with a ten foot wide outdoor corridor with the aim of doubling as a front lawn space for each cluster of units. On the unit scale, sharing can be found in the various 'dorm style' apartment types containing anywhere from 5 to 6 bedrooms allowing for the Melrose Apartments to sleep a projected number of 720 residents.

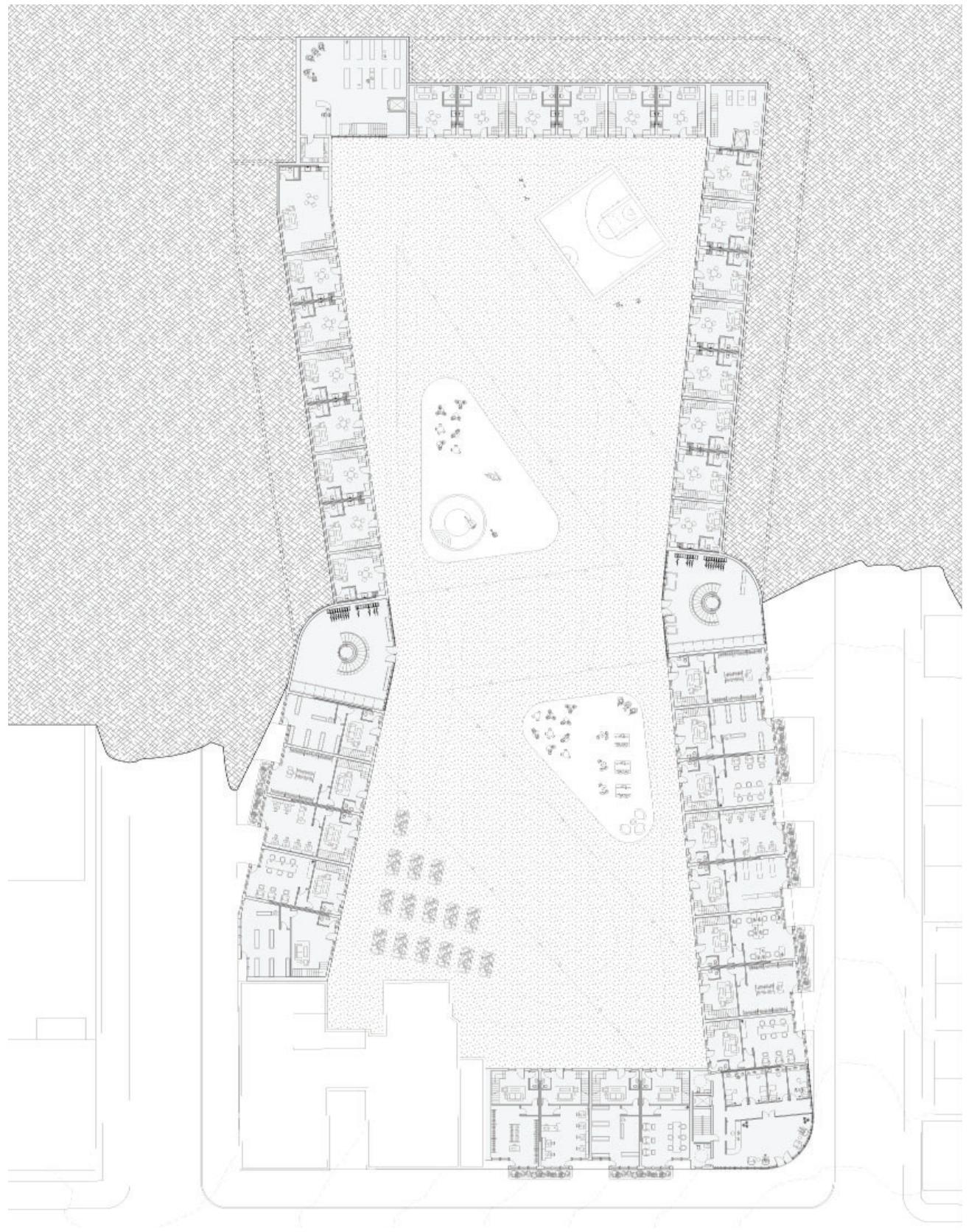




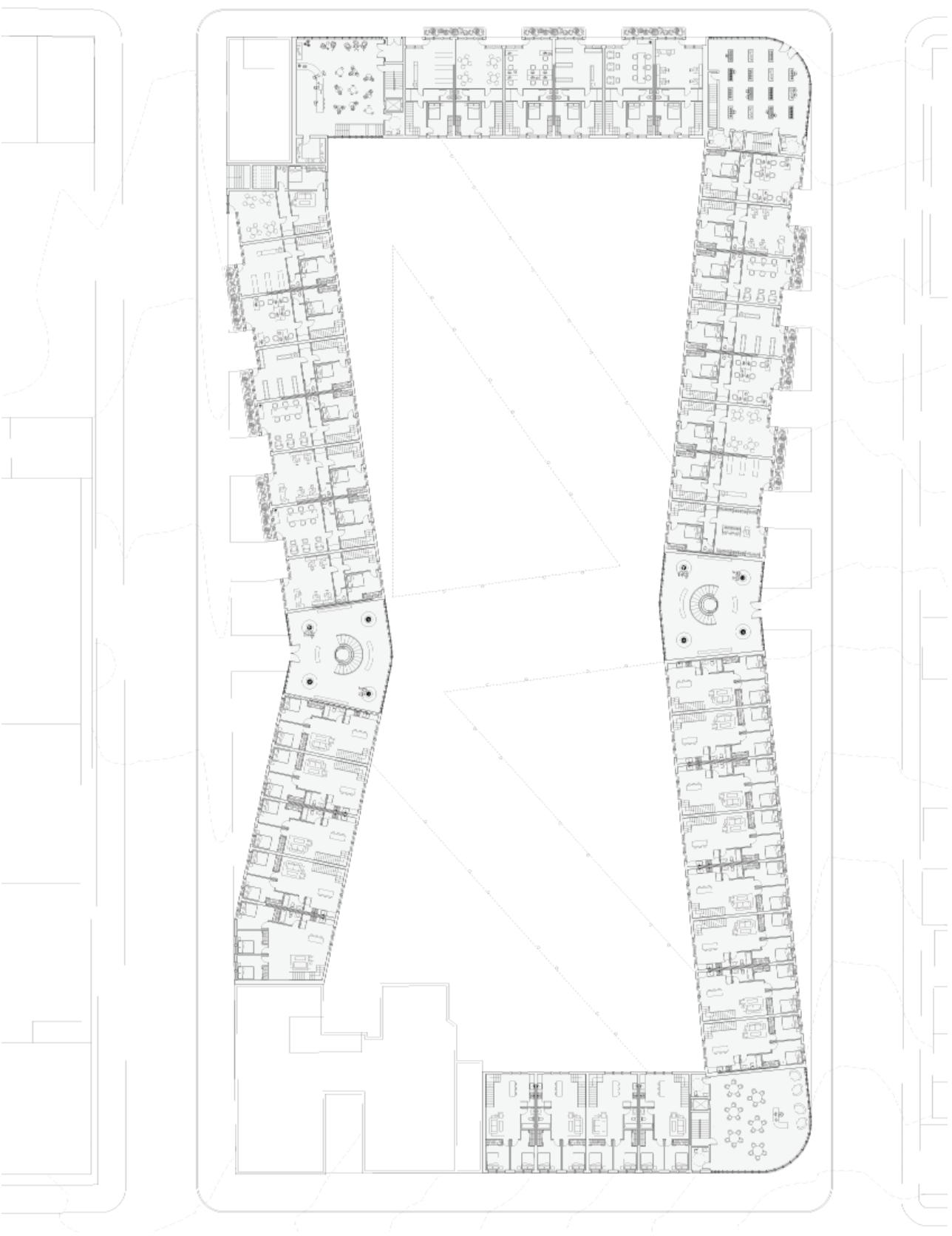
units & front lawns, section perspective



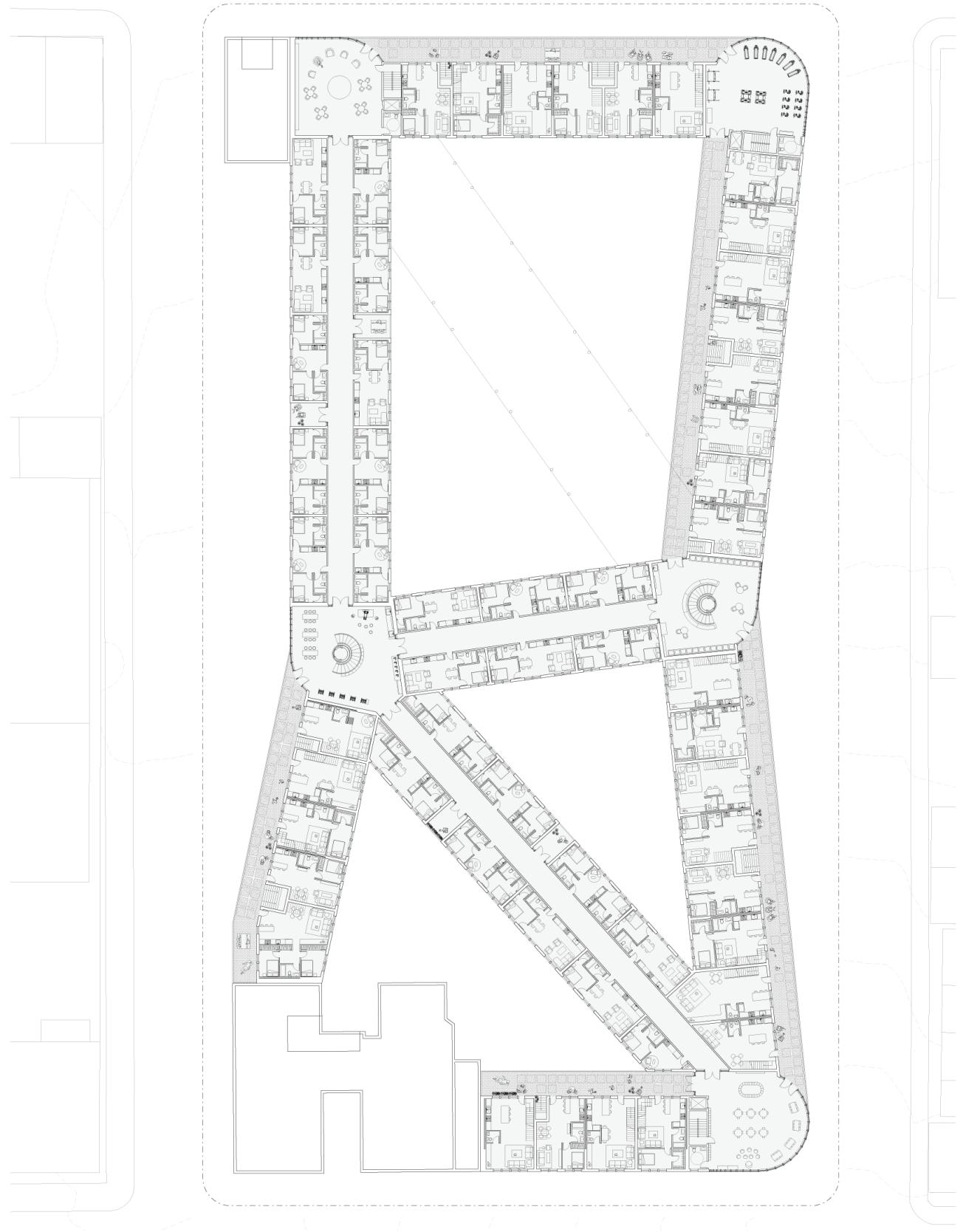
units & communal space detail model



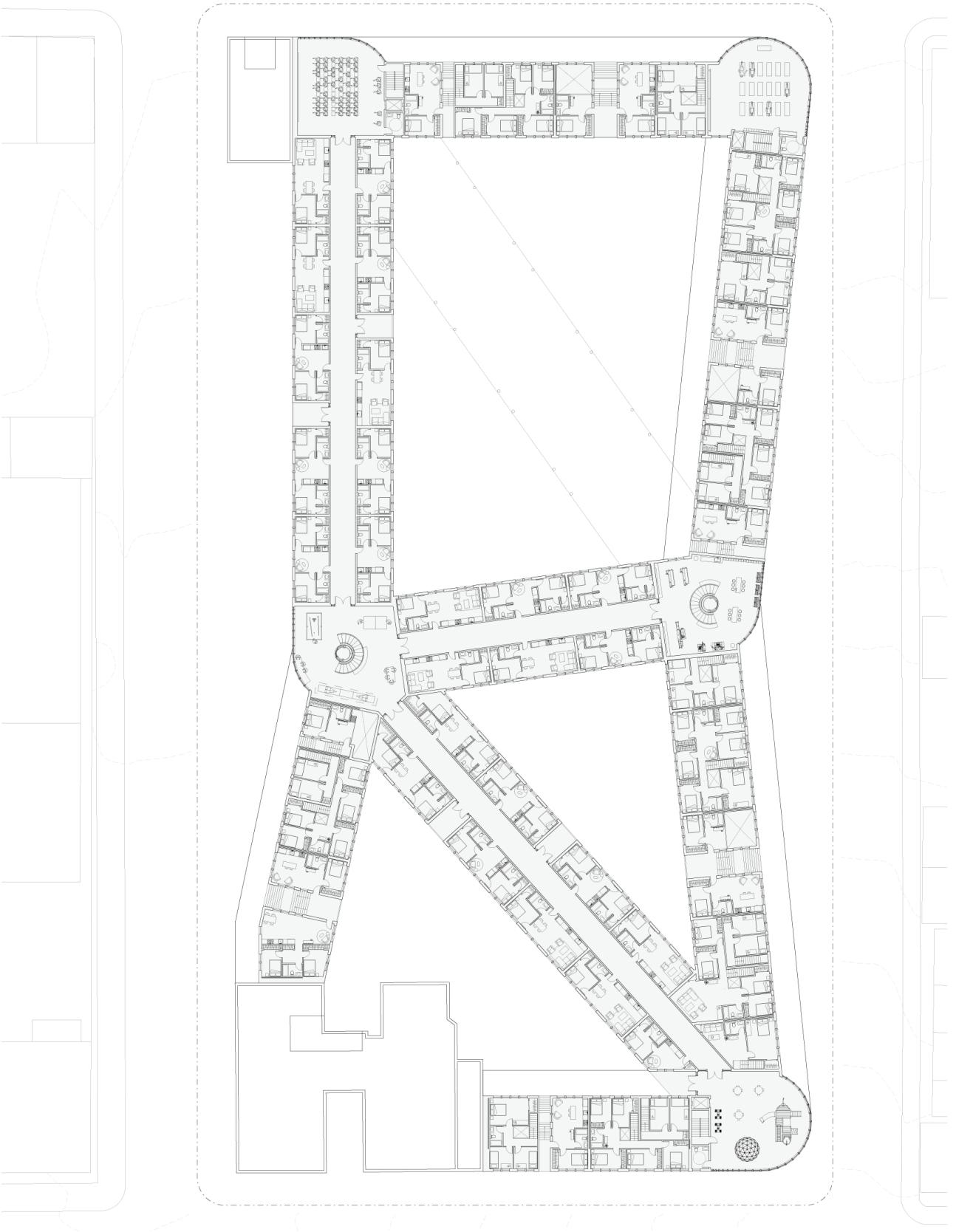
ground floor plan



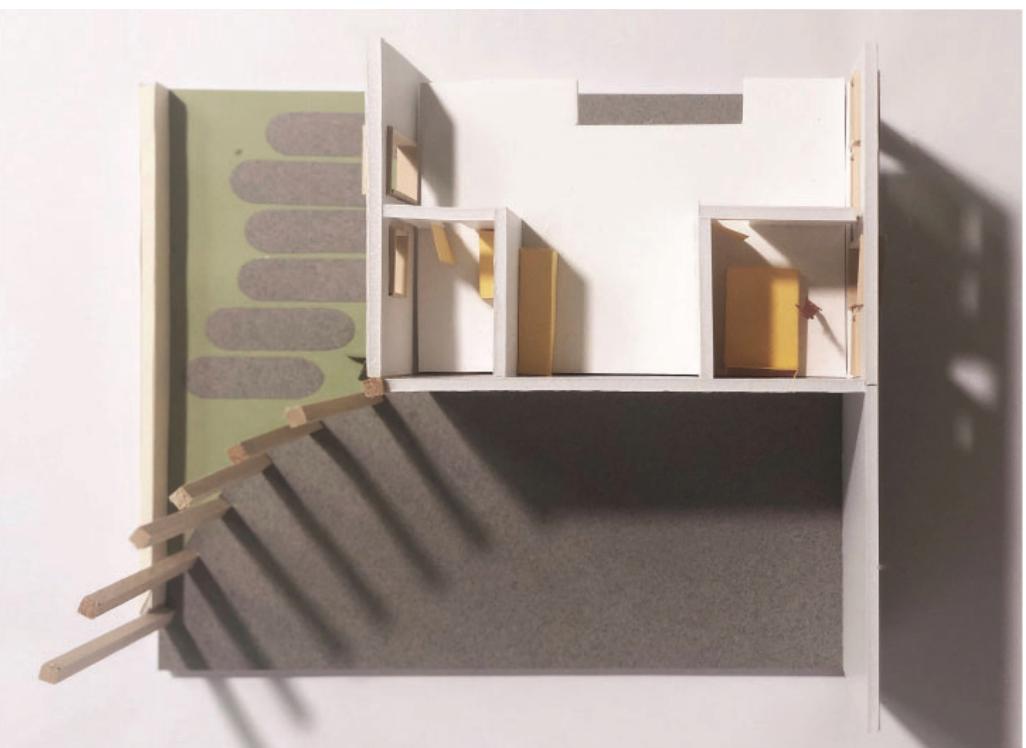
level 1 floor plan



level 4 floor plan

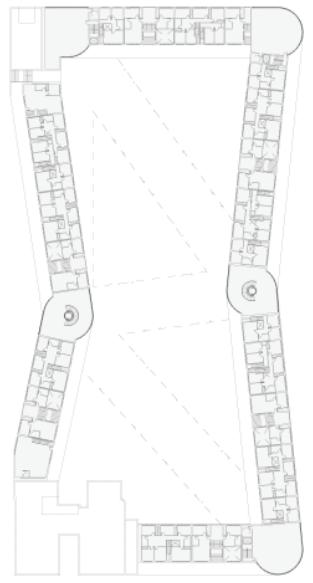


level 5 floor plan

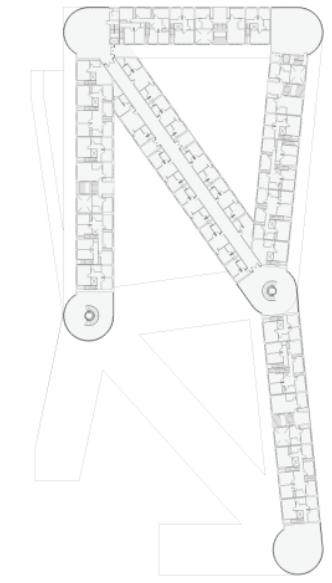


front lawn & shared amenity

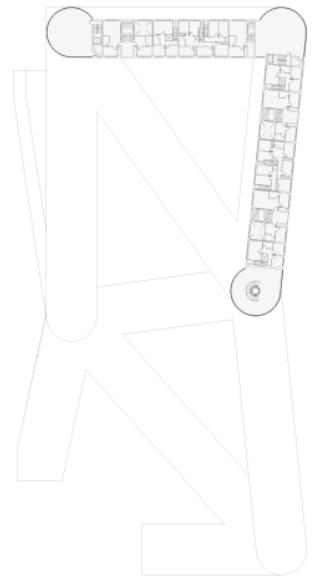
units & front lawn detail model



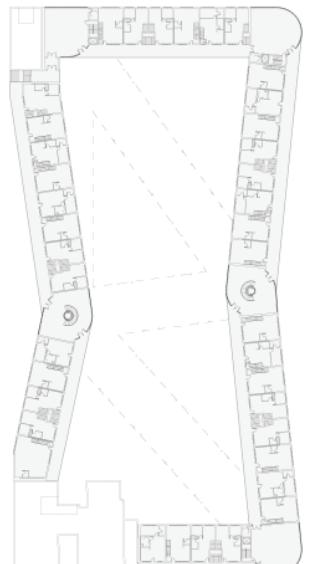
Level 3



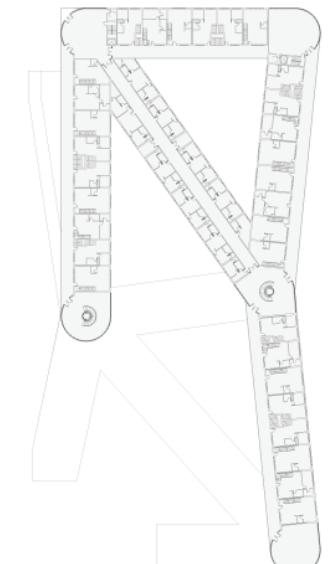
Level 7



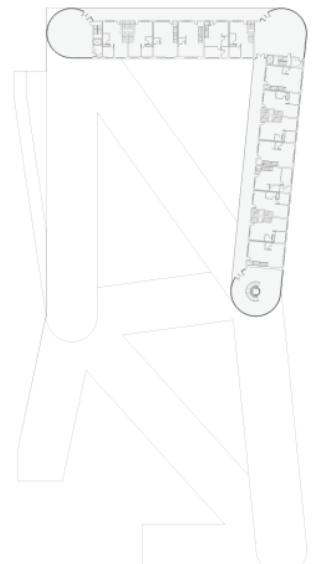
Level 9



Level 2



Level 6



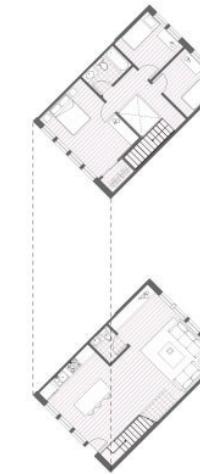
Level 8



TYPE A: 2-level / 6 bed



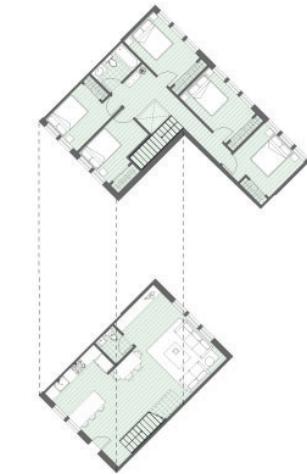
TYPE B: 1-level / 1 bed



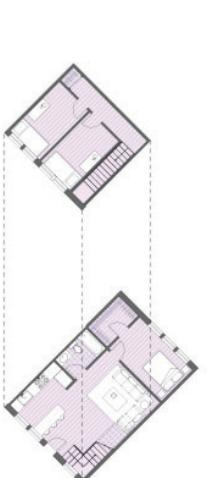
TYPE d: 2-level / 3 bed



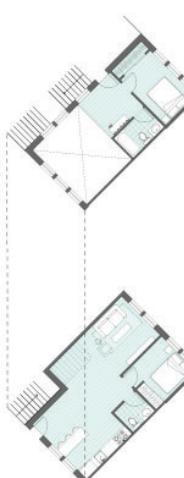
TYPE E: 1-level / 1 bed



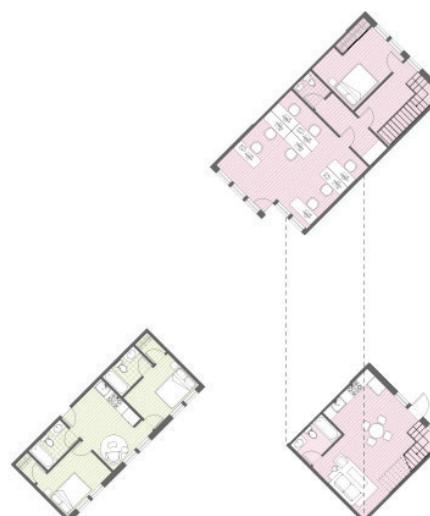
TYPE G: 2-level / 5 bed



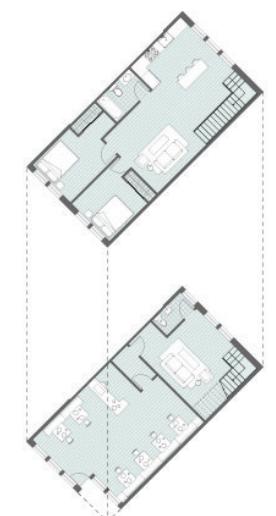
TYPE H: 2-level / 3 bed



TYPE I: 2-level / 2 bed



TYPE J: 1-level / 2 bed



TYPE L: 2-level / 2 bed



operation of detail model



courtyard from front lawn

SYSTEMS

STRATEGIES

STUDIES

STRUCTURES

*Sarah Bisignano Zamler
Columbia GSAPP 2021*