

The background of the entire page is a detailed illustration of a lush forest. It features a variety of tree species, including tall, thin deciduous trees and shorter, denser evergreens. In the center of the forest, there is a small, elevated wooden structure with a gabled roof, possibly a cabin or a observation tower. The ground is covered with green grass and small plants. The overall scene is vibrant and detailed, with many individual trees and foliage visible.

REPAIR

REGROWTH

RESTORE

A COLLECTION OF WORK BY ADELINE CHUM

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Repair, Regrowth, Restore

This collection of projects showcases a series of deep explorations into themes that consider cycles of growth and regrowth, repair and restoration through remediation and speculate on what happens in the time between the inception and end of life of projects. The experiences of time scales stretch from seasonal cycles of a growing tree that will be turned into timber materials, to its regeneration and restoration of the land at the scale and timeframe of a growing forest. How do these projects not only affect the sites they exist within, but function as an activator to the larger communities (both human and non-human species) and natural environment? By broadening the scope of where and when a project begins and ends, the breadth of these themes are investigated through the wide-ranging mediums in the **DESIGN STUDIOS** and supported through deep-reaching studies in **DATA VISUALIZATION** and **CONSTRUCTED STORYTELLING** projects.

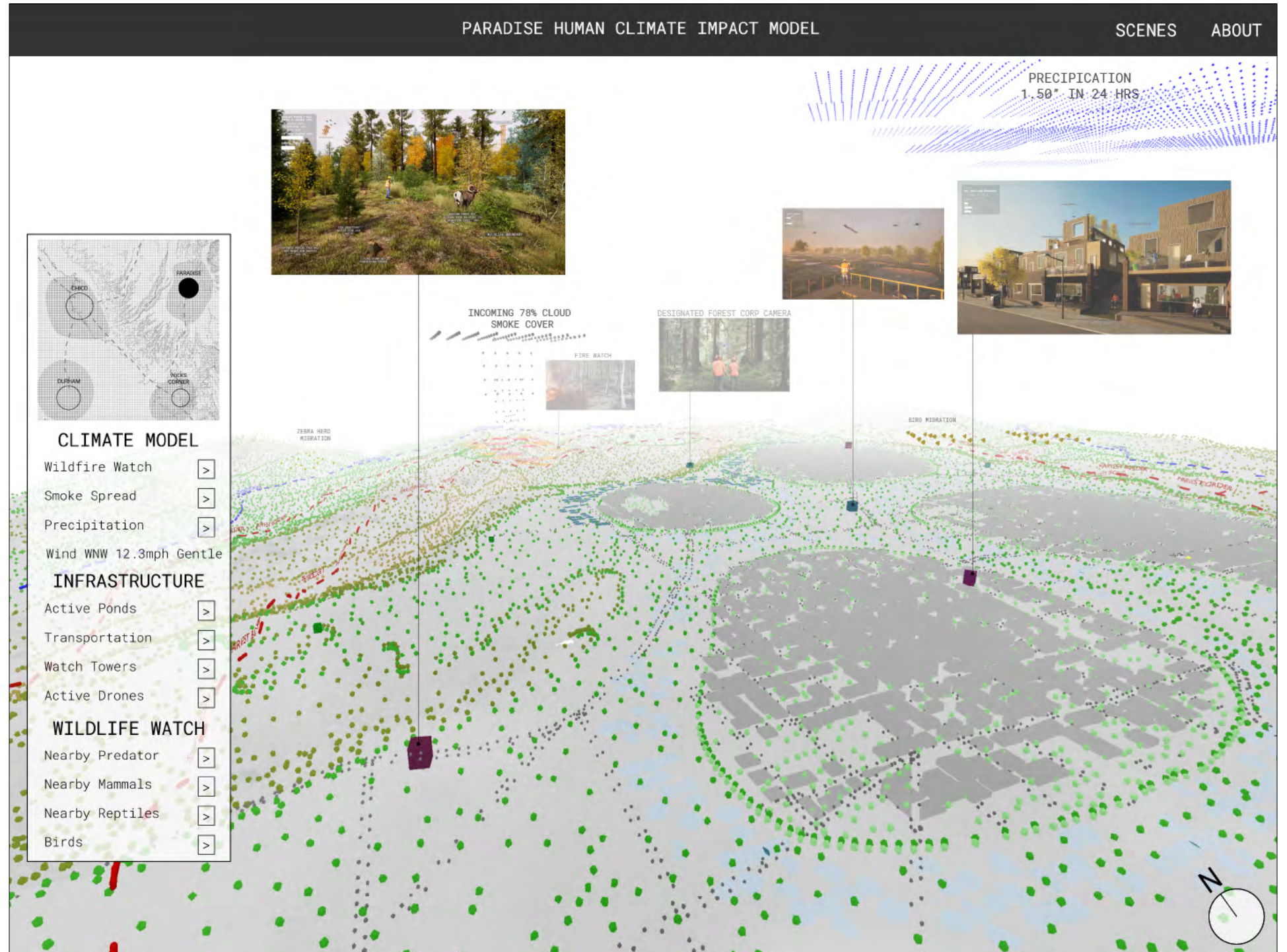
REBUILDING PARADISE

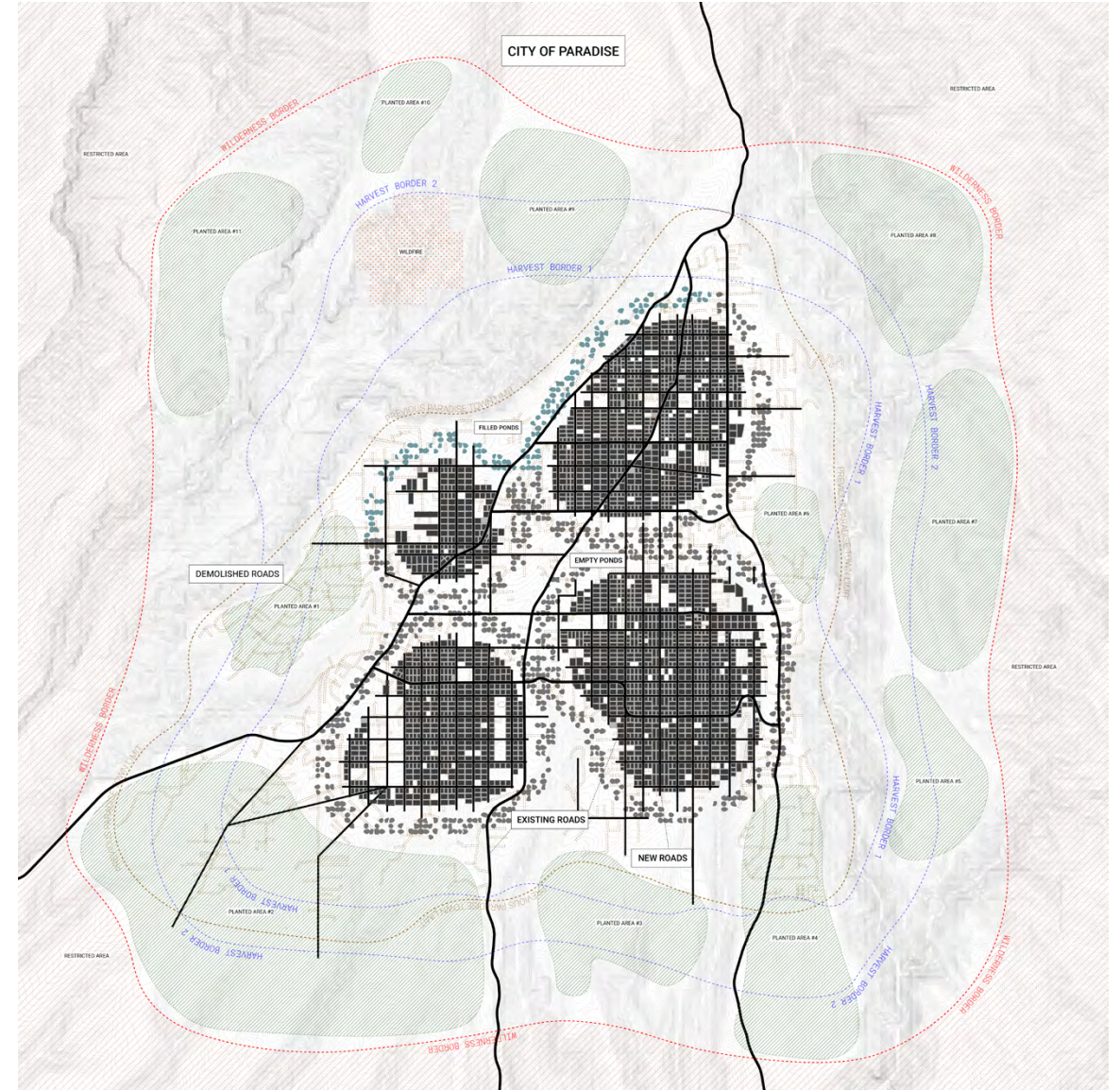
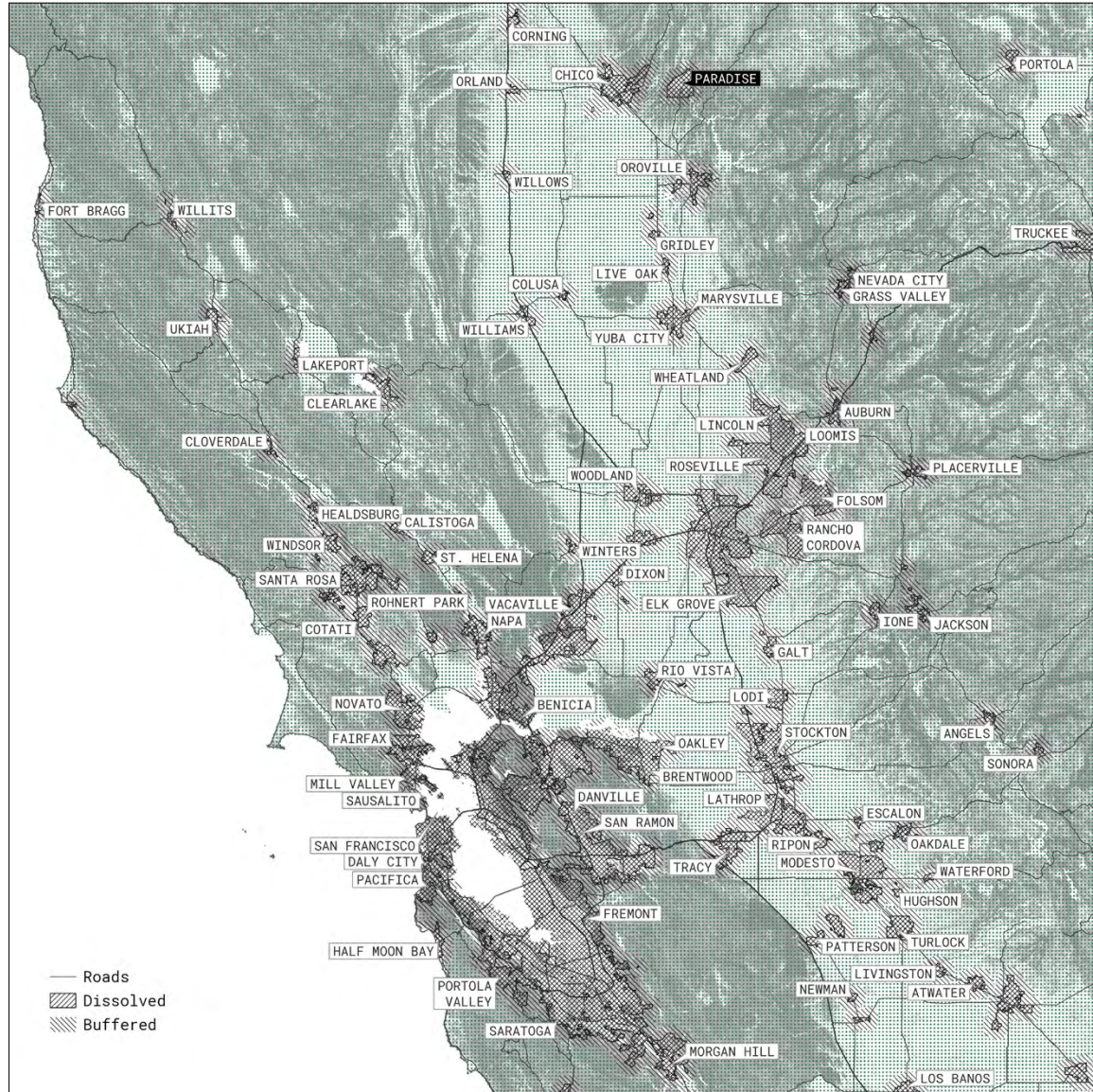
SPRING 2022
 CRITIC: DAVID BENJAMIN
 IN COLLABORATION WITH ADAM VOSBURGH

This project speculates on the Rebuilding of Paradise WUI Pilot Project through the combined expertise of the construction, forestry, climate science and reimagining the blurred/soft interfaces between “the urban” and “the wild” across scales. Our proposal calls for a rethinking of the town in all aspects, from its built environment to its economic relationship with the forest beyond, with the establishment of the Paradise community forestry, construction corps, and all tied together by the Paradise Human Climate Impact Model, an interface showing climate data with real-time monitoring of flora and fauna. This natural internet of living things allows the model to determine exactly what can be safely removed from the ecosystem and areas of maintenance. This land management system sets aside 25% to remain as urban development, 25% for leisure and natural resource extraction, and 50% will be off-limits wilderness. The Rebuilding of Paradise envisions a framework for not only urban development in the wildlife urban interface, but also a proposal for how climate modeling can inform political and economic decisions in a future of risk and uncertainty.

This natural internet of living things is [linked here](#).

STILL OF INTERACTIVE INTERFACE >



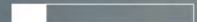


1:47 PM

H97 CONSTRUCTION PROGRESS

EST. EMBODIED CARBON: 100 KG / M2

SALVAGE USAGE TARGET: 12%



COMPLETION 63%



FUTURE GROWTH

SALVAGED FIREPLACE

STREET TREE
TC4

PARADISE CONSTRUCTION CORP
TROUPE 5

RAMMED EARTH
MASONRY UNIT

7" CLT SLAB

WHITE STUCCO FINISH

RAMMED EARTH
BIOCHAR MIX
EXTERIOR FINISH
PINE NEEDLE INSULATION
RAMMED EARTH
INTERIOR FINISH

PARADISE CONSTRUCTION CORP
TROUPE 5 EQUIPMENT

NET WT. 864 LBS

SALVAGED CONCRETE +
ASPHALT FOUNDATION

PERMEABLE STREET STAIR
BIOSWALE UNDERNEATH

STILL FROM SCENE OF 2025 RAMMED EARTH HOUSING CONSTRUCTION

6:35 PM

H97 ADDITION PROGRESS

FILE NUMBER: H97_2060_02

MATERIAL STOCKS:

CLT	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>
BARK	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>
PINE	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>



PRE-FAB WALL UNIT

CLT STRUCTURE
PINE NEEDLE INSULATION

REPLACEABLE BARK SIDING

PARADISE CONSTRUCTION CORP
TROUPE 5

LIGHT # LC4

STREET TREE
TC4

MUNICIPAL WASTE
WC4

PERMEABLE STREET STAIR
BIOSWALE UNDERNEATH

STILL FROM SCENE OF 2050 FUTURE HOUSING DEVELOPMENT

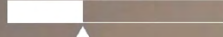


2022 SINGLE FAMILY HOUSING DENSITY WITH YEAR 1 FOREST ^
2050 HARVESTED TIMBER WITH INCREASED TOWN & HOUSING DENSITY >

11:35 AM

TODAY'S HARVEST:

273 TREES



CURRENT: 116

1.2 TONS OF EARTH



CURRENT: 0.57

ACTIVE WILDFIRE
SIZE: 250 HECTARES
RISK: MEDIUM



STILL FROM SCENE OF PROTECTIVE PONDS INFRASTRUCTURE

WILDLIFE WITHIN 1 MILE
RADIUS OF HARVEST ZONE:

- 9 BIGHORN SHEEP
- 4 BURROWING OWLS
- 1 BLACK BEAR

198 TREES PLANTED TODAY

3 WATCH TOWERS SETUP



TOWER RELOCATION #38

TOWER 25 SOUNDING 'RAVINE'
TO GUIDE WILDLIFE

CFC JACOB #11

BIGHORN SHEEP #33
FLEEING FROM WILDFIRE 728
HYDRATION LEVEL: 30%

FIRE RESISTANT
NATIVE PINE #58
AGE 6

SOFTWOOD POPLAR TREE #421
NOT READY FOR HARVEST
AGE 10

LIVING STUMP #21
TRANSFERING CARBON

STILL FROM SCENE OF HARVESTING AND WILDLAND EDGE

WILDLIFE BOUNDARY

REFACTORING FARMING

FALL 2021

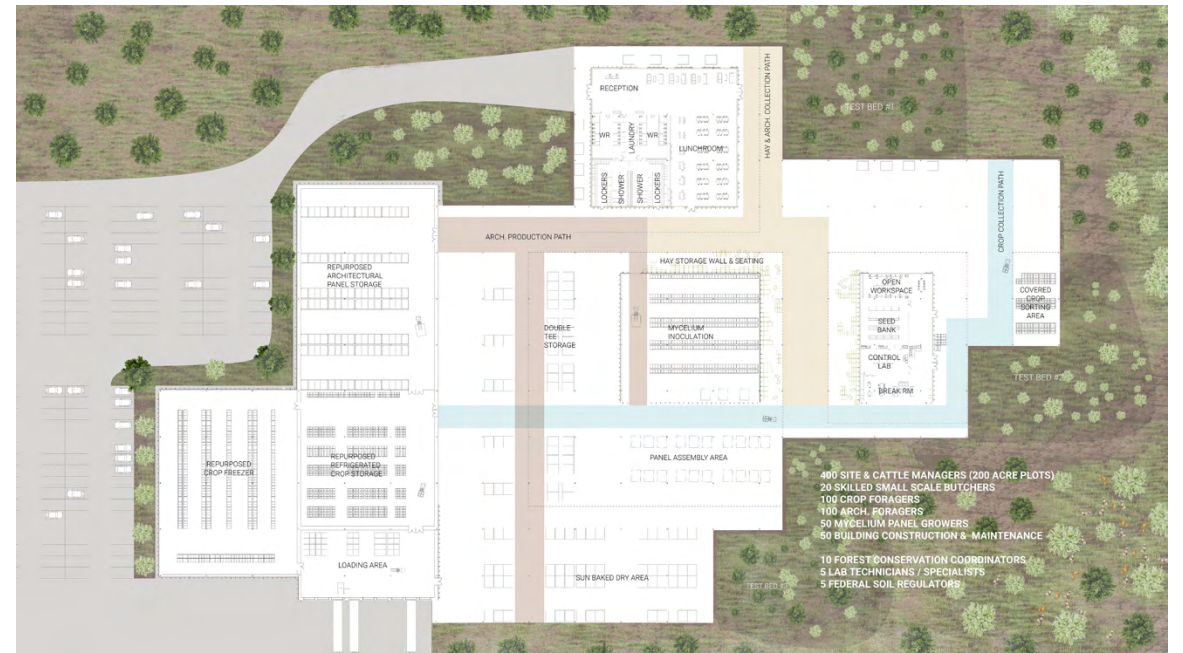
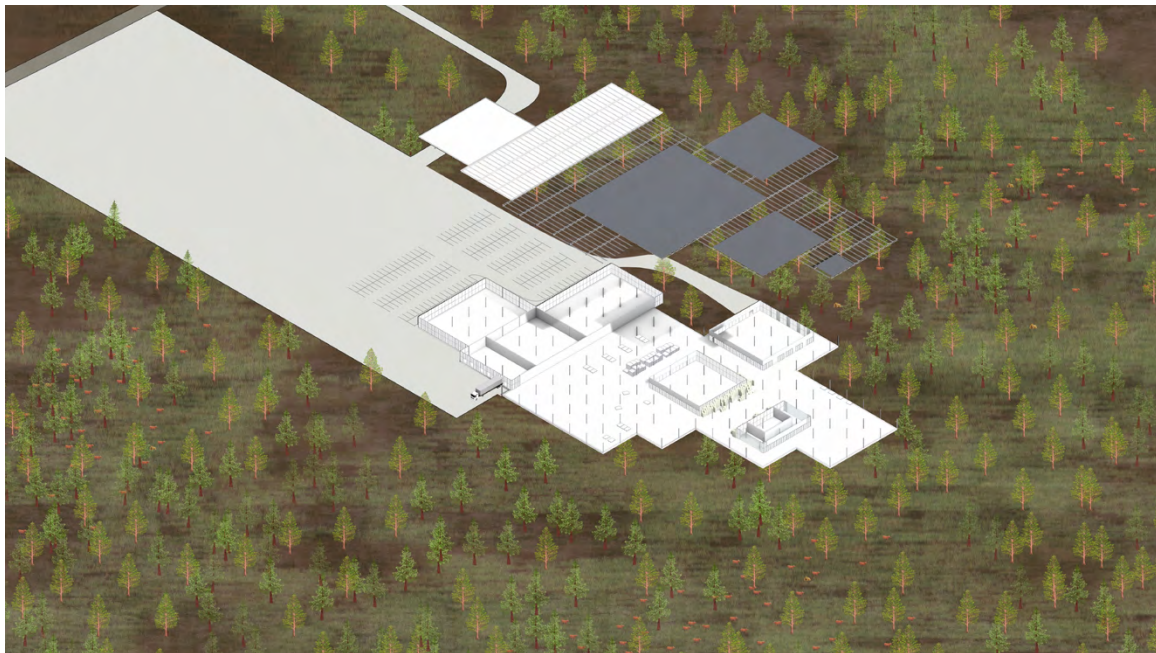
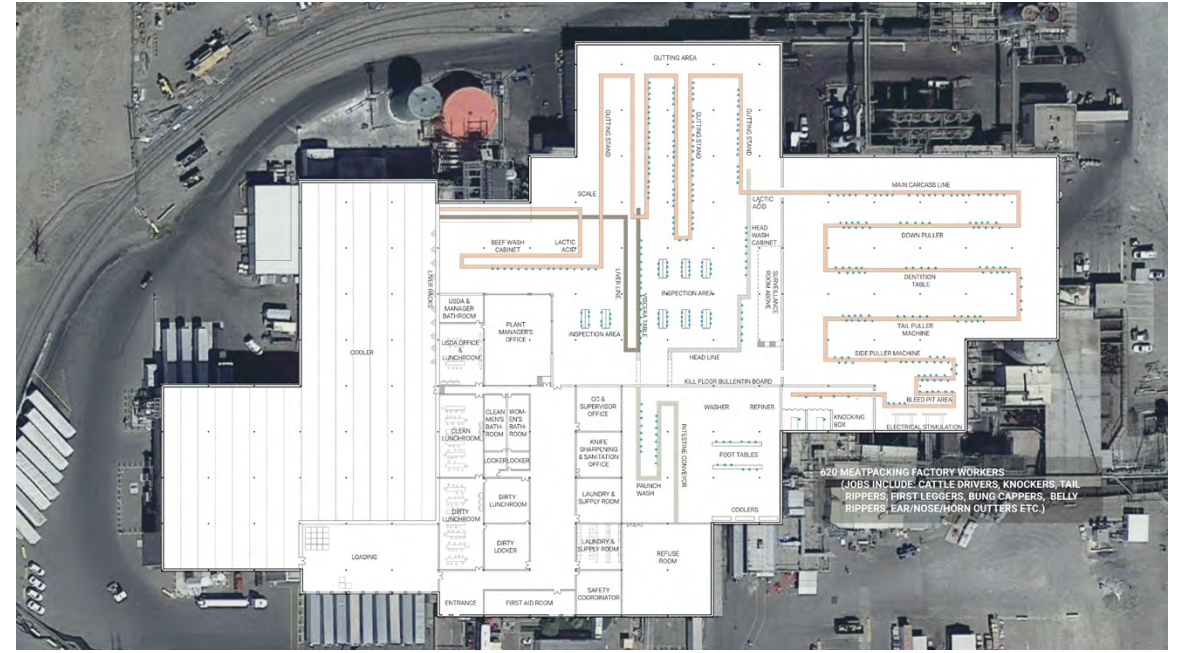
CRITIC: DAVID BENJAMIN

This pilot project, at 15,619 hectares will sequester 1,764,975 tons of carbon, and if this conversion of cropland to agroforestry is carried throughout the U.S. across 166 million hectares of land, this would result in 1.156 billion tons of carbon sequestered (the conversion of cropland to silvopasture agroforestry is 9.4tC ha⁻¹ yr⁻¹ above ground and 1.9 tC ha⁻¹ yr⁻¹ in soil carbon sequestration)

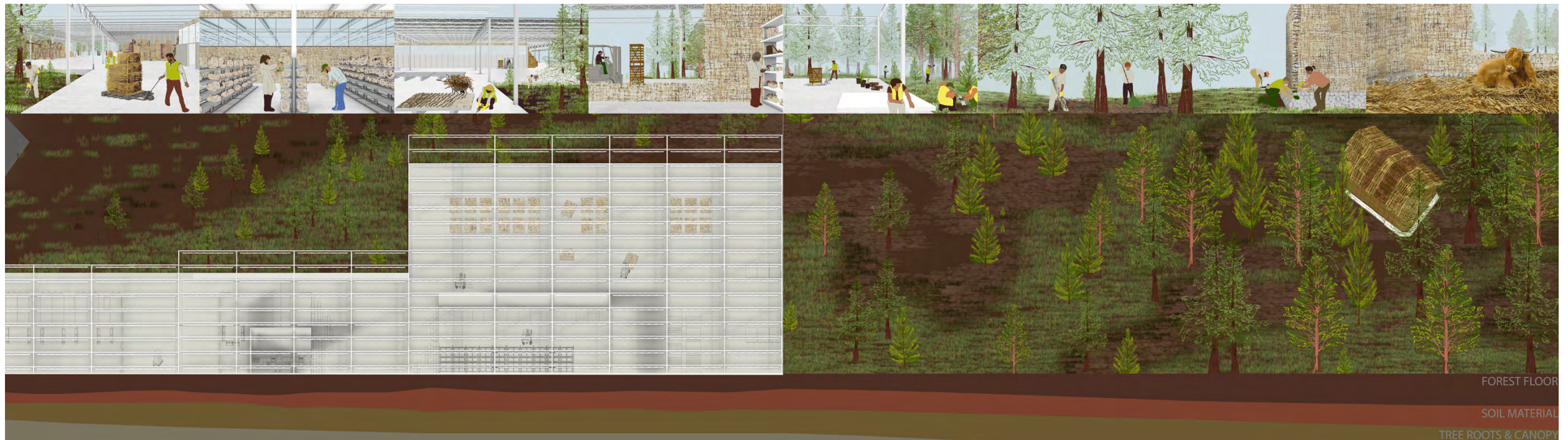
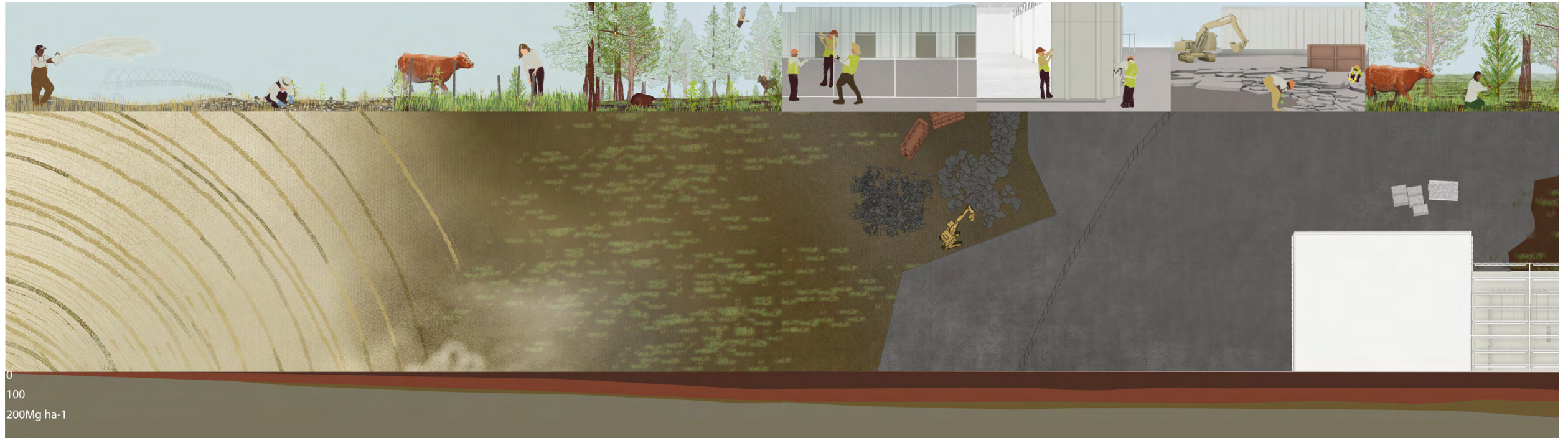
By converting this current machine-like processing facility with poor working conditions, to varied and more engaging work in spaces that provides jobs for all the 620 existing meatpacking workers, the new space is able to encourage the exchange of ideas amongst different professions, such as 420 site and cattle managers and leverage the Civilian Climate Corp to create 320+ new green jobs (such as crop and architectural material foragers, mycelium panel growers, construction and maintenance builders, forest conservation managers, seed bank/lab technicians, and federal soil regulators) who will work towards the goal of regenerating soil on site.

MYCELIUM AND FOREST COLLECTION MATERIAL STUDIES >



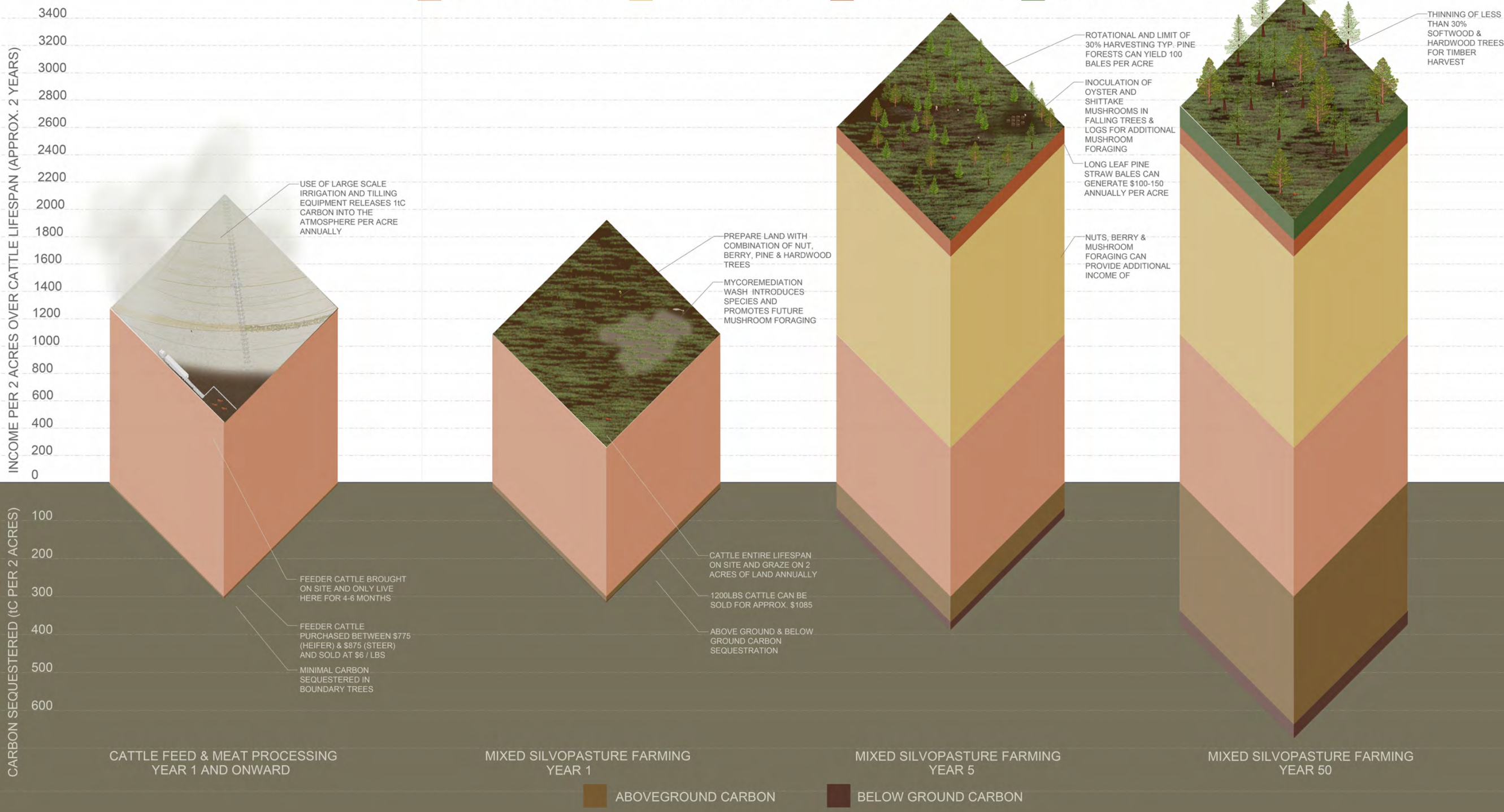


ISOMETRICS OF EXISTING ASPHALT SITE TO TRANSFORMED AGROFOREST REMEDIATION
PLANS OF EXISTING MEATPACKING FACILITY AND RENEWED COMMUNITY STORAGE AND FACTORY



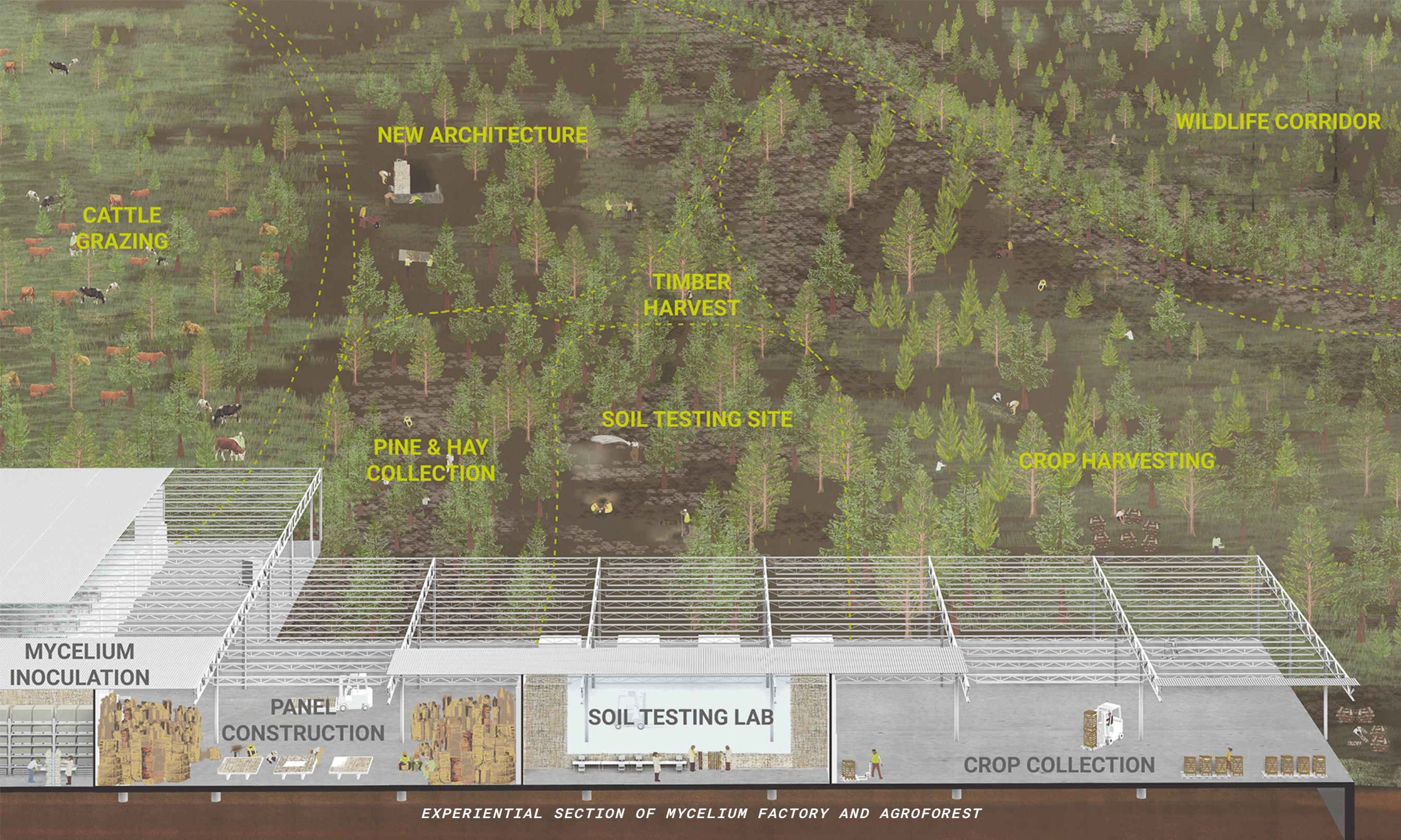


MEAT PRODUCE INCOME CROP FORAGE INCOME PINE STRAW INCOME TIMBER INCOME



AGROFOREST ECONOMIC AND CARBON SEQUESTRATION DIAGRAM

ABOVEGROUND CARBON BELOW GROUND CARBON



WILDLIFE CORRIDOR

NEW ARCHITECTURE

CATTLE
GRAZING

TIMBER
HARVEST

SOIL TESTING SITE

PINE & HAY
COLLECTION

CROP HARVESTING

MYCELIUM
INOCULATION

PANEL
CONSTRUCTION

SOIL TESTING LAB

CROP COLLECTION

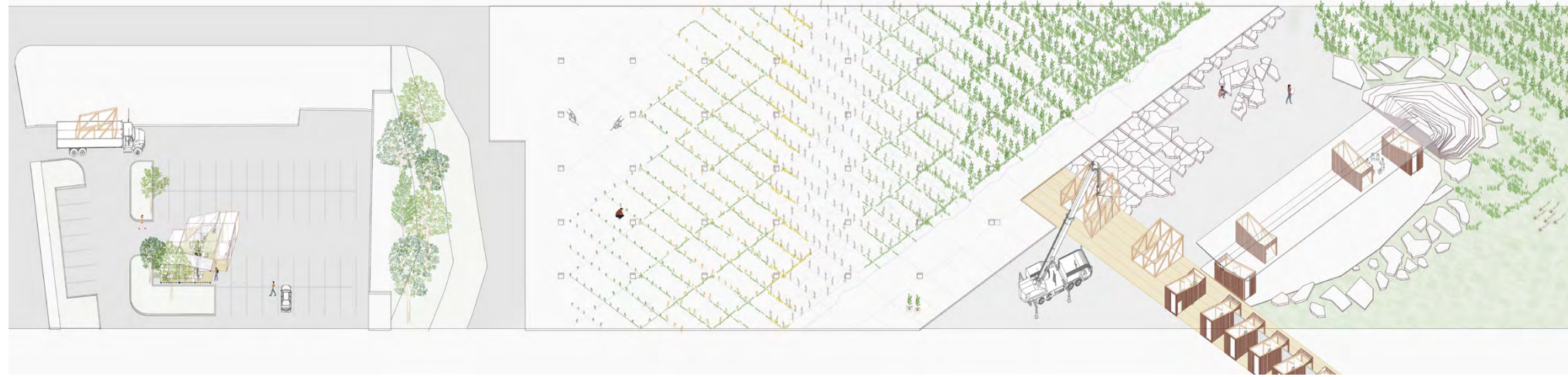
EXPERIENTIAL SECTION OF MYCELIUM FACTORY AND AGROFOREST

SAFE SPACE

SPRING 2021

CRITIC: PHU HOANG

IN COLLABORATION WITH ADITI SHETYE



Safe Space aims to look closely at the needs of each town and strengthen the community in three steps: resiliency through health, security through food and nutrition, and sustainability through secure livelihood and land. In Ellenville, this includes focusing on at-risk youth and young adults who are looking to further their education and gain the skills to participate within the larger community.

The project is located on what used to be a metal manufacturing facility's concrete pad, begins as a rapid deployment of a vaccination center and a series of phytoremediation strategies as a way to begin to restore the health of both the community and the land. By planting within the existing exposed column grid of the previous facility and strategically scoring lines for additional plant growth, within the year there will be a natural disintegration of the concrete allowing for smaller blocks to be repurposed or removed from the site. The project will continue to expand across our site sitting within the remediation process to include programs of urgent care and housing, and green career training. An animated drawing linked here walks through the experience of the growth of the site:

<https://youtu.be/eDX0bycB-cY>

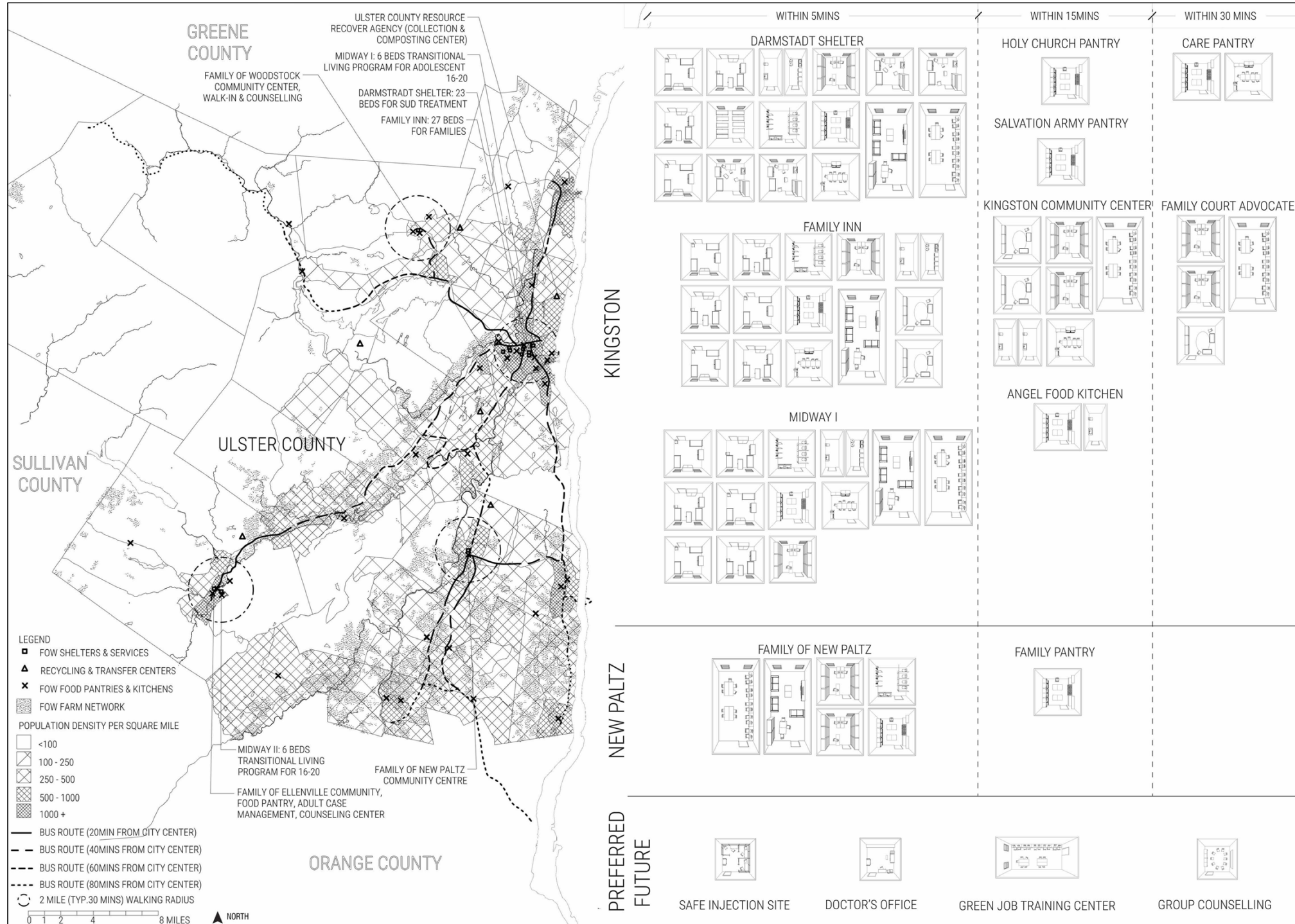
PROJECT TIMELINE: VACCINATION IN YEAR 0
TO REWILDING IN YEAR 10 >

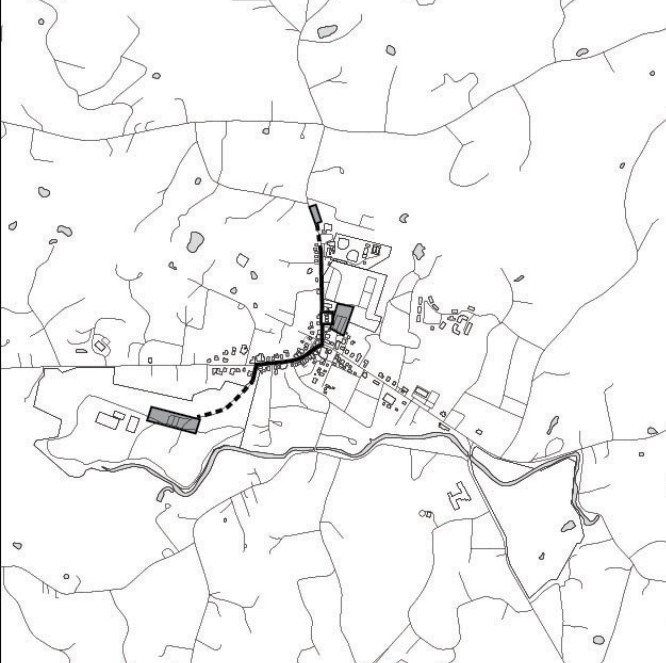


Site Research:

Ulster County is facing a number of challenges stemming from a dearth of economic opportunities combined with mitigating factors brought on by COVID-19. Family of Woodstock provides services of community care such as shelters and rehabilitation services, and has developed a strong network of farm-to-food pantries and soup kitchens, establishing itself as a trusted community organization. These services are localized within walkable distances in each town at varying densities and scale, where Kingston has more services than smaller neighboring towns rendering some of the population even more vulnerable.

The County intends to expand its green energy systems by using an existing network between community support and agrarian establishments to further develop its composting capabilities to handle Waste-to-Energy operations. The biomass energy operation provides the opportunity for economic wellness through creating jobs within the County as well as providing a green energy source for the County including its various community facilities.





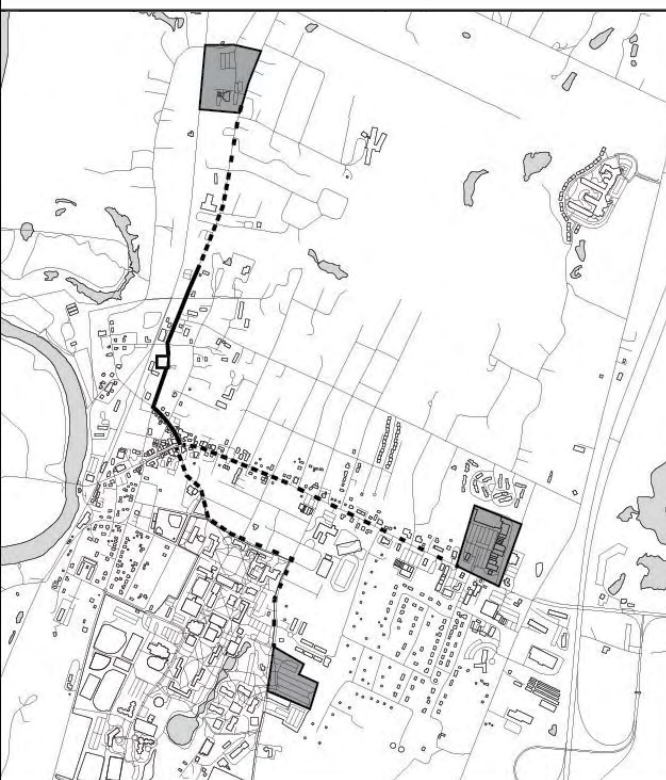
WOODSTOCK

FAMILY OF WOODSTOCK SHELTERS & SERVICES
 0 5 10 15 20
 MINUTES



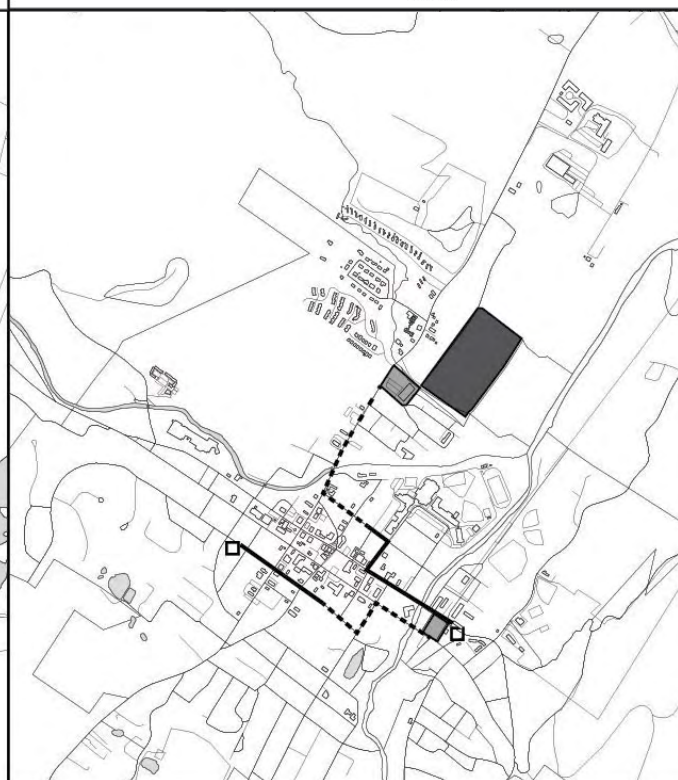
KINGSTON

FAMILY OF WOODSTOCK SHELTERS & SERVICES
 0 5 10 15 20
 MINUTES



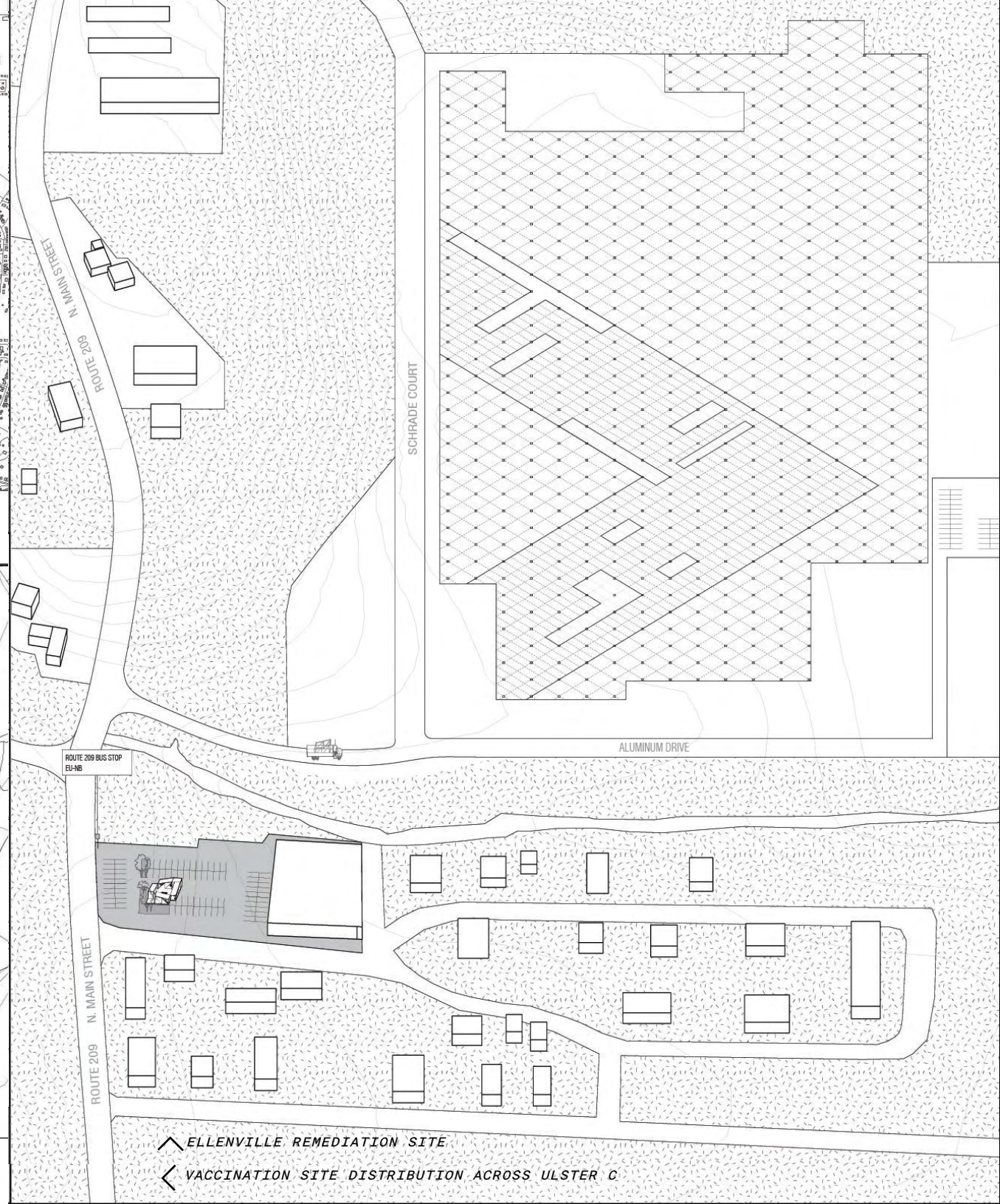
NEW PALTZ

FAMILY OF WOODSTOCK SHELTERS & SERVICES
 0 5 10 15 20
 MINUTES

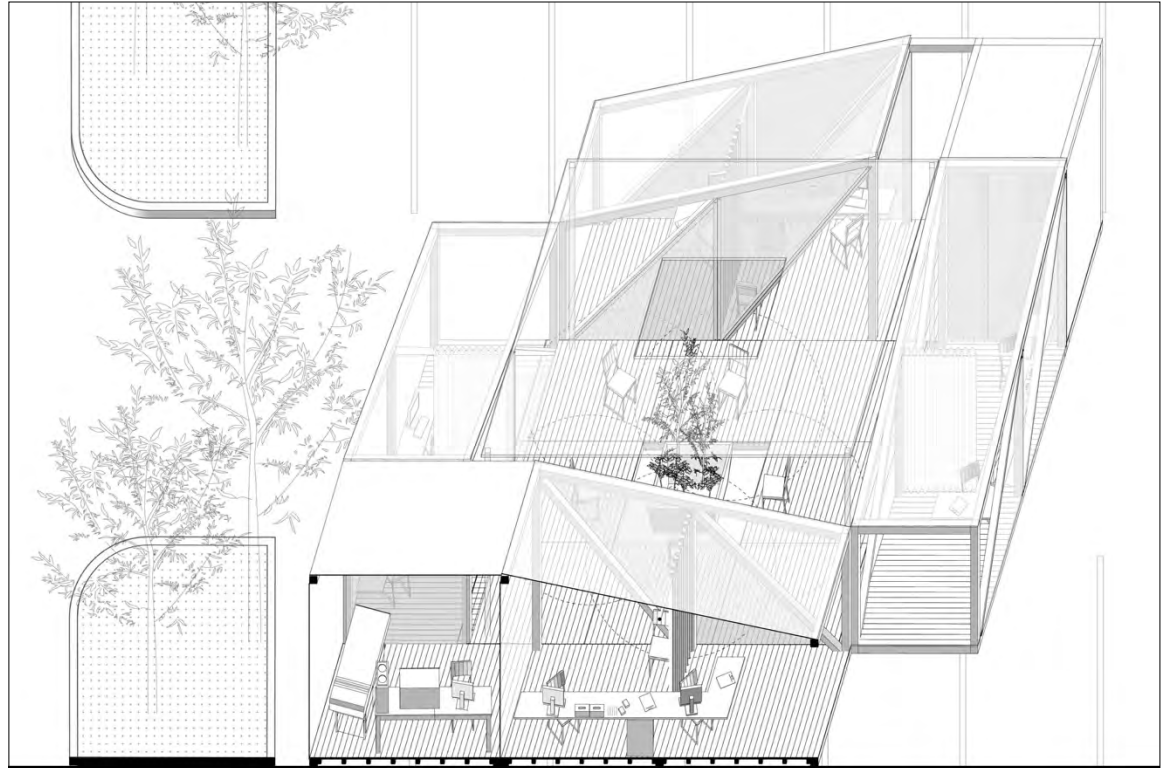



ELLENVILLE

FAMILY OF WOODSTOCK SHELTERS & SERVICES
 0 5 10 15 20
 MINUTES

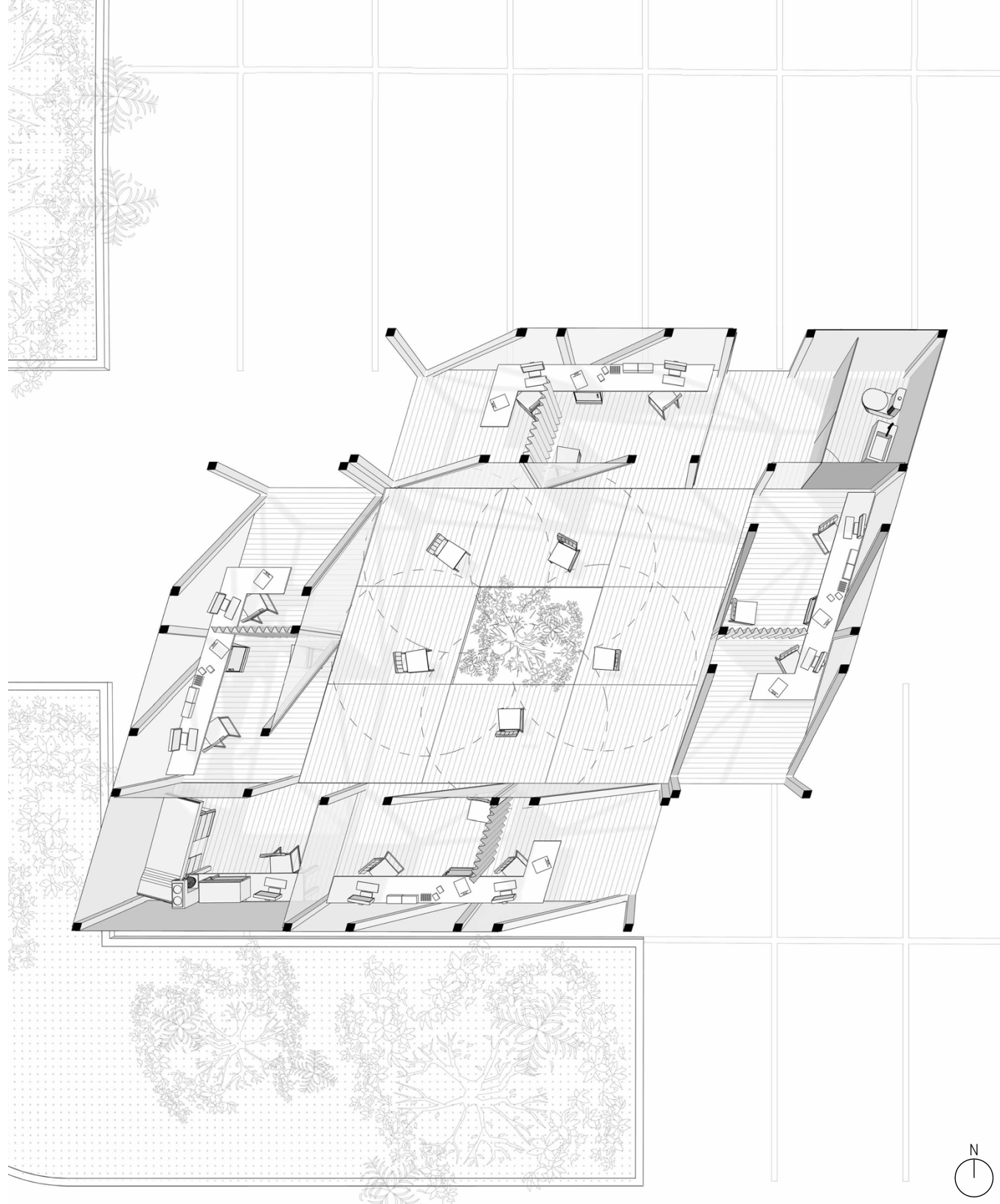


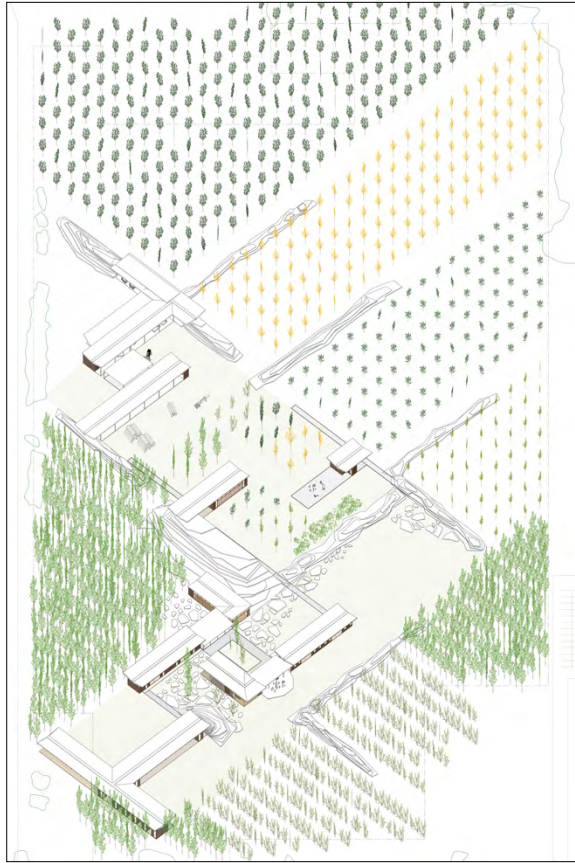
ELLENVILLE REMEDIATION SITE
 VACCINATION SITE DISTRIBUTION ACROSS ULSTER C




VACCINATION POD IN SECTION 

VACCINATION POD PLAN 




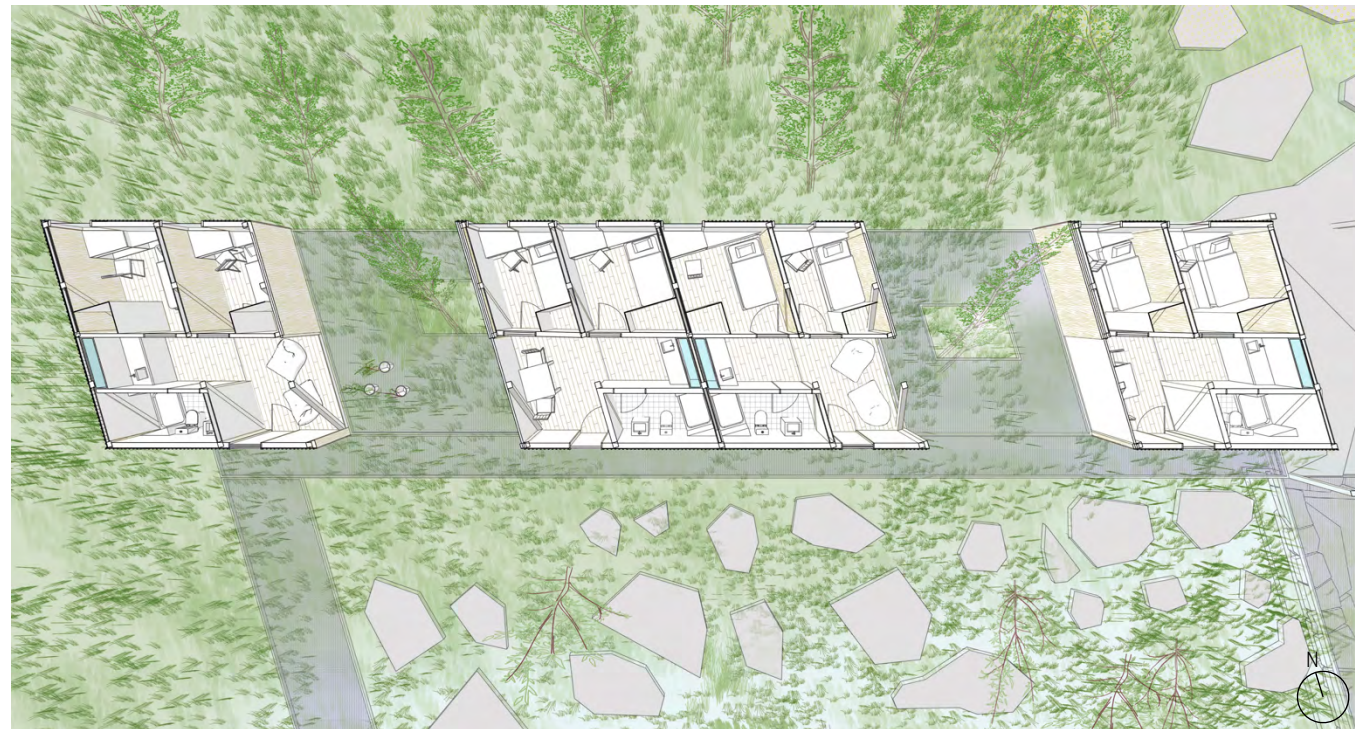
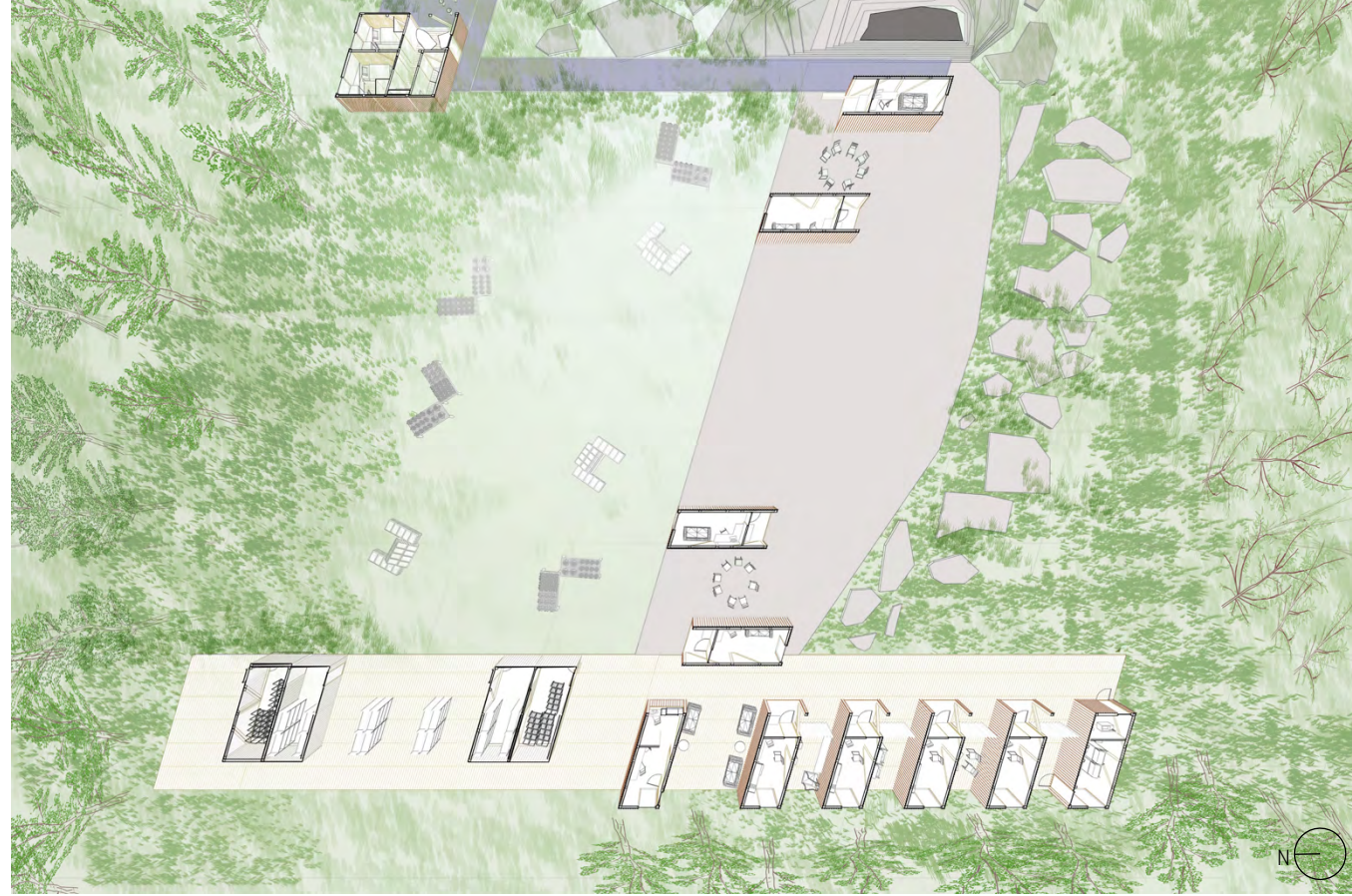


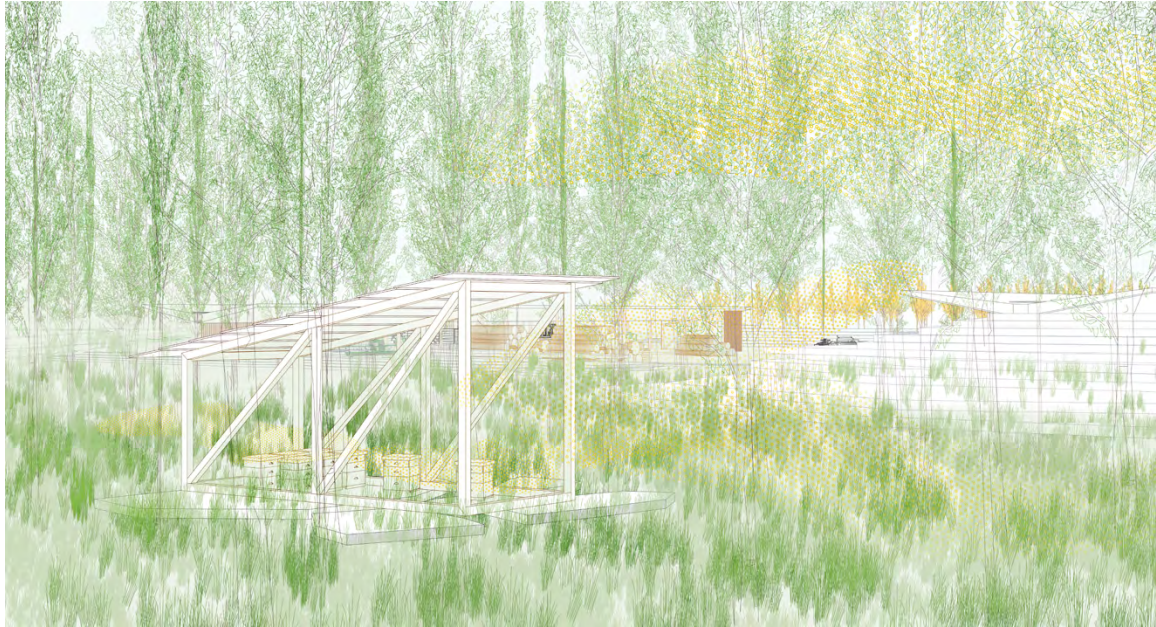
PLAN OBLIQUE (YEAR 5) 

HOUSING UNIT WITH WATER
COLLECTION SYSTEM & BRANCH
& BARK CLADDING 

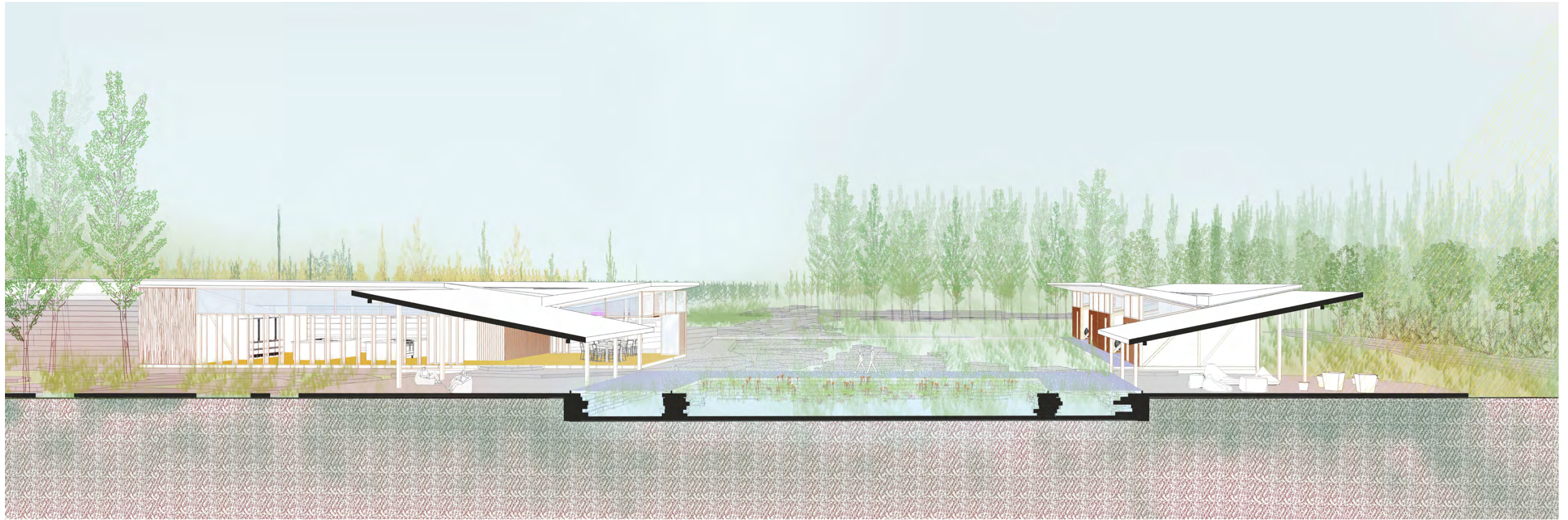
COUNSELING & URGENT CARE PLAN 

HOUSING PLAN 





- BEE POLLINATORS (YEAR 10) ^
- INDOOR/ OUTDOOR LIVING AREA PLAN >
- TRAINING CENTER & TEST FIELD >



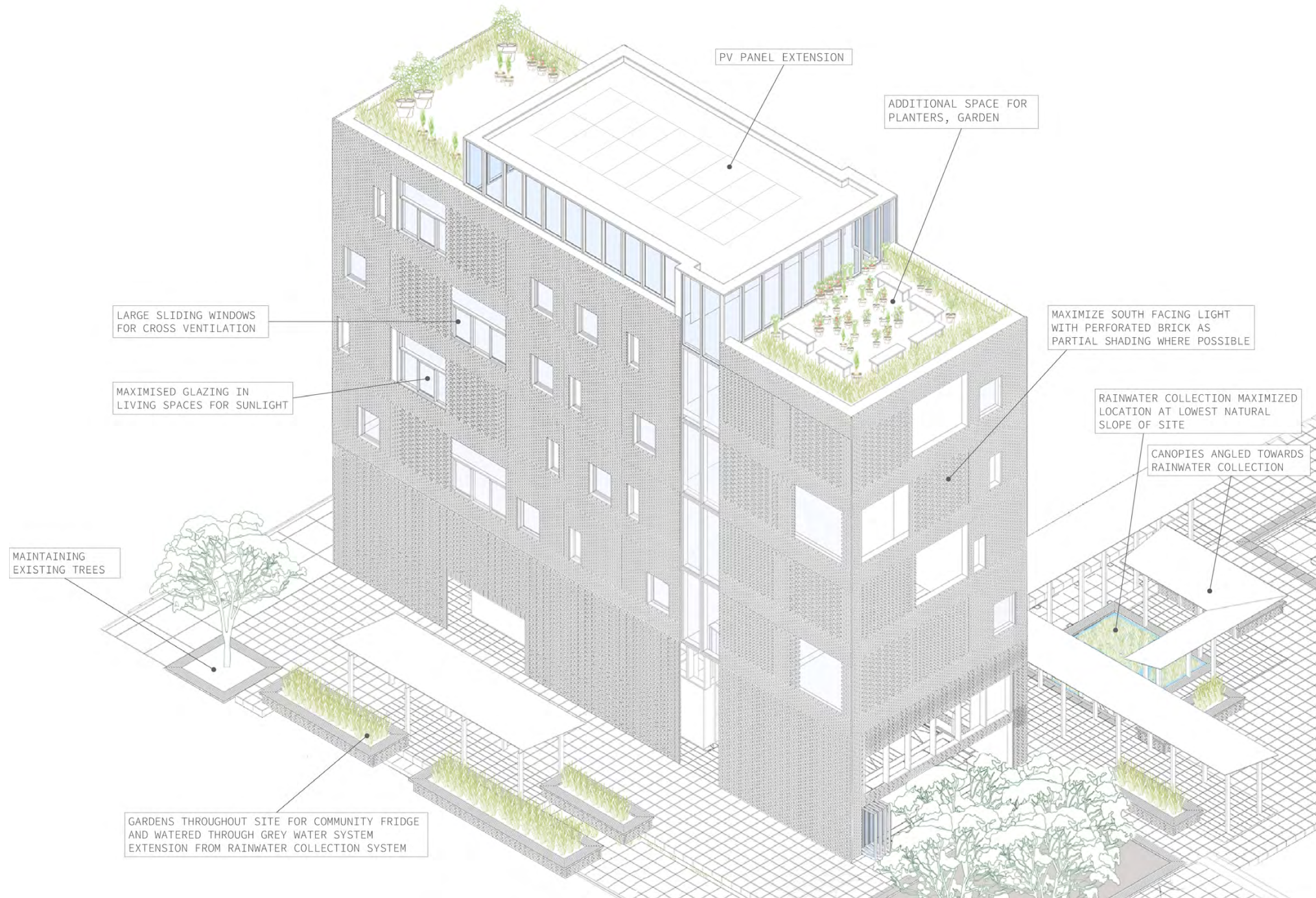
THERMAL SECTION PERSPECTIVE

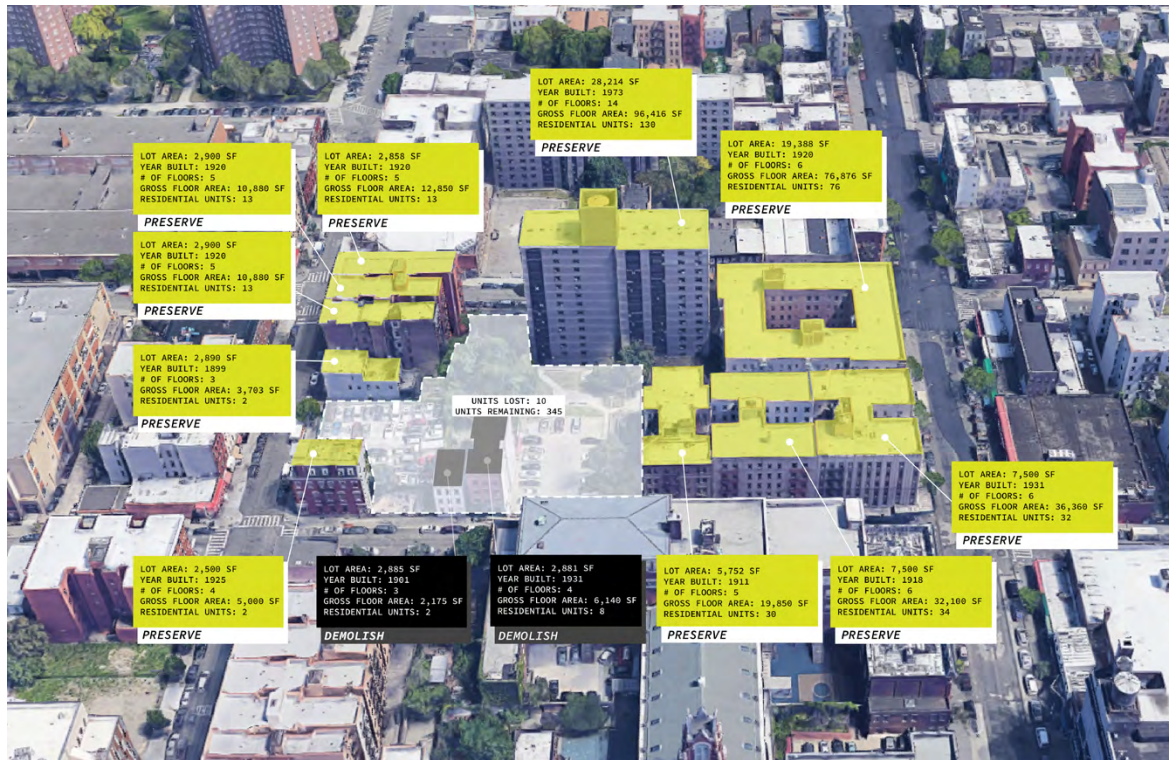
UNITS OF CARE

FALL 2020
 CRITIC: HILARY SAMPLE
 IN COLLABORATION WITH MAX GOLDNER

BUELL PARIS PRIZE WINNER

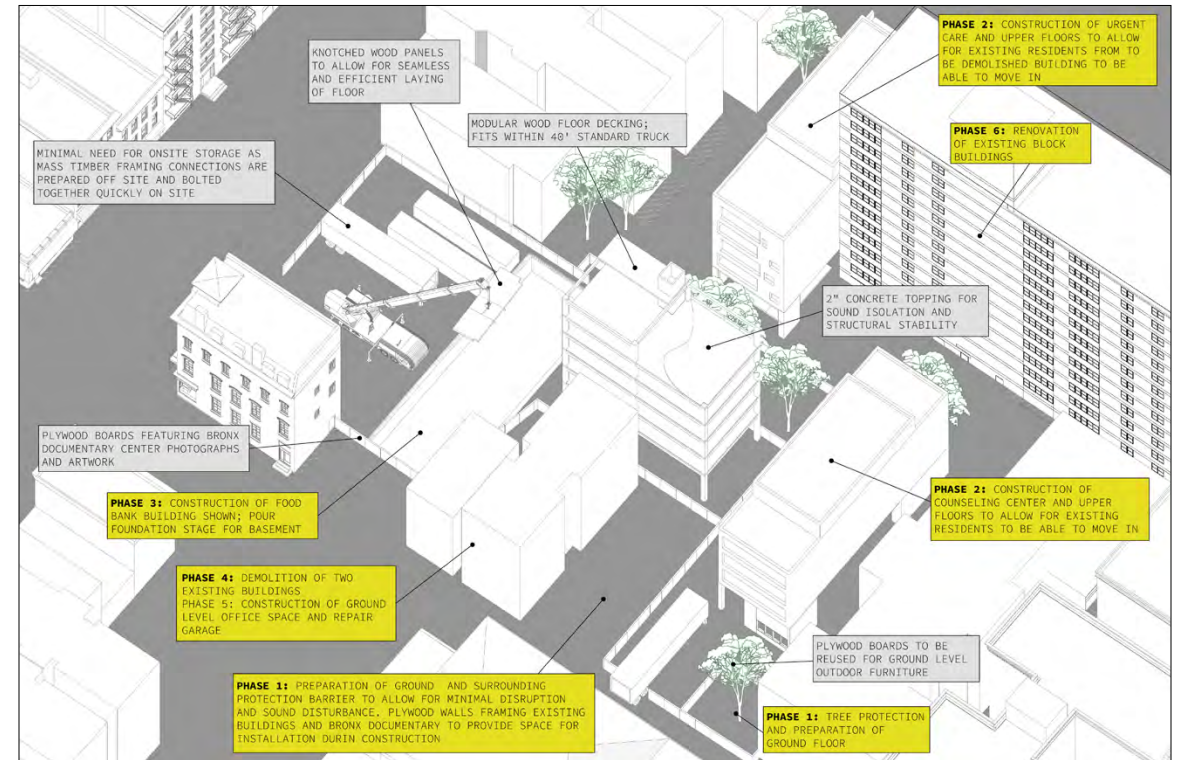
Units of Care calls for affordable housing that is both efficient and detailed, both humble and resourceful, and looks to provide care through every scale and program. Melrose's existing structures and livelihoods led us to see maintaining existing structures as an initial act of care—that any demolition is the destruction of not just dwellings, but the displacement of people, families, livelihoods and rituals. Weighing units counts, commercial spaces, and the embodied energy of rebuilding, we preserved 345 units and all businesses on site, losing only 10 units and gaining 50. collection, maintenance of existing trees and microclimates) and ultimately, personalized care, leaving some spaces unprogrammed and open for the community to appropriate.

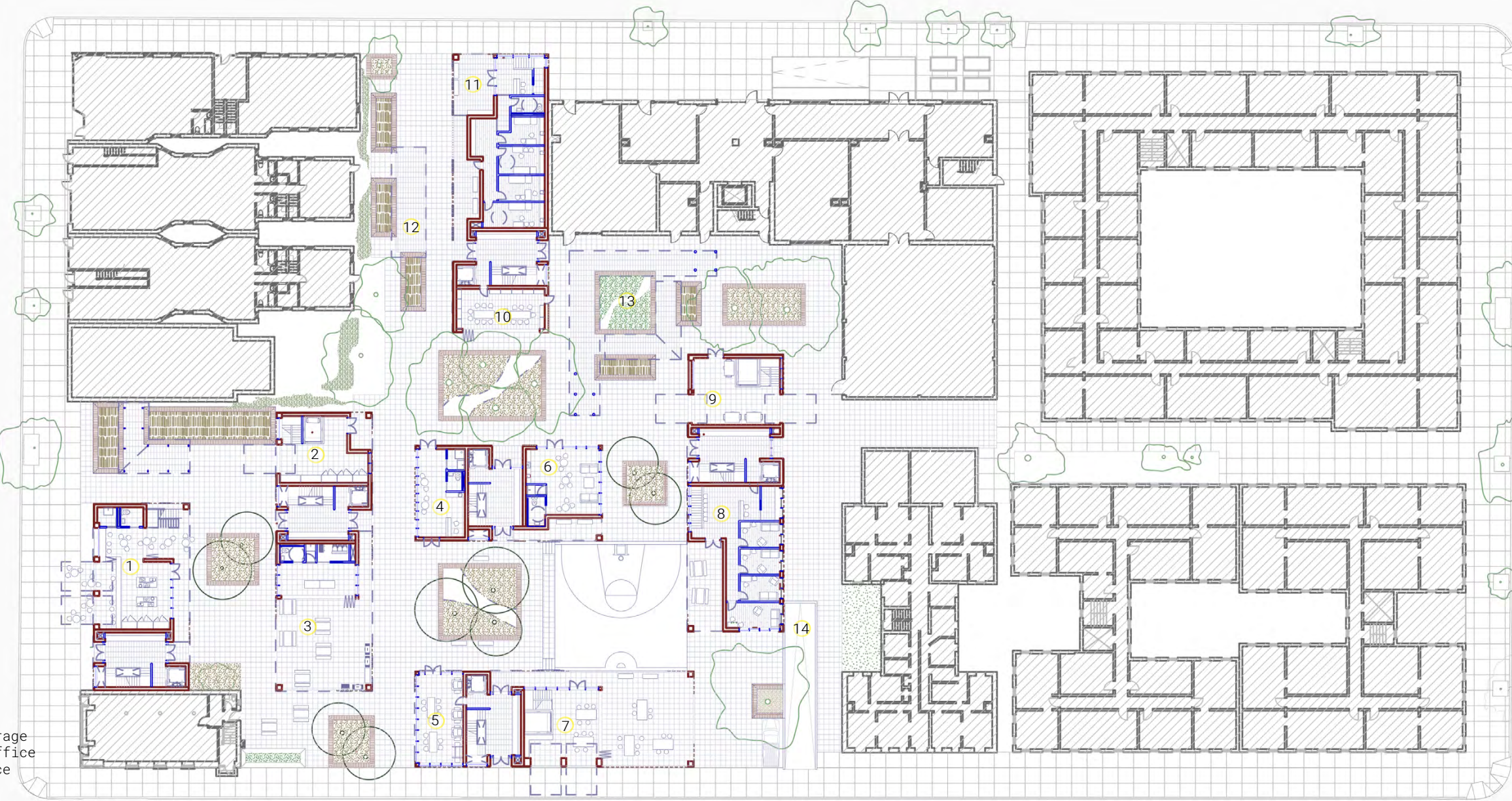




SITE STRATEGY

PHASING STRATEGY





- 1 Community kitchen
- 2 Food bank
- 3 Food and cookout storage
- 4 Super / management office
- 5 Library / office space
- 6 Open space
- 7 Repair shop
- 8 Counseling center
- 9 Recycling, trash, compost area
- 10 Open Program
- 11 Urgent care
- 12 Community garden (throughout)
- 13 Rainwater collection
- 14 Parking / maintenance ramp

GROUND FLOOR PLAN



We organized ground floor programs that could render maintenance as visible and important, enable access to sites of repair, reconstitute resiliency by amplifying existing community support networks, and balance community amenities between street-facing and more internal areas. These programs touch on care through many facets: the care for bodies through food justice and health facilities, the care for homes and amenities, the care for children, work, and learning, the care for site and existing species/landscapes and ultimately, personalized care, leaving some spaces unprogrammed and open for the community to appropriate.

Situated within a grid of 9M bays, our project uses mass timber framing, a low embodied energy material, allowing for more off-site construction with its modularity. This minimal, efficient construction system can generate a varied ground plane through simple shifts and framing of spaces. We intend to bring about care even through minimized demolition: our construction phases would minimize the amount of disruption, phasing the project to accommodate residents from our demolished building and to first provide community amenities. Our wide spectrum of unit types take into account the spectrum of family and household sizes within the Bronx, including multi-generational adaptability, as well as 1- to 2-bedrooms that incorporate duplexes for added privacy even within units. This idea can also extend to entire floors where the corridor becomes an extended space connecting two units, thinking towards ideas of household longevity, building lifespans, and adaptability of units. Operational energy is minimized with wide window panels on either side of living spaces, amplifying sunlight and cross-ventilation across various unit types.



SECOND FLOOR PLAN >





- < CAFE STREET VIEW
- < MAINTENANCE SHOP & OPEN COURT
- < VIEW OUT TO RAINWATER COLLECTION FROM UNIT
- < NIGHT VIEW OF URGENT CARE
- CORRIDOR AS EXTENDED LIVING >
- HOUSING ENTRY SPACE >



THE WETLANDS SCHOOL OF ECOLOGIES

SPRING 2020
CRITIC: ERICA GOETZ

This project aims to restore the historical wetland ecology that modern Manhattan was built upon. Through the integration of a basement level wetlands and living machine which acts as a water treatment center for the community, the school teaches through the lens of this past coastal landscape resiliency, adaptivity, and regeneration. The atrium provides a protected open playscape from the wetlands to the roof garden and bird habitat above, and is traversed by open metal grate walkways --suspended on the existing post and beam system-- that widens to provide informal meeting spaces. The science pods are layered from rammed earth geology lab to the lightbox culturology labs and spaced out to create intimate moments where students can fully emerge in this lush wetlands environment.



SITE SECTION OF WETLANDS >





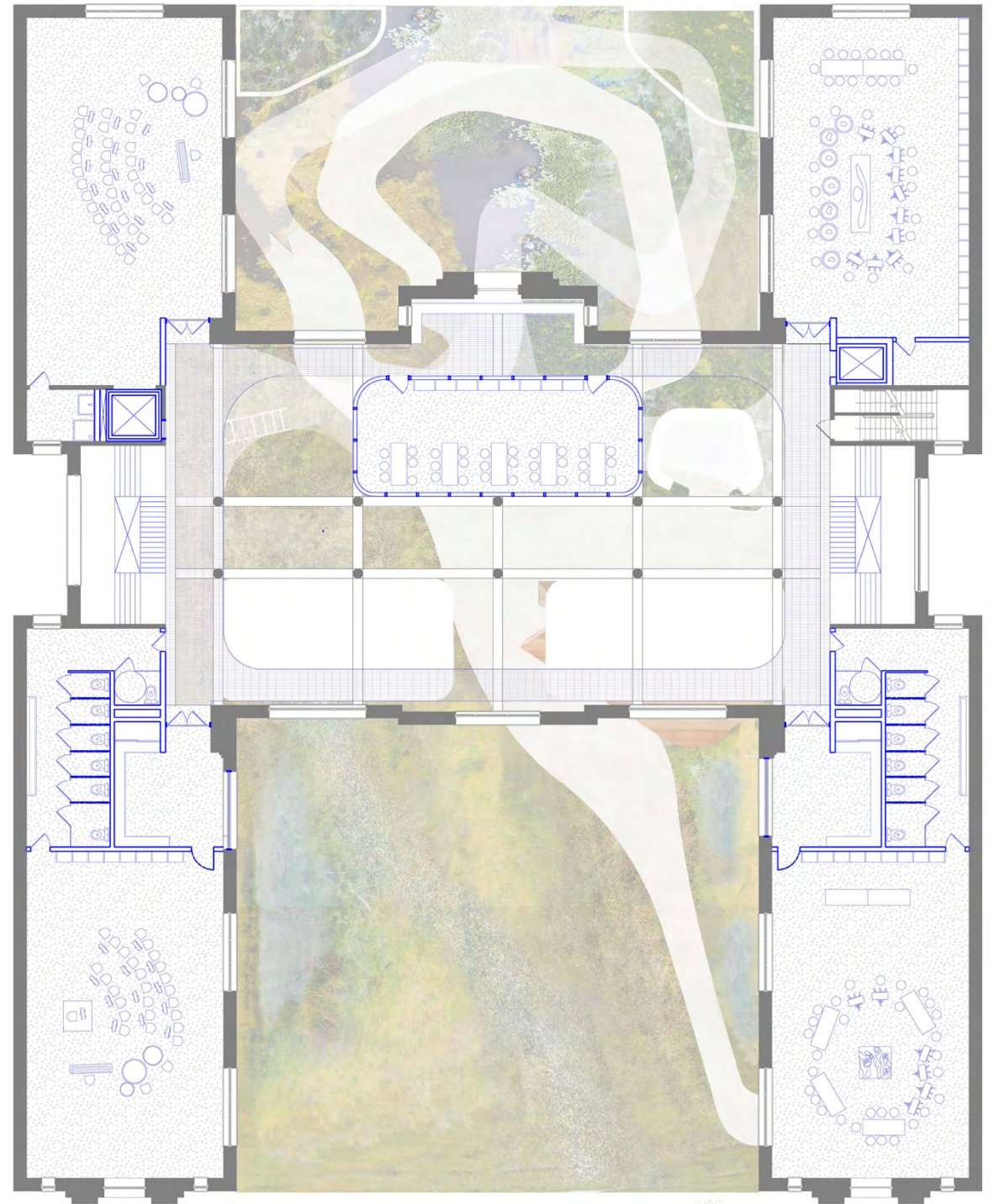
WETLANDS VIEW TO BIRD HABITAT COLLAGE

GROUND FLOOR PLAN





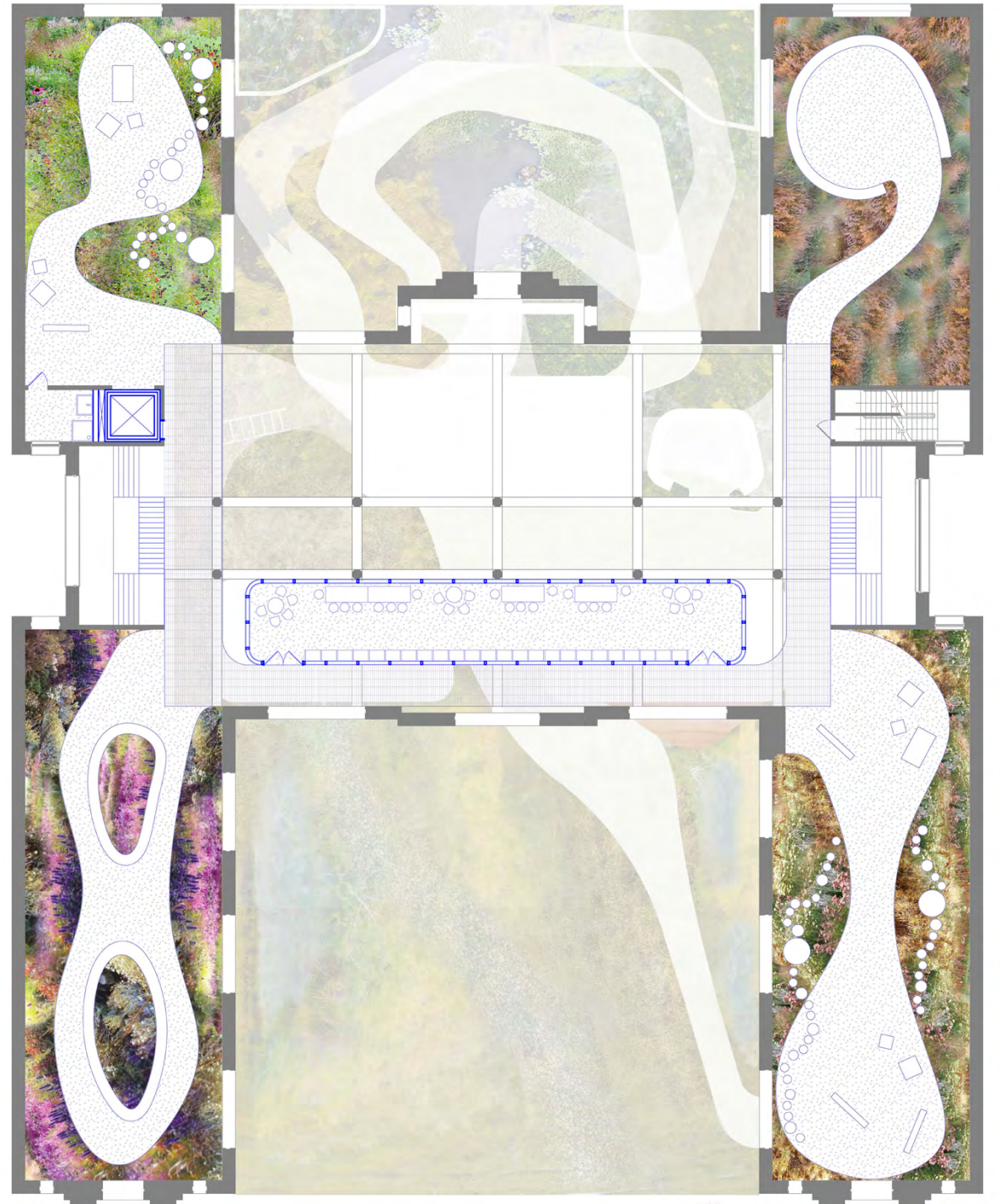


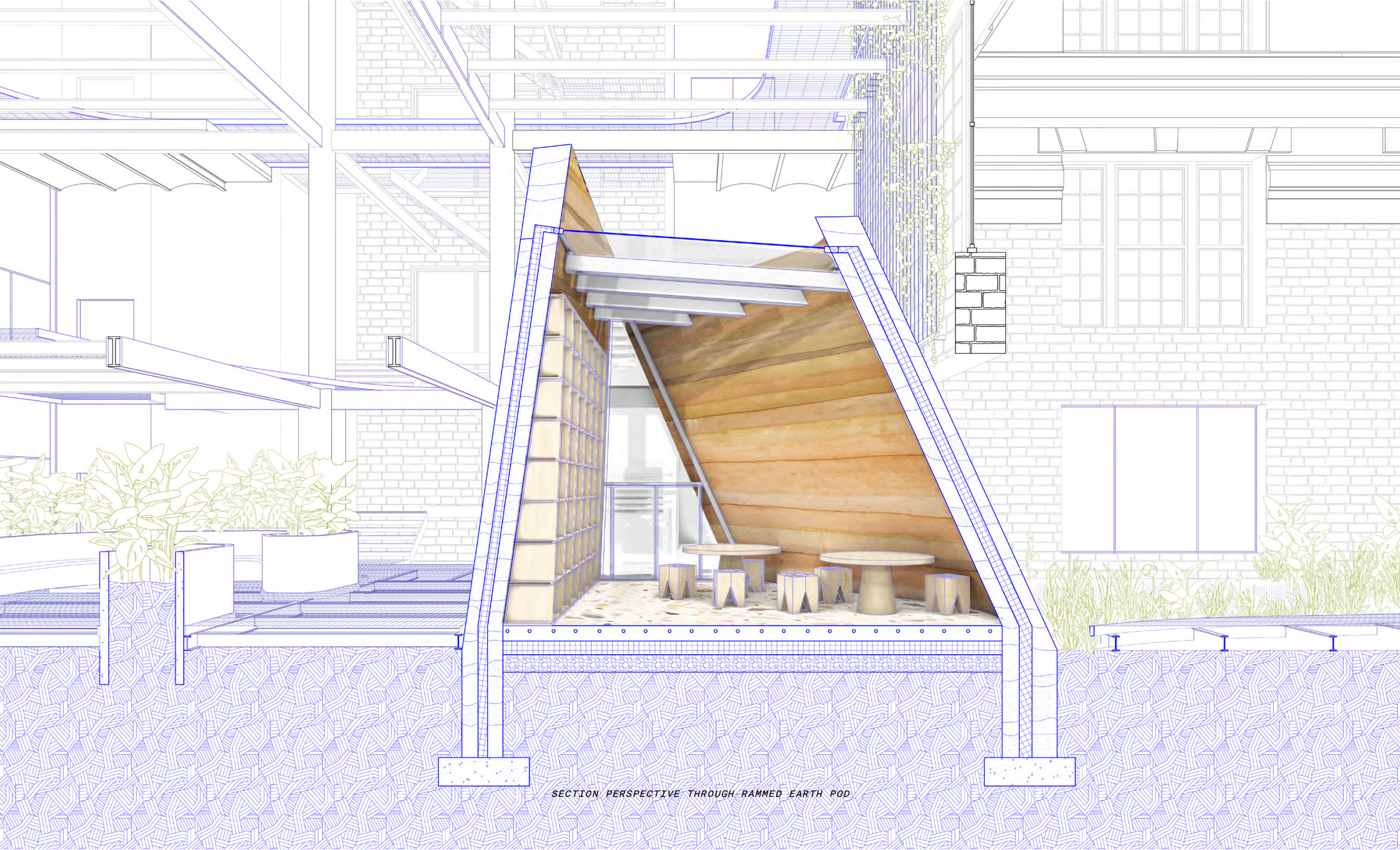
WETLANDS VIEW TO BIRD HABITAT COLLAGE 
 THIRD FLOOR PLAN 





CLAY MODEL VIEWS 
 ROOF GARDEN PLAN 





SECTION PERSPECTIVE THROUGH RAMMED EARTH POD

QUILTED

FALL 2020

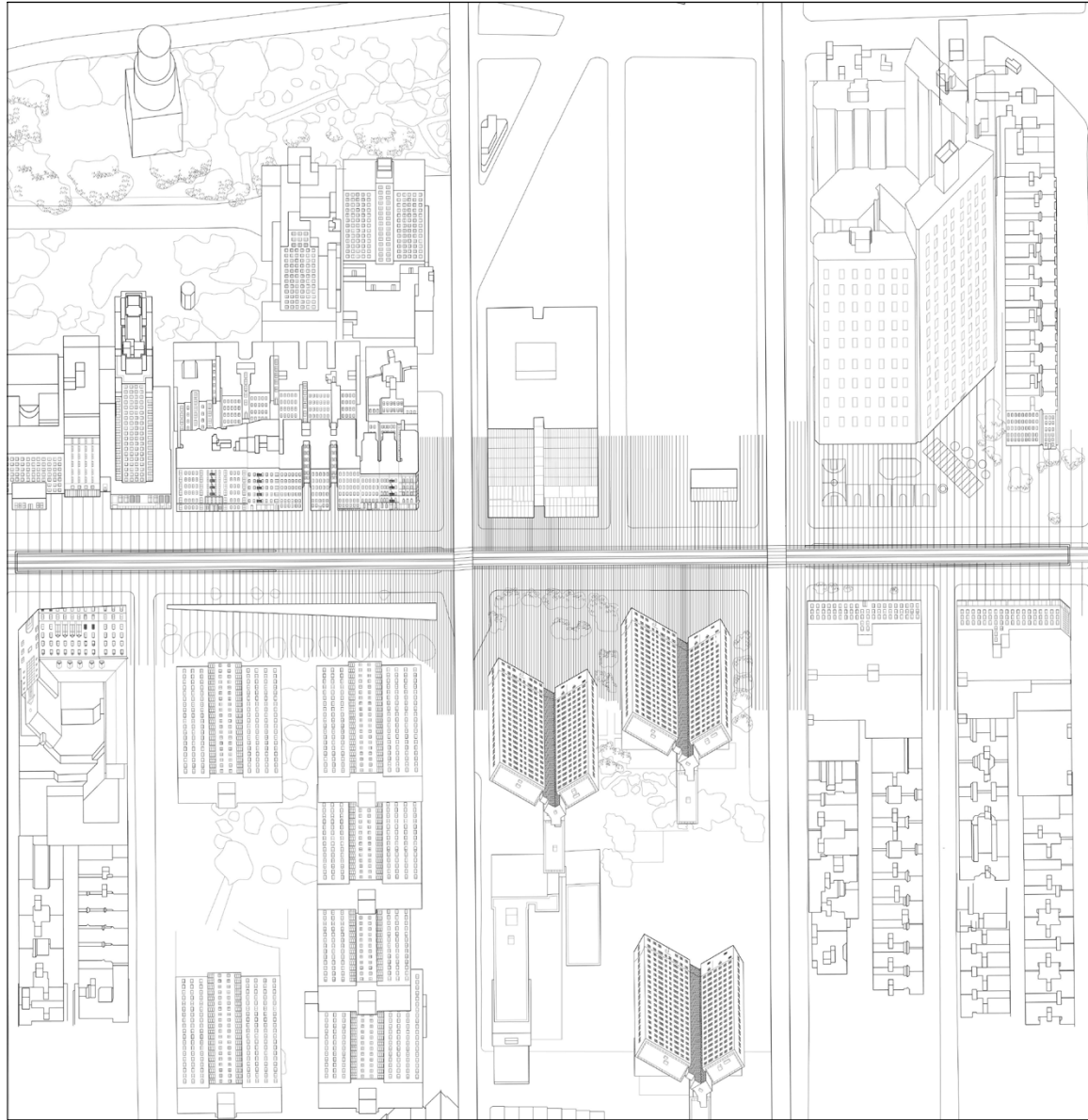
CRITIC: ALESSANDRO ORSINI
BUELL PARIS PRIZE FINALIST




Quilted is sited at the urban void in front of Manhattanville Housing Project along Broadway and is proposed to be able to extend throughout the empty lots within the New York City Housing Authority (NYCHA) projects. While passing by these New York City Housing complexes along Broadway, the sound of the railway overhead is amplified by the tall tower of these housing projects, creating an isolating and desolate space and a separation from public streets. There is a longstanding need to provide safety and security to these NYCHA blocks and in order to do so this project proposes to redefine these ground level voids with comforting, soft and welcoming architecture that engages the public and street access.

The addition of domestic amenities of dining space, outdoor kitchen, study, workshop/library, covered theatre, children's playground and storage are provided in these soft pavilions as an extension for the NYCHA resident and also to dissolve the harsh facade of NYCHA. In order to address the crisis of the lack of funding required for renovation upgrades described in the document NYCHA 2.0, the study and theatre rooms are activated through a transaction window converting these spaces to a market stand and theatre ticketing booth for projection screening that activate the blank walls of NYCHA tower, to create an economy for the residents and local workshop space for personal renovations. The herb and vegetable garden is landscaped through the site creating pathways leading up to entrance of residence. The gradient of planting heights allows for more intimate spaces while still maintaining visibility throughout the site. The roof continuously slopes, dipping down at the semi-enclosed storage spaces to allow for rainwater collection.

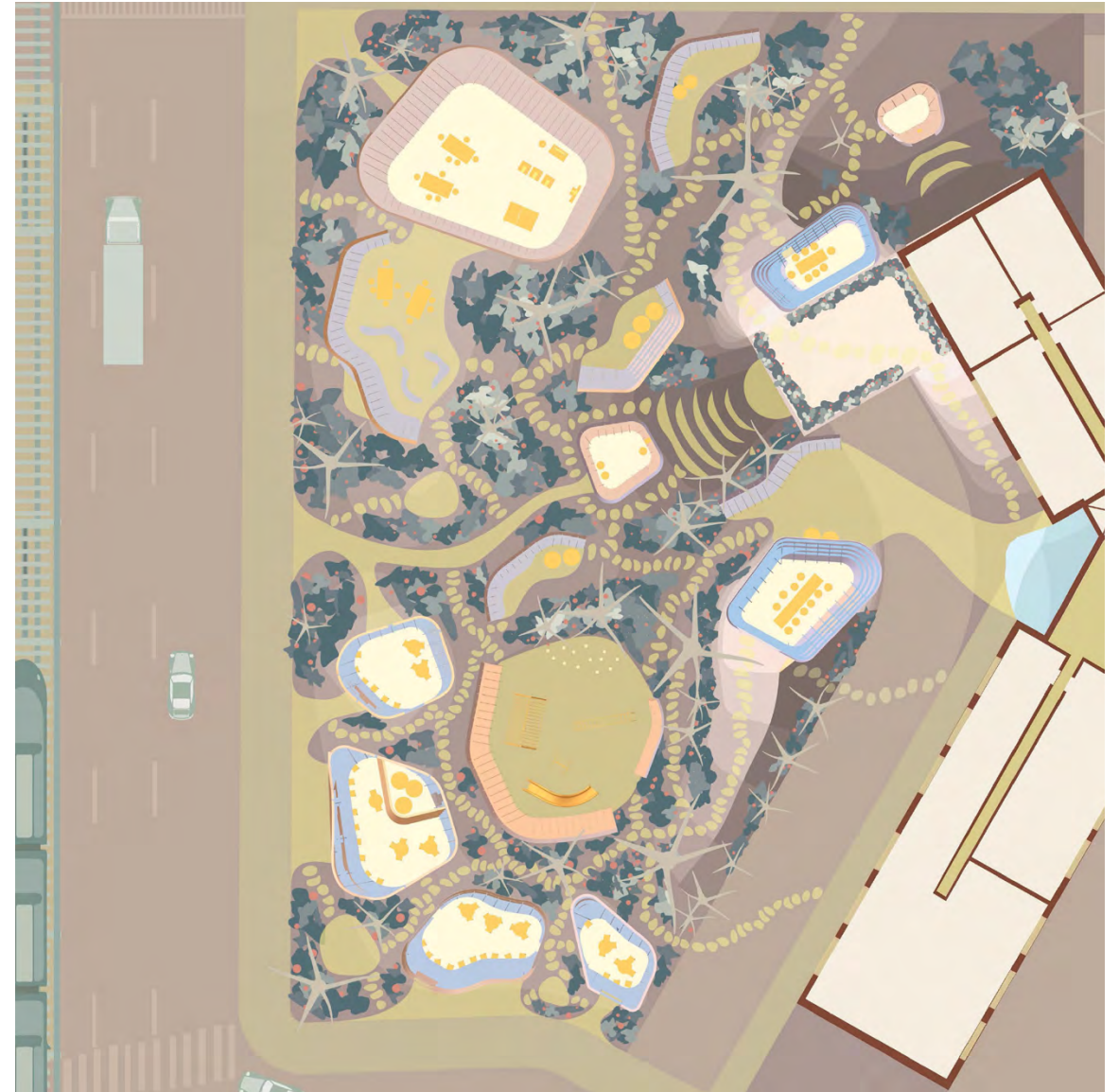
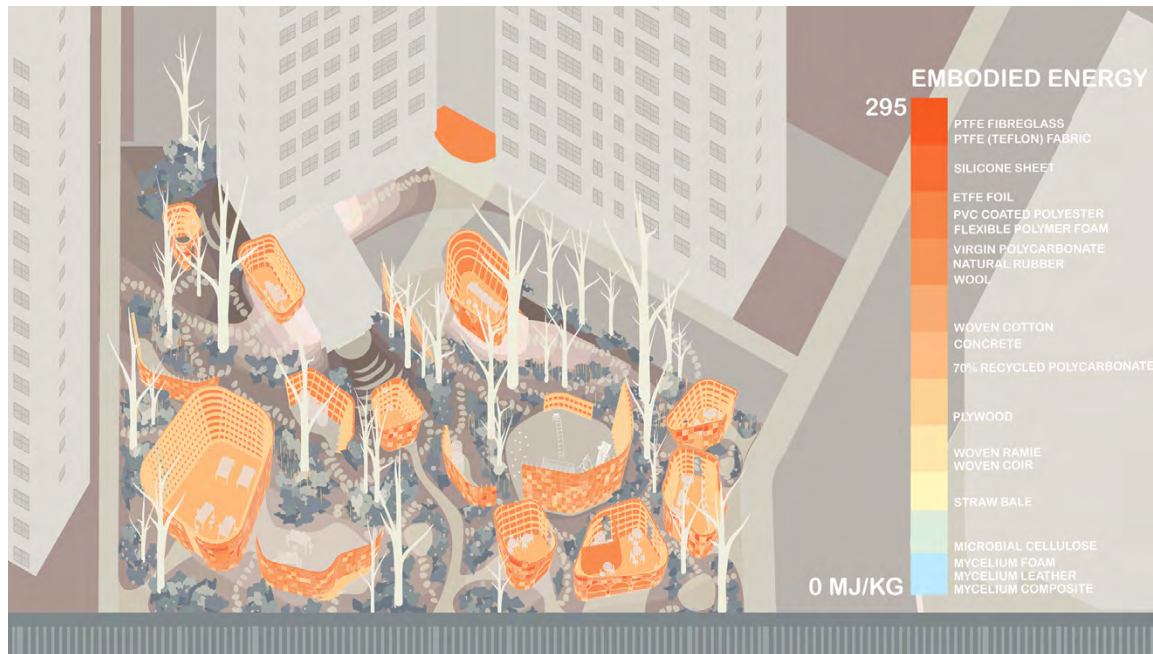
AXONOMETRIC OF ACTIVATED URBAN VOIDS >





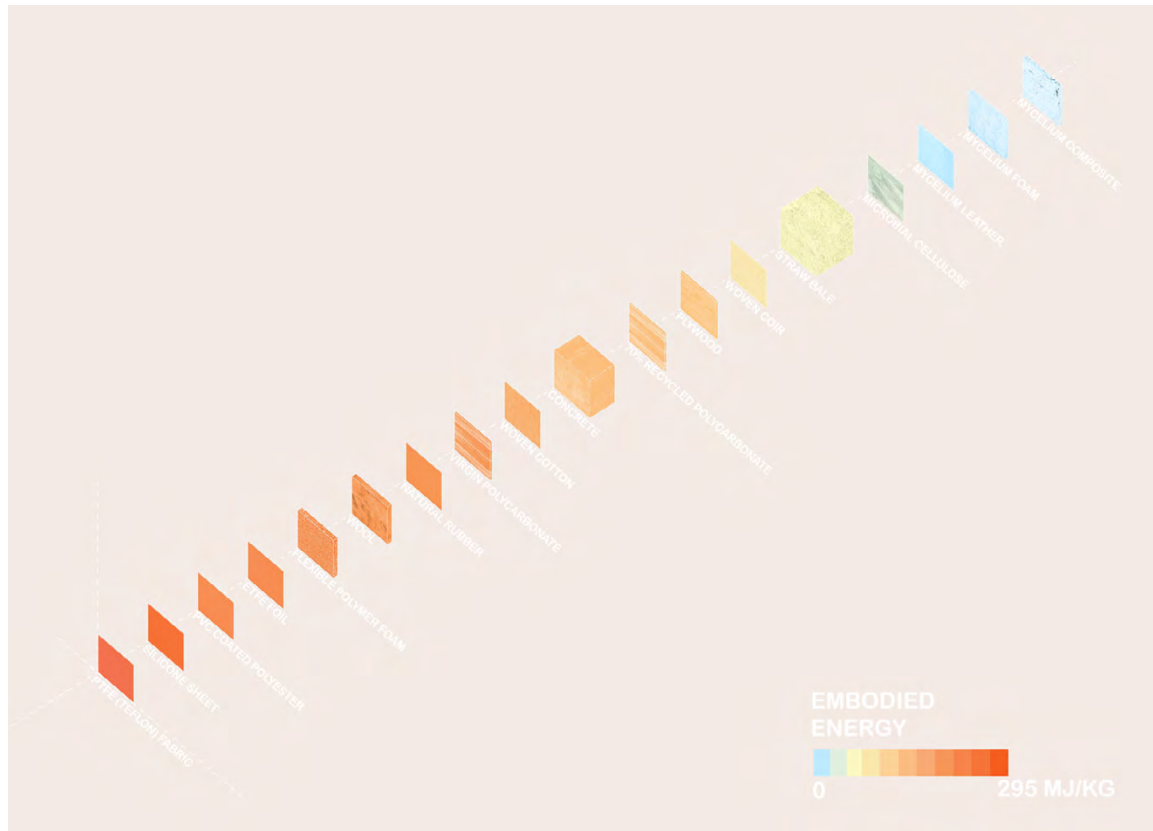
SITE STUDY OF TRAIN SOUND 
 PLAN OBLIQUE OF SOUND ISOLATION 
 STRATEGIES 





EMBODIED ENERGY OF PLASTIC MATERIALS AND THEIR ALTERNATIVES

SITE PLAN IN RELATION TO NYCHA TOWERS



EMBODIED ENERGY OF PLASTIC MATERIALS AND THEIR ALTERNATIVES

MODEL VIEWS



POLITICS OF CARE: FLATTEN THE CURVE

SUMMER 2020
 CENTER FOR SPATIAL RESEARCH
 IN COLLABORATION WITH SPENSER KRUT

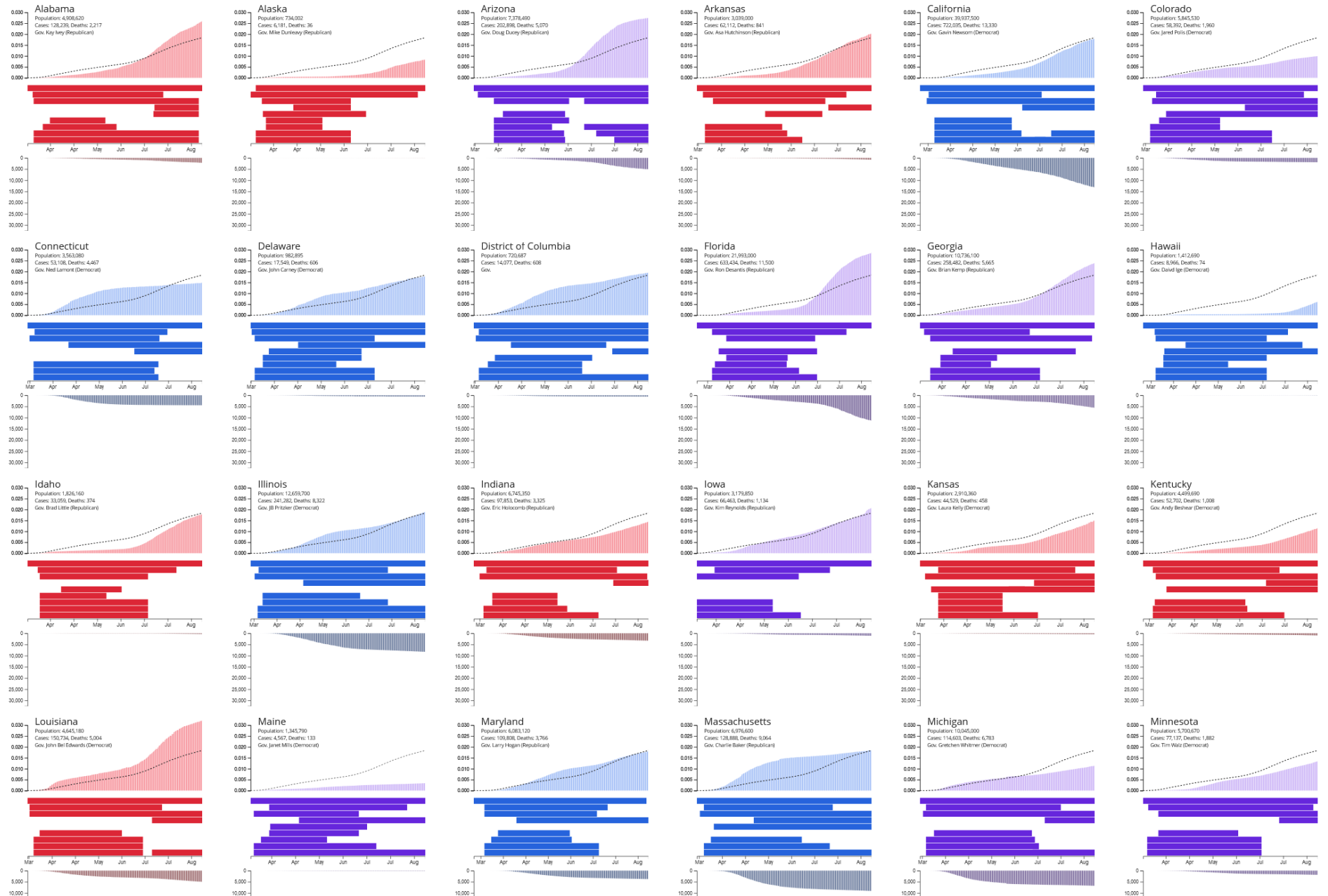
“Flatten the curve” is a popular phrase to emerge during the COVID-19 pandemic, referencing a widely circulated diagram. The ubiquitous graph shows the number of cases plotted on the Y-axis and time on the X-axis. Two epidemic curves predict the number of cases over time with or without the implementation of preventative measures that seek to “flatten the curve.” At a set quantity of cases, another horizontal line indicates the healthcare capacity in terms of how many cases can be treated (another call to action: “raise the line”). The goal is to keep the epidemic curve flatter the healthcare capacity line.

The following set of graphics combines case data and policy analysis per state. Critical preventative measures enforced at the state-level are grouped into nine general policy types: emergency declarations, school closures, “non-essential” business restrictions, restaurant restrictions, bar restrictions, gathering restrictions, quarantine or case isolation orders, stay-at-home orders, and public mask orders (definitions of each type are in the reference section). The start and end (and sometimes second start) dates of policies within these categories define distinct policy timelines for each state. Coupled with the cases per capita chart above and death count chart below, this three-part graphic generates a unique fingerprint for each states’ response to the pandemic.

Flatten the Curve: Policies and Outcomes of COVID-19

Adeline Chum, Spenser Krut (Last Updated: July 31, 2020)

Sort By Name Sort By Cases Sort By Deaths Filter by Pact: All



STILL FROM WEBSITE OF INTERACTIVE STATE 'FINGERPRINTS' >

36 YEARS OF HOUSING

FALL 2020
 CRITIC: JIA ZHANG
 IN COLLABORATION WITH ADAM VOSBURGH &
 JONATHAN CHESTER

This project is about the Columbia GSAPP's Housing Studio, which began in 1974 as a result of student activism and the coordinated interests of new faculty. The studio has continued in different iterations over the 40+ years since, and has changed with the dominant ideas in architecture as well as with the social political and economic pressures on the city. 36 YEARS OF HOUSING is centered around two components: Data comprised of individual student projects, and Tags which are an attempt to draw some lessons from the past 40 or so years of production out of them.

36 YEARS OF HOUSING was made by three Master of Architecture students during their completion of the Housing Studio, but would not have been possible without the work done in 2014 by the GSAPP Exhibitions Team, in a retrospective of the GSAPP Housing Studio titled "GSAPP Housing Studios, 1974-2014."

This interactive catalogue project is [linked here](#).

STILL FROM WEBSITE >

36 YEARS OF HOUSING

[Grid](#)
[Map](#)
[About](#)

A Visualization of the Columbia GSAPP's Housing Studio Over the Years

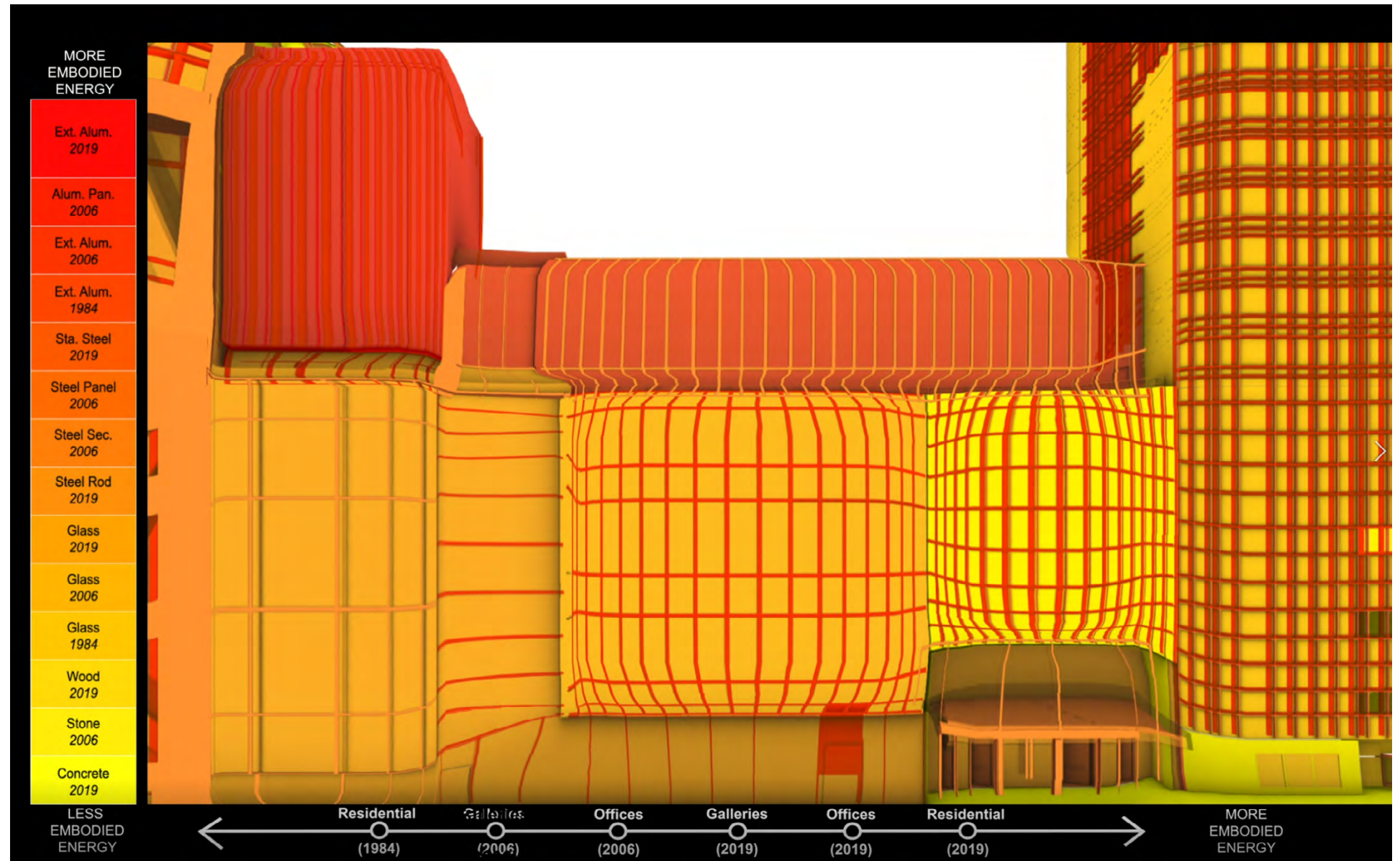
STUDIO BRIEFS THAT INCLUDE OR EMPHASIZE: SITE

TERMS OF SCALE	SITE	UNIQUE STUDIOS	TAKE ON "HOUSING PROBLEM"	PEDAGOGY	BRIEF LENGTH	OTHER
LOW RISE HIGH DENSITY	SHARED SITE	OLYMPICS BID	GRAPPLING WITH GENERIC	TYOLOGY	SHORT	FINANCE/POLICY
MID DENSITY	DIFFERENT SITES	STUDENT HOUSING	PROPOSING NEW MODES	PRECEDENT STUDY	MEDIUM	NEIGHBORHOOD
HIGH DENSITY		COLUMBIA PROJECT HOUSING		SITE ANALYSIS	LONG	GOV. AGENCY PARTNERSHIP
						MIXED-USE

MOMA'S EMBODIED ENERGY

FALL 2019
 UNDER THE DIRECTION OF DAVID BENJAMIN,
 THE LIVING, AND PAOLA ANTONELLI, SENIOR
 CURATOR OF MOMA

Working in conjunction with the Energy exhibit at the reopening of the Museum of Modern Art, The Embodied Energy Pilot was commissioned by MoMA to investigate and create a visual analysis of the embodied energy of the existing construction and how this relates to the new construction by Diller Scofidio + Renfro. As one of the two student leads in this project, we were interested in representing the embodied energy of the project at two scales at the level of MoMA's facade and taking a closer look in the new gallery. This project is presented as a video [linked here](#).



STEROID PLANTS

SUMMER 2021

CRITIC: JOSH JORDAN

IN COLLABORATION WITH ANAYS MICAL GONZALEZ, BENJAMIN DILLER-SCHATZ



"Due to a combination of CO2 saturation and other environmental factors, the biomass ecosystem has gone on steroids, and plants must be used (in place, attached to their site toors) as symbiotic exoskeleton for all buildings, with new and old reinforcements"

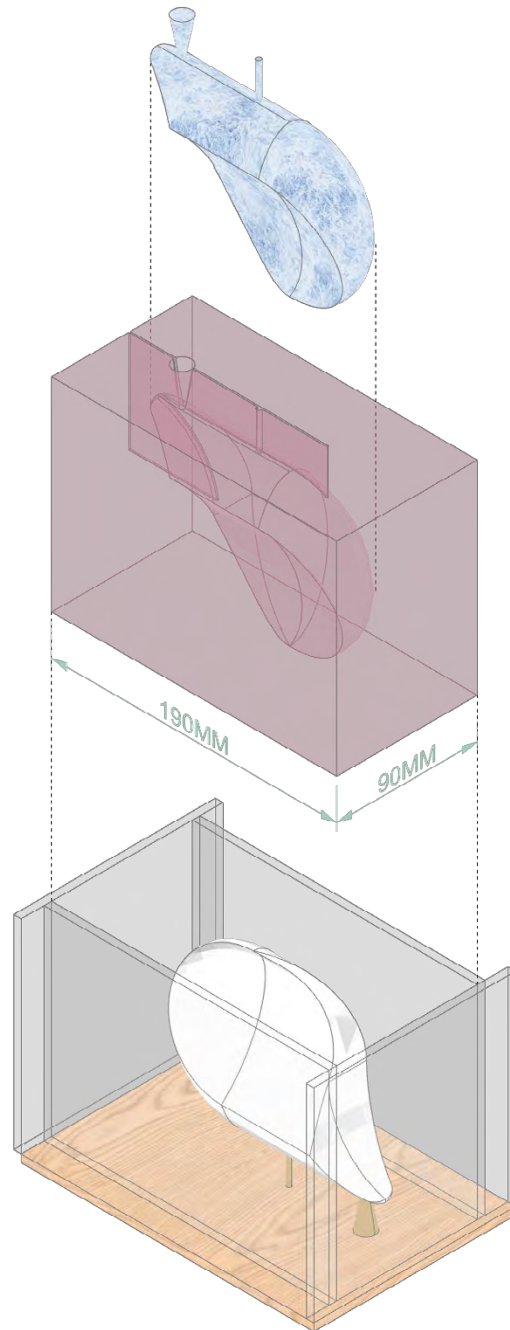
This world building project grows out of the narrative of exoskeleton plant structures and the 1915 short film of Alice in Wonderland. Model size stage sets were built and video animation and effects overlaid.

Full video [linked here](#).

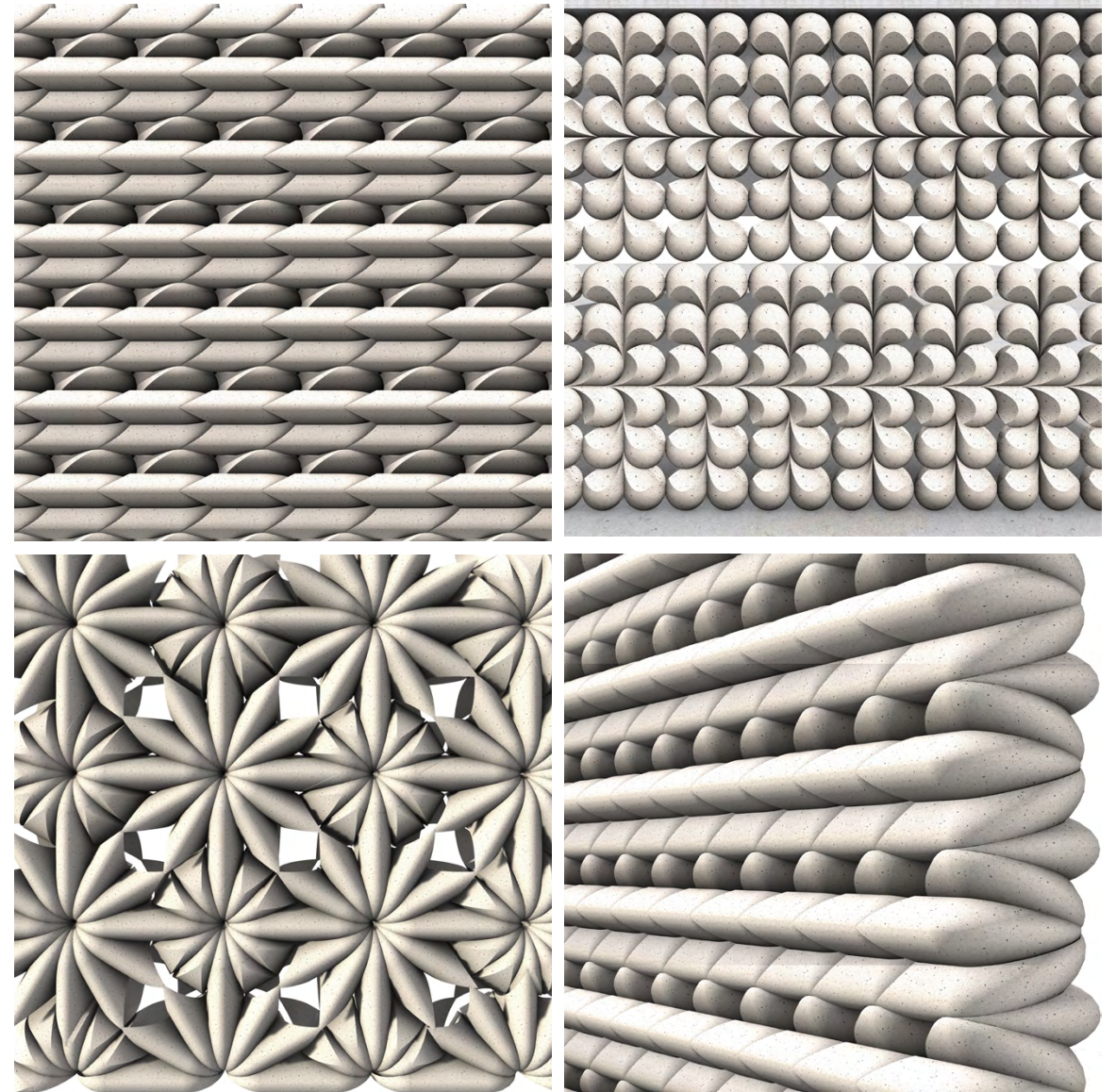
STILLS FROM FINAL ANIMATION >

NESTLED PILLOWS

FALL 2020
CRITIC: JOSH JORDAN

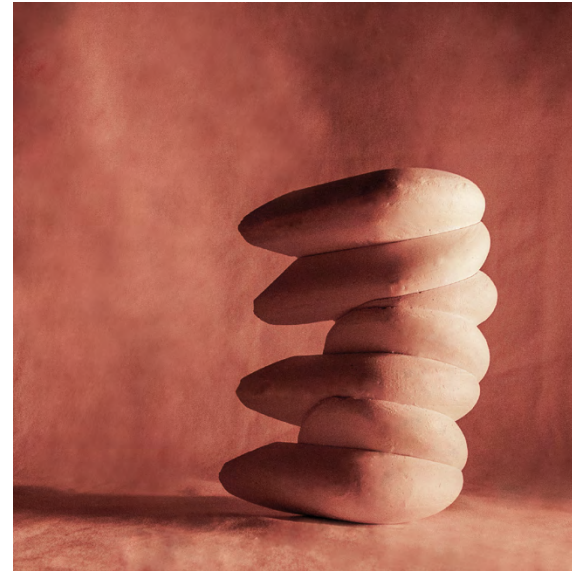
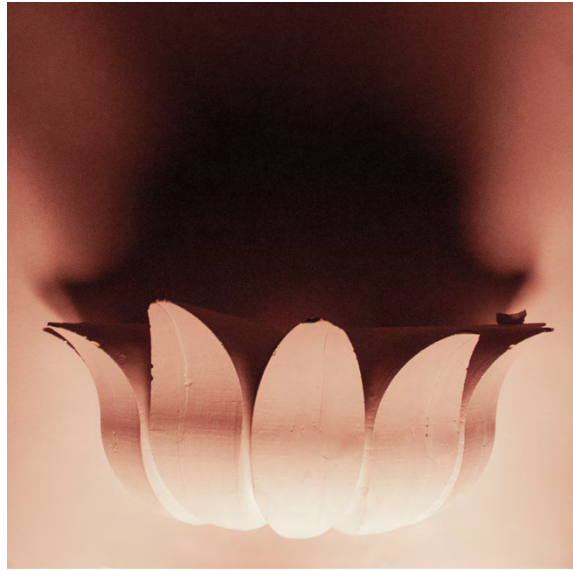
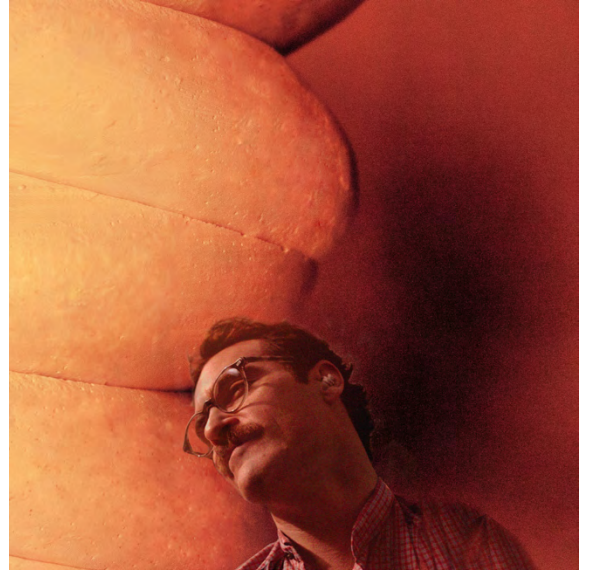
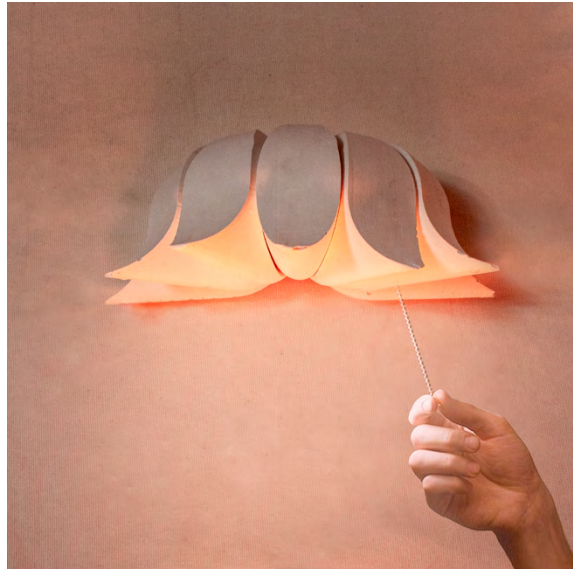


Nestled Pillows are a series of 6 tiles , where there are 3 variations of 30 degree cutouts and their mirrored counterparts. This project is a exploration of tiling systems as a way to create furniture, lighting fixtures, solid wall tilings, and facade tiling patterns, and investigate even as larger scale stackable building units. This study extends into model image making and looks to create a warm and comforting atmosphere.



^ TILING STUDIES

< CASTING MOLD PROCESS

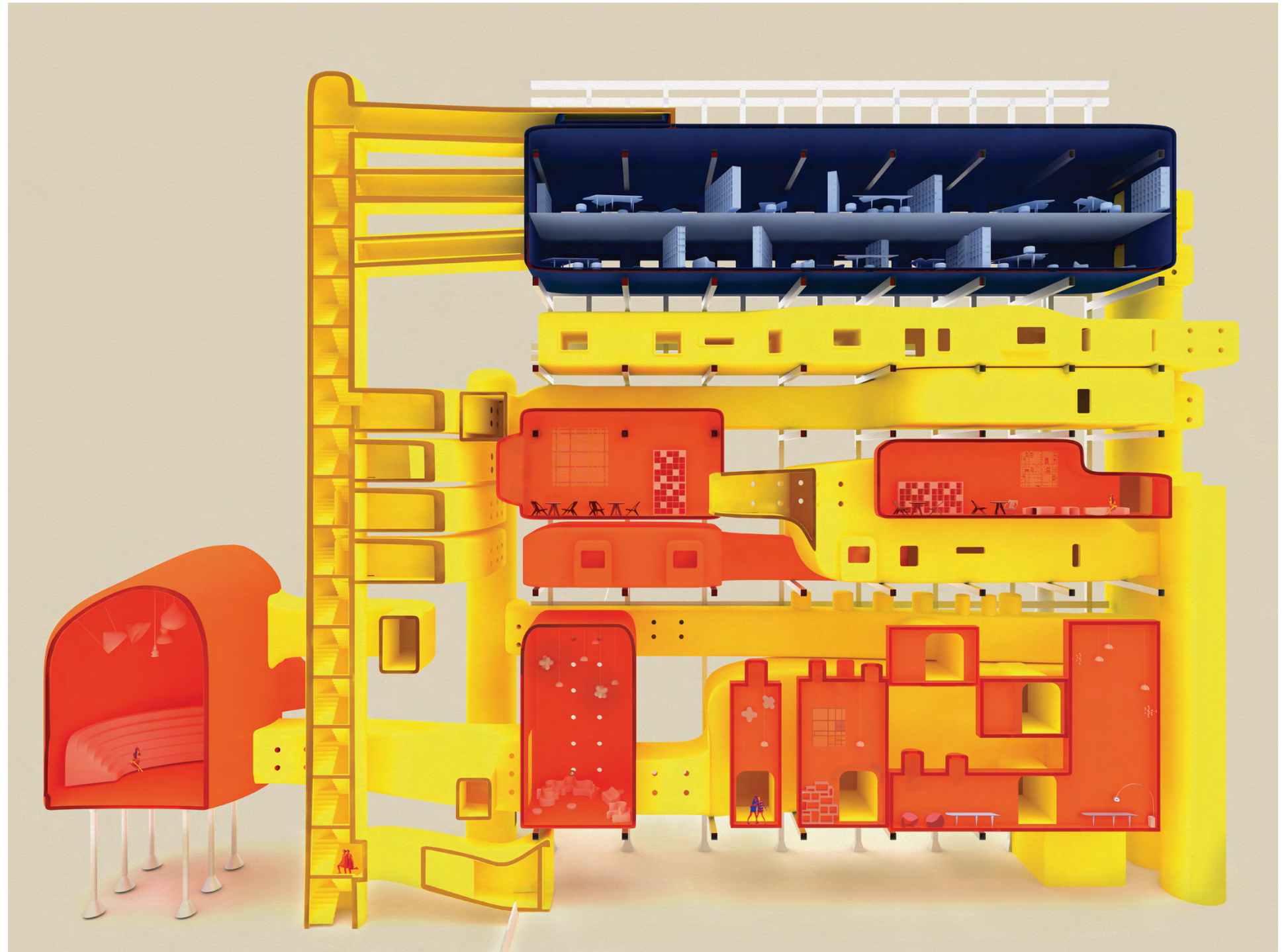


FURNITURE MANUFACTURING HEADQUARTERS

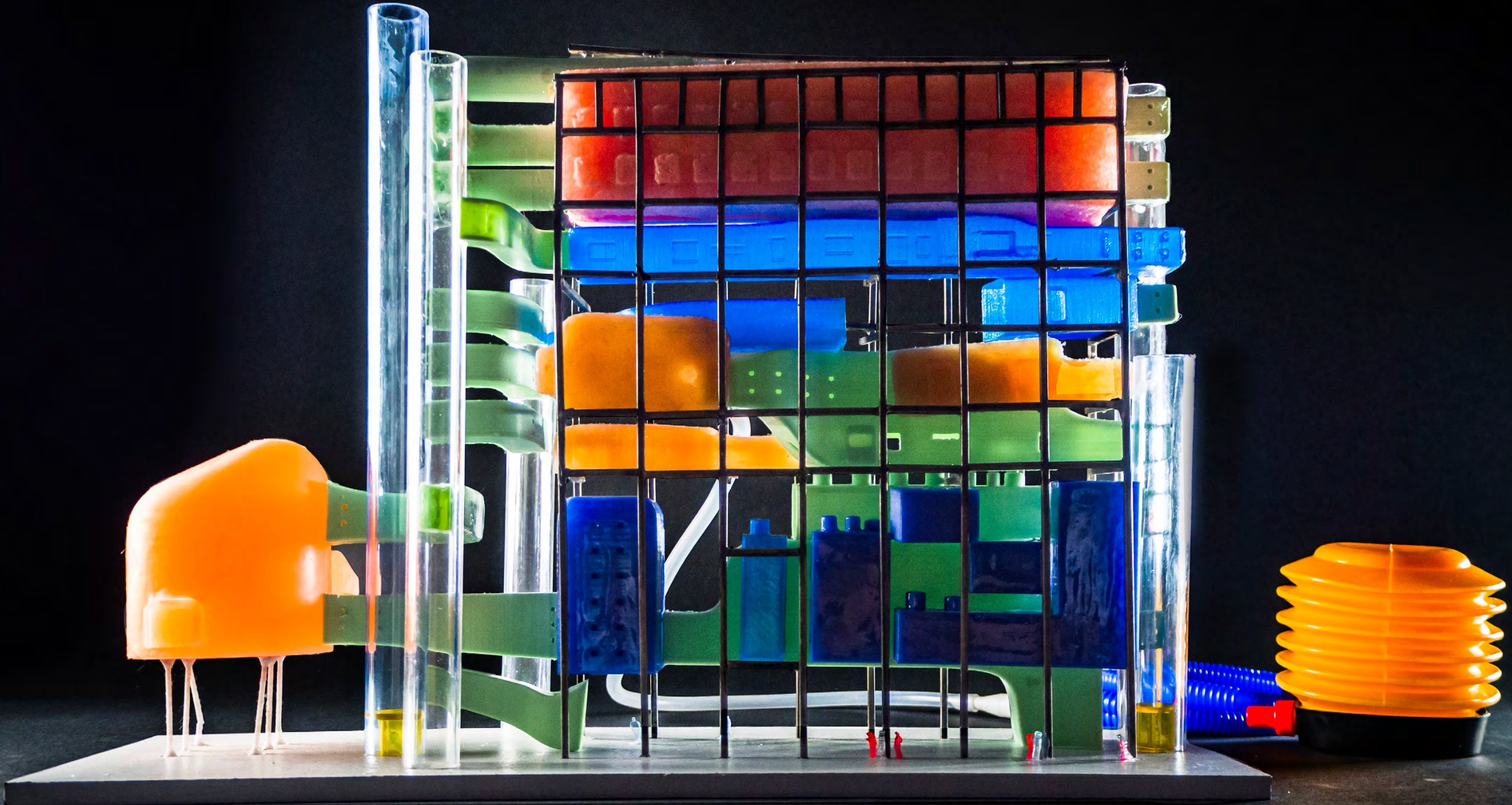
FALL 2019
CRITIC: BIKA REBEK

This series of drawings, model and animation explore Michael Webb's Furniture Manufacturing Headquarters evolving maybe to become a living, breathing building "where rooms are like bodily organs that swell when full of people, and tubes, like arteries, heave, and pulsate". The colour coding identifies the 'served' and 'servant' spaces and how this would be translated into the corridors, executive suites and furniture showrooms of the Furniture Manufacturing Headquarters.

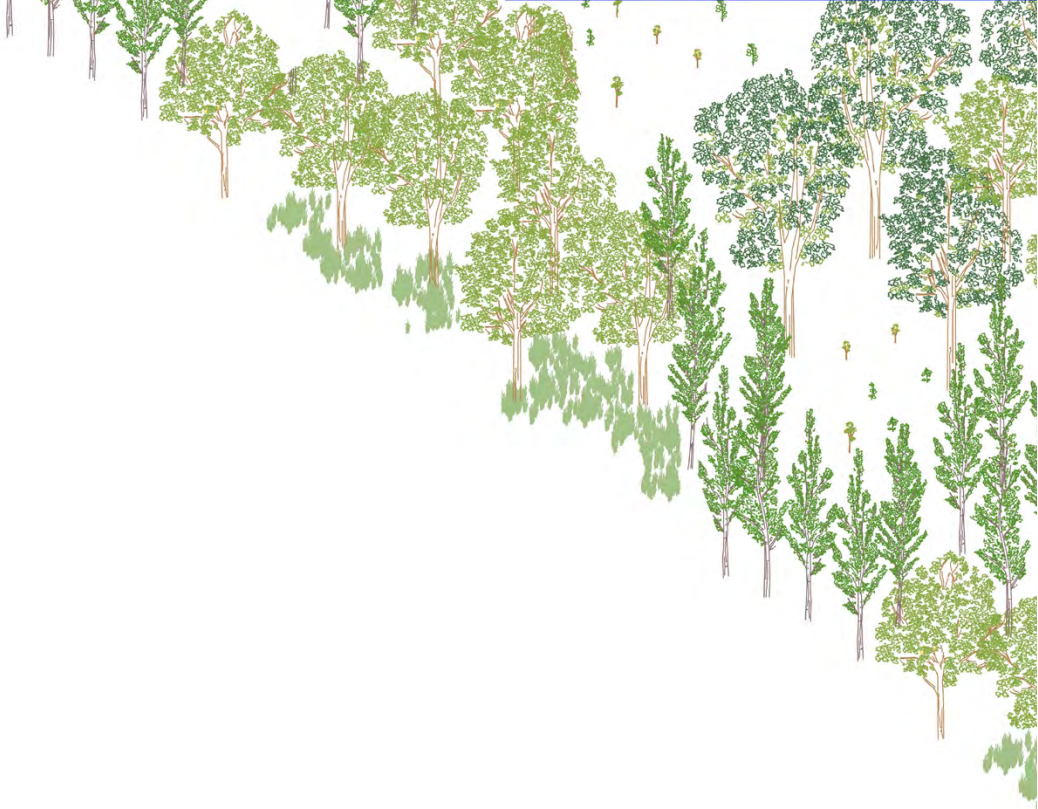
These visualizations explore how these tubular concrete structures can be interpreted as bowels hanging on a grid structure and explore how soft and flexible materials (especially in the model) can create this feeling of movement and suggest the possibility of expanding and contracting tubes and how these spaces become plug-in architecture.



IMAGINED SECTION COLOR CODED
BY SERVICES >



INTERACTIVE BREATHING MODEL



THANK YOU

FOR MORE PROJECTS AND INTERACTIVITY,
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1-416-399-1854