MEGAN DANG

ECOLOGICAL ENTANGLEMENTS

# **Ecological Entanglements**

Graduate Architecture Portfolio 2020-2024

This edited collection is a curated sequence of visuals encompassing an ongoing three-year exploration of ecological entanglements. The book explores the relationship between humans and nature at a time when these forces are eroding. Challenging the time of the 'Anthropocene,' as humanity makes its way through permanent planetary changes to the earth's systems through climate change, the collection of projects brings optimistic light to a dystopian reality. It poses the question: are there more or less ways to work with nature? How might we create perspectives and enact practices that build community across spaces and species, constructing relationships with nonhumans beyond the discourse of destruction? As a human myself, I attempt to speculate these pressing concepts of ecology and entanglement as a tool to combat social and cultural issues at large. Of course, examining these questions as a single human under the constraints of an academic calendar can only go so far. I want to thank my collaborators, family, and friends for this unforgettable journey.

- Megan D.

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### FlowHUB

ADV V\_\_ Wetropolis: Wet Architecture & Electric Mobility in a Post-Crisis City Fall 2023

In Collaboration with Rose Zhang

Studio Critic: Amina Blacksher

In 2053, the current site of Spring Studios has transformed into a bustling hub where native blue mussels flourish: FlowHub. The public space is designed to purify the building's water supply. It nurtures the burgeoning ecosystems within the newly established flood zone by assisting the tide, filtering water, and distributing nutrients. Our vision of 2053 prioritizes the prosperity of non-human actors to develop a new, more harmonious coexistence with nature.

Our initiative is based on the established framework of Spring Studio. At Spring Studios,

our hub is for native blue mussels serves to filter, clean, and rehabilitate the water, supporting the river's prosperity and any newly established habitats in the flood zone. Overfishing and industrial pollution in the 19th and 20th centuries led to a significant decline in the blue mussel population, and our design aims to restore and surpass what it once was. Water quality—embracing factors like temperature, salinity, turbidity, dissolved oxygen (DO), pH, pathogen presence, and food supply—is crucial to promote a healthy ecosystem. Mussels filter and recalibrate water and function as highly effective bio-sensors, outperforming their digital counterparts.

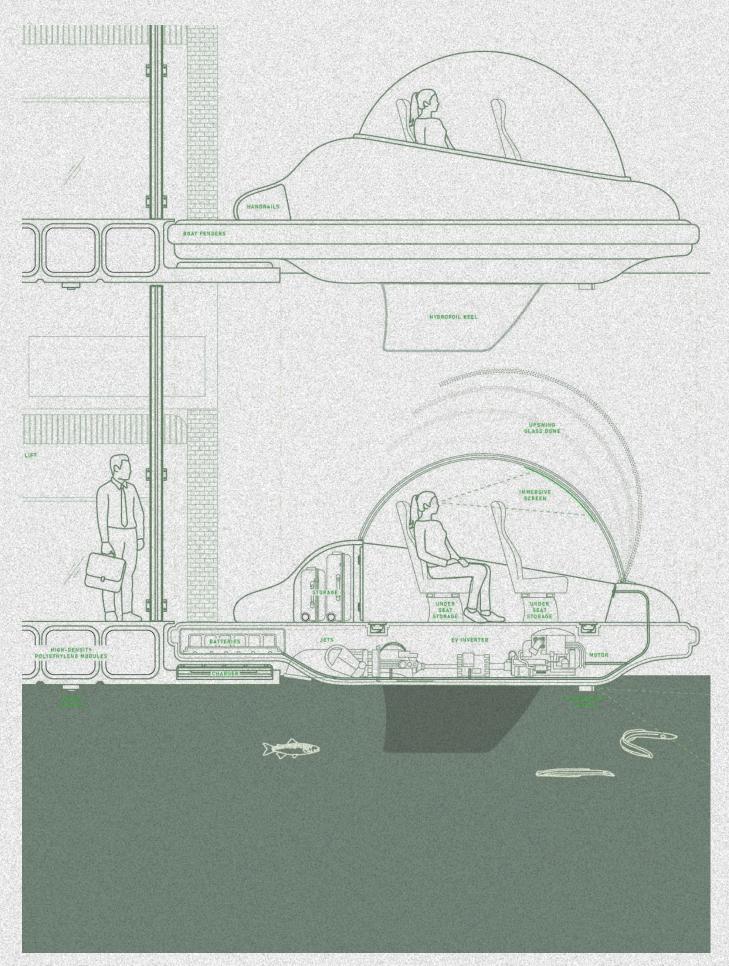


Section Detail Model

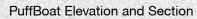




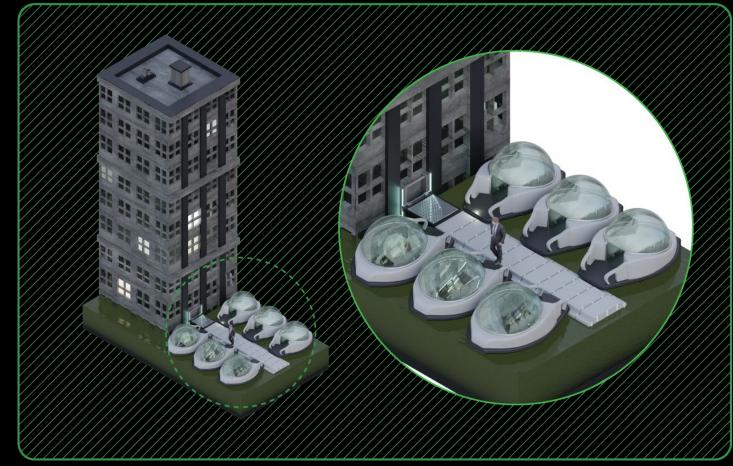




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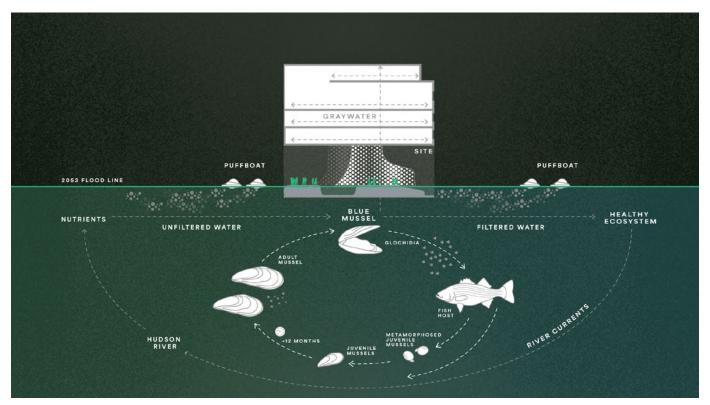






PuffBoat size XS/XL Docking Station

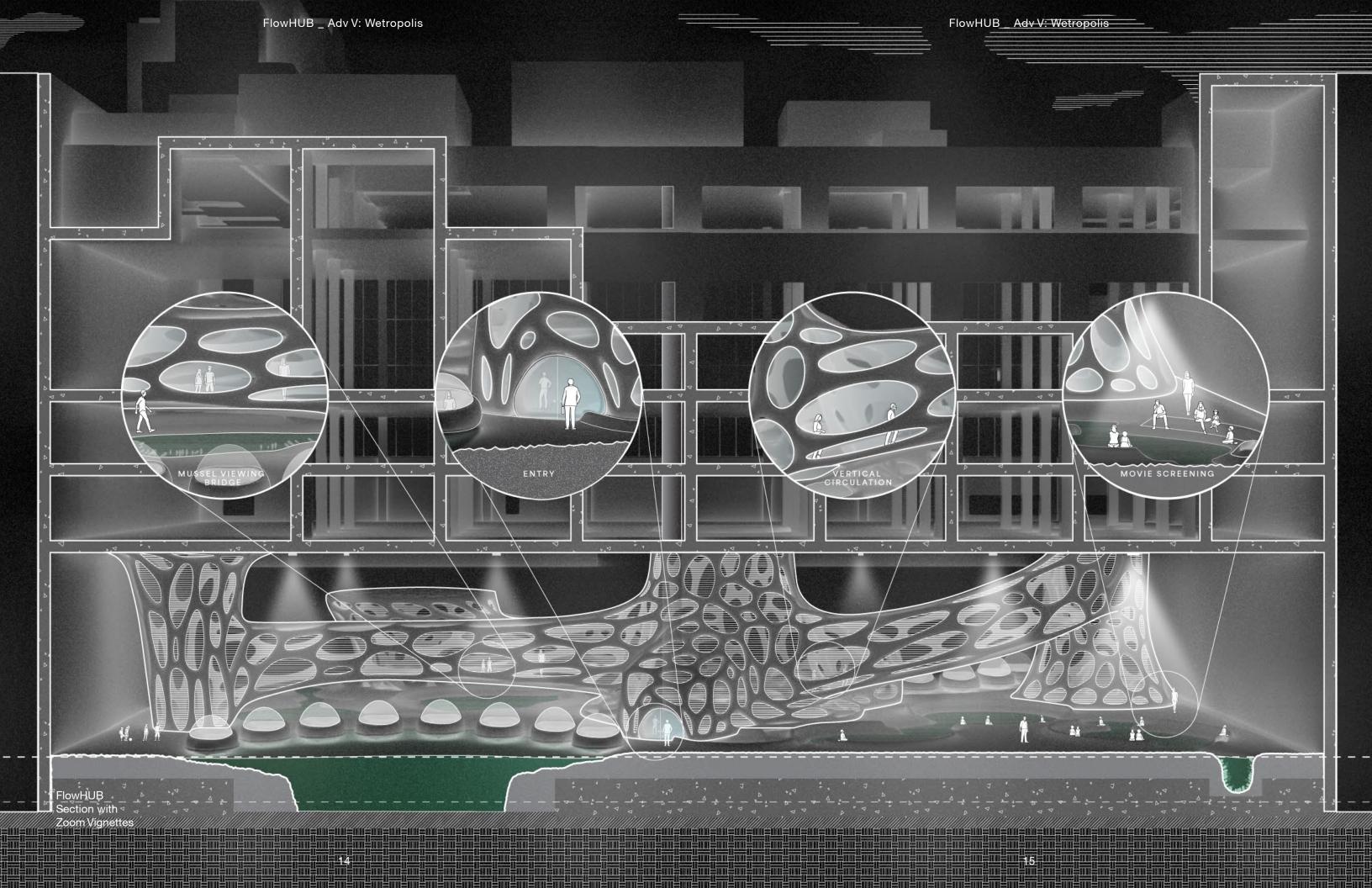


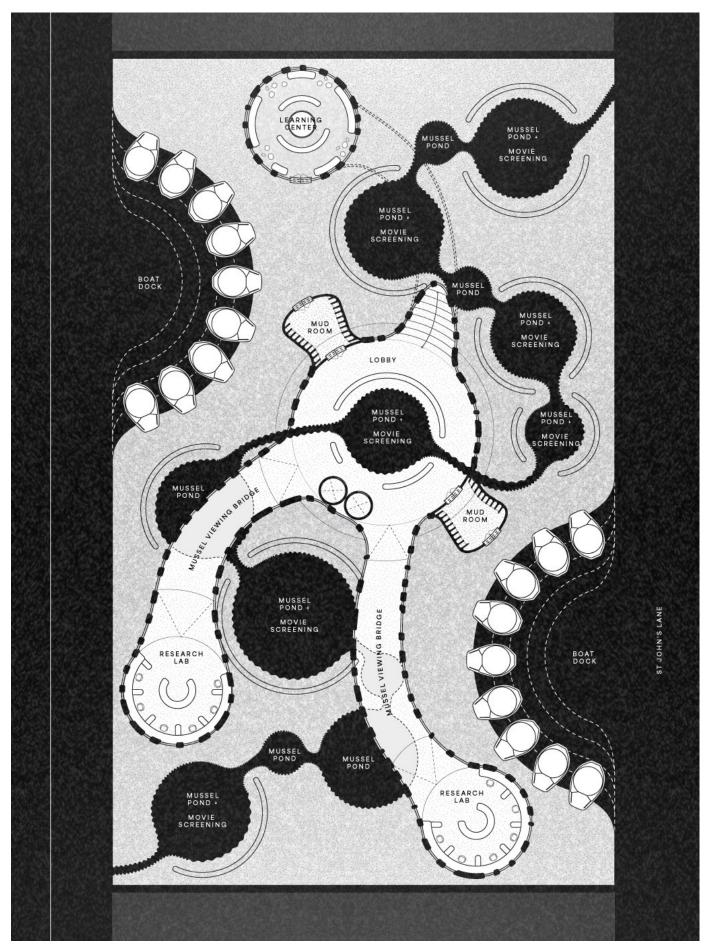


Mussel Filtration System Overview



Section Detail Model





Ground Plan

# HempCORE

ADV VI\_\_ Open: Designing Systems for Carbon Removal, Buildings, and Equality Spring 2024

In Collaboration with Rose Zhang

Studio Critic: David Benjamin

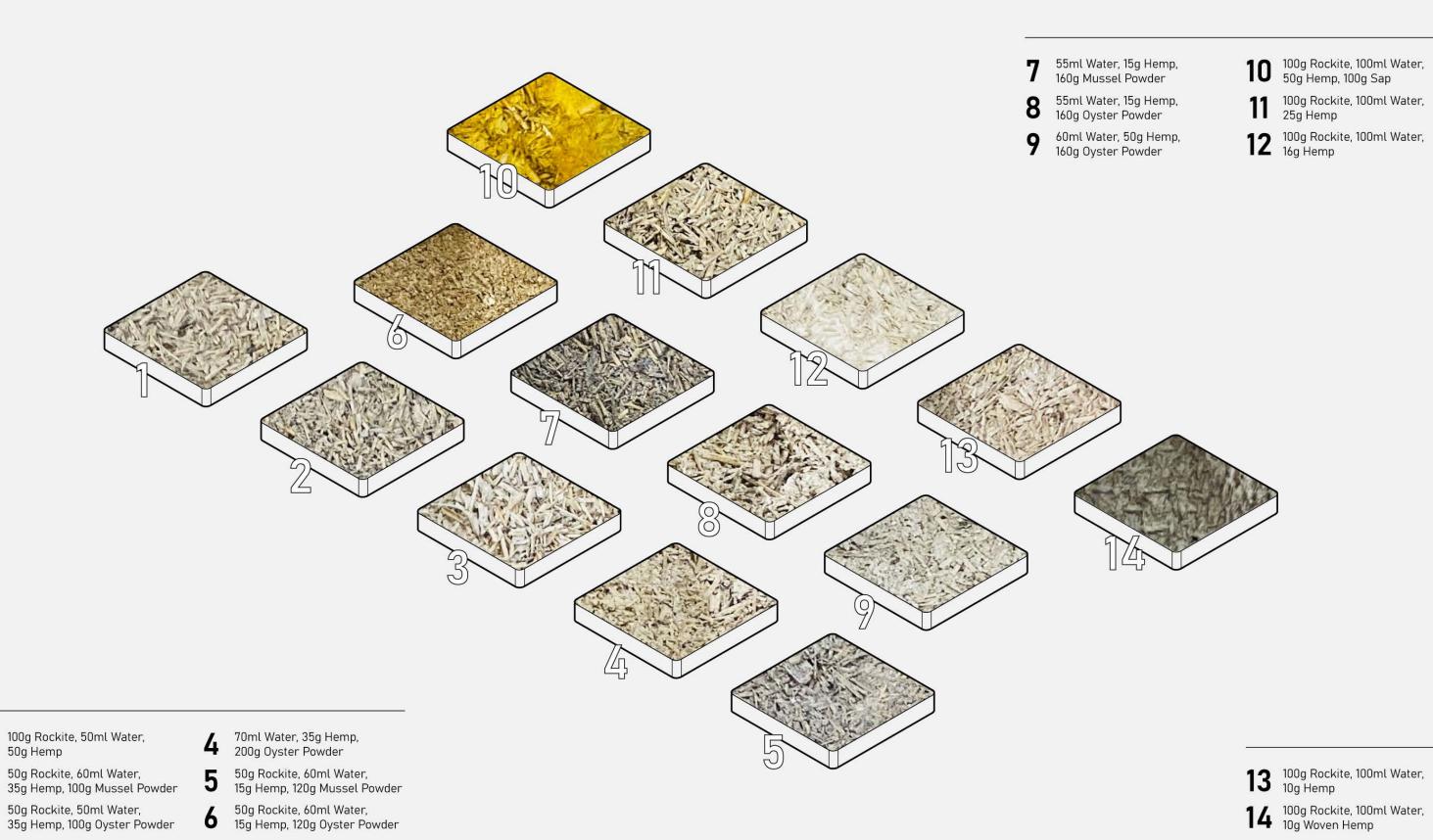
In response to the climate crisis, there is an urgent demand for environmentally sustainable construction materials. Our proposal aims to meet this need by exploring hemp waste as a viable alternative.

Hemp is renowned for its low carbon footprint and ability to continuously sequester CO2 throughout its life cycle, making it a promising material choice. Since its legalization in 2018, hemp has gained popularity among farmers; however, the issue of hemp waste management remains largely unaddressed. Classified as 'hazardous,' hemp waste is often disposed of through burning, exacerbating environmental concerns.

Our solution involves harnessing this waste to address disposal challenges and expand existing living spaces. Introducing Hempcore--a flat-pack panelized balcony system that integrates with various housing typologies.



#### Material Studies

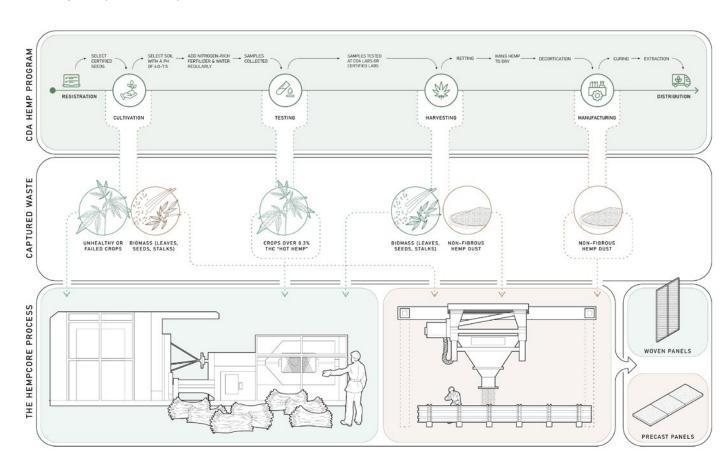


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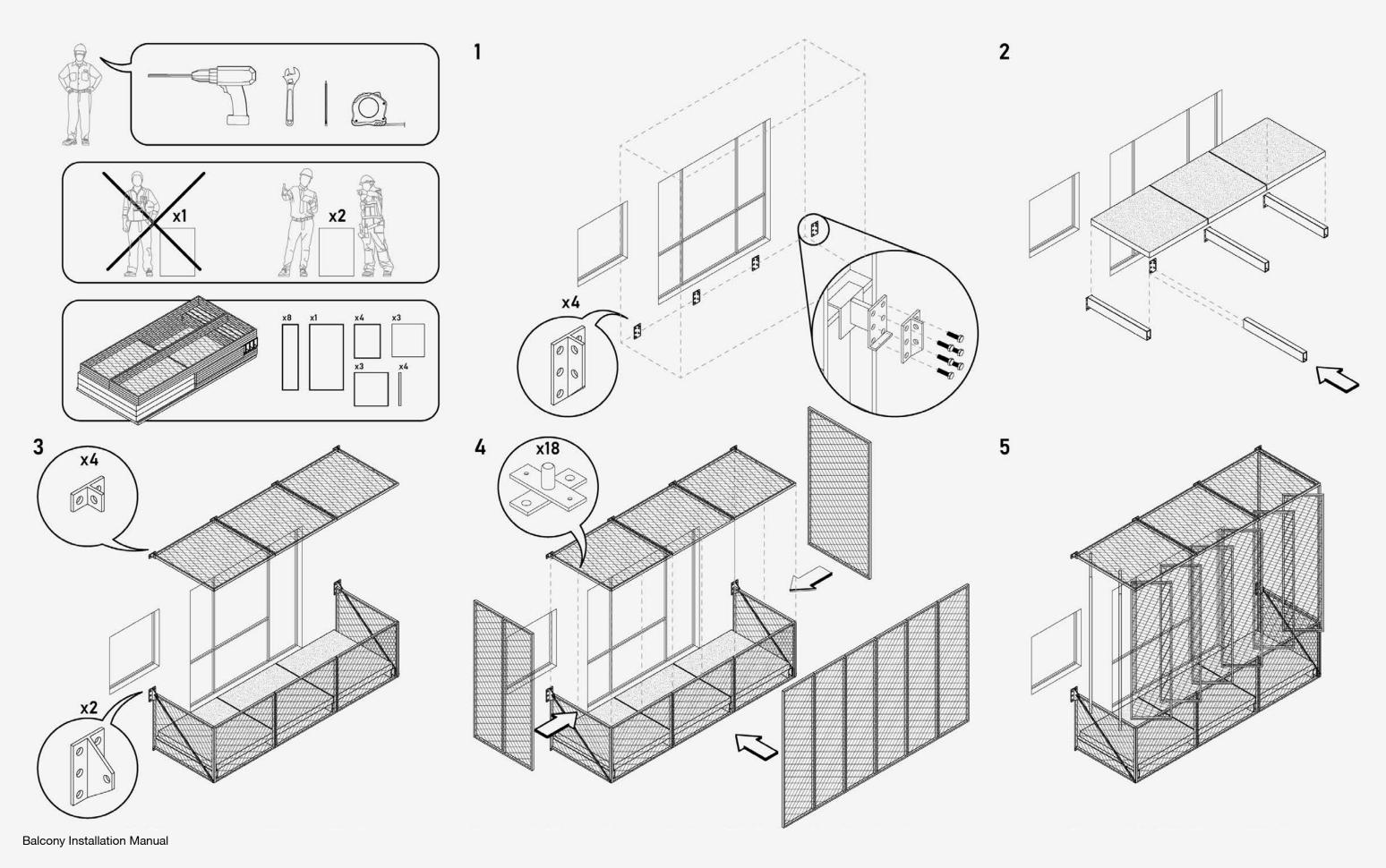


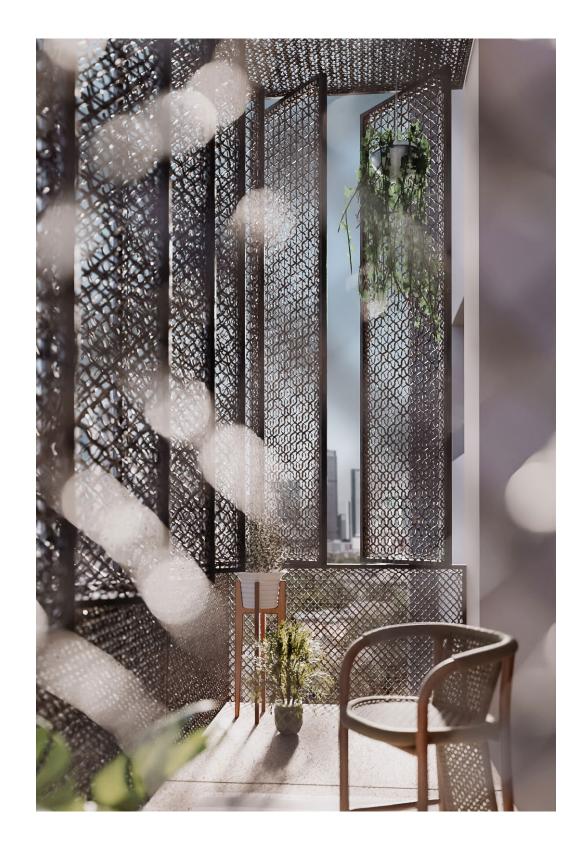
### Utilizing Hemp Waste Proposal

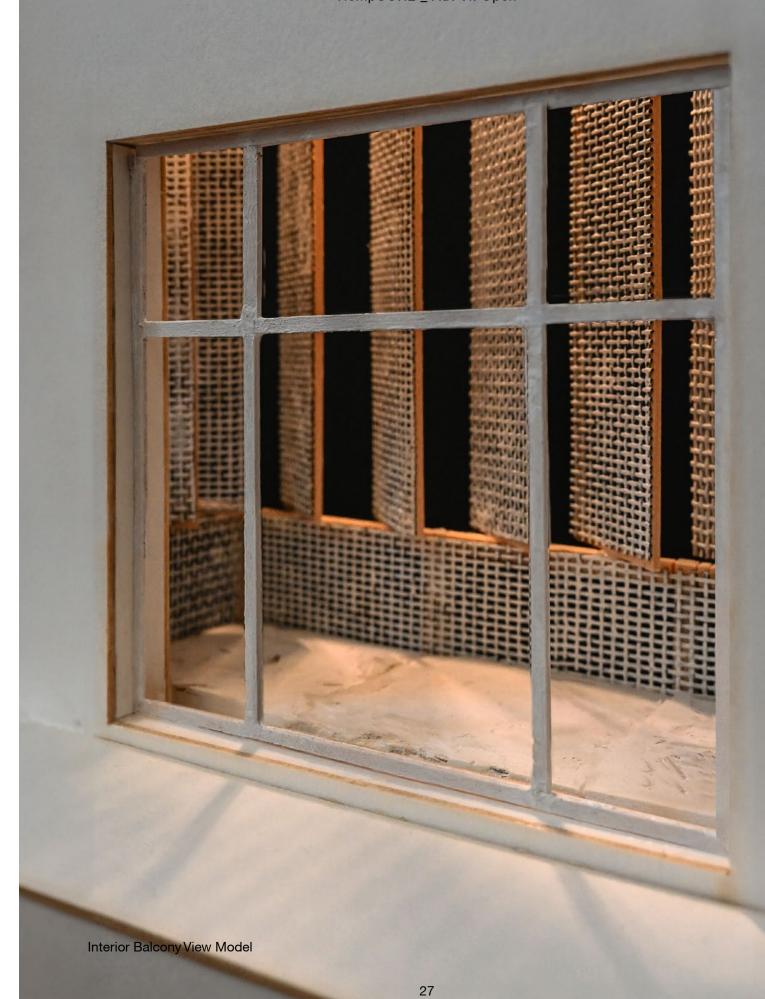


Hemp Waste System

HempCORE \_ Adv VI: Open







### TerraceSCHOOL

Core II\_\_ Extinction Rebellion (XR) School

Spring 2021

Studio Critic: Gordon Kipping

Fostering cross-generational interaction is crucial for sharing knowledge. The project aims to promote this intersection within the community by addressing the issue of isolation that many seniors face. Additionally, the project seeks to serve as a public platform for educating both seniors and youth about the pressing concerns of climate change and ecological degradation.

The project's aims to promote intergenerational practices is rooted in the dynamic energy of the East Village art scene and the powerful activism

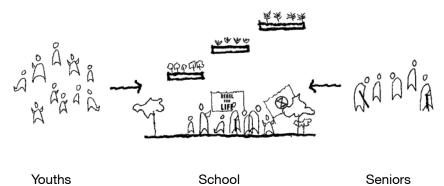
of Extinction Rebellion (XR), which utilizes performative protest and public art. By creating a public corridor and providing semi-public access to urban farms, the school emphasizes the importance of social inclusion and collective growth, fostering a sense of community between generations in both learning and green spaces.

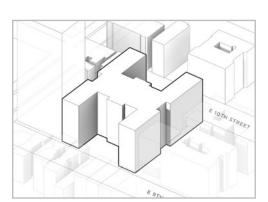




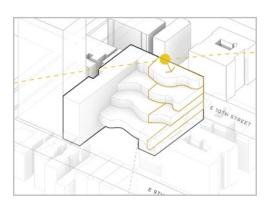
Concept Sketch

Youths

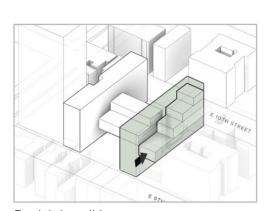




Existing building

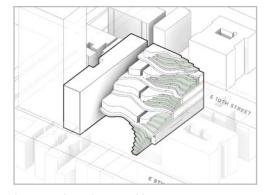


Determine sun exposure area



Seniors

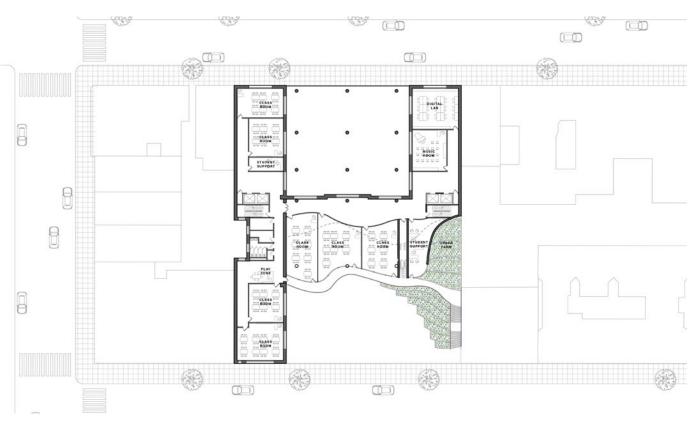
Partial demolition



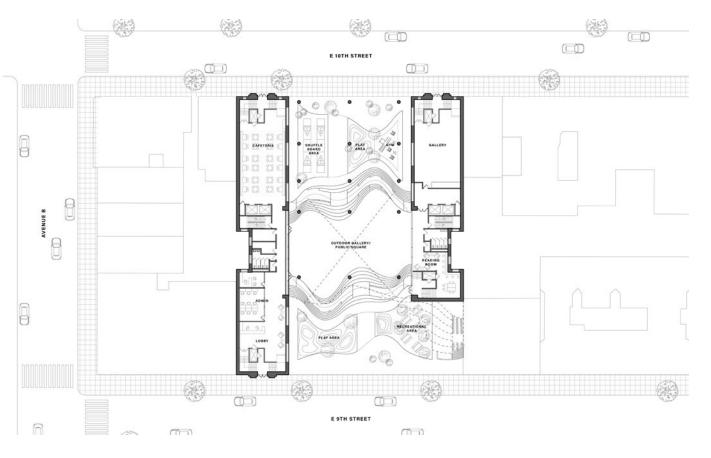
Insert urban farm + Classrooms



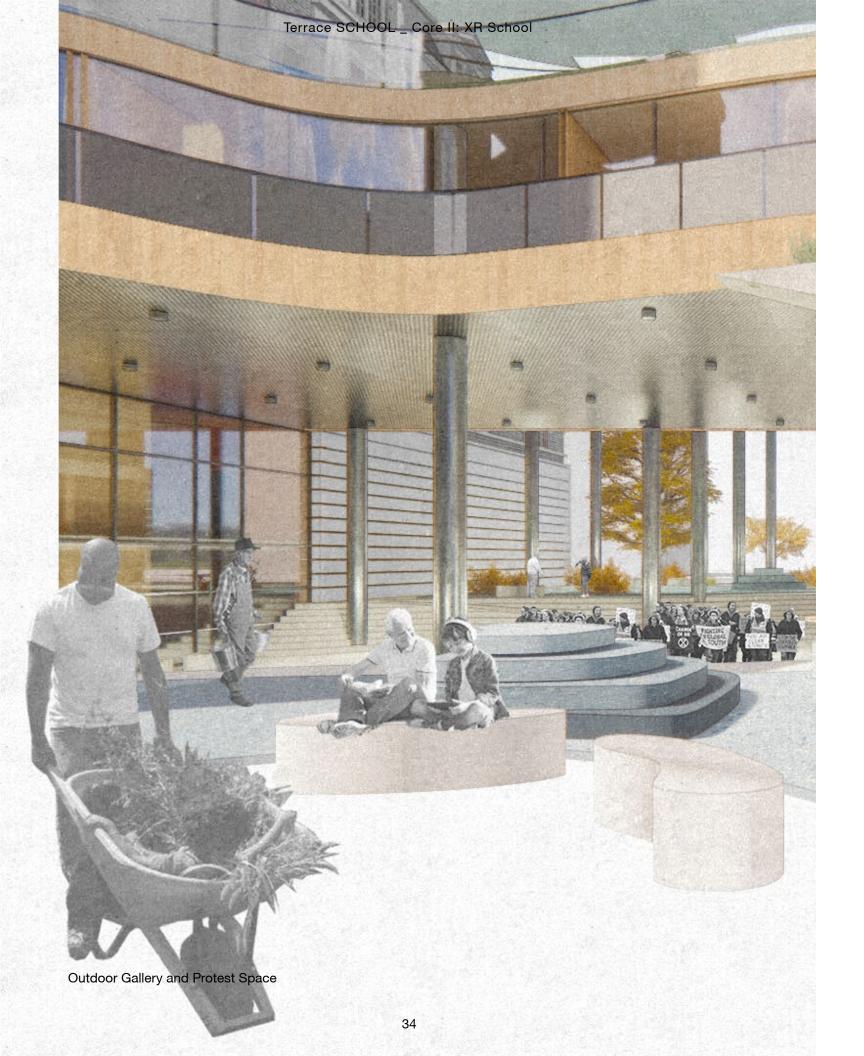
Section of Urban Farm, Classrooms, and Community Spaces

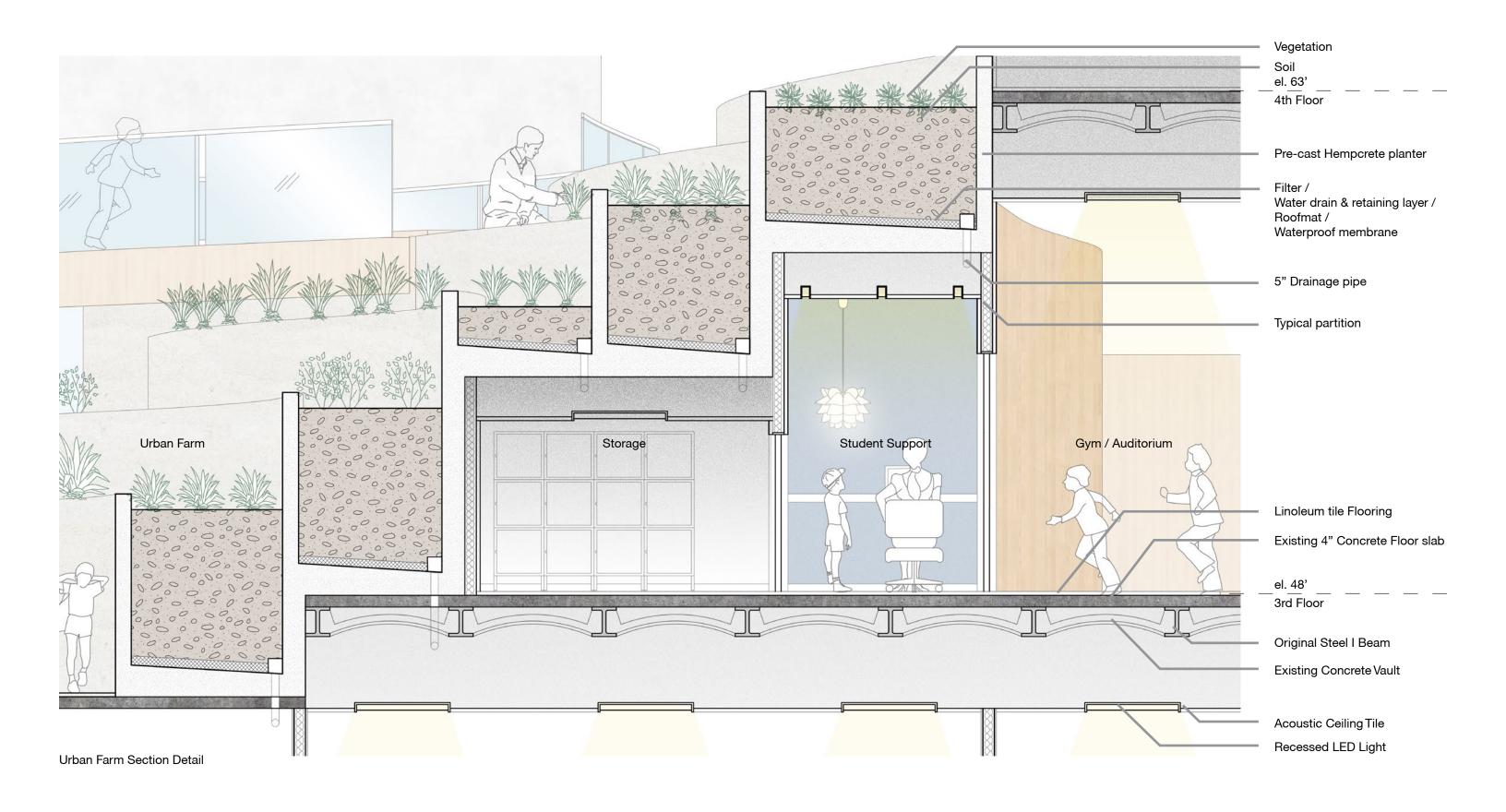


First Floor Plan



Ground Floor Plan







## ScaffoldLOT

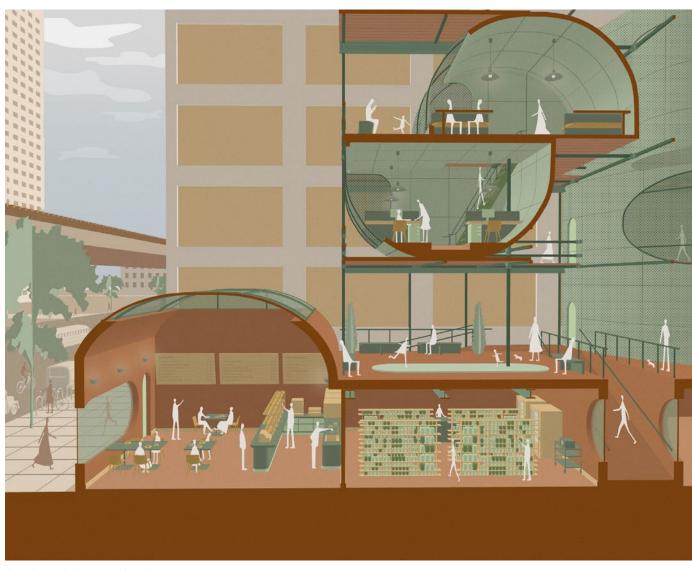
Core I\_\_ Broadway Stories/ West Harlem

Fall 2020

Studio Critic: Alessandro Orsini

The initiative is situated in the parking lot of Columbia University and is a joint effort with the Harlem Business Alliance (HBA), a non-profit organization that aims to promote economic empowerment within the West Harlem community by providing education, assistance, and advocacy for black-owned businesses and entrepreneurs. The construction is attached to the Columbia Nash building, utilizing scaffolding as an architectural solution to the disruption caused by the university's campus expansion plan.





Section of Community Center

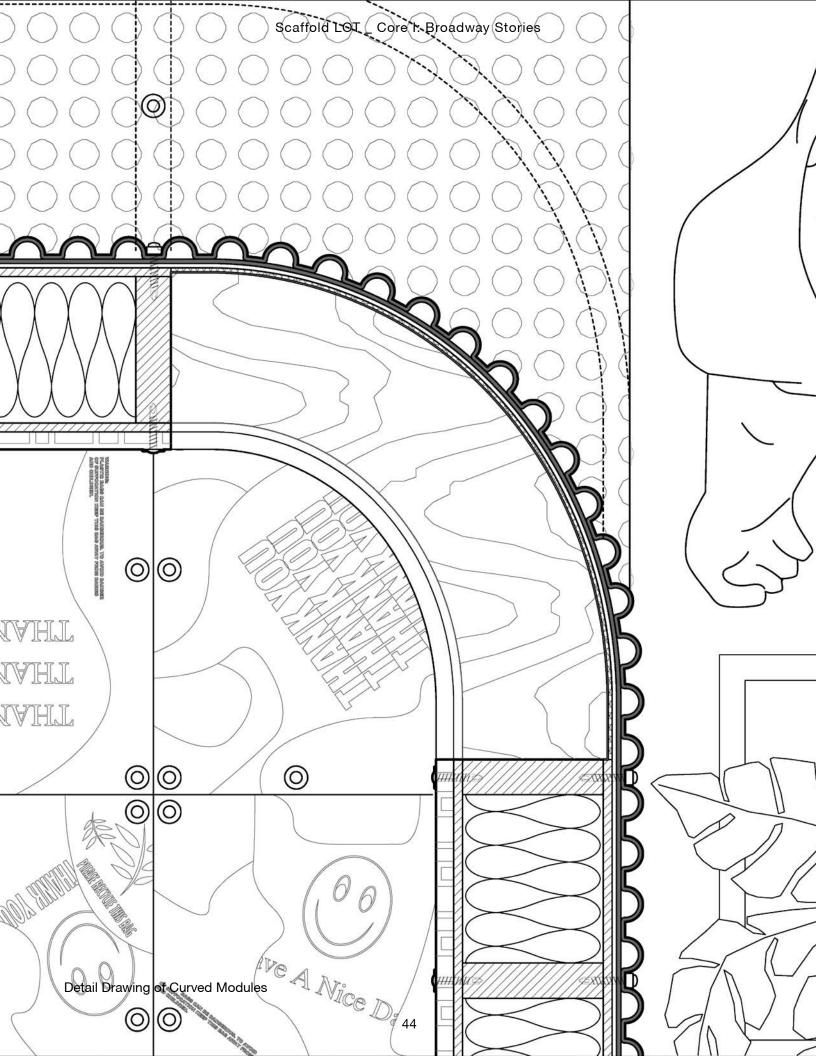


Model of Cafe Interior



Model of Community Center







1:1 Detail model of Window Modules

## SoftHOME

Core III \_\_ Housing Fall 2021

In Collaboration with Rose Zhang

Studio Critic: Alicia Olushola Ajayi

Our housing proposal reimagines systems of waste as a means to restore environmental comfort and facilitate a reclamation of sensory ownership. Historically, the South Bronx has been disproportionately affected by the municipality's waste management system. The distrust between urban governance and its inhabitants was exacerbated by resulting health injustices, environmental inequality, and a loss of home. How can systems of waste be reimagined as a means to restore environmental comfort and facilitate a reclamation of sensory ownership?



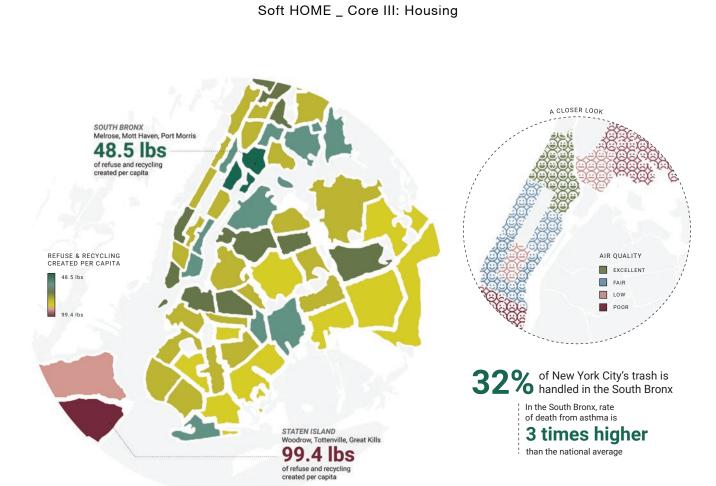
Our housing proposal reimagines systems of waste as a means to restore environmental comfort and facilitate a reclamation of sensory ownership.



ROOFTOP: RAINWATER COLLECTION TANK RESIDENCE FLOORS:: COMPOST PIPE SYSTEM FILTERED W/ RAINWATER ..... **GROUND FLOOR: OUTDOOR LOAD STATIONS** 49 CYCLONE SEPERATOR & ARM ROLL BOX

Soft HOME \_ Core III: Housing

Waste System Diagram

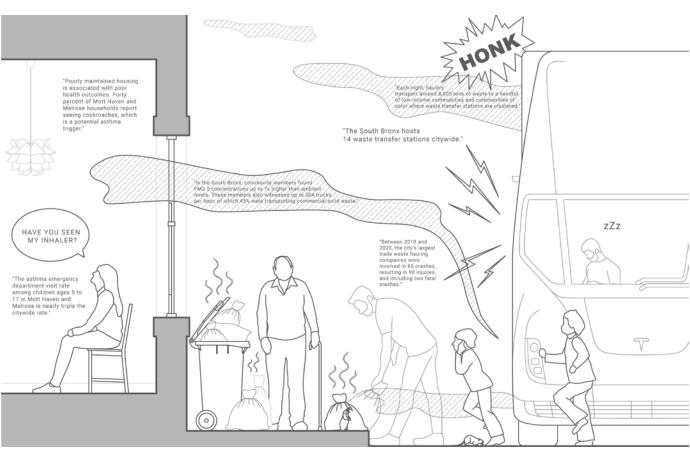


### New York City Waste Map



Asthma and Child Hospitalization Map

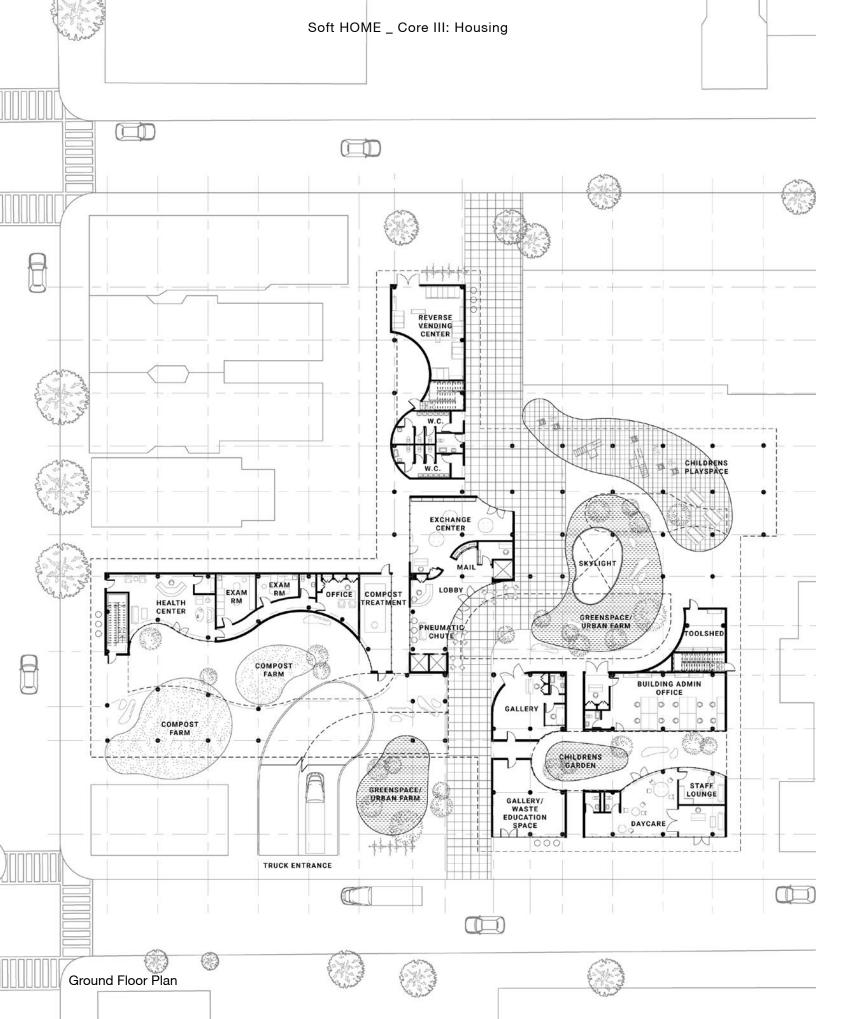




Current Environmental Comfort Issues in the South Bronx



Ground Floor Urban Farm View



Soft HOME \_ Core III: Housing Soft HOME \_ Core III: Housing

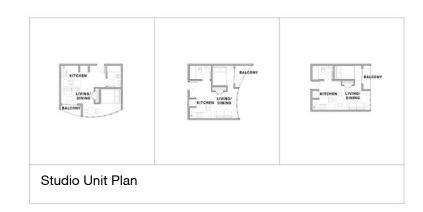


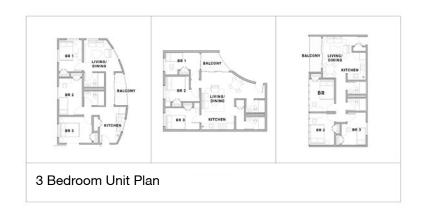
Exterior View

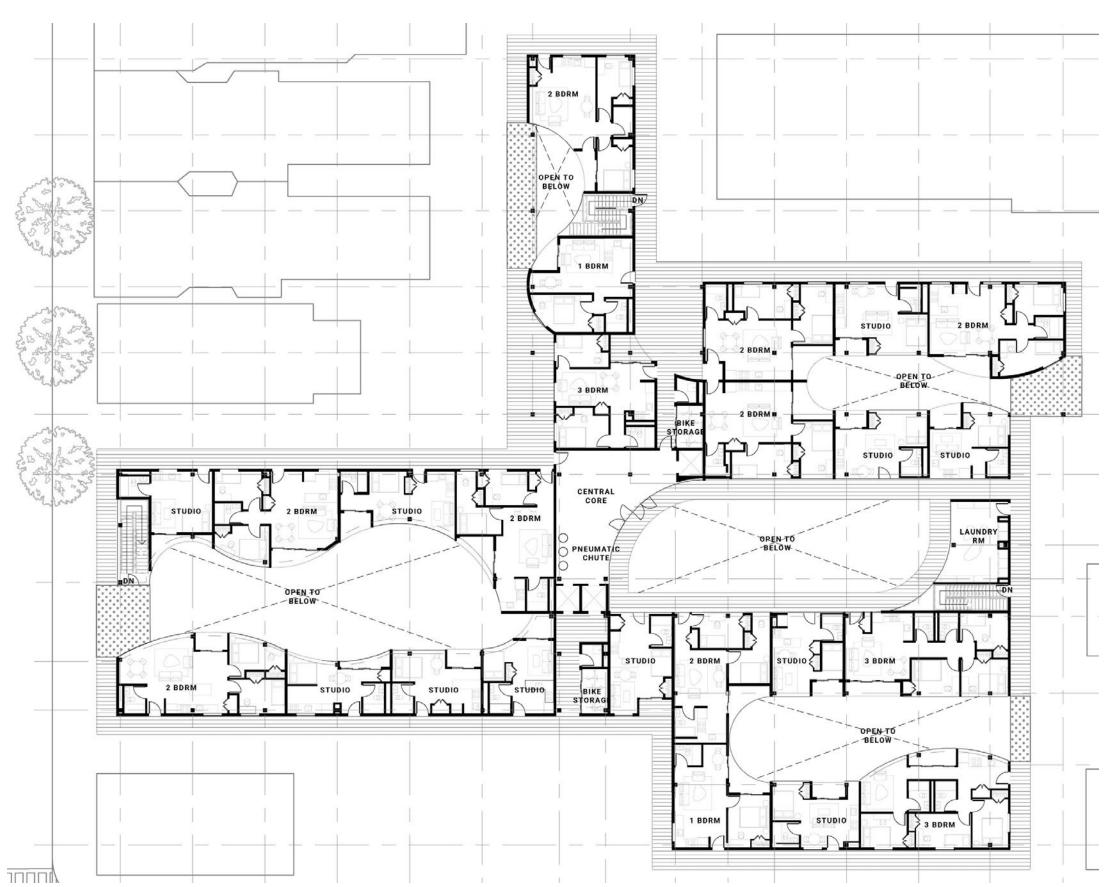
Soft HOME \_ Core III: Housing Soft HOME \_ Core III: Housing





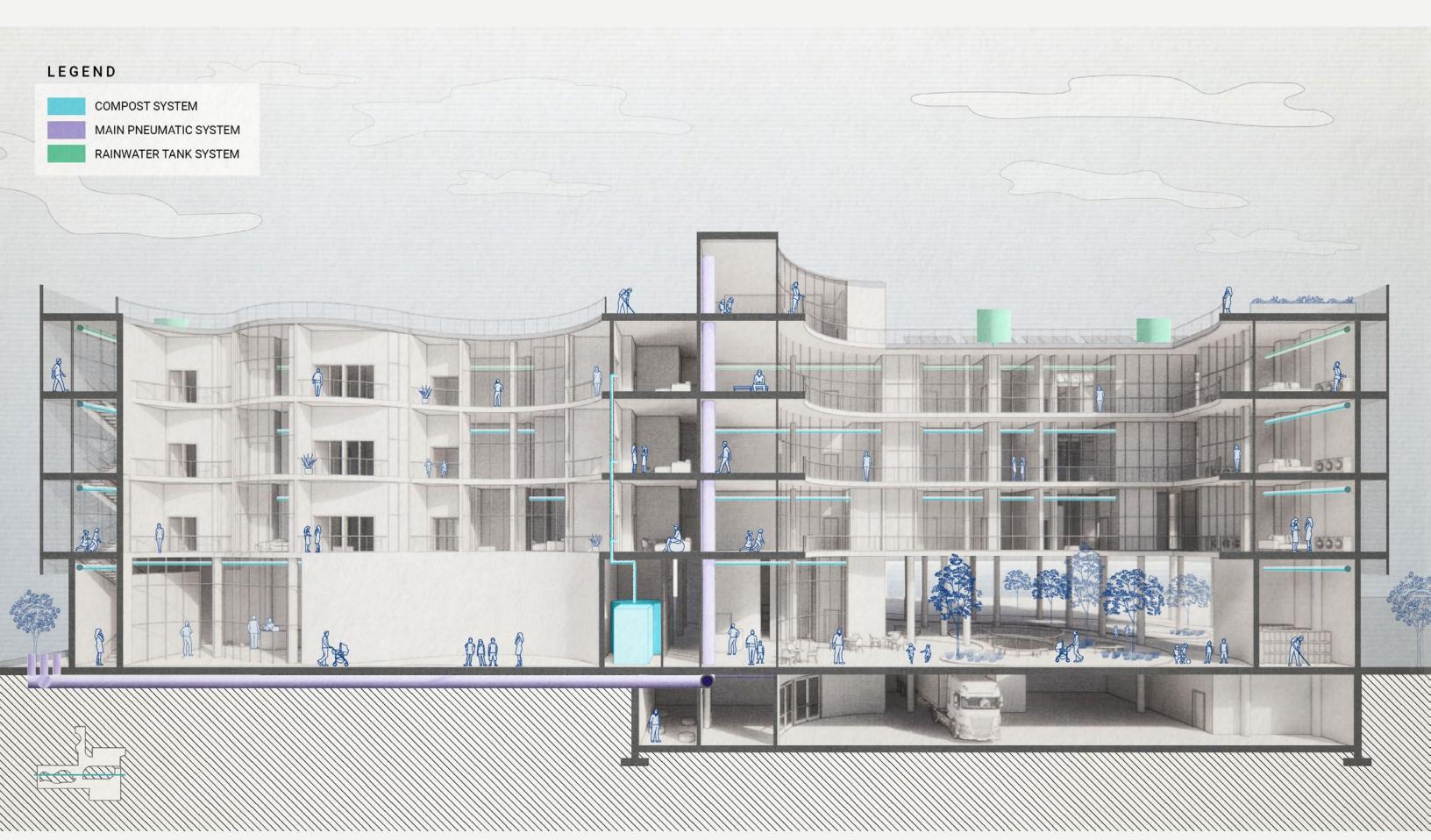






Typical Floor Plan

Soft HOME \_ Core III: Housing



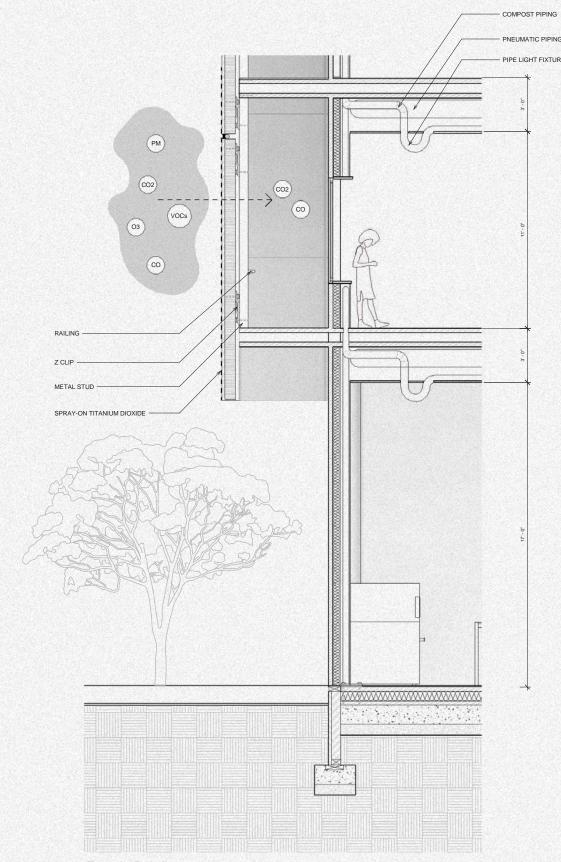
Section of Waste Systems



South Elevation



Exterior Night View



Facade Detail

# SapLAB

ADV IV\_\_Fringe Timber: The Ethics of Care in a Vertical Commons

Spring 2022

Studio Critic: Lindsey Wikstrom

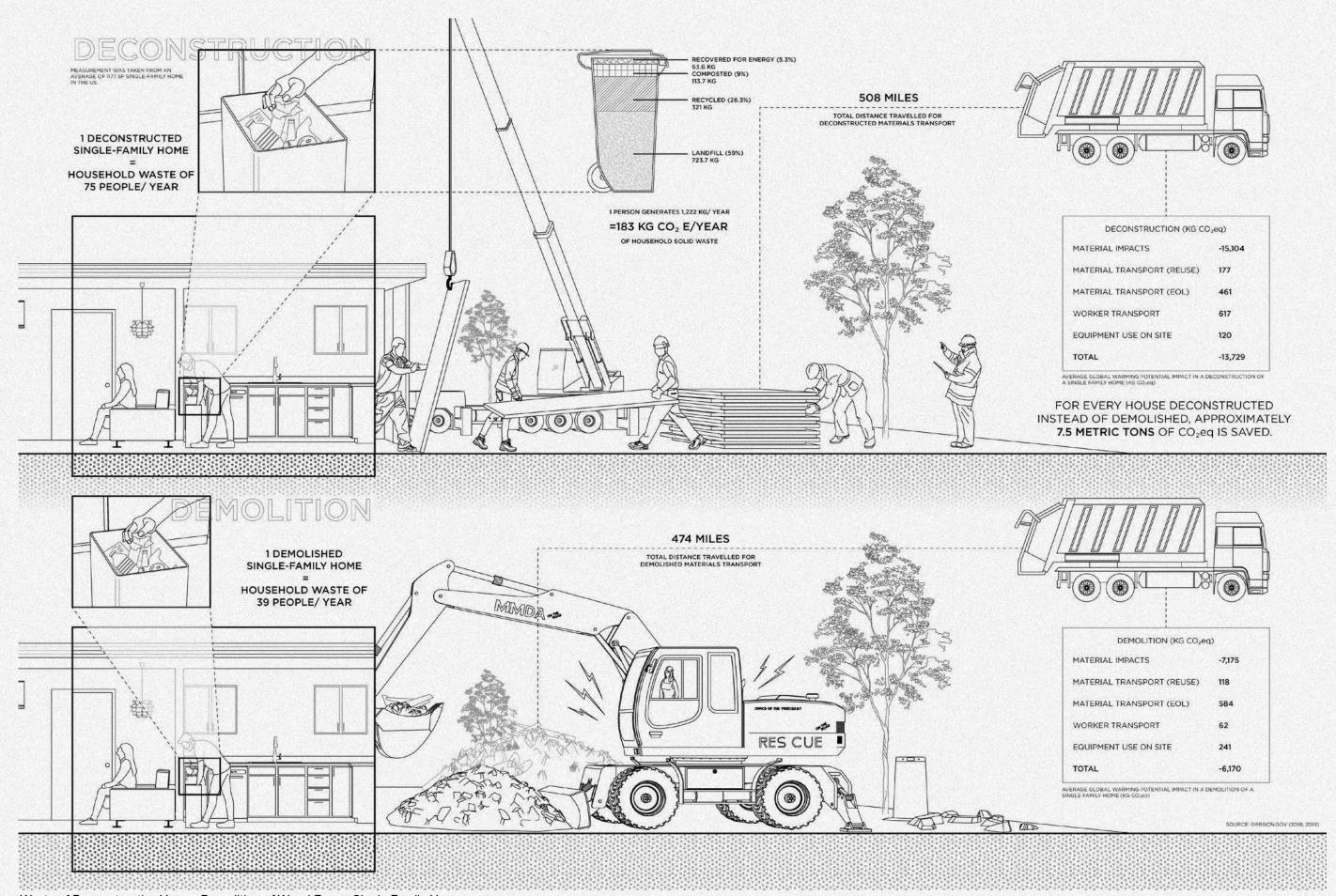
The proposal reimagines the integration of invasive species (Hemlock Woolly Adelgid) into the project's infrastructure as a means to preserve the native Eastern Hemlock trees population. How can humans collaborate with other species to form new structures without depleting the earth's natural resources?

By studying the behavior of invasive species (HWA), this informs how the project can utilize the species to benefit the forest's ecosystem. Following the principles of a circular economy in wood manufacturing, the project acts as

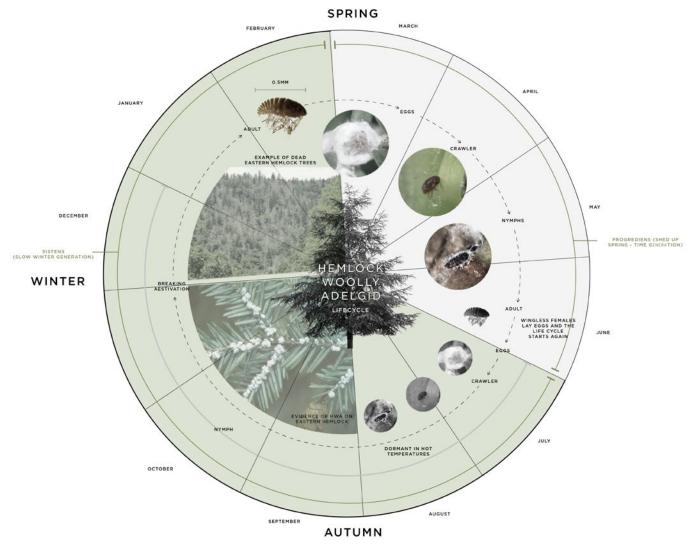
a network between human and the natural environment to further adapt ourselves to the inevitable climate emergency future. How are we able to follow similar models such as silk manufacturing to further collaborate with other species?

More information on Hemlock Wolly Adelgid:





Waste of Deconstruction Versus Demolition of Wood Frame Single Family Home



Hemlock Woolly Adelgid Life Cycle



Silkworm



Hemlock Woolly Adelgid



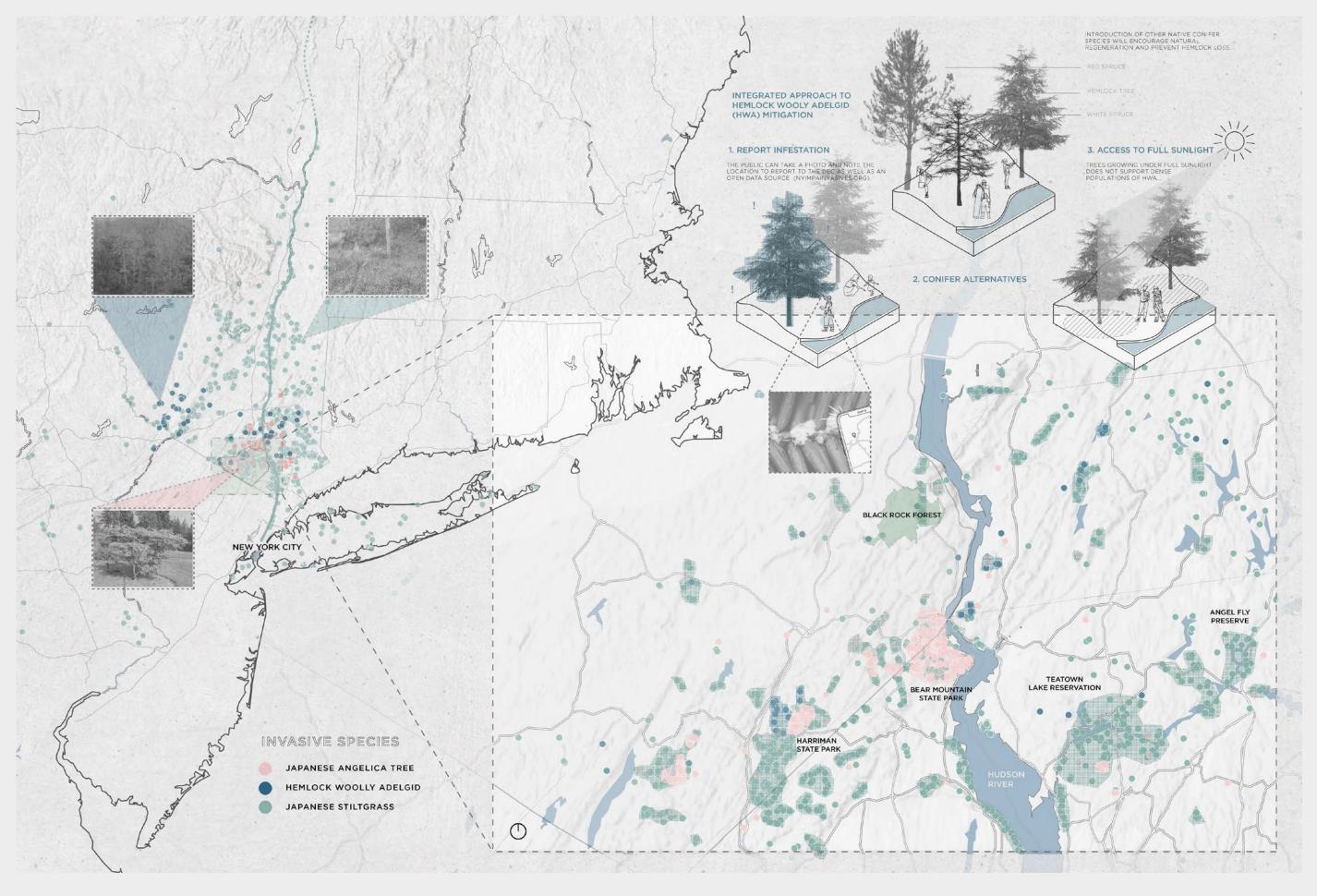
Silk

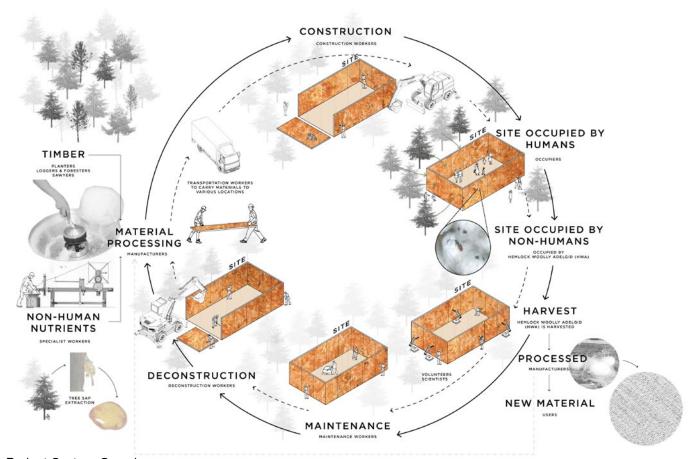


The Hemlock Woolly Adelgid are aphidlike insects that feed on the sap at the base of Eastern Hemlock needles which disrupt the nutrient flow, causing the needles to fall off. Without the needles, the Eastern Hemlocks starve and die, usually within 3-5 years within the initial attack.

To protect themselves, HWA generates woolly wax ball coatings. These coatings can serve as a marker for foresters to identify infested sites.





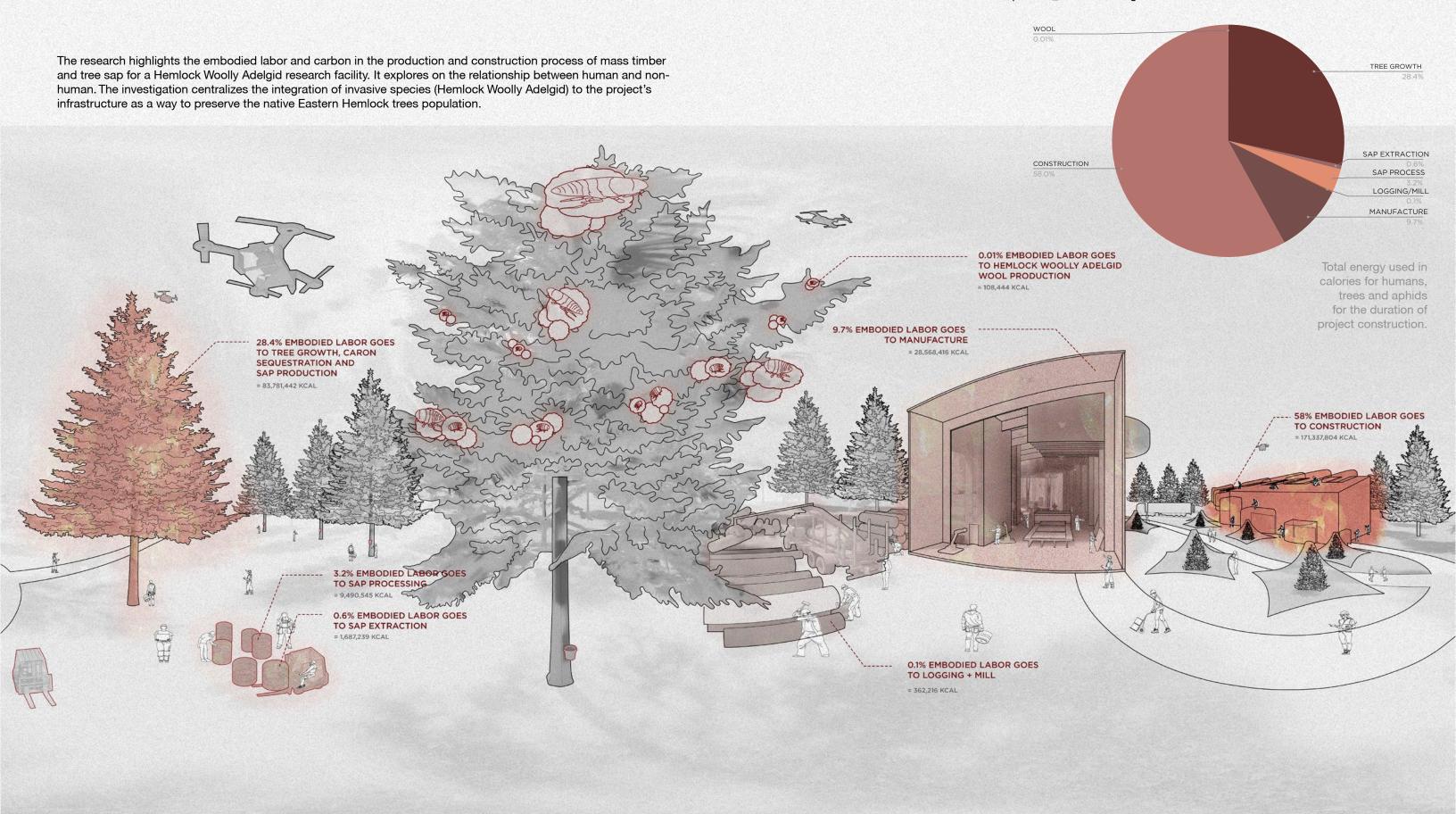


Project System Overview



Research Facility Section





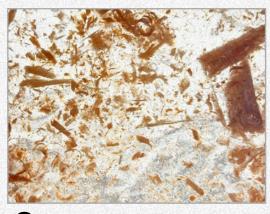
#### Material Testing



50% Sap (Not Melted) 50% Saw Dust



70% Sap 30% Saw Dust



**3.** 90% Sap 10% Saw Dust



50% Sap 20% Saw Dust 30% Wood Chips



5.
100% Sap (Laser Cut Etched)



6.
80% Sap
20% Saw Dust

#### Material Testing



80% Sap 20% Saw Dust



8.
60% Sap
20% Saw Dust
20% Wood Chips



9.
40% Sap
20% Saw Dust
40% Wood Chips



10. 30% Sap 20% Saw Dust 50% Wood Chips



40% Sap 50% Saw Dust 10% Wood Chips



12. 100% Sap (Laser Cut Etched)





Research Facility Collage



CLT Factory View

### DamascusROOM

Building Islam Spring 2024

Art institutions and the reproduction of secular spaces

Professor: Ziad Jamaleddine

The reproduction and display of the 'Damascus Room' in contemporary museums and its collection has become the subject of a new method of foreign appropriation of domesticity. The cultural exportation for displaying Damascus Rooms has become prevalent in both Western and non-Western art institutions. This zine aims to catalog and create a taxonomy of current Damascus Rooms across museums, offering images and analysis that extend beyond their architectural significance.

The Damascus Room's evolution has been the focal point for such dialogue between cultures and civilizations as it condenses an interpretive time capsule of private domesticity in a public museum setting. However, what is important to note is the narrative of the curatoras-author and the creation of the room's style through contemporary museums and their Islamic Art department. Similar to Nouvel's Louvre Abu Dhabi, in Biln's words, "Nouvel recognizes that whatever the 'Arab' is, it will remain out of the grasp of his architecture; that any dualities presented in the work will always remain within the interpretative economy of the West."

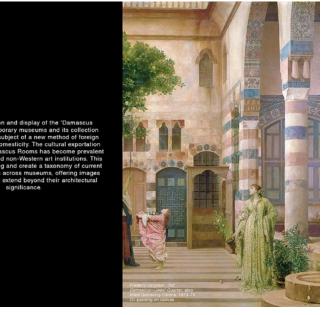
The cataloging project/zine hopes to illustrate the collecting practice done by European dealers and curators of fragmented Syrian interiors to be displayed as a marvel relic of "Islamic Art." What is not told to visitors is the process of purchasing, de-installing, and exporting of these spaces. The conception to display the rooms is linked to earlier travel experiences of the European cultural elite who have recalled the caliber of the Syrian domestic architecture they visited. Art dealers then appropriated Damascus Rooms as charming display environments for a heterogeneous range of Middle Eastern objects that appeal to private clients and museum curators.

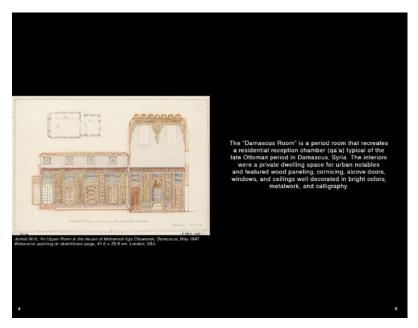
To hold possession of an interior in a museum's permanent collection is a novelty, much different from the traditional mediums of works of art. Taken into question the renowned 2011 reopening of the "The Galleries for the Art of the Arab Lands, Turkey, Iran, Central Asia, and Later South Asia" at the Metropolitan Museum of Art, a pinnacle question to interrogate is, in Nasser Rabbat's words, "How can a museum reconcile its traditional mission of showing, explaining, and contextualizing art with other, para-artistic aims—diplomatic, political, and, dangerously, ideological?"

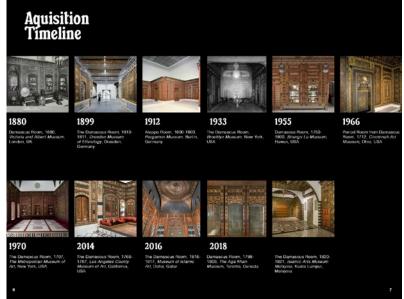
The Damascus Room at the MET lives between cultural and artistic. As a curatorial team, the overall goal is to create a space for education and speculation on the culture through art. Interior replications, such as the Damascus Room, provide an architectural ambiance and space to contextualize artifacts on a semiimmersive scale. Distinctive local traditions of the Ottoman Empire, such as wood carving, carpets, and metalware, can all be seen represented in Damascus Rooms across the globe. It attempts to synthesize a wider context, allowing for the broadest and most nuanced understanding of each artifact. Such an approach becomes a contemporary curatorial trend of emphasizing the unity and linearity of Islamic art instead of only rooting the art in specific geographies and linguistic realms of the Islamic World.

The Damascus Room allows the curators to superimpose and distort their preconceptions of Islamic Art. It puts architectural elements at the forefront and reimagines the everyday life of a Syrian household. It fragments the context of the domestic to a singular space where visitors can marvel at the intricacies of what life during the Ottoman Empire was like. This method of displaying Architectural History is a selective tool constructed by Western museums in the late 19th century that cleanses the labor and craft of the people into a sterilized environment where one can simply gaze at the space but not enter it. In line with Andrew McClellan's essav "Cosmocharlatanism," the Damascus Room is part of a colonial practice of collecting in the name of cosmopolitanism and the assumption that only powerful institutions, like Western museums, can safely preserve the world's heritage.

Damascus Room \_ Building Islam Damascus Room \_ Building Islam





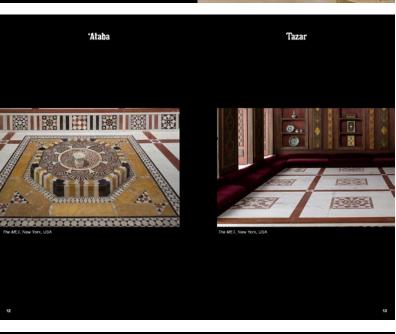


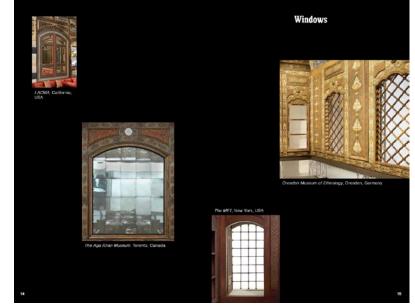


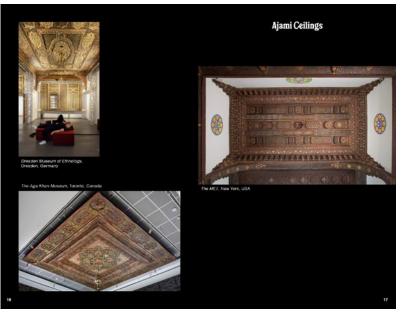
(later sold to South Kensington Museum for £850)

I was taken to the houses of people who were anxious to sell but desirous of keeping from other residents the knowledge of their being compelled to part with holifooms. Thus I acquired the Damascus Room now in the Misseum and a unique pair of large panels of thes with surken nichoas new forming a part of Sir Federick Leighton's Arab Hall. Many objects were offered upon the condition that they would be received as a gift but a return present in money would be received. This was nearly always a genuine offer made on account of a superattitious repugnance to sell family relices and the genuineness proved by the lowness of the sum asked. [...] The Damascus room was accepted as a gift, the return presented being fixed at £10 for the owner's family and £5 for the soments."

V&A Archive, ED/94/205 (Official Visits), memo by Caspar Purdon Clark dated June 11, 1883.



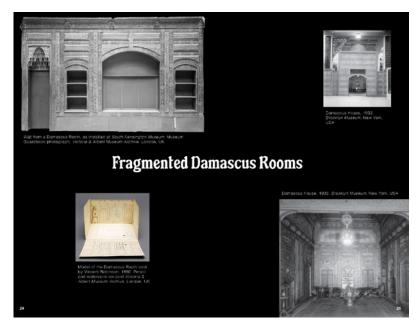














### MicrobesTOPIA

Subject\_Object
Spring 2024

In Collaboration with Isaiah Graham, Jess Kuntz

Professor: Suchi Reddy

The concept of beauty is subjective and varies greatly from person to person. What is considered beautiful to one may be deemed repulsive to another. While bacteria is a ubiquitous presence in our daily lives, it is often viewed in a negative light. Our project seeks to transform our perception of these microorganisms and provide a fresh perspective on the invisible entities with whom we share our daily existence.







Bacteria Module Assembled

