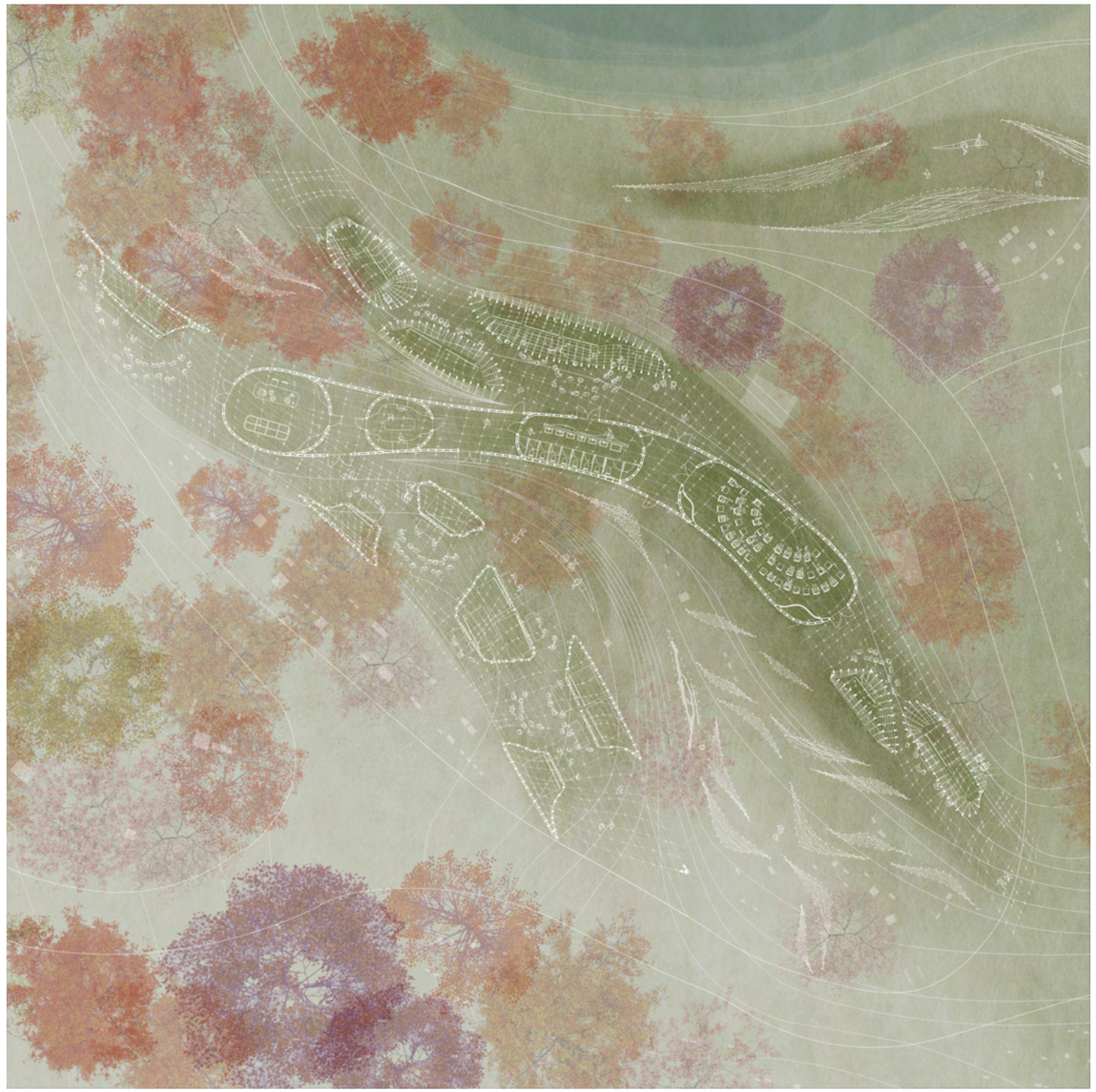

ARCHITECTURE
PORTFOLIO
A COMMEMORATION OF DESIGN WORKS
BY JORDAN HOWARD AT COLUMBIA GSAPP FROM 2022-2025

CONTENTS



(above) detail plan adjacent to Dell Water - terramation nodes & interior programming organized for a range in privacy and collectivity

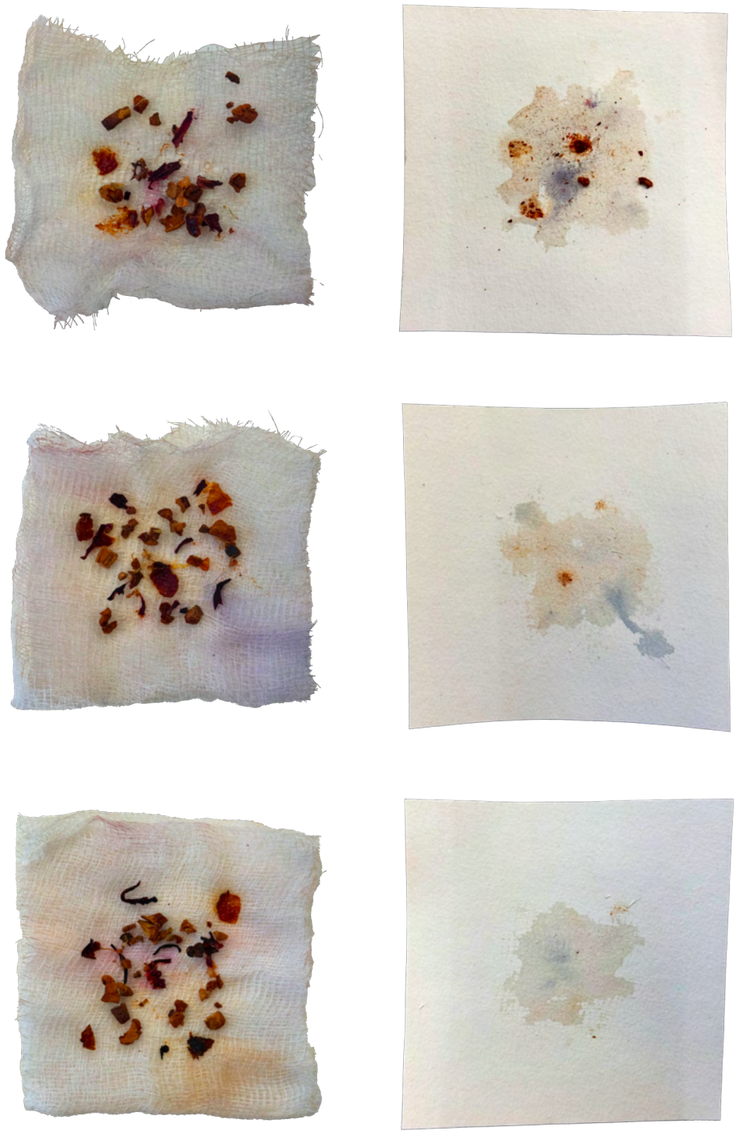
CEMETERIAL POROSITIES:

TERRAMATION TERRACING AT GREEN-WOOD

Course: Advanced Studio VI - Civic-Sacred: Life, Death, & Liminality
Semester: Spring 2025
Professor: Karla Rothstein
Partner: Bryce Emerson
Location: Green-Wood, Brooklyn
Program: Cemetery

Description:

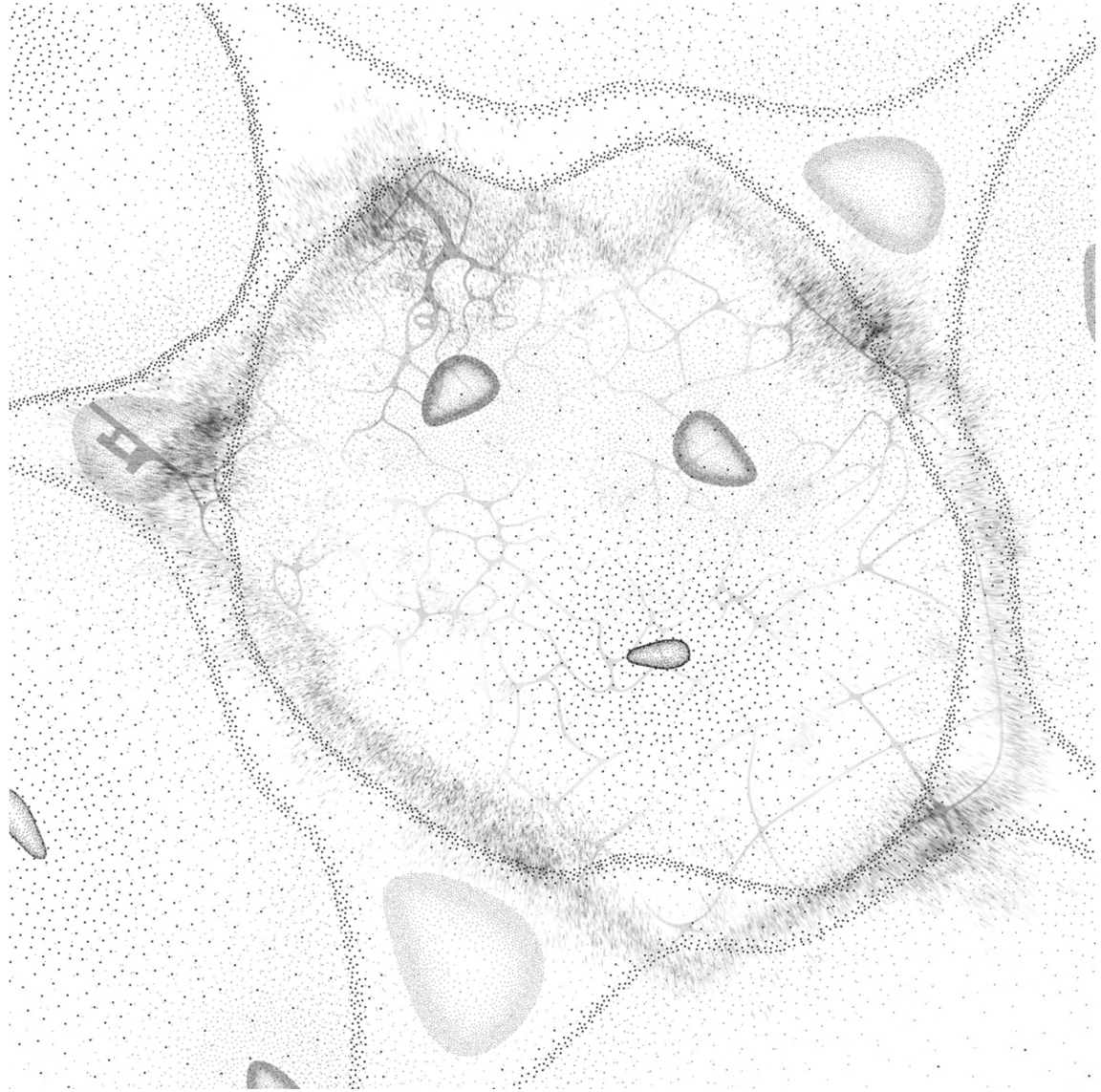
Green-Wood Cemetery is a host of transient multitudes that are responsive to its ecological seasonality and the in-flux cultural grief practices of its urban context. Woven into the living fabric of the cemetery are a series of terramation nodes that reconceptualize death as an ecological and inter-relational process. Informed by multiscalar interdependencies, from cellular senescence to cultural rituals of grief, these regenerative interventions cultivate porous, adaptive spaces that honor the emotional complexity of mourning. The proposal positions grief as a spatial, temporal, and ecological process, unfolding within the Dell Water's landscape of continual transformation. Intentional care for the deceased, those living and grieving, and the grounds of the cemetery frame a responsive landscape with gradients of privacy and collectivity. A material library, harvested from Green-Wood's 478 verdant acres, cultivates and supports the process of terramation, which re-envisions care for the deceased by facilitating an ecologically sensitive process that is both dignifying and able to be sustained by the grounds of the cemetery. Perpetual care is redefined through spatial practices that invite visitors and nature to interact and care for one another, furthered by the woven materiality of the structure itself which necessitates maintenance and adaptability directed by fluctuations in its natural context. In celebration of Dell Water's blooming seasonality, a constructed, adapted landscape unfolds and transforms with its visitors who are afforded the space to contemplate, reflect, heal, and breathe.



Material Studies: Tea Bloom & Porosity
(left) cheesecloth of increasing thicknesses with blood orange tea particles
(right) watercolor paper substrate with particle and seepage remnants

(above) operative drawing of active characteristics from material studies & research
(including tea bloom, regeneration, macrophages in lung cells, and air flow)

(above) initial multiscalar research about respiration and regeneration: topics spanning air pollutants, lungs, tree canopy, and building emissions



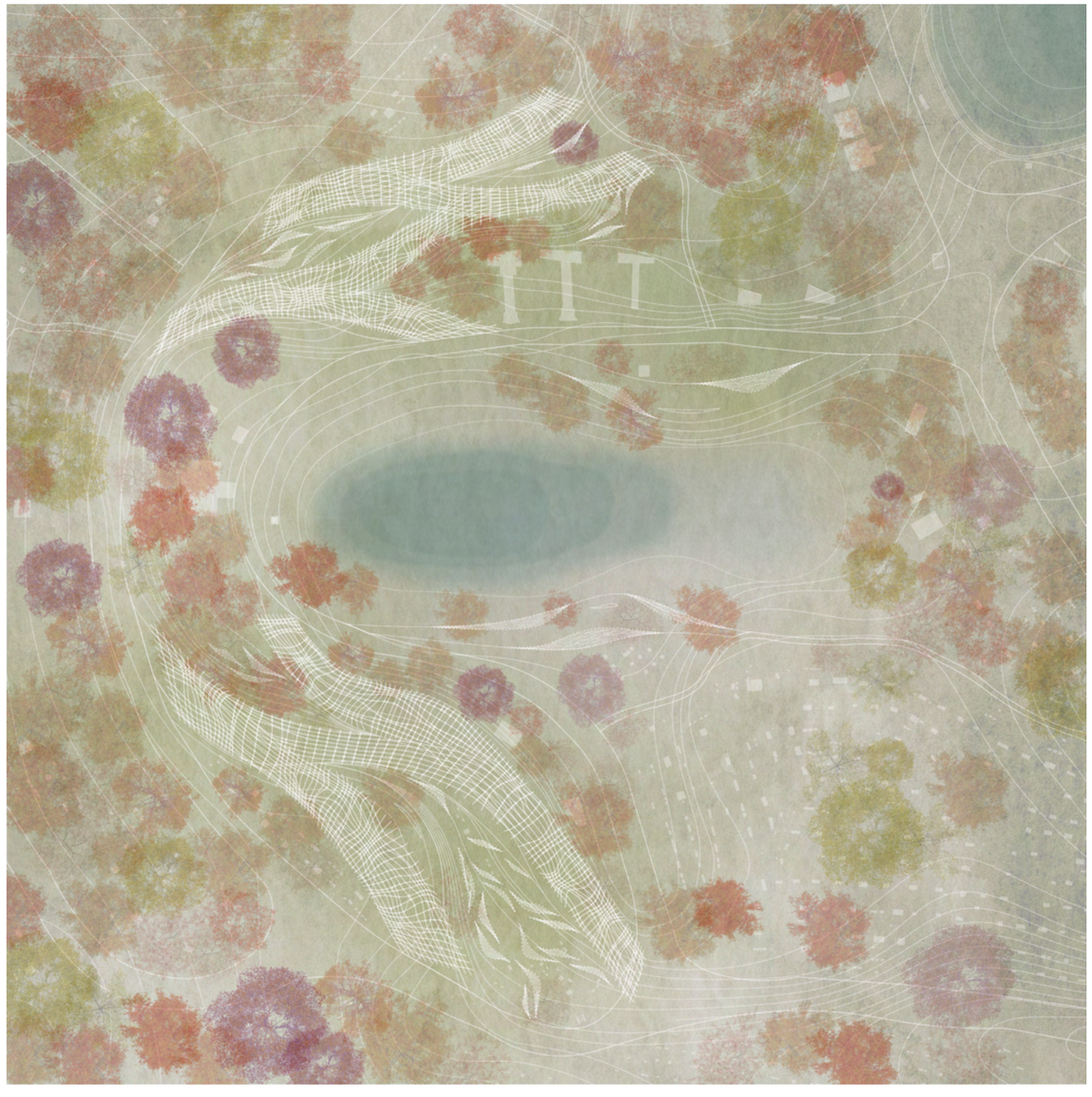
(above) site & research chimera of alveoli lung cells and Green-Wood Cemetery porosity of gates, pedestrian access, and fencing perimeter conditions

(above) perspective across Dell Water

(above) physical model with view of Crescent Water

(below) section through north end interior and terramation spaces (mylar print with woven thread)

(above) detailed section through a terramation node woven with branches in a wattle construction method with CLT primary members

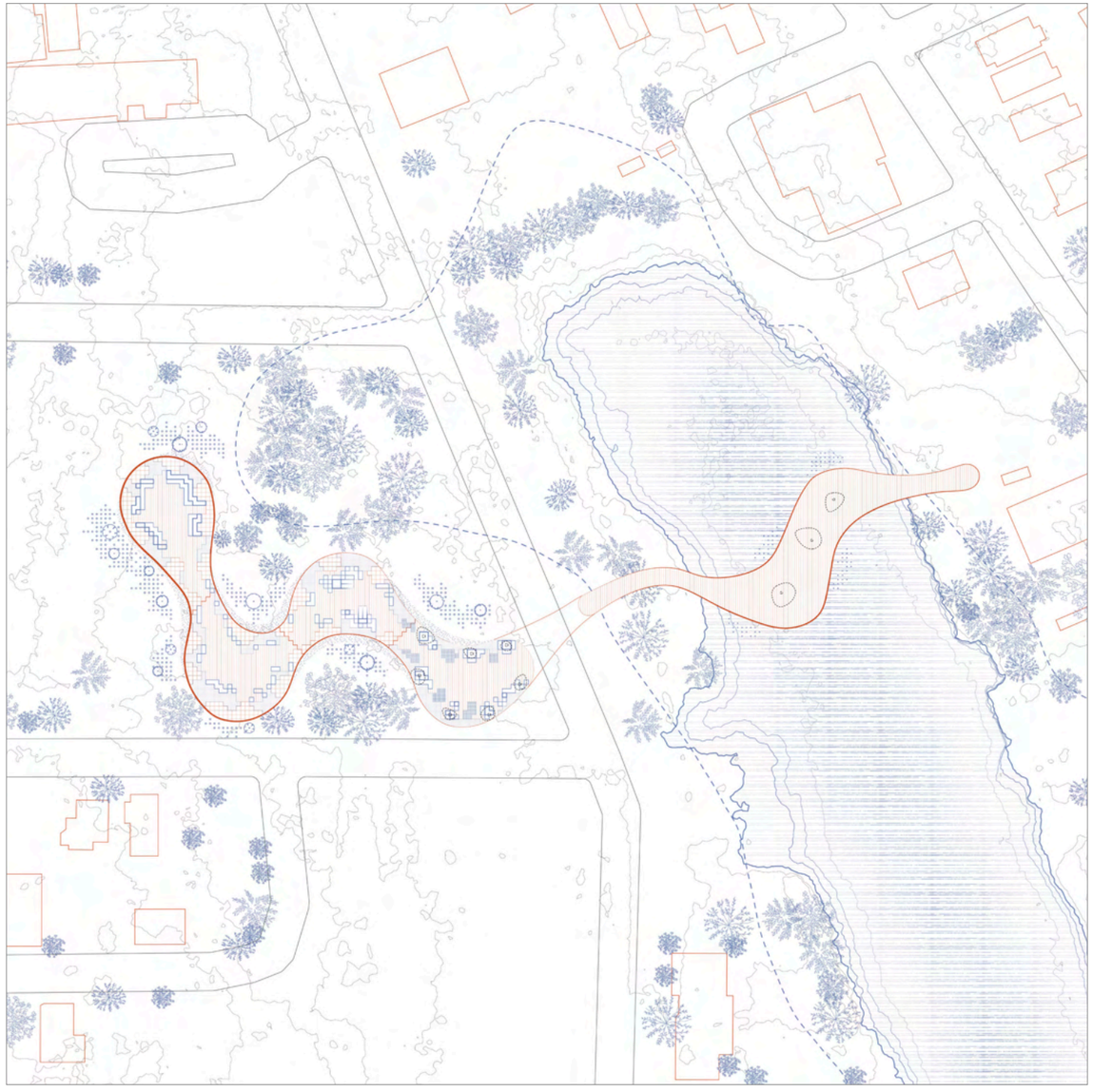


(above) site plan with Dell Water in the center, material library, and porous, terramation intervention terraced through the landscape

(above) orientation of the structural arches with terramation nodes frame critical views of Dell Water
(bottom right) physical model detail of porous ground treatment and shadows from woven materiality

(above) terracing of the landscape with material library
(below) layered ground with woven structure of terramation node

(above) sectional model made from collected site materials & glycerin



(above) site plan of proposed remedial community center interacting with Johnsons Creek

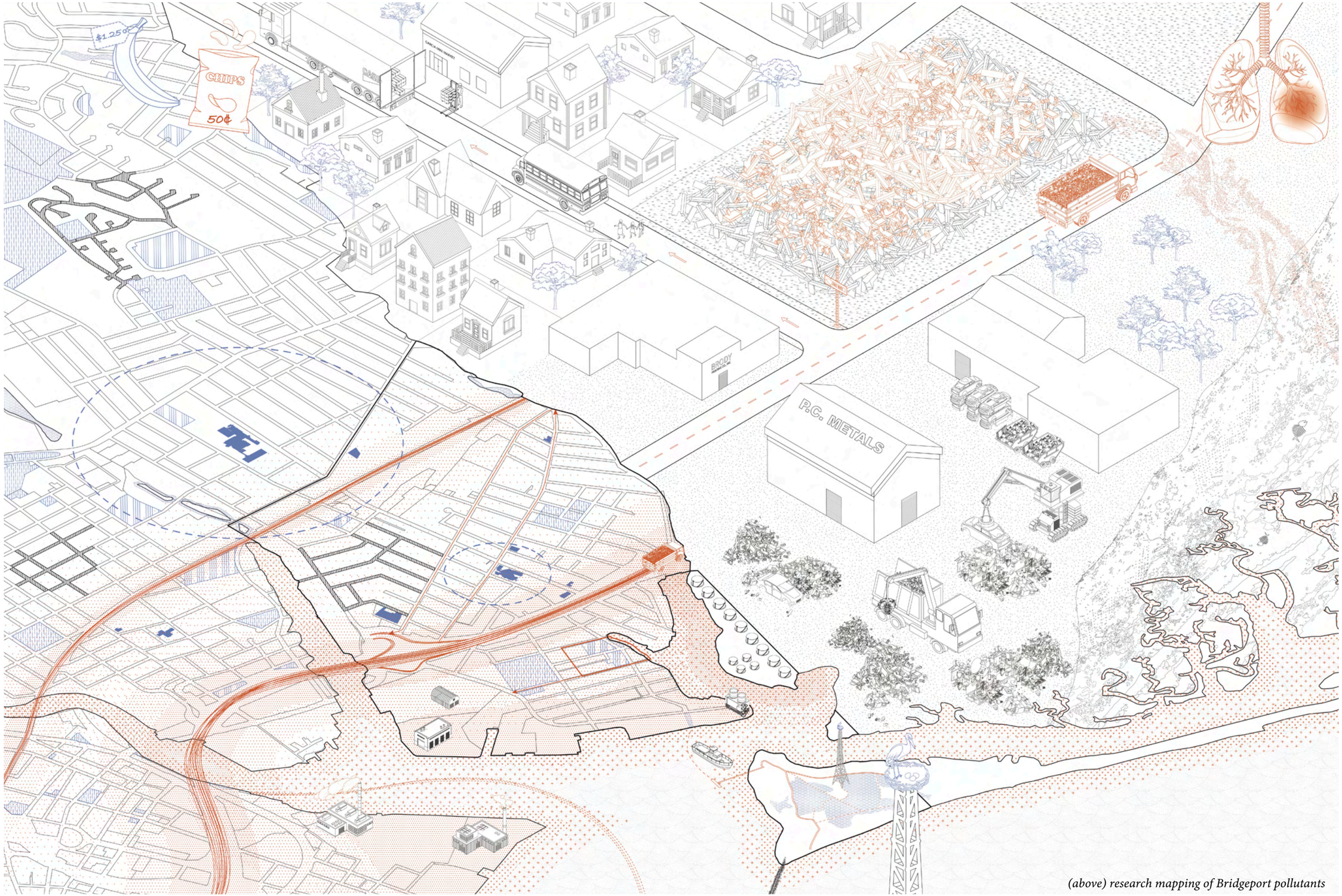
ACUPUNCTURAL REMEDIATION:

ENGAGING WITH AN ECOLOGICAL CUL-DE-SAC

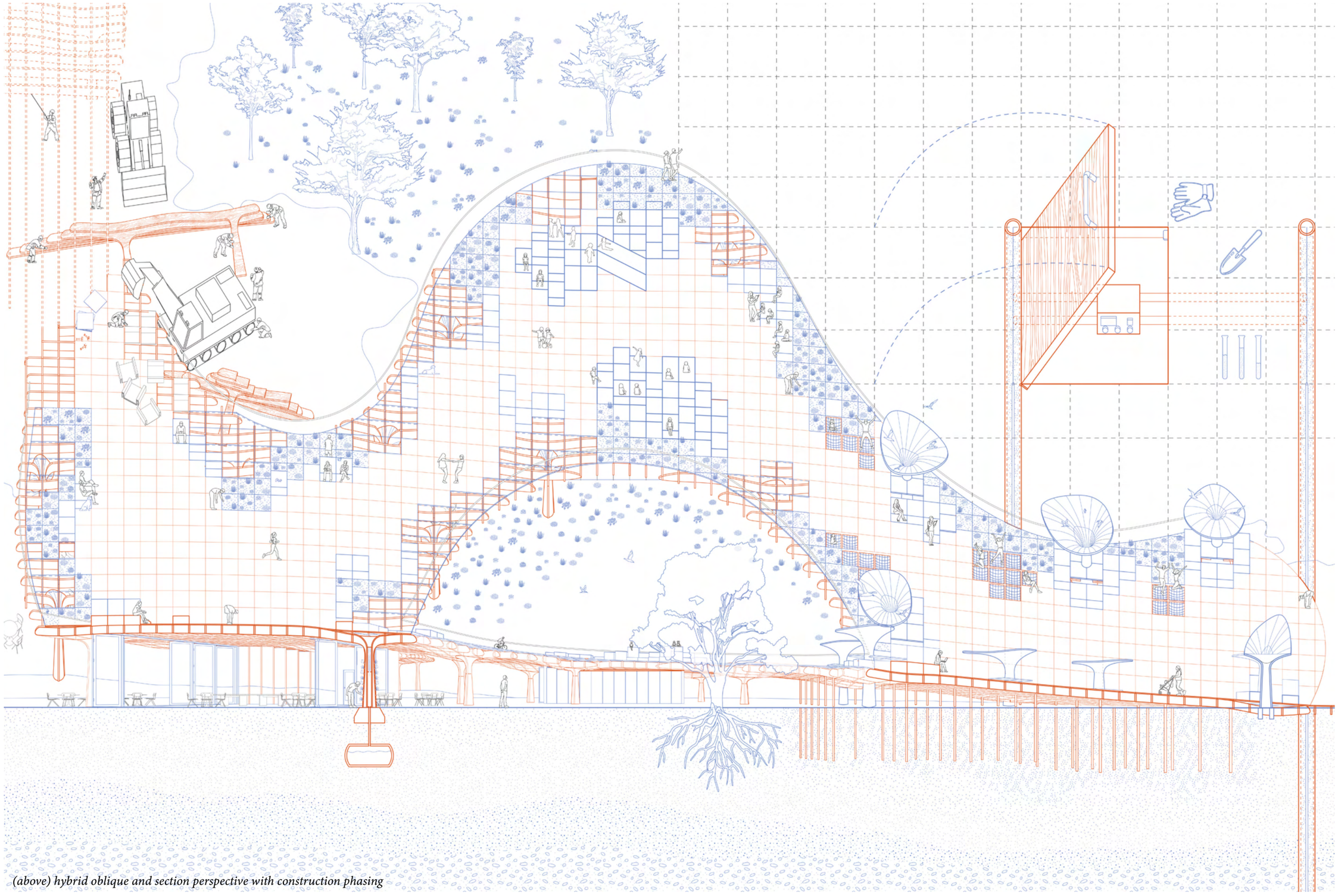
Course: Advanced Studio IV - Designing with/for Uncertainty
Semester: Spring 2024
Professor: Rachely Rotem
Partner: Gabriela Ramos Figueroa
Location: Bridgeport, CT
Program: Community Center

Description:

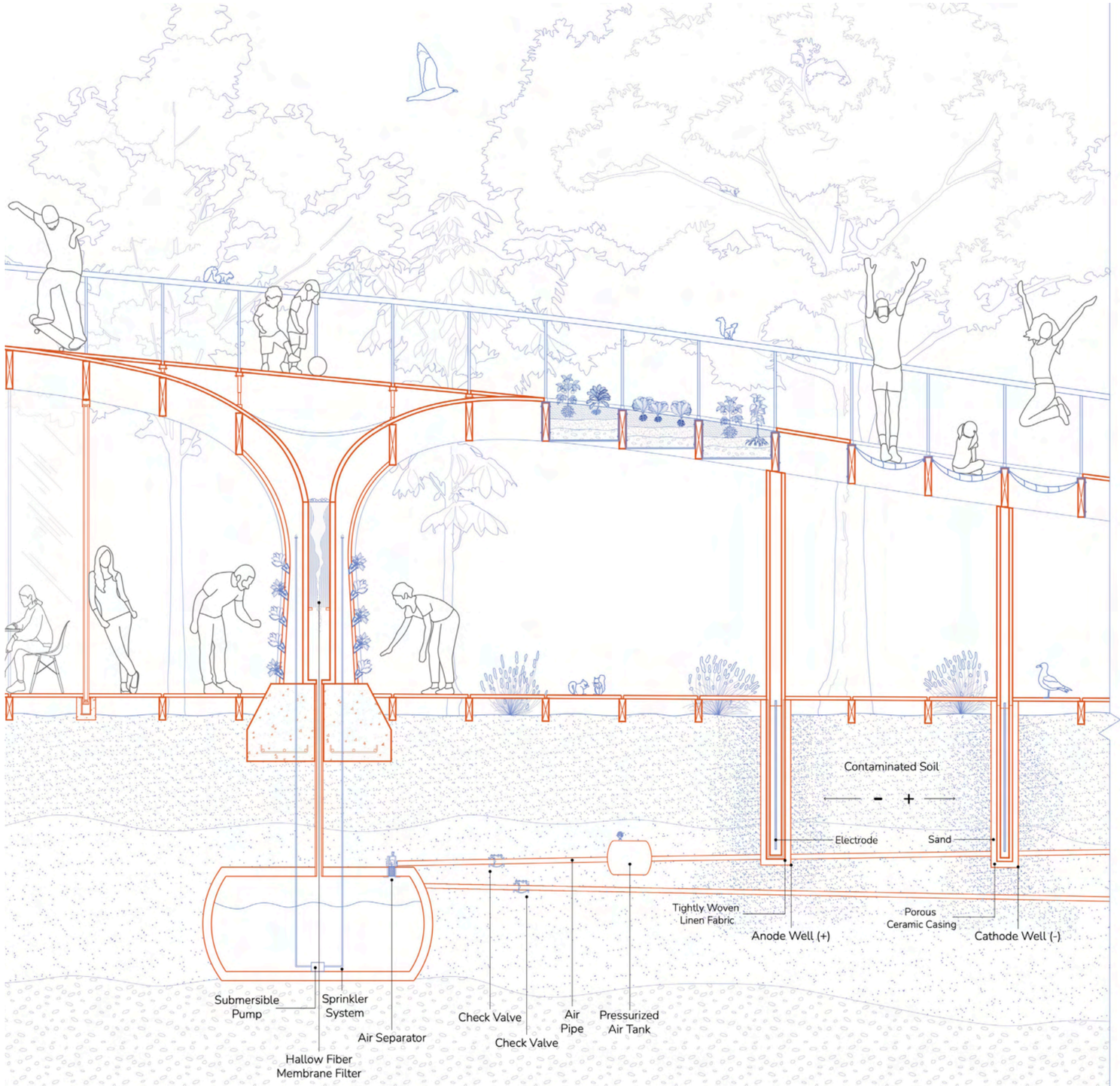
Through multiple scales of research, this project examined the impact of pollutants on human and non-human residents of Bridgeport's East End and adjacent ecological region. A significant historical marker of pollution in the area was Mt. Trashmore, a 35-foot high pile of construction debris from the 1980s. The remediation efforts for Mt. Trashmore have left the community with lingering uncertainty about their effectiveness, as the approach merely capped the site without addressing deeper contamination. This history emphasizes the pattern of deliberate targeting of low-income and minority neighborhoods for hazardous waste disposal, which starkly contrasts Connecticut's suburban cul-de-sacs. Our response to these systemic issues centers on the ecological cul-de-sac of Johnsons Creek, a nearby area prone to the uncertainty of flooding and consequent redistribution of pollutants. Here, we propose an 'acupunctural remediation' approach—just as acupuncture targets specific points in the body to heal, our project uses a network of remedial 'columns' to treat localized pollution effectively. These columns are designed to perform functions tailored to specific needs of the area: rainwater is filtered through hydroponic systems, which support plant growth and manage stormwater; electrokinetic columns remediate the soil by using electrical currents to mobilize and capture contaminants; and underwater oxygenating columns help purify the water and encourage healthy aquatic ecosystems. The project is phased to gradually build upon each success, starting with the development of a 'second ground.' As the site's contamination decreases, the remediated ground will evolve to include laboratories, food distribution centers, and childcare facilities, responding directly to the community's needs. The overarching structure is a timber waffle system, which offers flexibility in creating varied spaces for play, planting, and pathways, forming a pixelated landscape that promotes interaction between residents and their environment.

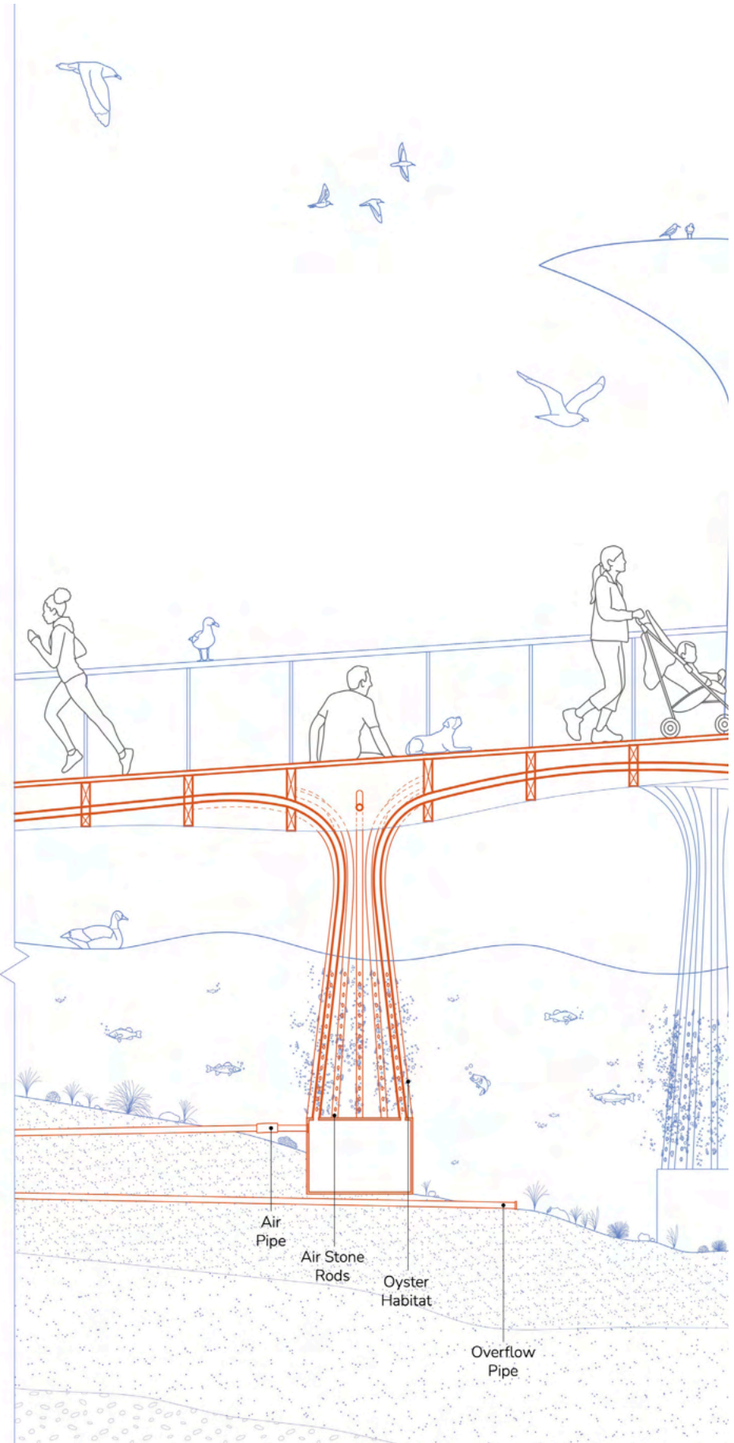


(above) research mapping of Bridgeport pollutants

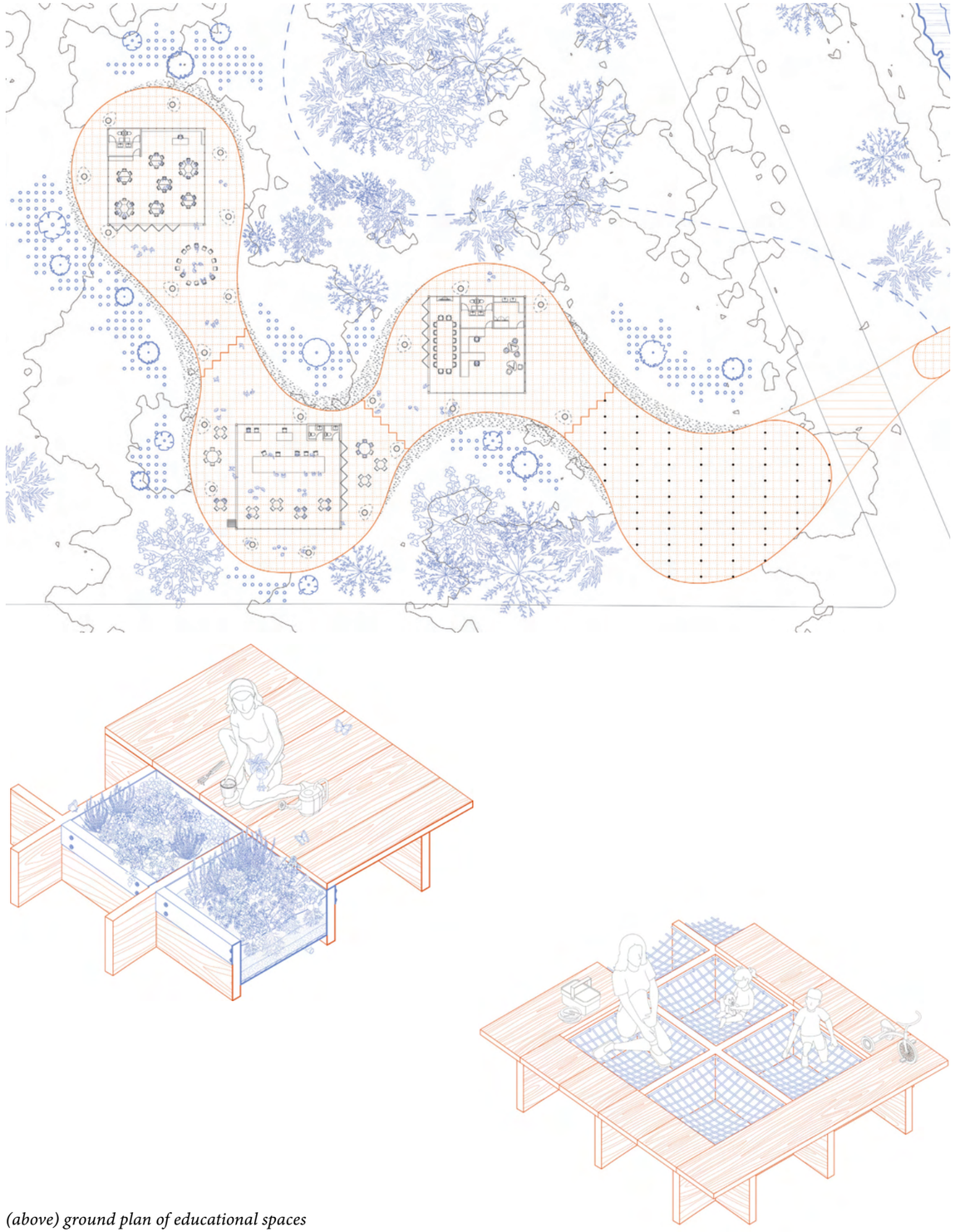


(above) hybrid oblique and section perspective with construction phasing

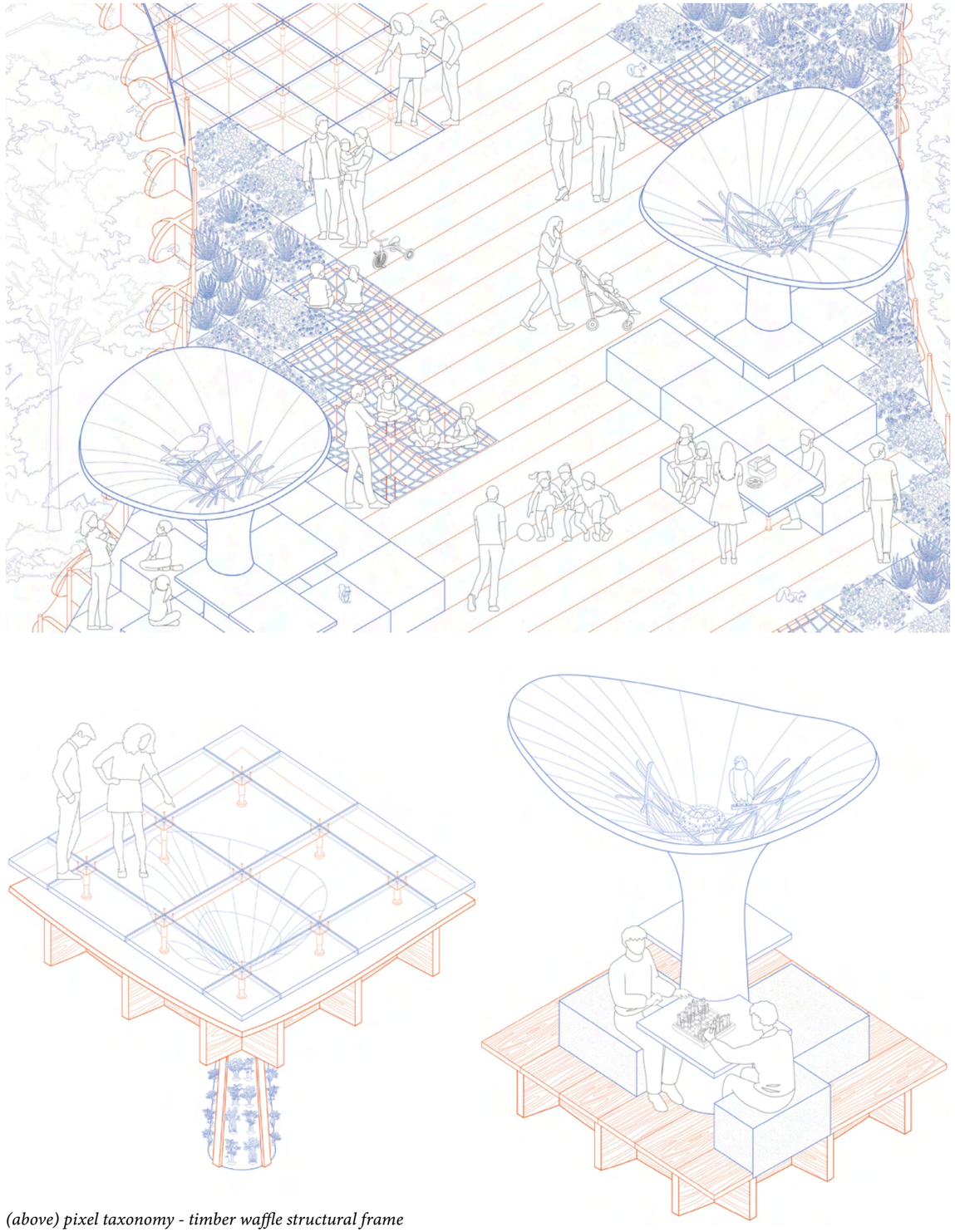




(above) systems section: hydroponic, electrokinetic, and oxygenating integrated remedial columns

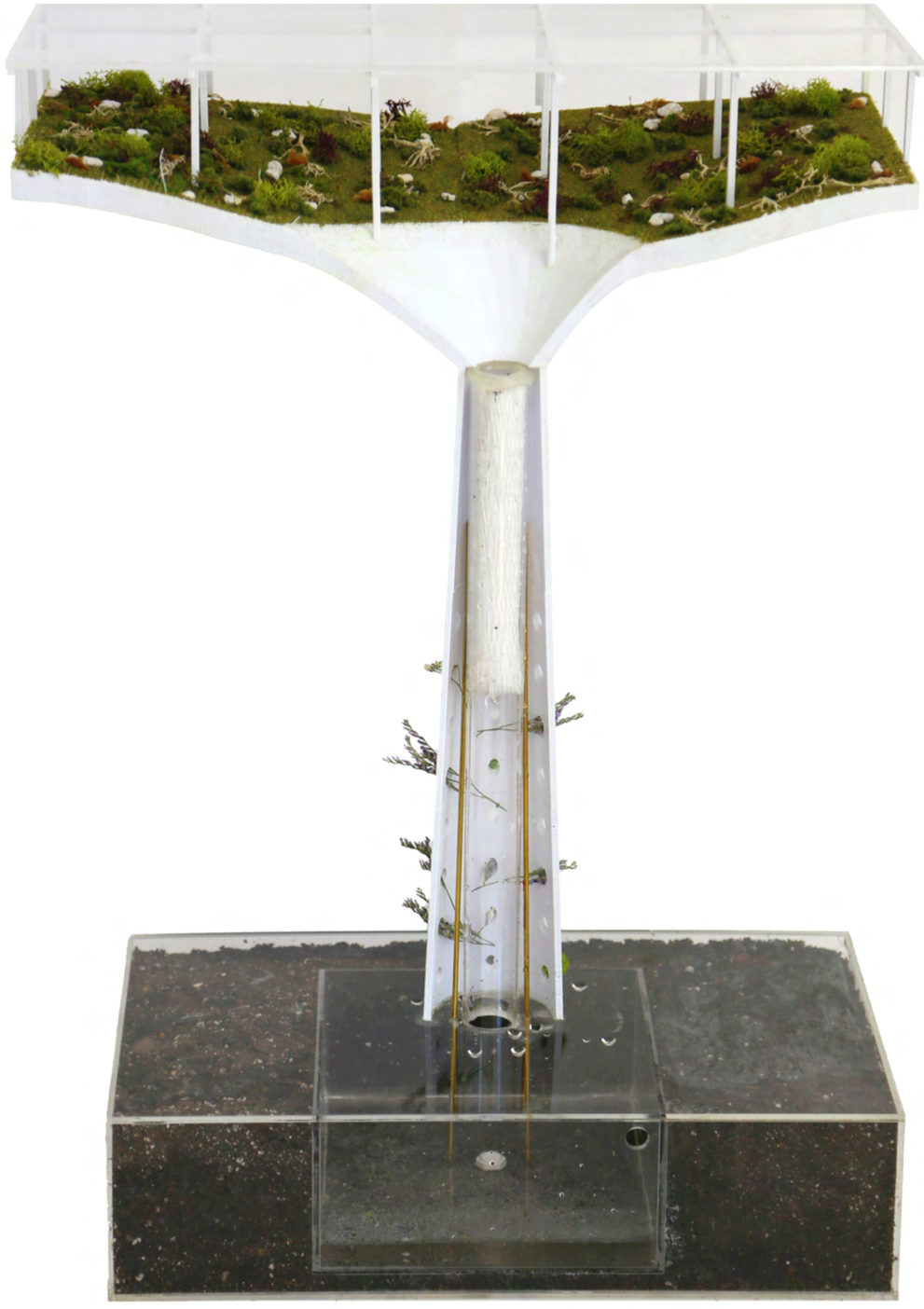


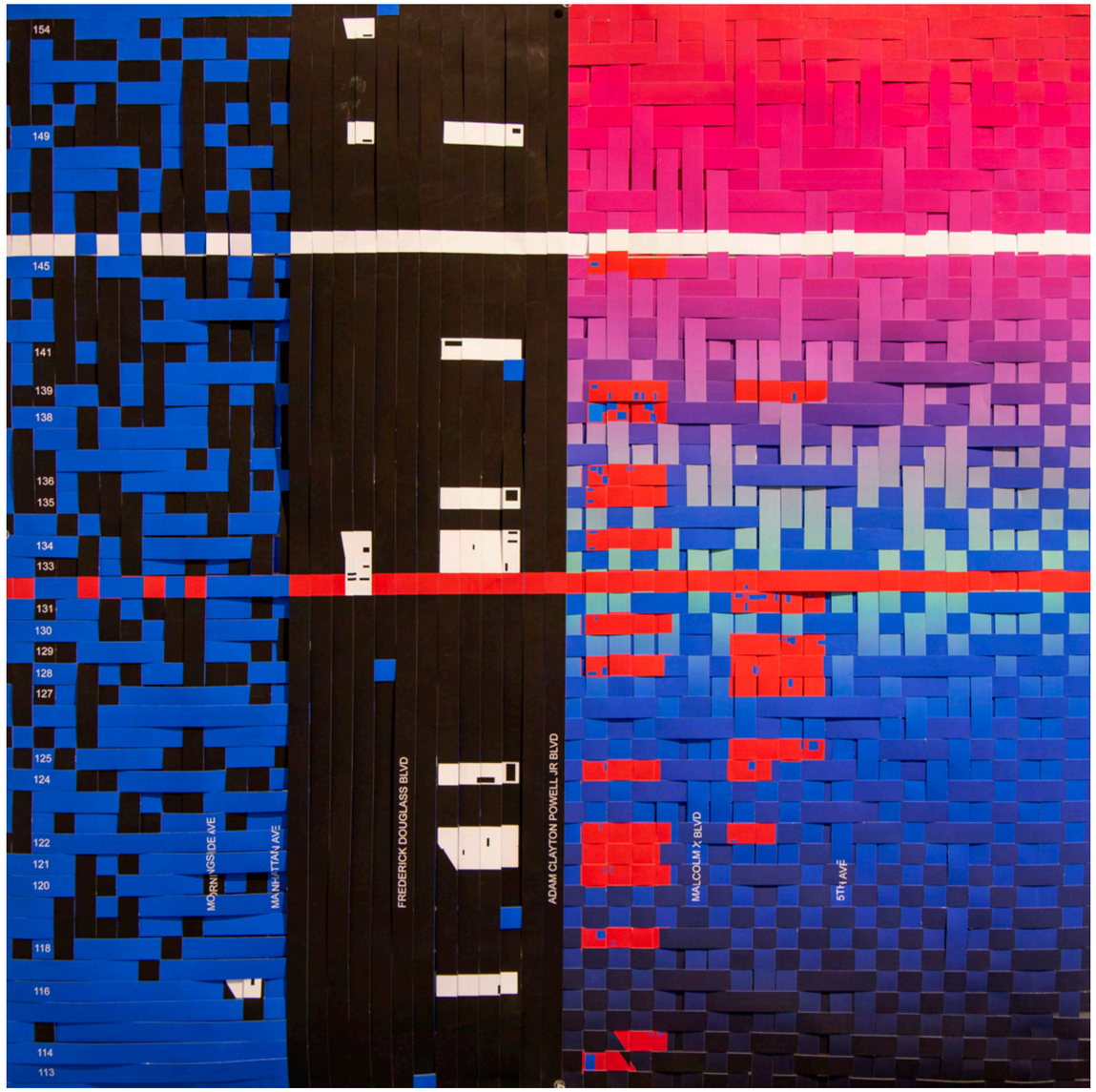
(above) ground plan of educational spaces
(below) planter & play net typological design



(above) pixel taxonomy - timber waffle structural frame
(below) water filtering column typological design

(below) rainwater filtering hydroponic column: physical model study





(above) physically woven map of real estate holdings with affordable housing metrics

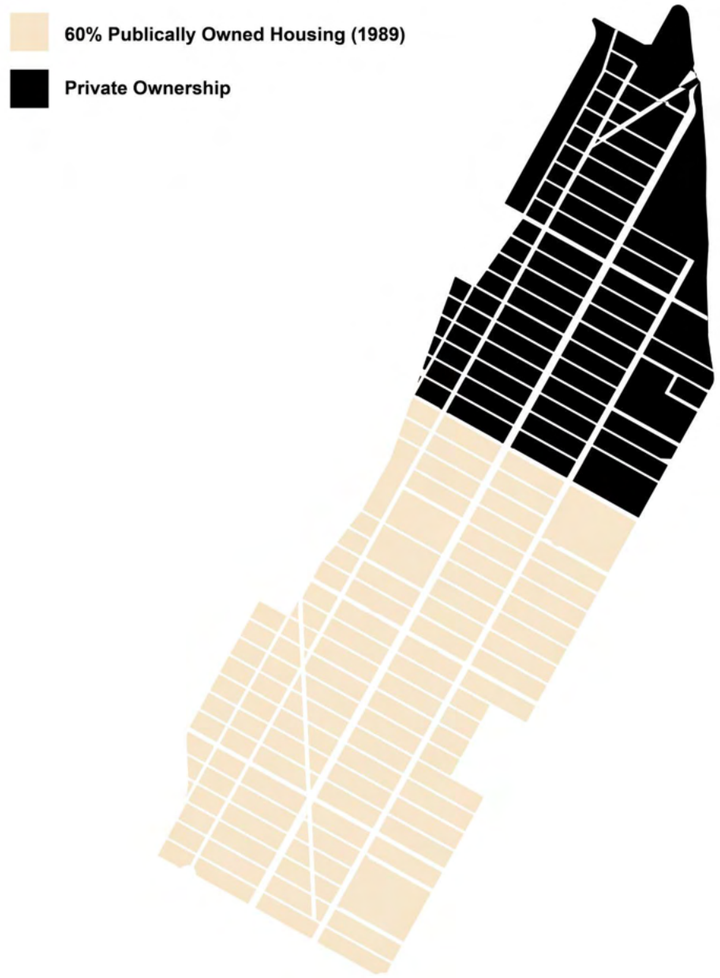
HARLEM AFTER PROPERTY

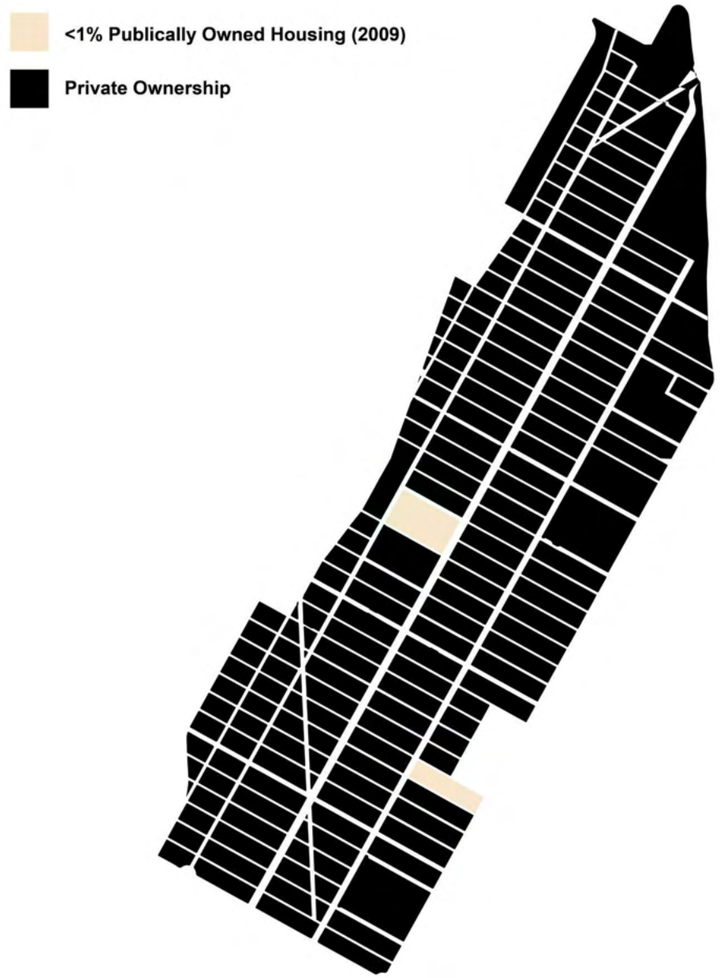
AFFORDABLE HOUSING PERMANENCE

Course: Advanced Studio V - Animist Algorithm
Semester: Fall 2024
Professor: Emanuel Admassu
Partner: Jess Kuntz
Location: Harlem, Manhattan
Program: Housing

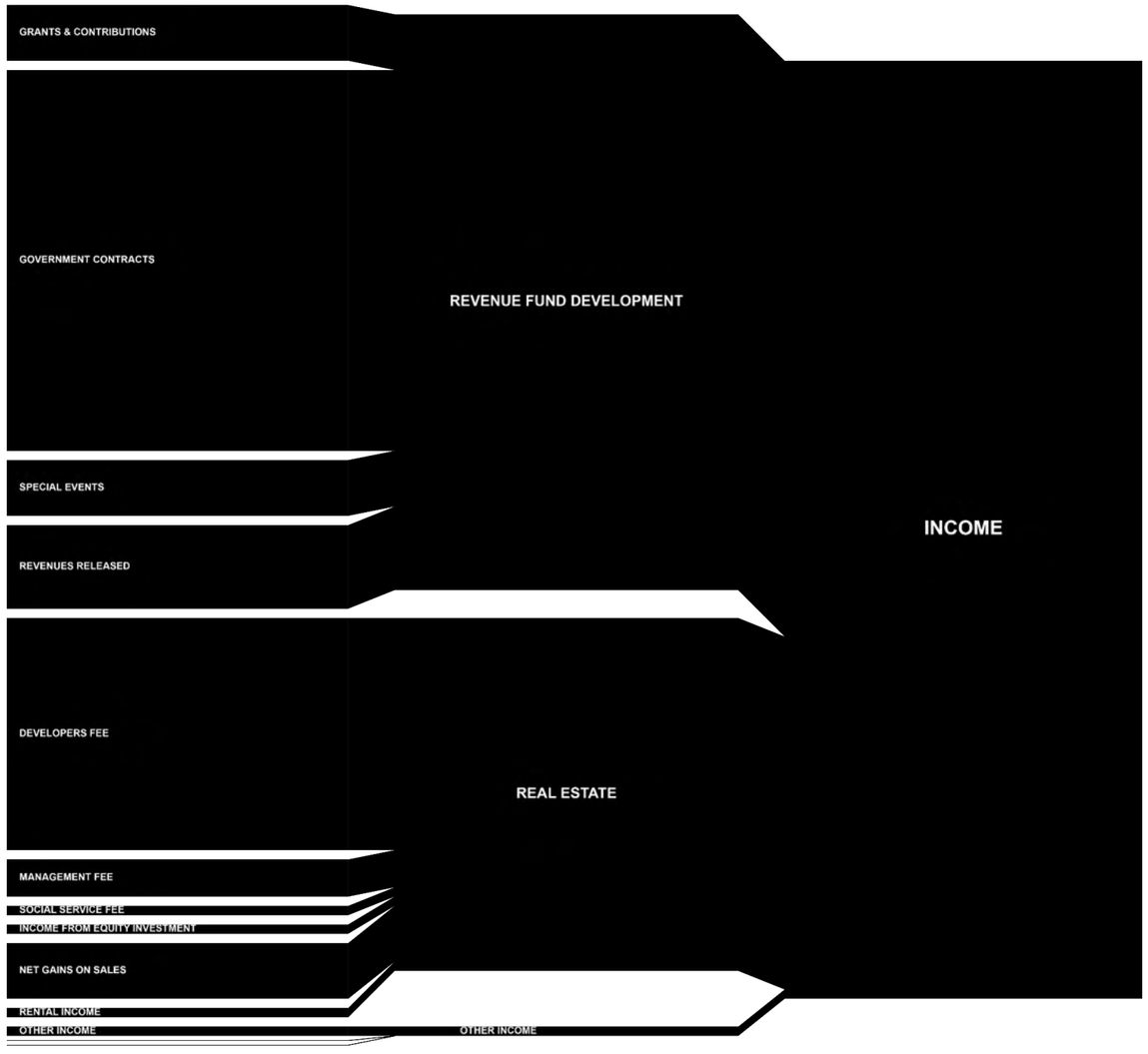
Description:

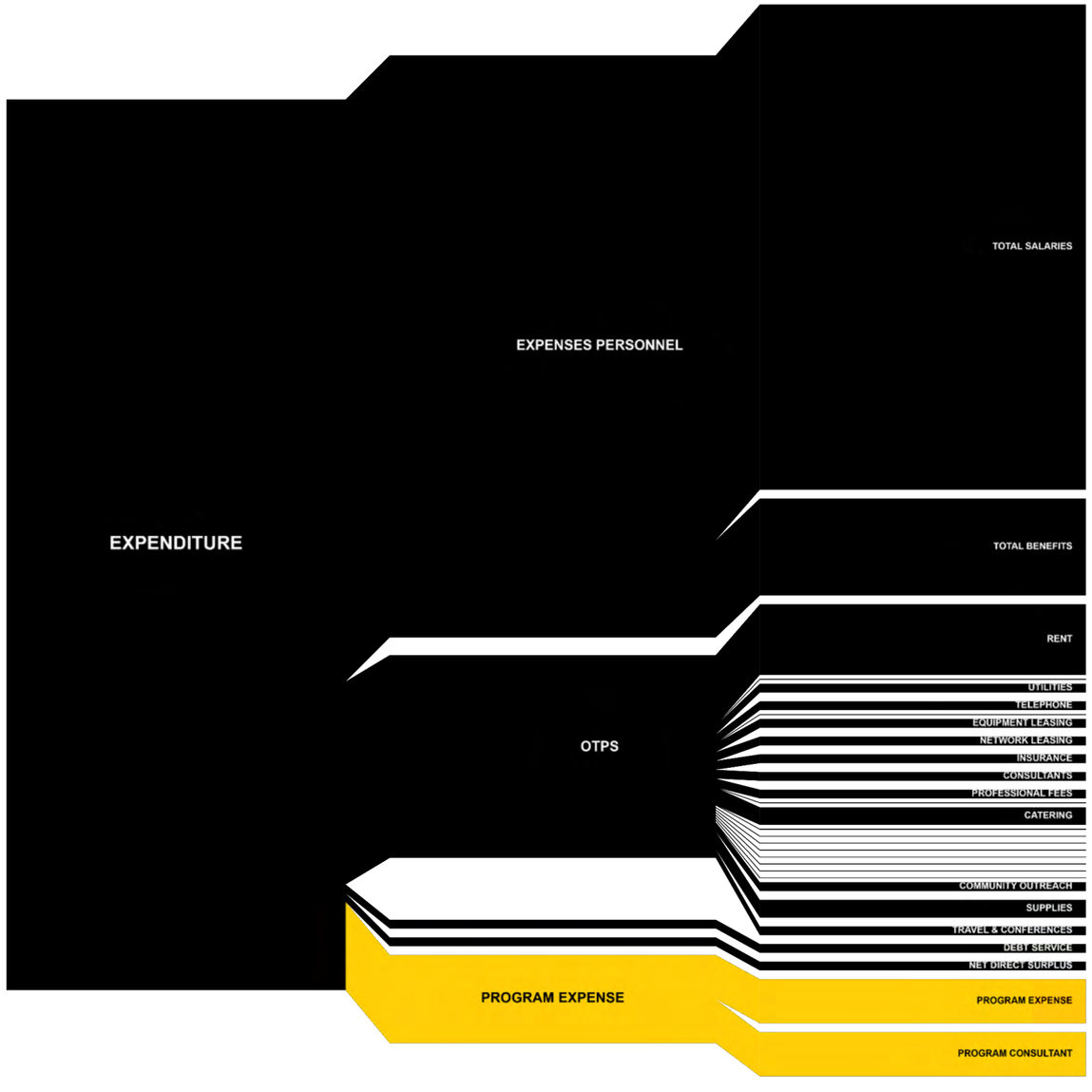
Housing is a human right. What does it take socially, economically, and architecturally to make this statement a reality? Housing in Harlem needs to be re-envisioned, where economic accessibility affords stability. Our vision for housing after property critically examines mass privatization through critique of Abyssinian Development Corporation's real estate practices, condemns real estate speculation, and advocates for the de-commodification of housing through decentralized communal ownership. The Renaissance Ballroom was a site of black leisure and culture that operated in Harlem for 50 years before it fell into a state of disrepair. Despite community outrage, the Renaissance Ballroom was demolished and replaced with The Rennie Luxury Condos, which is our site of intervention. The existing floor plan of the Rennie is a double loaded corridor flanked by wet walls, resulting in a compartmentalized plan. We reject this individualistic plan by inverting the social relationship to the corridor to weave utilities like bathrooms and kitchens into a concentrated spine. This architectural shift dissolves private and public distinctions, liberates housing from the generic, and replaces it with specificity, social vibrancy, and the expressive messiness of domesticity. To achieve permanence in Harlem, we must address affordability to combat the reality of gentrification and displacement. We utilized paper weaving in our tapestries as a methodology for community connection, strengthening, and longevity.





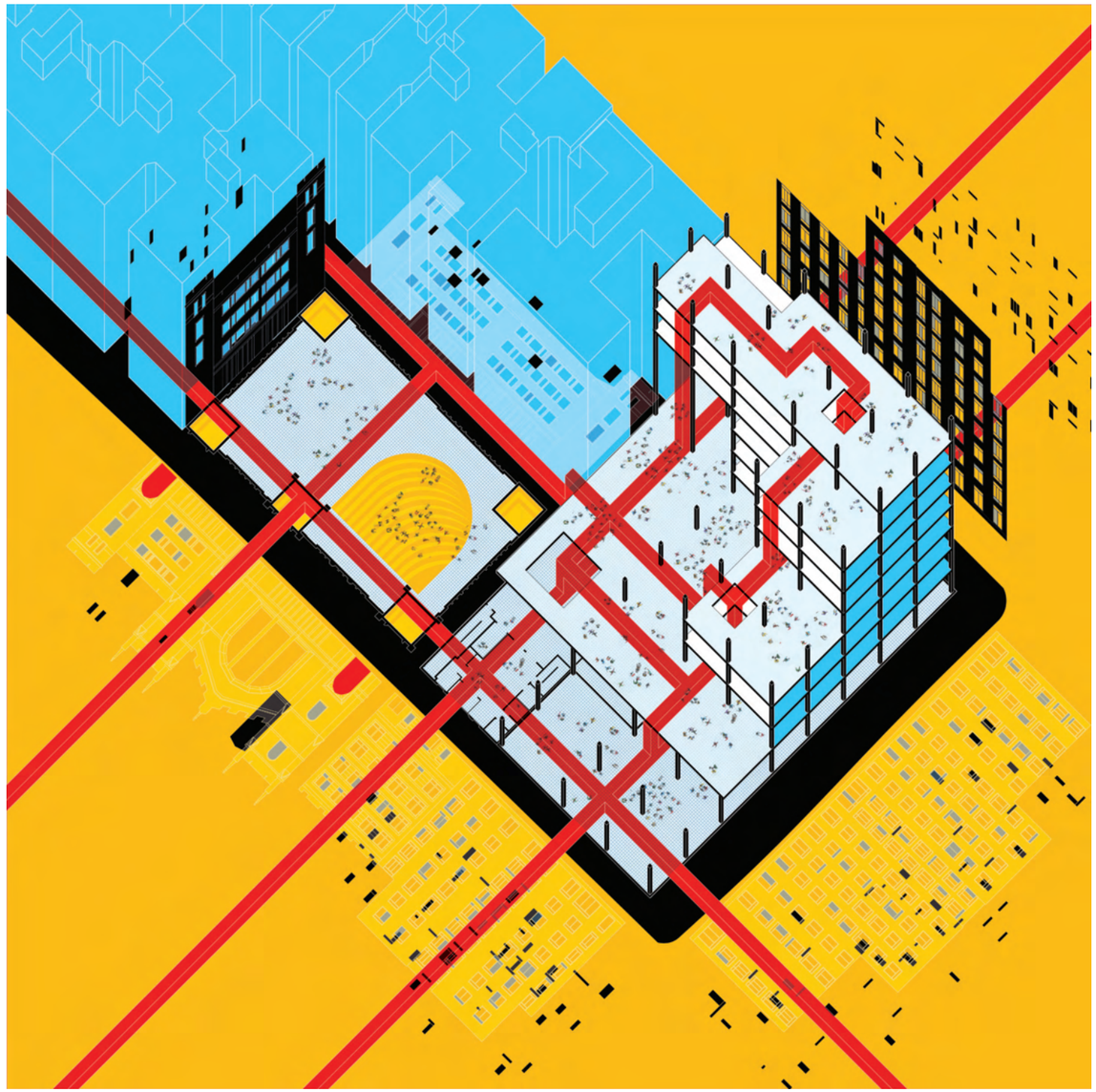
(left to right) Harlem experienced mass privatization of its housing stock from 1989-2009 due to incentivized private development which is indicative of the current regime of property.



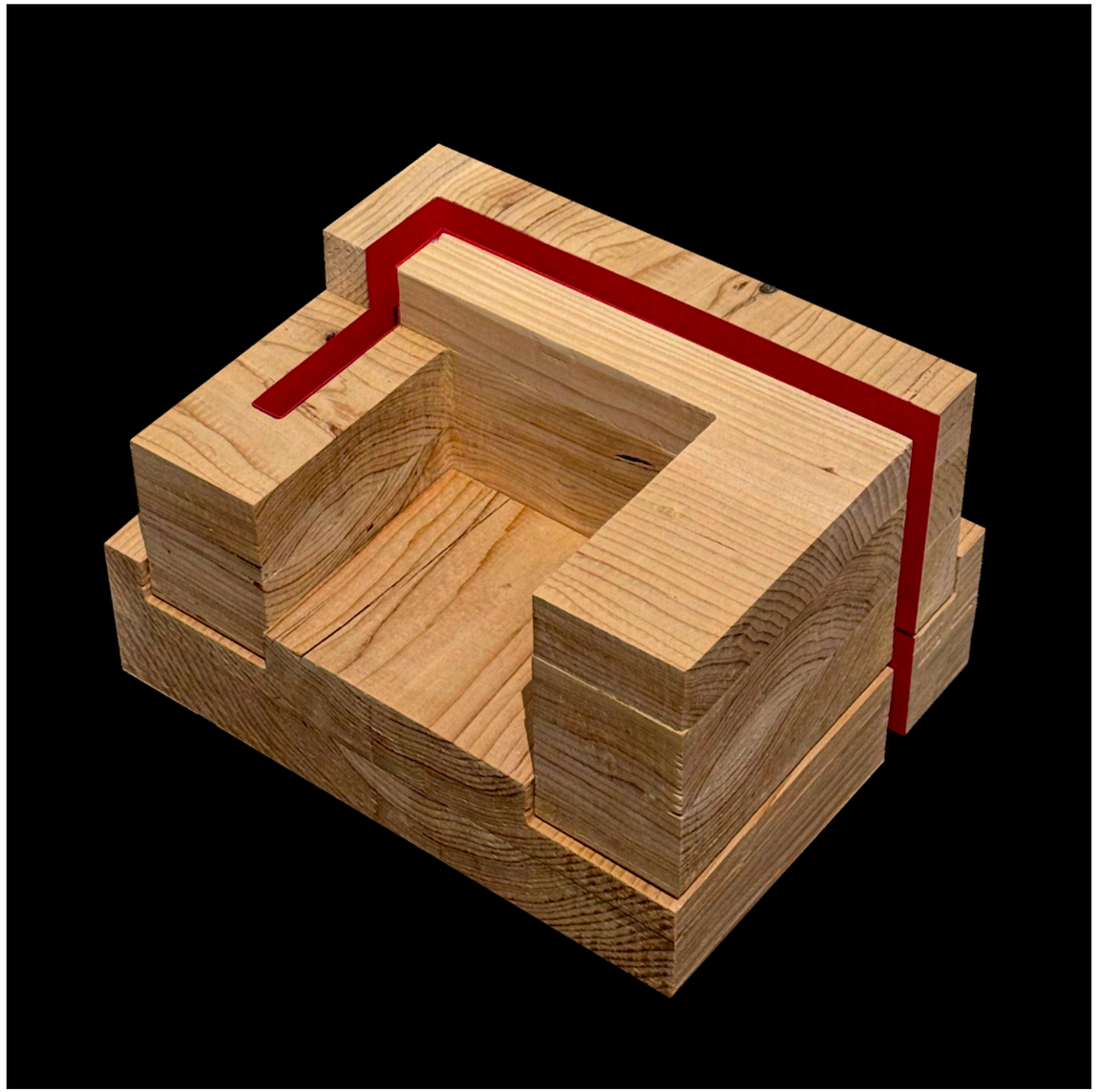


(above) Abyssinian Development Corporation (not-for-profit) income and expenditures during the 2009 fiscal year revealing minimal spending on program

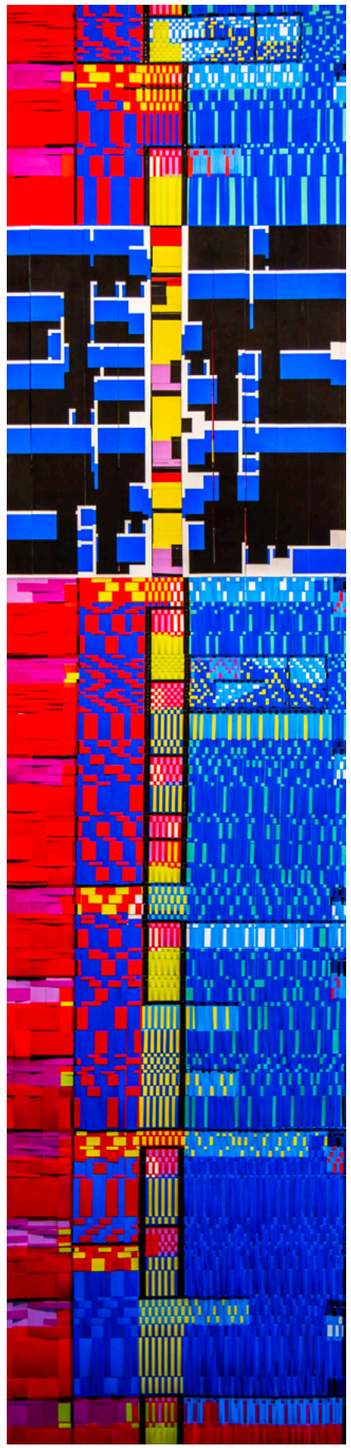
This research analysis learned from the methodology of institutional critique by artists like Cameron Rowland and Hans Haacke to critique the operations of the ADC.

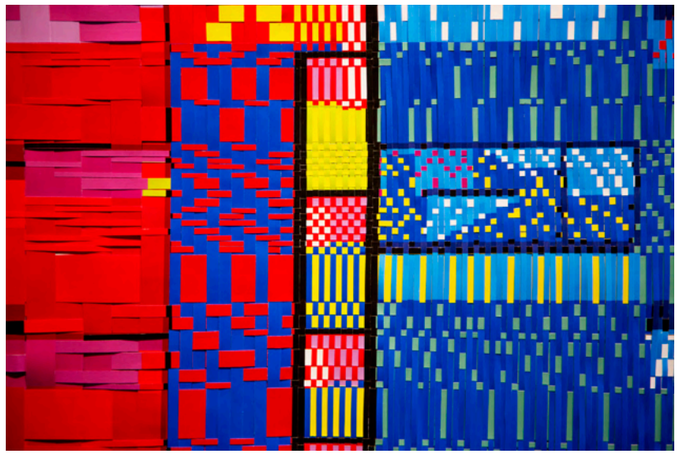


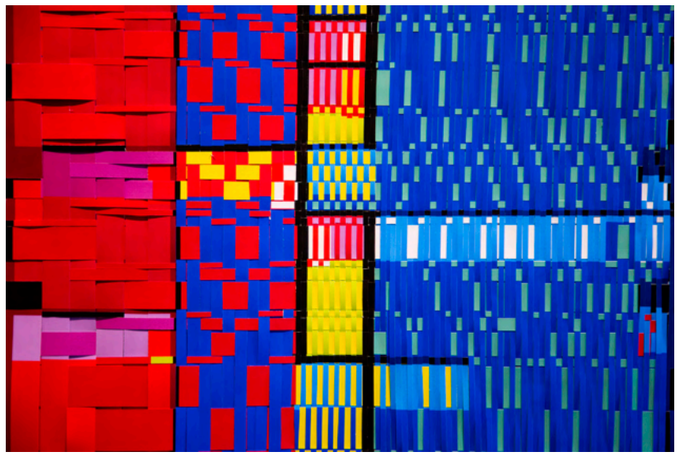
(above) deconstructed axonometric of The Rennie in a vision of Harlem post-property where individual ownership no longer determines circulation

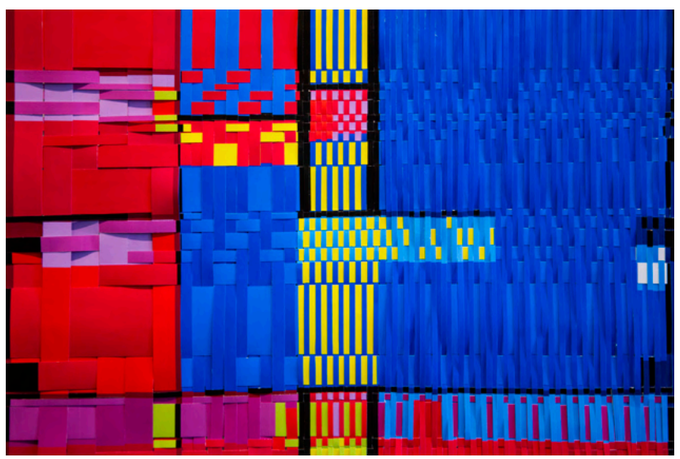


(above) physical model exploring a central spine of connected utilities to liberate the floorplan bound by real estate speculation

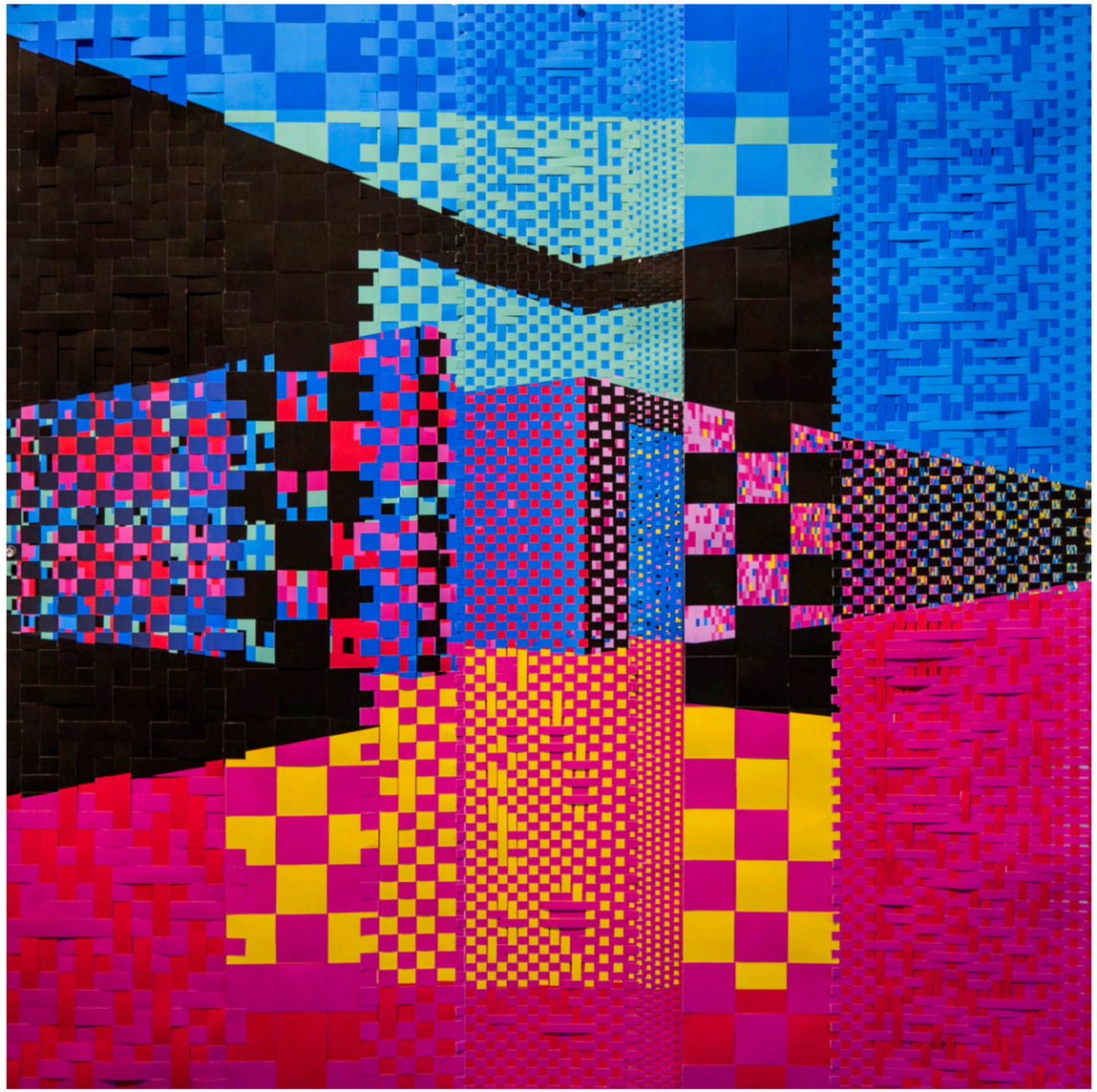








(left) woven paper tapestry (right) detail photographs of plan oblique tapestry: re-envisioning the Rennie



(above) interior perspective of a unit in the Rennie after property that counters the monotony of marketing imagery - density of weaving corresponds to community integration and permanent occupation

(above) rendering of entrance with adaptive reuse

BLUE ZONE LOFTS AT 128TH ST:

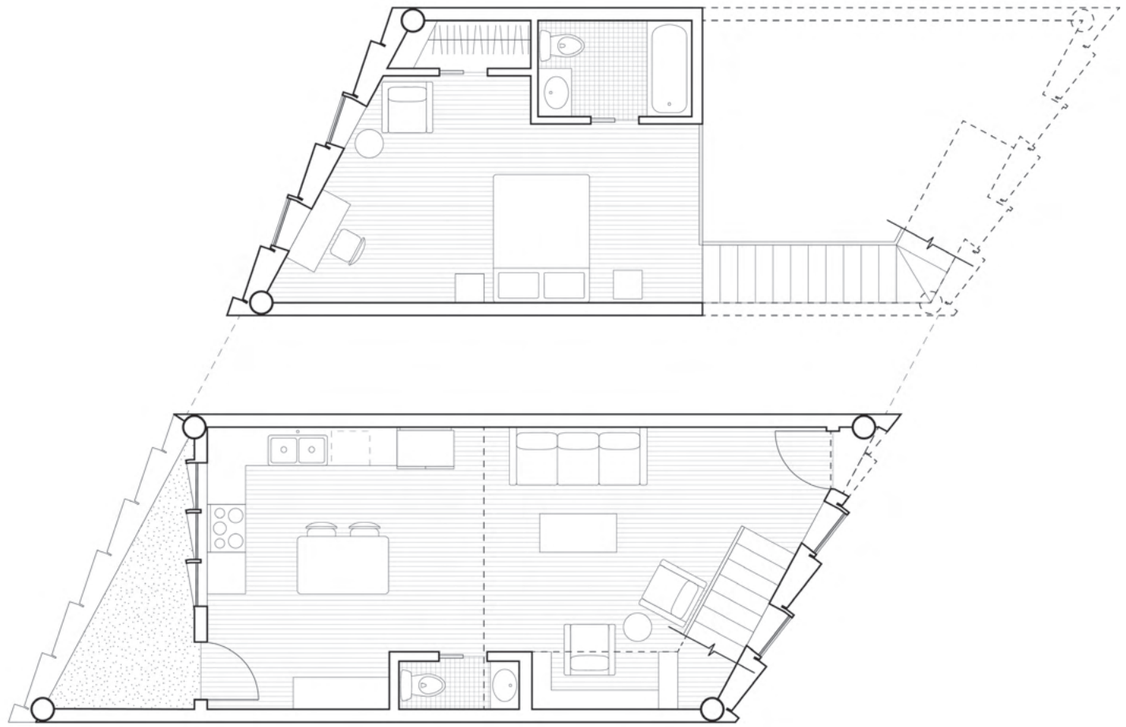
LIMINALITY AND LIVING IN-BETWEEN

Course: Core III Studio - States of Housing
Semester: Fall 2023
Professor: Christopher Leong
Partner: Jackson Key
Location: West Harlem, Manhattan
Program: Housing

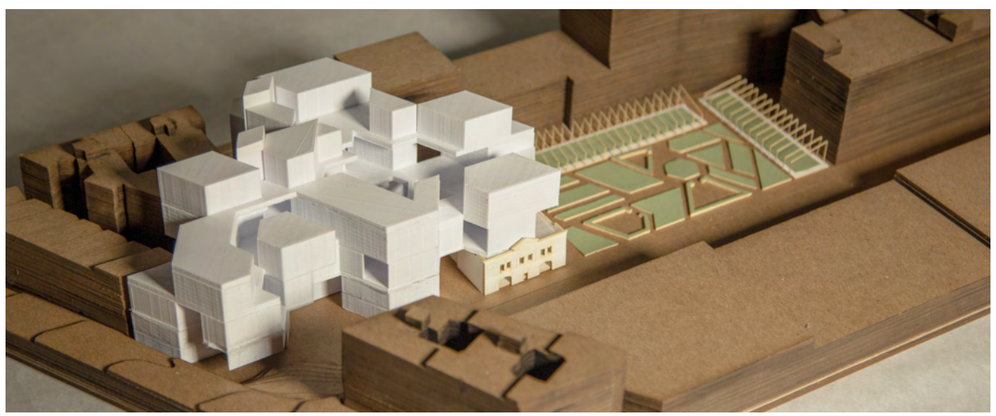
Description:

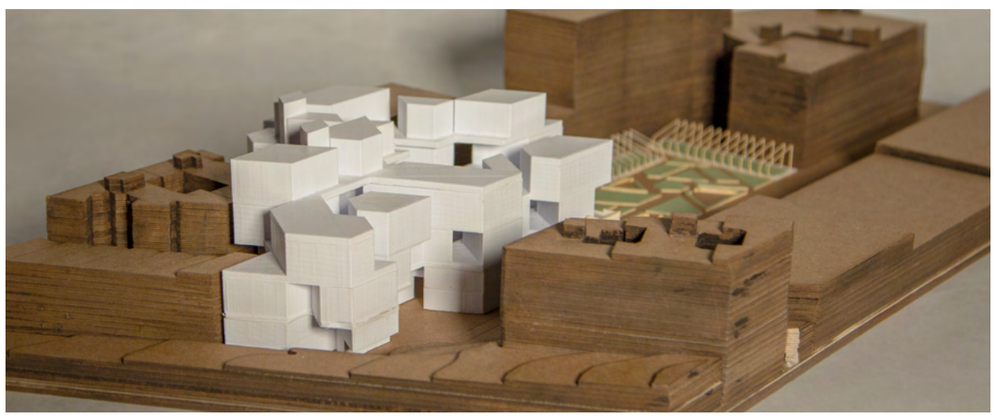
This housing proposal explores how living environments can increase longevity in New York City. With the framework of Blue Zone Living, this housing development refocuses on how people move, what they eat, and how they maintain deep personal relationships. Located at an intersection between a commercial district and residential neighborhood, urban farming becomes a tool for social and spatial connection. A common circulation core connecting 70 units enables social interaction and incorporates stairs into residents' daily movement. Each apartment is clustered nodally in groups of 5-7 which promotes a circle of close friendships outside of the family unit. Unit aggregation looks to facilitate intergenerational living through adjacencies of studio, 1 bedroom, and 3 bedroom units. Food systems are a major focus of Blue Zone living, and the proposal seeks to incorporate locally sourced, plant based food at multiple scales. Critically, the proposal looks to partner with Harlem Grown to develop an urban farm for both production and education on the adjacent vacant lot. The site's two existing buildings connect this farming activity to the larger community through adaptive reuse into commercial space including a farmers market, incubator kitchen, and headquarters for Harlem Grown to support agricultural education and administration. This built environment nurtures a healthy life for its long term residents who are deeply connected to their surrounding community. Jackson Key and I collaborated throughout the semester on all design elements.

(above) occupiable circulation for social connection

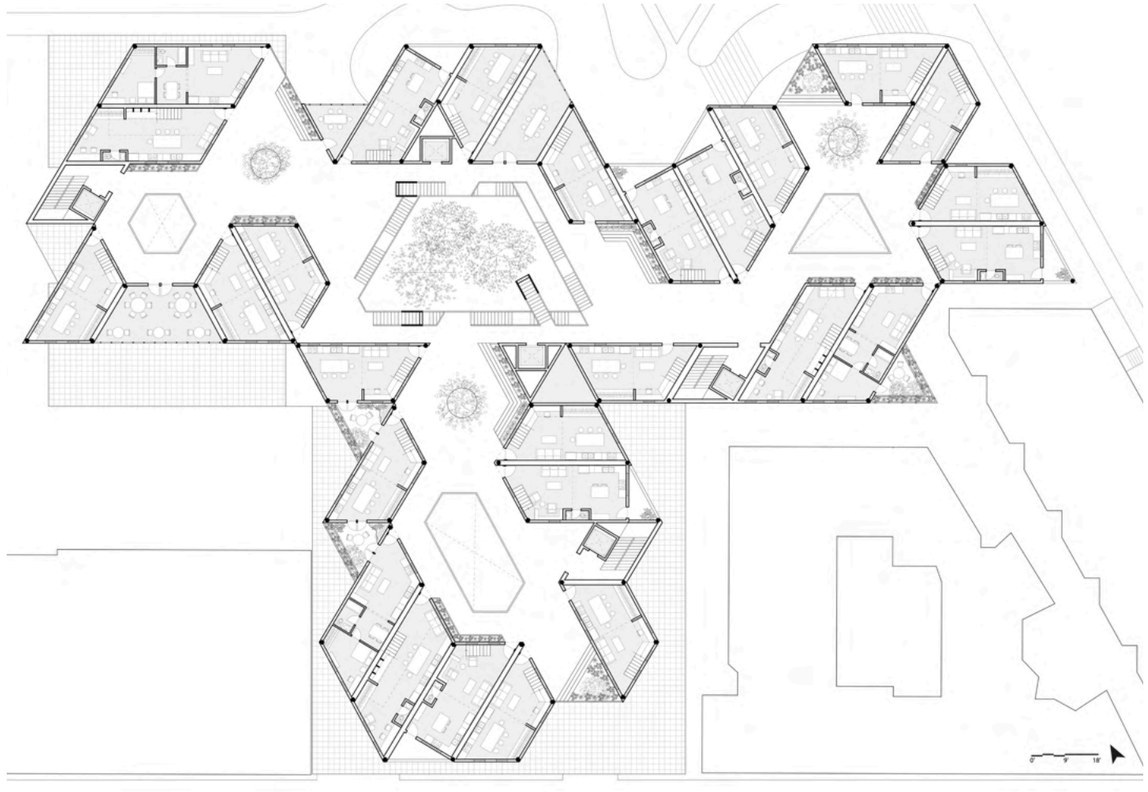


(above) 1 bedroom loft unit, 775 sqft
(below) physical model of 1 bedroom loft

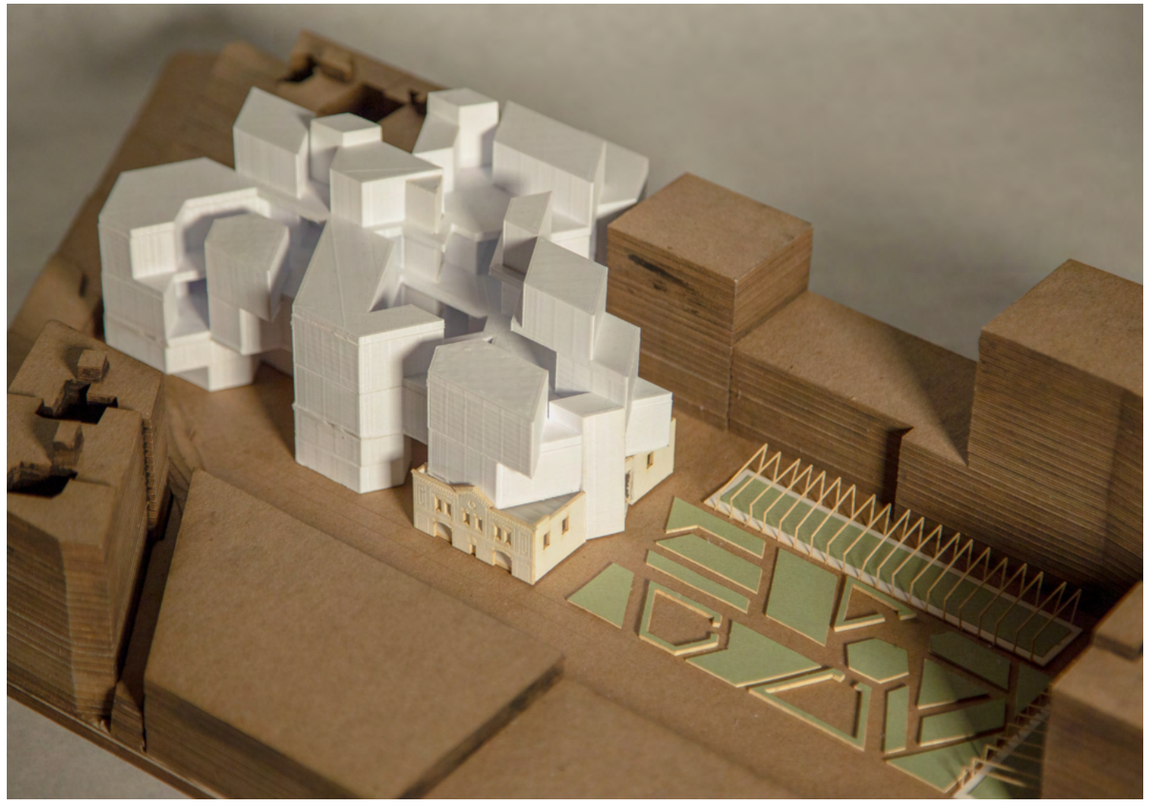




(above) ground floor plan: adaptive reuse for Harlem Grown site collaboration
(below) massing model within site context - angles address adjacencies

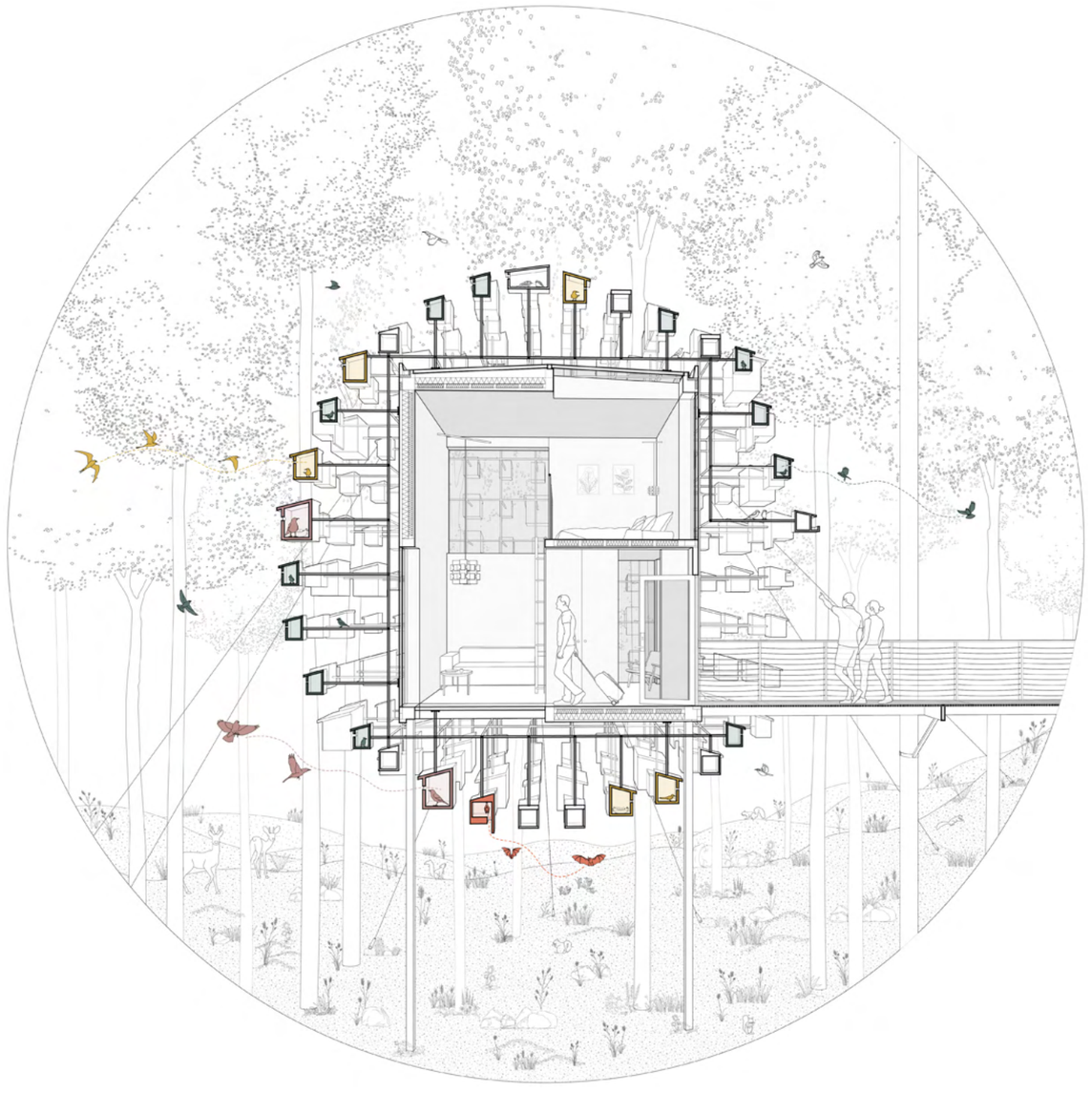


(above) floor 3 plan: geometric shifts driven by light, air, and social organization of units



(above) massing model within site context - highlighting adaptive reuse and proposed urban farming

(above) sectional axon: reveals the systems of food production from the urban farm to the apartment kitchen



(above) section perspective

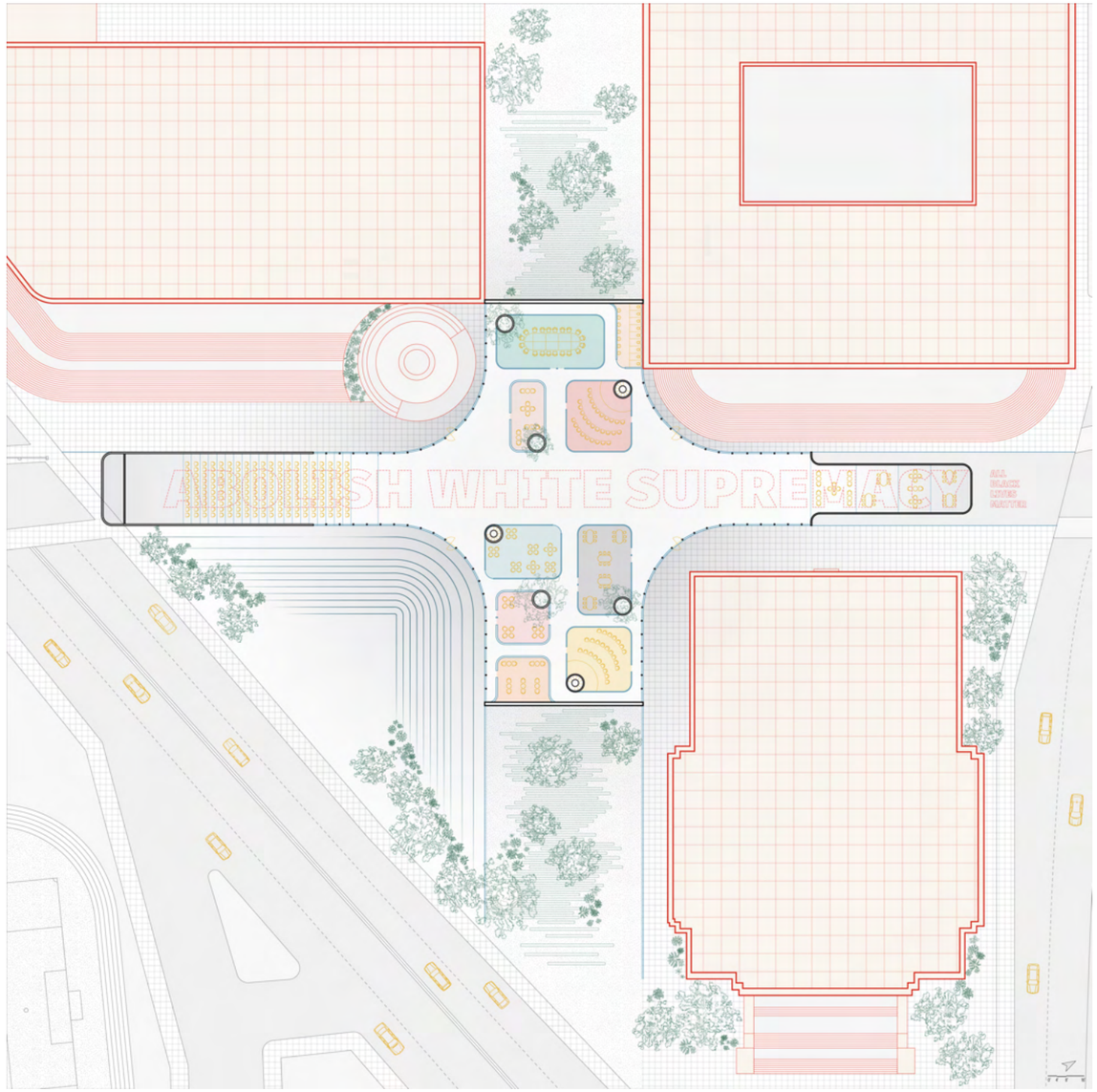
SEMINAR OF SECTION

BIOSPHERE CASE STUDY BY BJARKE INGELS GROUP

Course: Seminar of Section
Semester: Spring 2024
Professor: Marc Tsurumaki
Location: Harads, Sweden
Program: Hotel Room

Description:

This semester long investigation utilized section drawing as a method for analyzing a case study project. I chose Bjarke Ingels Group's Biosphere, a treehouse-inspired hotel room wrapped in over 350 birdhouses to support a struggling bird population in Sweden's forests. The "nesting" quality of the section and the circular form drove me to highlight these formal components through this particular drawing. This singular drawing aims at capturing the range of birdhouse typologies and occupants, including humans, bats, small, medium, and large birds. The ecological diversity of the structure's context is reflected in the formal complexity of the project, and the section perspective captures the scene of the indoor and outdoor room of the treehouse site. Implementing the methods of designing the section cut from Marc Tsurumaki's guiding book, Manual of Section, gave valuable insight into the critical components of a hybrid section and perspective drawing to articulate depth and detail with fills and lineweights. The digital modeling was completed in Rhino while the drawing was edited through Adobe Illustrator.



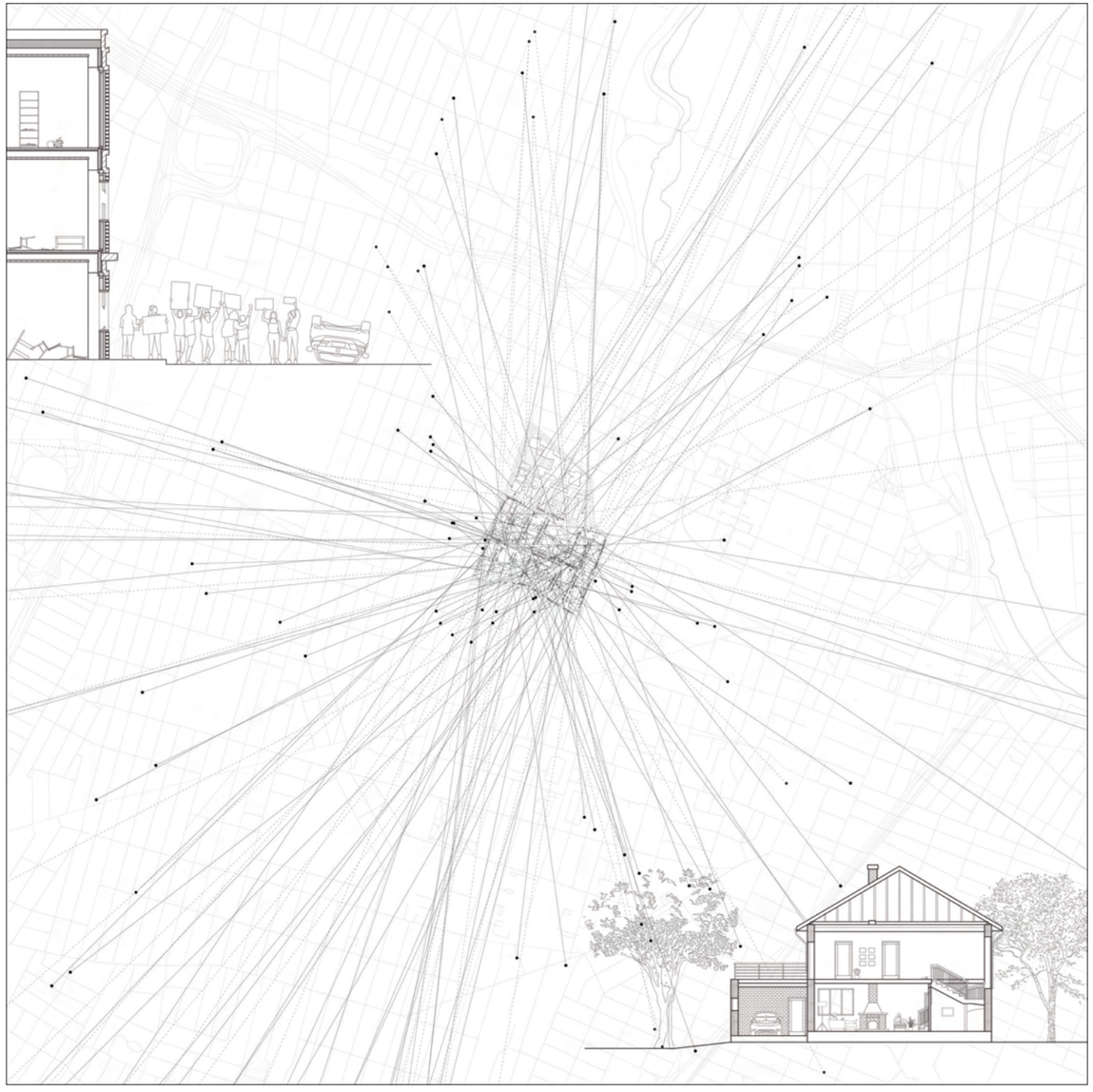
(above) ground floor plan

PROTEST URBANISM

Course: Core II Studio - Damage Control
Semester: Spring 2023
Professor: Joshua Uhl
Location: Newark, NJ
Program: Youth Center

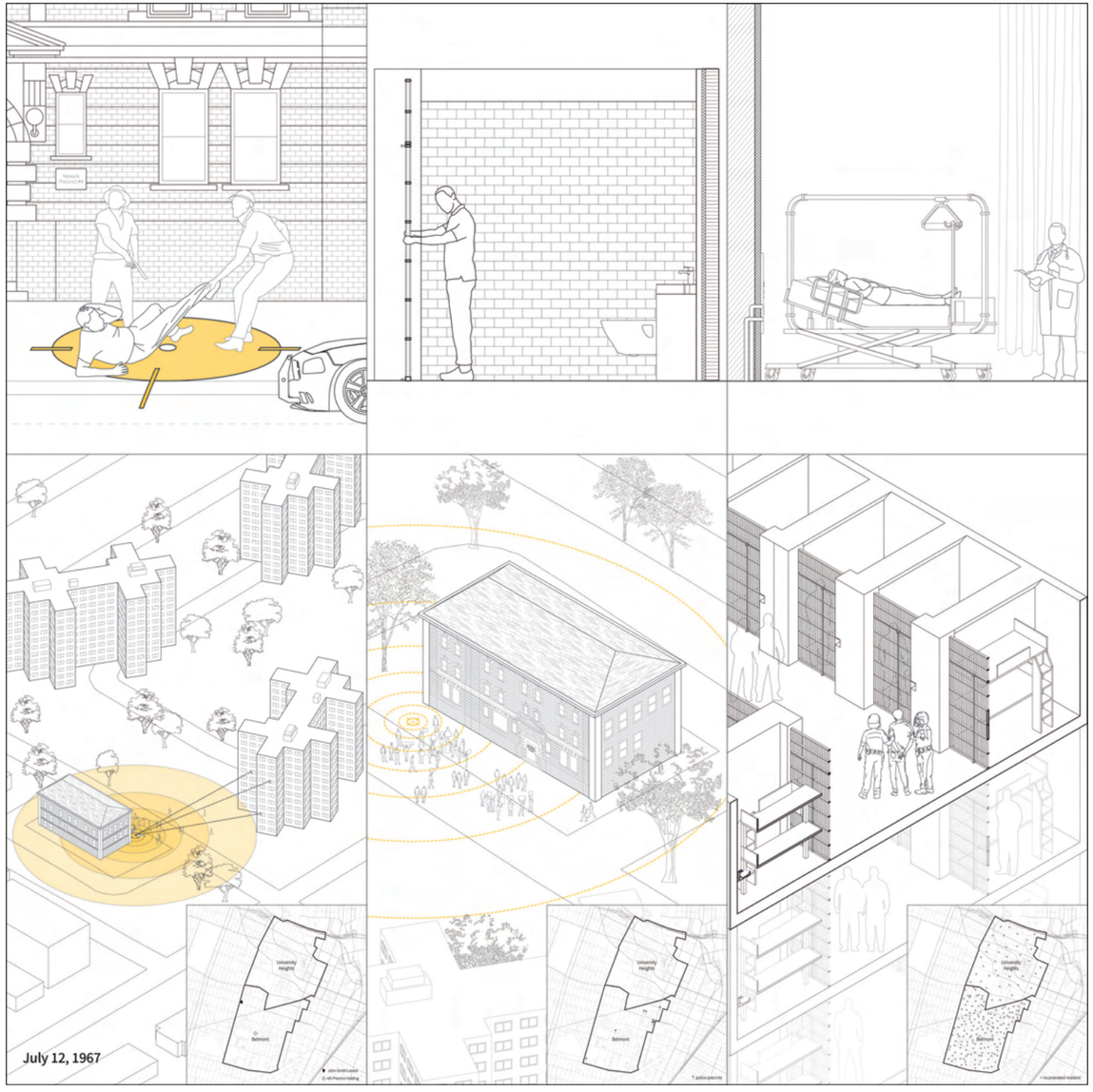
Description:

This project began with an investigation of two primary damage systems Newark has faced for over five decades: displacement and mass-incarceration targeting people of color. Protests have long been deployed as a damage control tactic in Newark, and one site that has been especially used as grounds for protest is Dr. Martin Luther King Jr. Blvd. This contentious street is situated in between the Essex Hall of Records, Historic Courthouse, a park, and new Criminal Justice building, which symbolize Newark's systemic damages. As an act of resilience during Black Lives Matter protests, the street was painted boldly with "Abolish White Supremacy, All Black Lives Matter." My project intervenes by raising the streetscape to close it to vehicular traffic, creating a haven for pedestrians and enabling a democratic sphere. Underneath the raised streetscape is a program for youth struggling with parental incarceration, while the letters are given permanence as a skylight and seating system.



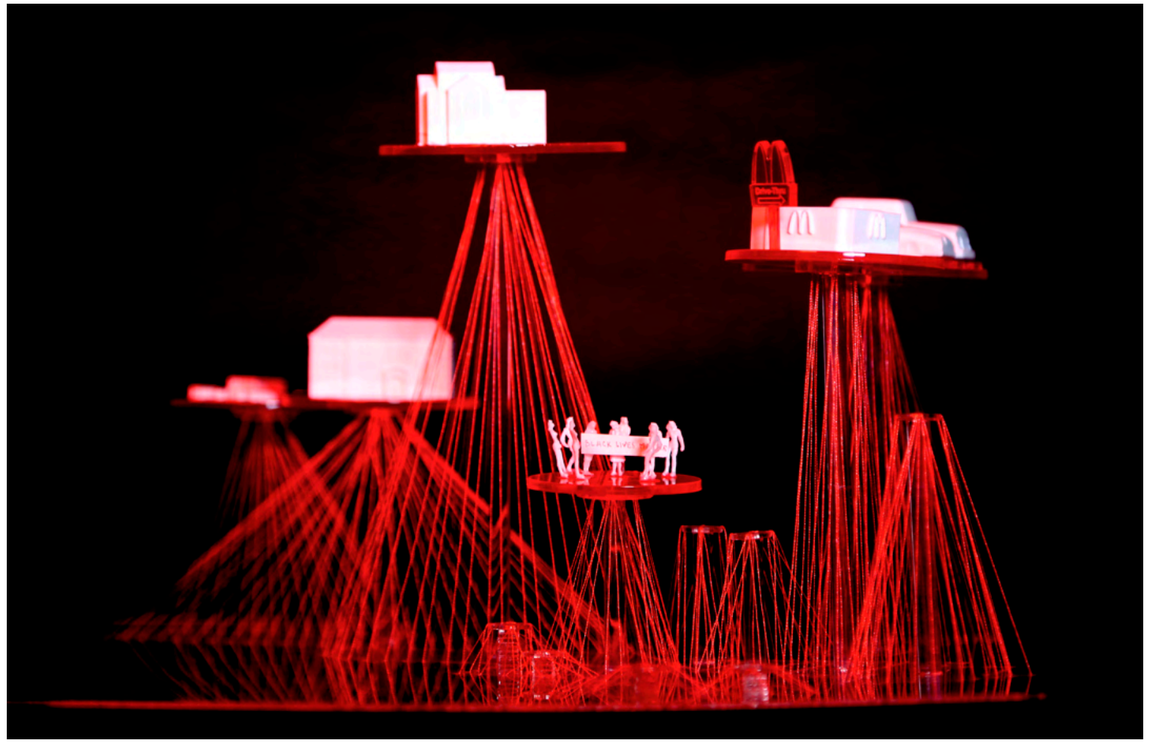
Displacement of Residents from the Urban Renewal of University Heights

The underlay maps the addresses of residents, primarily people of color, before and after displacement from the University Heights neighborhood as urban renewal took over. Frustrations over decades of community upheaval sparked protests along Springfield Ave which this drawing juxtaposes with the predominant single family home typology built afterwards.



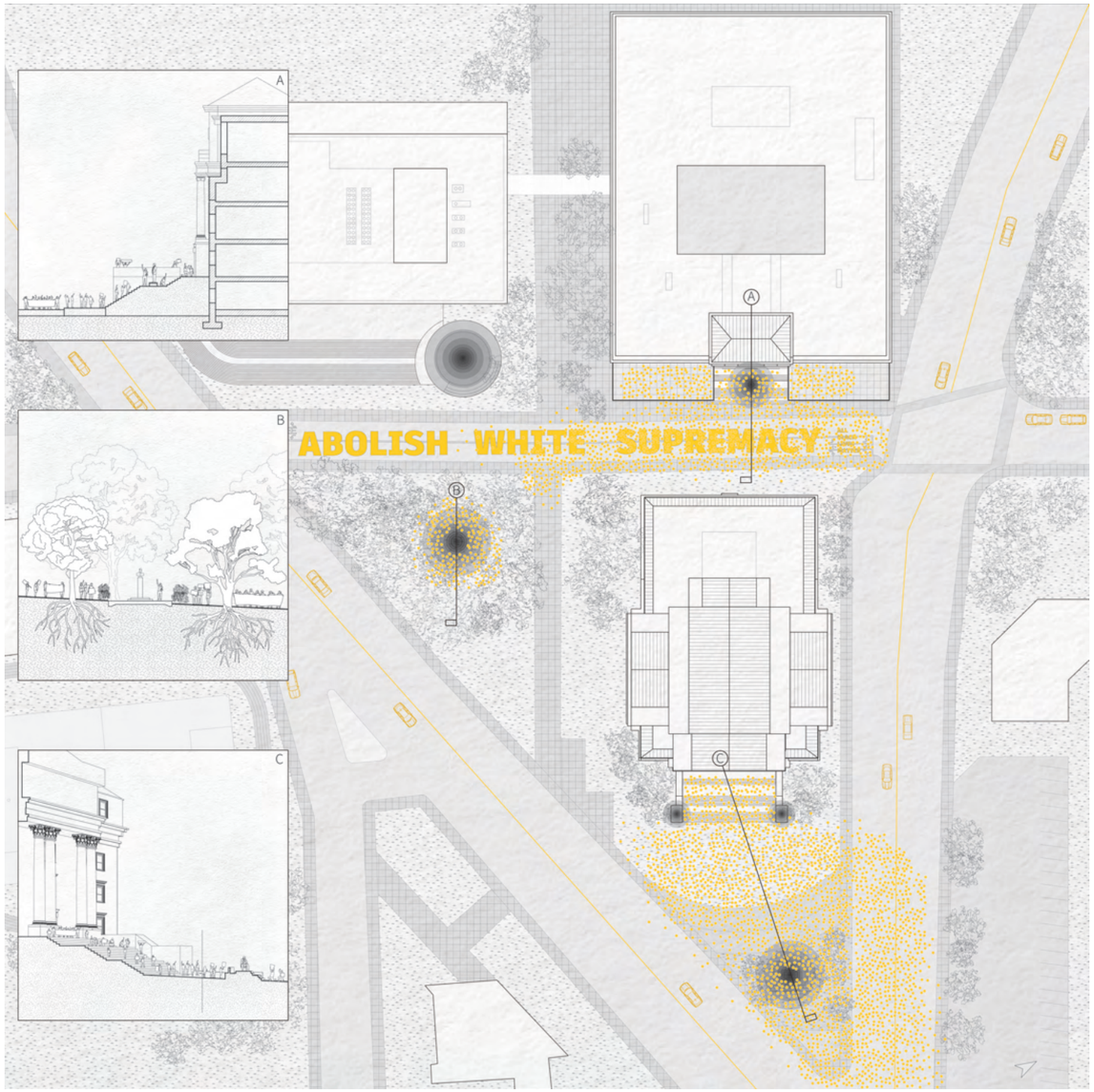
Mass Incarceration in Belmont

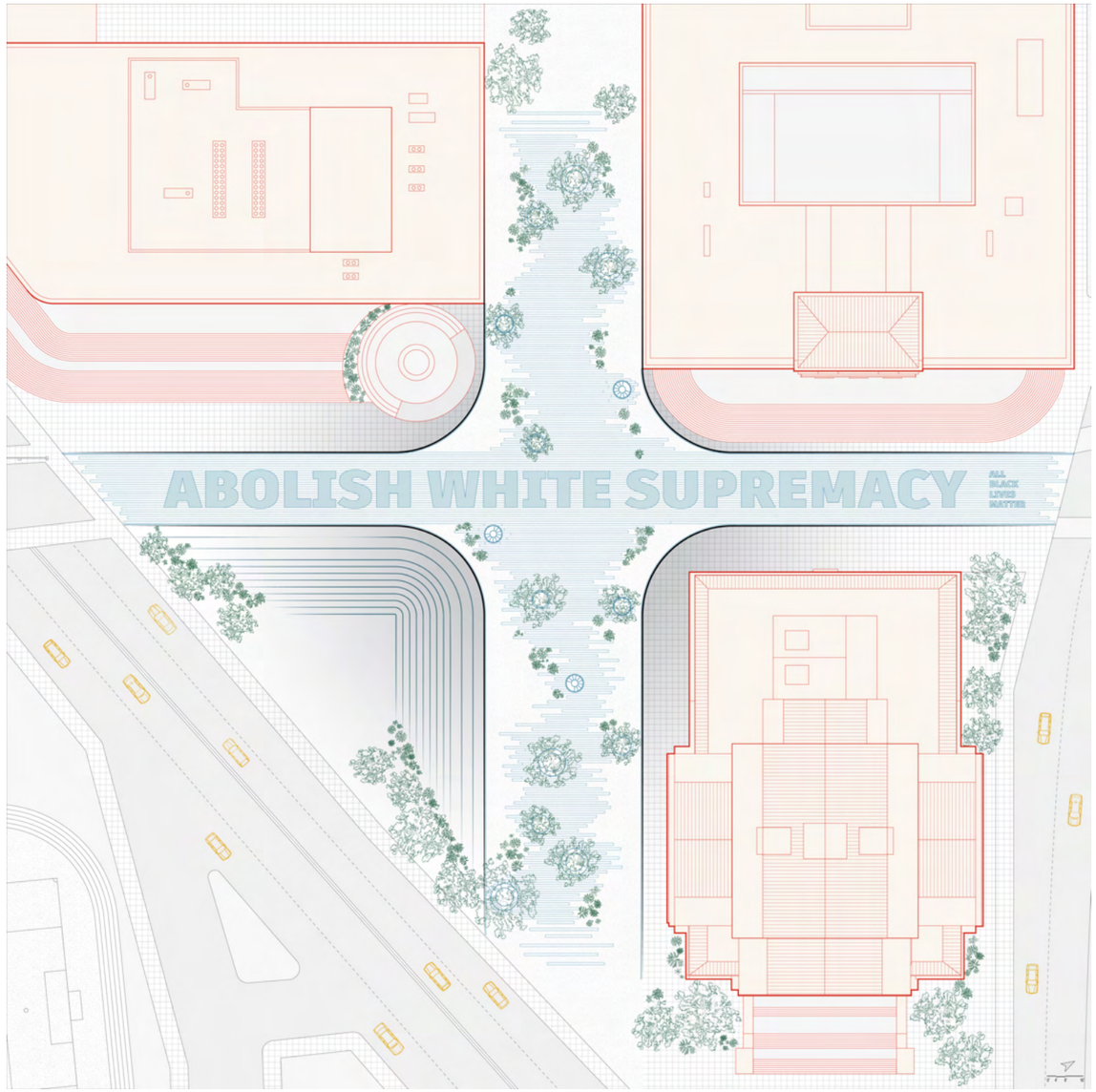
In 1967, the violent arrest of John Smith sparked protests and arrests in Newark. Close examination of police precincts and incarcerated residents demonstrates the correlation between race and mass incarceration in the neighborhood of Belmont.



(above) physical model representing incarceration rates through amplitude

(above) physical model including study of damage control sites





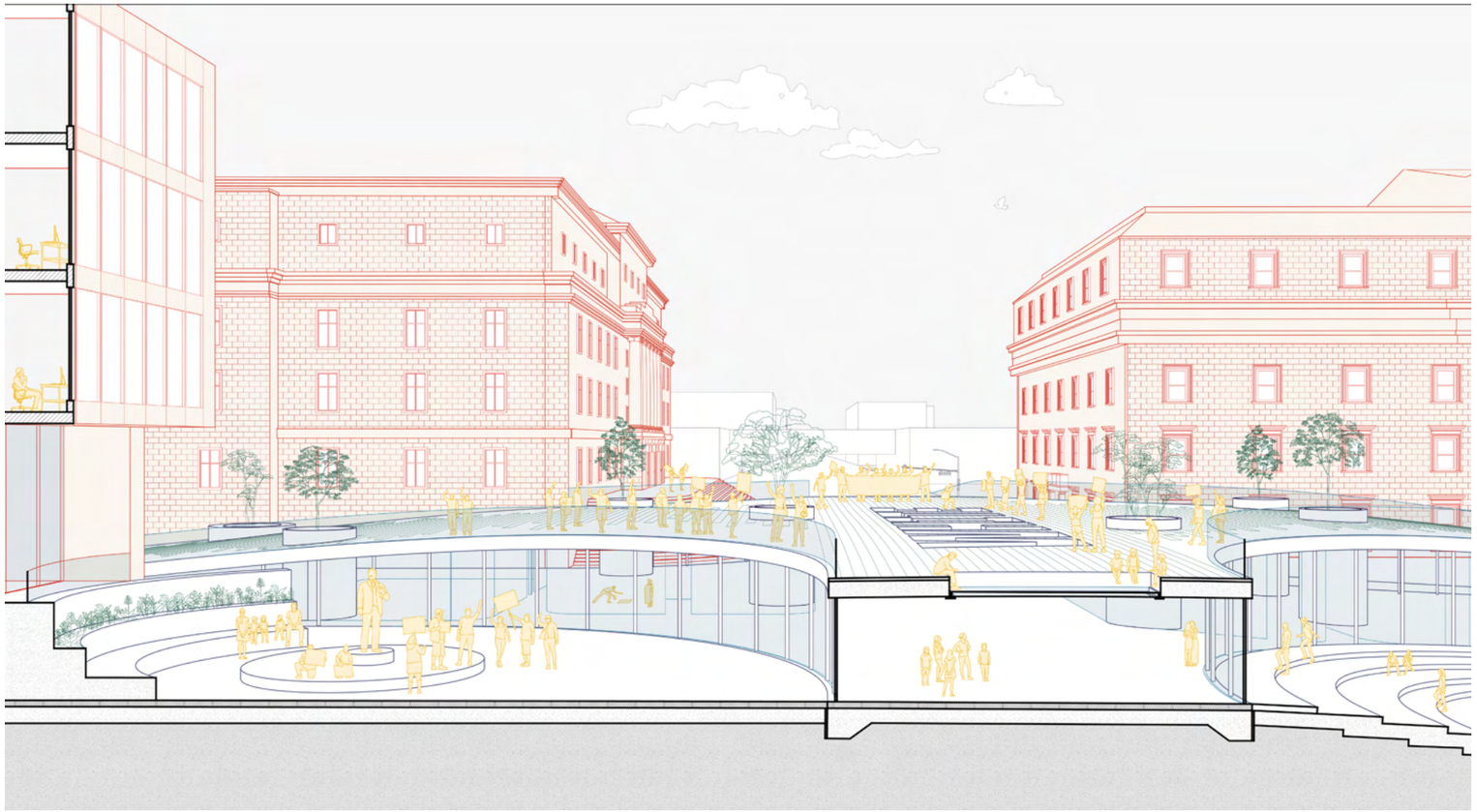
Site Analysis of Protest History

Martin Luther King Jr Blvd is a contentious site often chosen for large Newark protests over the past five decades because of the exisiting, politically charged buildings: Essex County Courthouse, Hall of Records, and Criminal Justice Center. In 2020, the street was painted with "Abolish White Supremacy, All Black Lives Matter."

Occupiable Roof to Reclaim Protesting Grounds

The proposed roofscape would create a safe haven for protestors, closing off the street and elevating the residents with a platform for social progress. The profile of the youth center honors the existing buildings and enhances the park landscape.

(above) sectional physical model



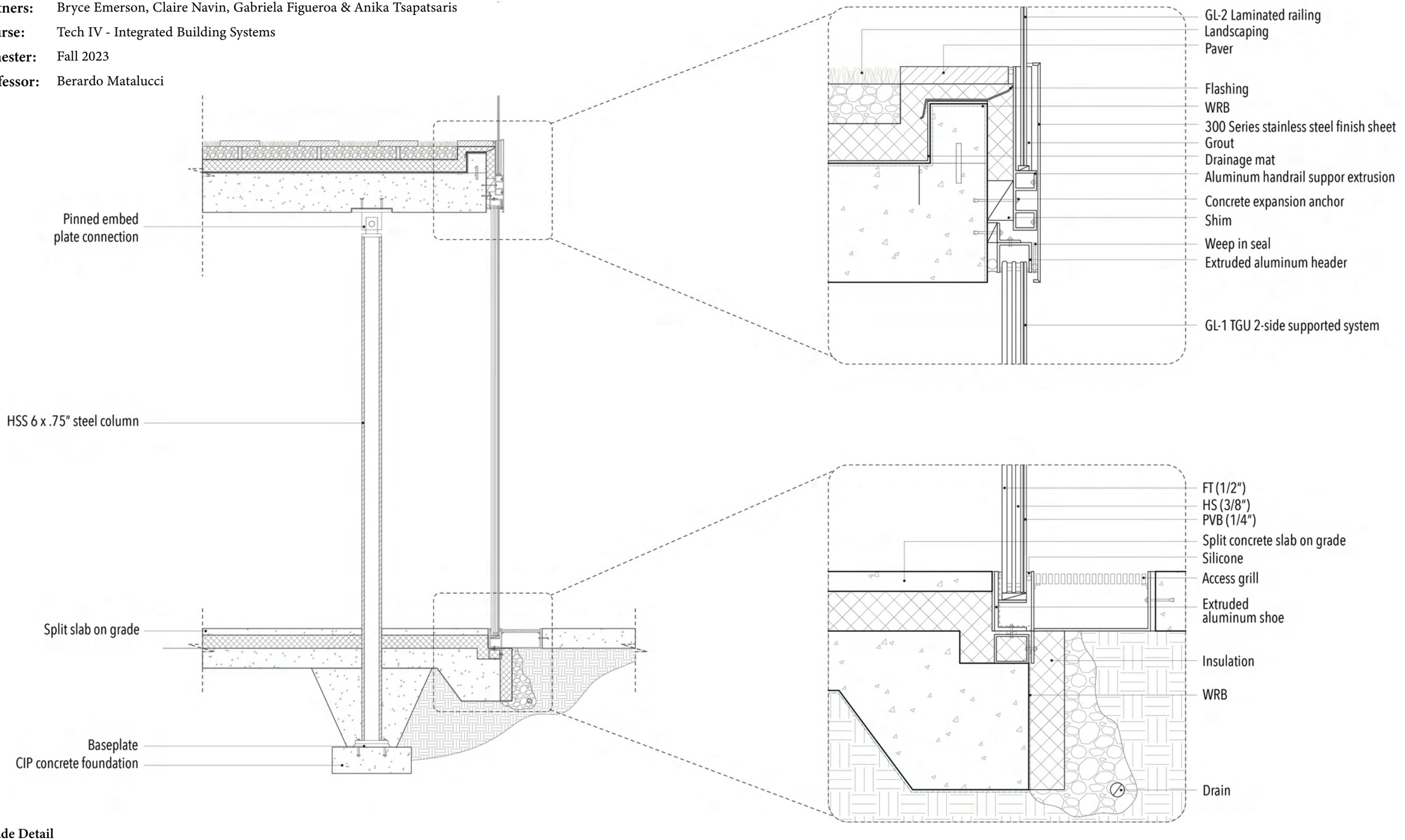
sections: (above) transverse of roofscape protest, interior youth center + MLK statue
(below) longitudinal of auditorium + library

Partners: Bryce Emerson, Claire Navin, Gabriela Figueroa & Anika Tsapatsaris

Course: Tech IV - Integrated Building Systems

Semester: Fall 2023

Professor: Berardo Matalucci



Façade Detail

For this sequence we were tasked with taking my studio proposal from the previous semester and developing it further through façade, MEP, structural, and egress systems. I took a particular focus to the façade system, where I further detailed this sectional moment. This detail encompasses the efficient structural logic, roofscape, and curved glass facade into one integrated scheme.

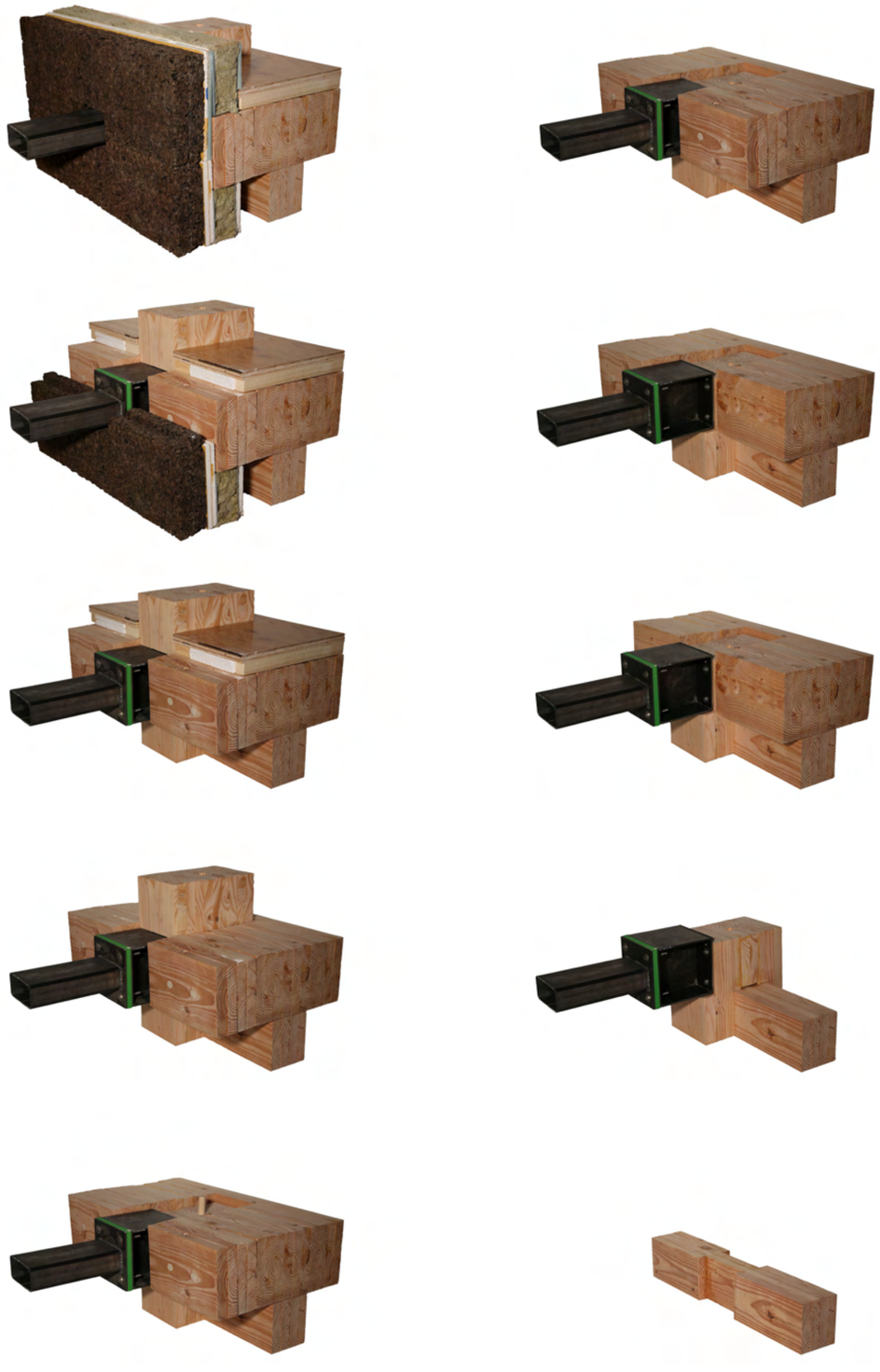
(above) model photo of floor to façade connection assembly

CONSTRUCTION and LIFE CYCLES

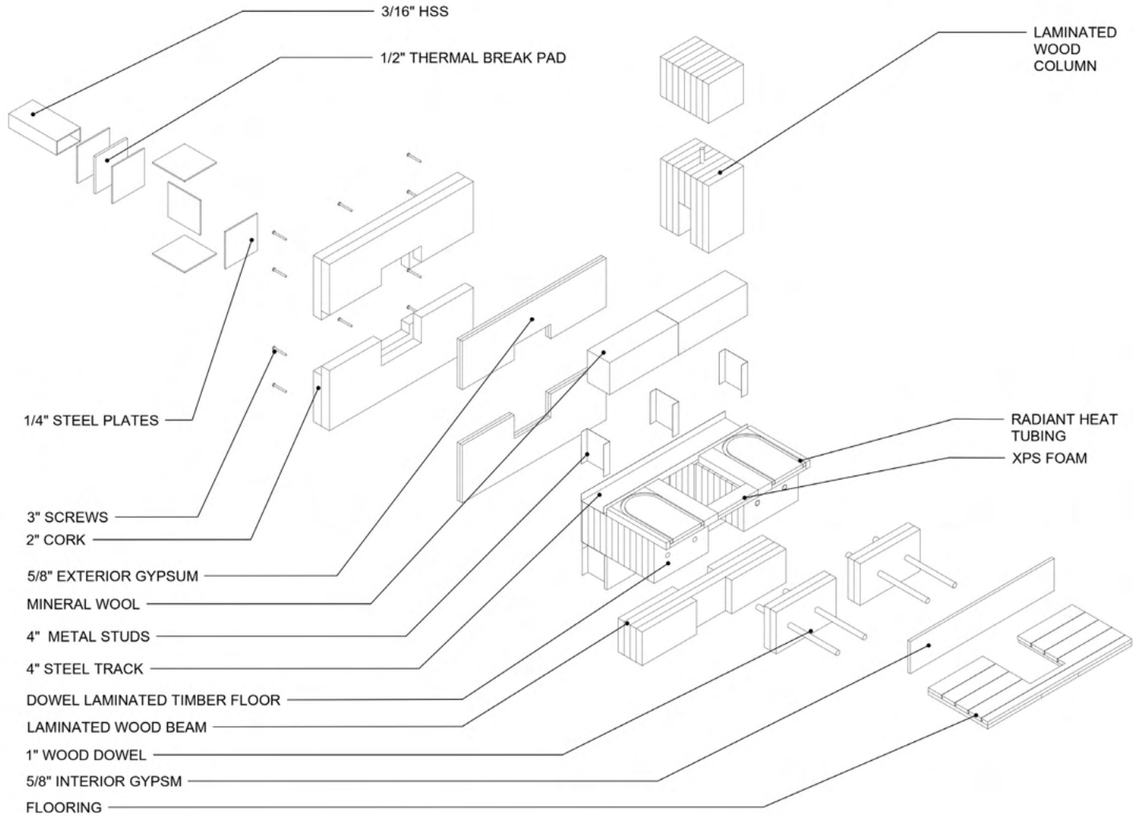
Course: Architecture Technology V
Semester: Spring 2024
Professor: Lola Ben-Alon and Tommy Schaperkotter
Partners: Brandon Gil, Jackson Key, Rory Peckham
Location: Financial District, Manhattan
Medium: 1:1 Scale Mock-Up

Description:

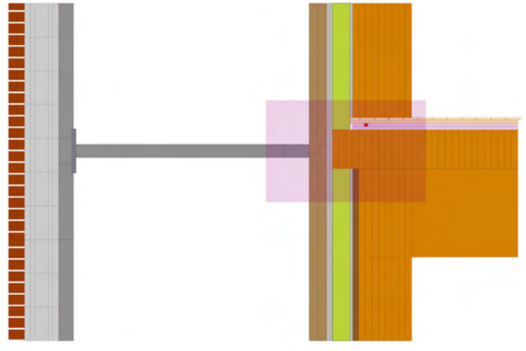
In this architecture technology course, we utilized a myriad of software to analyze the life cycle of materials. We used a teammate's previous studio project and selected a moment of interest where the facade system and floor assembly met to further detail. This semester long research culminated in a physical, 1:1 scale mock-up of the selected moment, where we highlighted key material components such as a cork facade, HSS steel tube bracket, and DLT floor with radiant heating. We stayed true to the materials and used physical fabrication as a means for continuing to design, alongside shop drawings that provided a key framework for our process. This semester grew our skills in teamwork, material research, and shop fabrication to reveal the realities of the endless considerations and components that are required for construction in the real world.

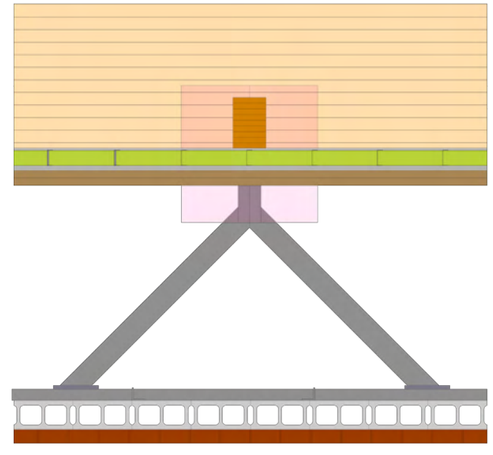


(above) disassembly of mock-up



(above) moment exploded axon
(below-left) elevation, (below-right) plan





(above) layered diagram of material production & construction assembly

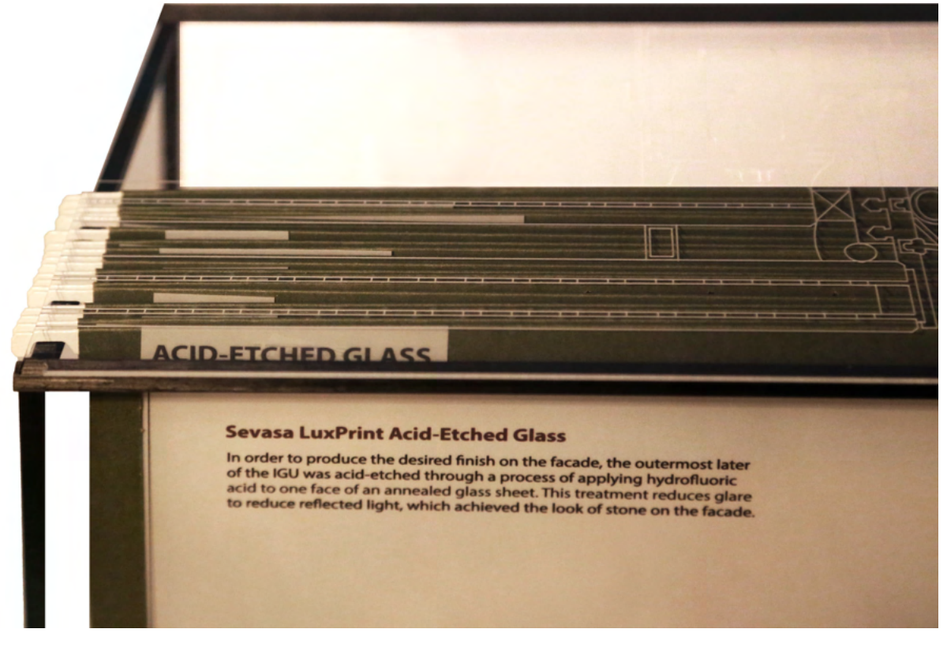
DELAMINATING THE FAÇADE:

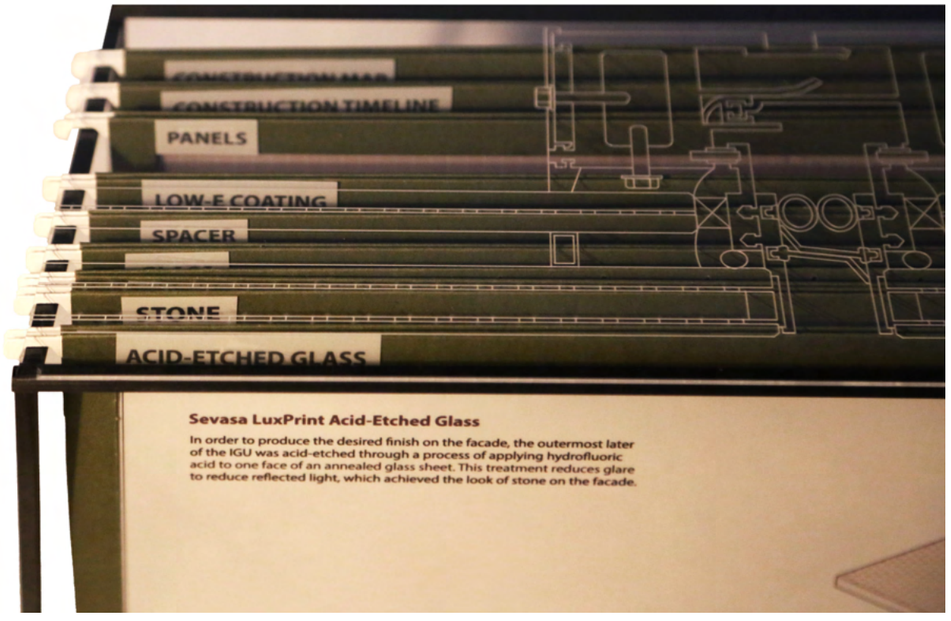
PERELMAN PERFORMING ARTS CENTER

Course: Construction Ecologies
Semester: Fall 2024
Professor: Tommy Schaperkotter
Location: Financial District, Manhattan
Program: Performing Arts Center

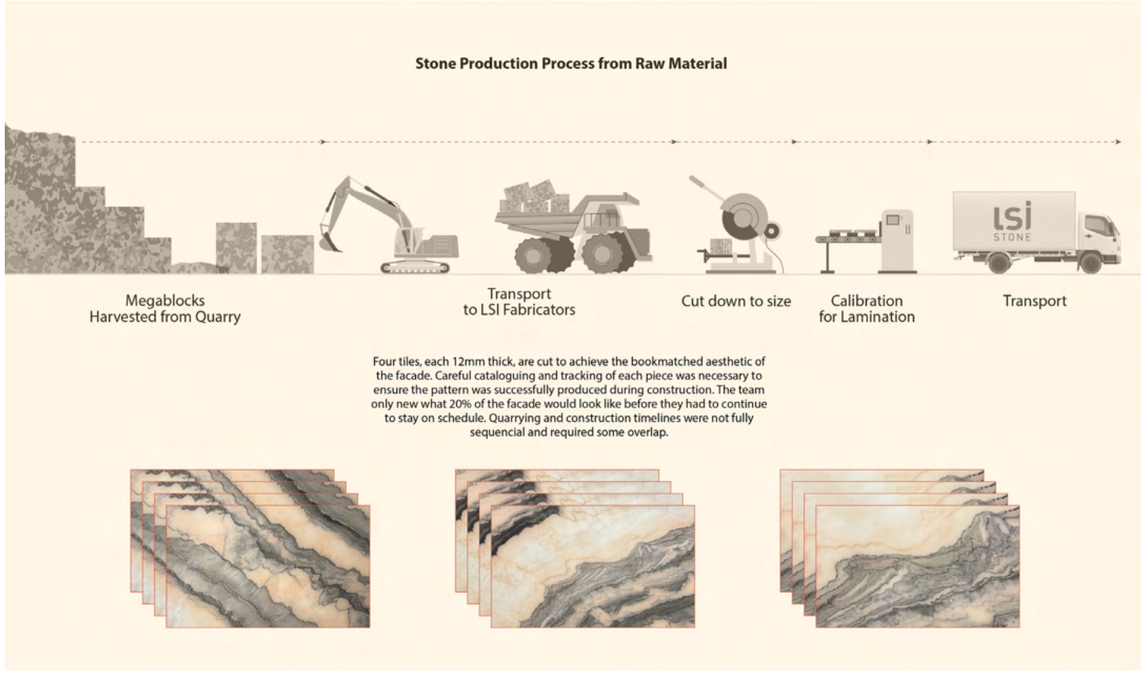
Description:

This project aims to reveal the complexities involved in the construction of the Perelman Performing Arts Center facade in New York City. Perelman, completed in the fall of 2023, features a marble facade, which required a material expertise and immense attention to detail. Particularly its patterning and aesthetic ambitions demanded a complex facade system with almost 5,000 panels. The marble itself was entirely sourced from one quarry in Estremoz, Portugal in order to achieve a consistency in veining and accomplish the bookmatched pattern on all four sides of the building. In order to delaminate the facade, which appears to be one homogenous material, this project uses physical fabrication as an exploration of construction ecologies in the Perelman Performing Arts Center. This strategy and organization of diagrams rejects the flattening of the facade that the designers achieved. While the most noticeable aspect of the design is the stone, the insulated glazing unit (IGU), required many more layers of materials that demand raw materials, energy to process them, and intensive production processes. Each facade panel has the following layers: acid-etched glass, EVA adhesive film, 12 mm thick marble, EVA adhesive film, glass, EPDM spacer, low-e coating, glass, EVA adhesive film, and a final sheet of glass. The triple laminated exterior face and additional double-laminated interior face operate to protect the stone and create the energy performance required for this commercial project. These layers all operate together to achieve performance criteria and the look of a translucent piece of stone that the architects sought after in their design aspirations. Through a series of diagrams that can be rearranged within the framework of the model, the story of the construction of Perelman's facade comes to life as the layers peel away from one another to reveal the environmental demands that emerge from the construction of complex, high performing systems such as this case study.

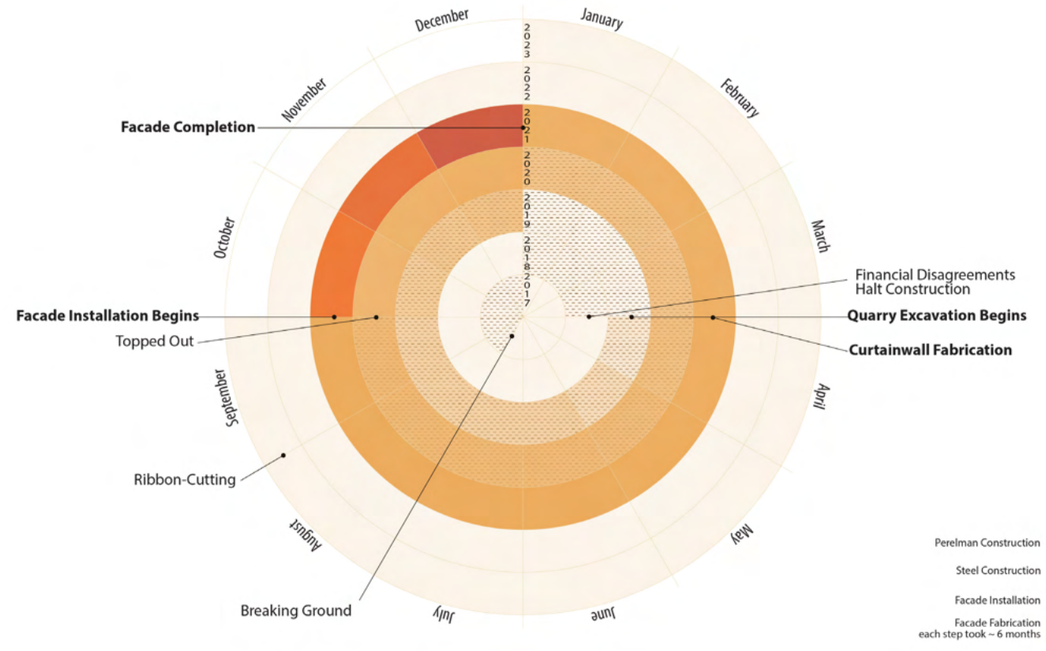


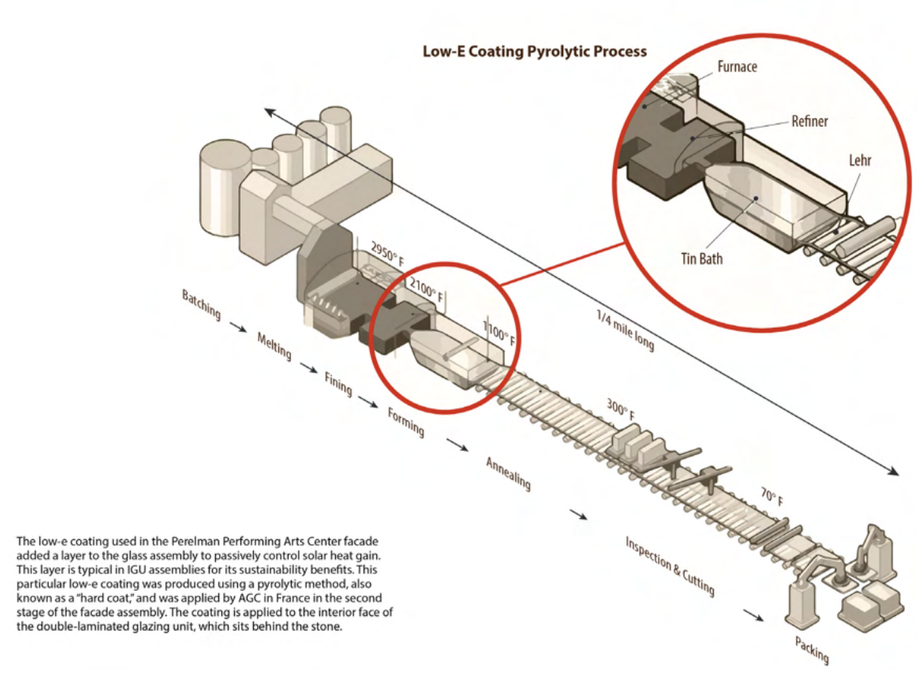


(above) layered model of diagrams detailing the construction ecologies of the laminated marble façade



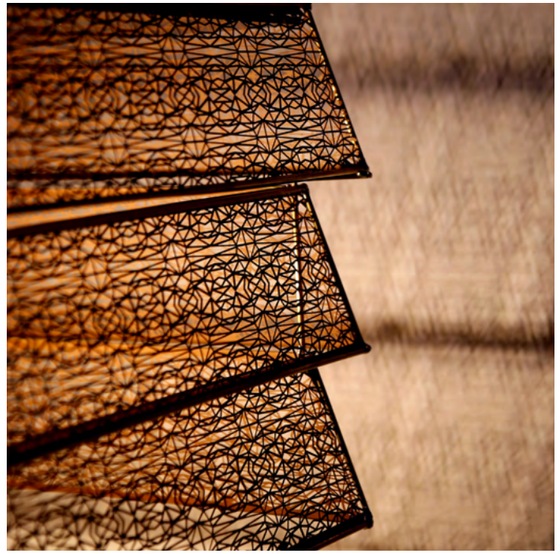
(above) construction map
(below) stone production

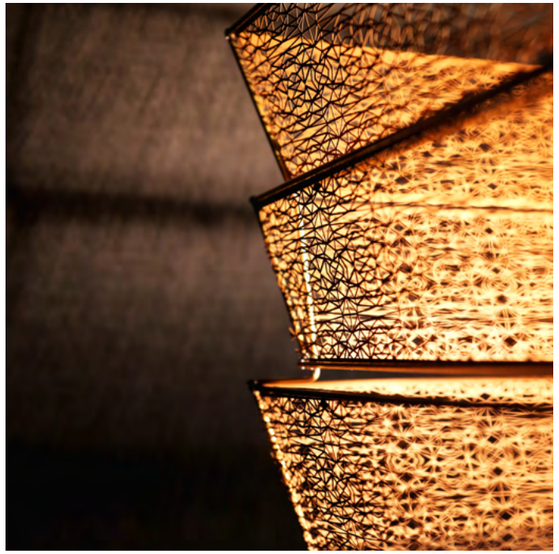




The low-e coating used in the Perelman Performing Arts Center facade added a layer to the glass assembly to passively control solar heat gain. This layer is typical in IGU assemblies for its sustainability benefits. This particular low-e coating was produced using a pyrolytic method, also known as a "hard coat," and was applied by AGC in France in the second stage of the facade assembly. The coating is applied to the interior face of the double-laminated glazing unit, which sits behind the stone.

(above) construction timeline
(below) low-e coating production





(above) lamp shade photos depicting lighting qualities

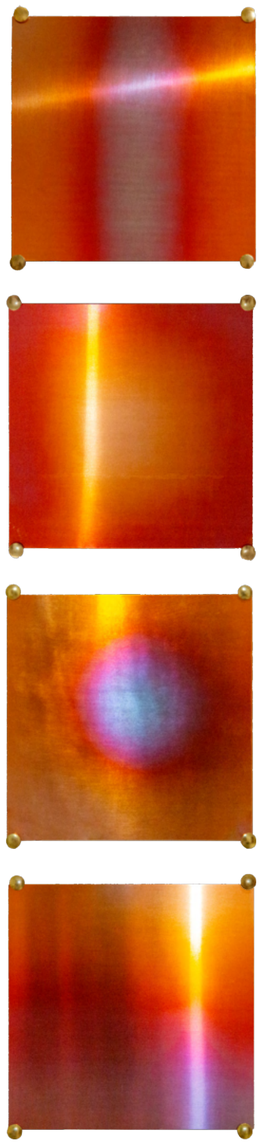
FAÇADE CASE STUDY:

NATIONAL MUSEUM OF AFRICAN AMERICAN HISTORY & CULTURE

Course: Architectural Drawing & Representation I
Semester: Fall 2022
Professor: Ray Wang
Location: Washington, D.C.
Program: Museum

Description:

In our core curriculum, we begin with an architectural drawing representation course where we choose a case study and represent the work through a range of mediums across a series of assignments. I chose the National Museum of African American History and Culture in Washington, D.C. and had a particular focus on lighting and the façade. The semester included a drawing portion, where I used a section perspective to represent the etherial conditions of the reflection waterfall room, which acts as a moment of pause in the museum. For the model, I fabricated a lamp shade using laser cut paper and soldered brass wire. The lamp shade juxtaposes the found object lamp base, and is used as a tool to examine the façade system inverted to display a projected shadow system on its surroundings. The pattern repetition and bronze materiality is accentuated by the lighting condition that is generated through the use of contrast and void space. Through this case study, I was able to explore the built environment by shifting perspective down to the object scale.



(above) exhibition installation

EXTRACTED IRIDESCENCE

METABOLIC MATERIALITY OF COPPER

Course: Metabolic Materialities
Semester: Spring 2025
Professor: Michael Wang
Partner: Liza Hegedus
Material: Copper

Description:

Four copper plates were treated with a soft annealing technique. This application of heat, embedded in the refining process of copper ore into pure copper sheets, reveals a colorful, iridescent gradient. Adjacent to the copper plates is a model of the scalar equivalents of displaced material from their extraction. In order to produce the four 0.5mm pure copper plates displayed, the height of the acrylic towers of clay soil overburden (below) and copper ore (above) were removed from the earth. This ratio was derived from research on the Kennecott Copper Mine in Utah, which is responsible for a quarter of the annual production of copper in the United States. Kennecott Mine has produced the most copper of any mine in history and remains the largest open-pit mine in the world. Our piece explores the immense scale of copper extraction and the vast amount of waste it produces by placing this reality in direct conversation with the refined copper that requires intense heat to reach purity—a purity we question by revealing its potential for iridescence.

(above) site axonometric

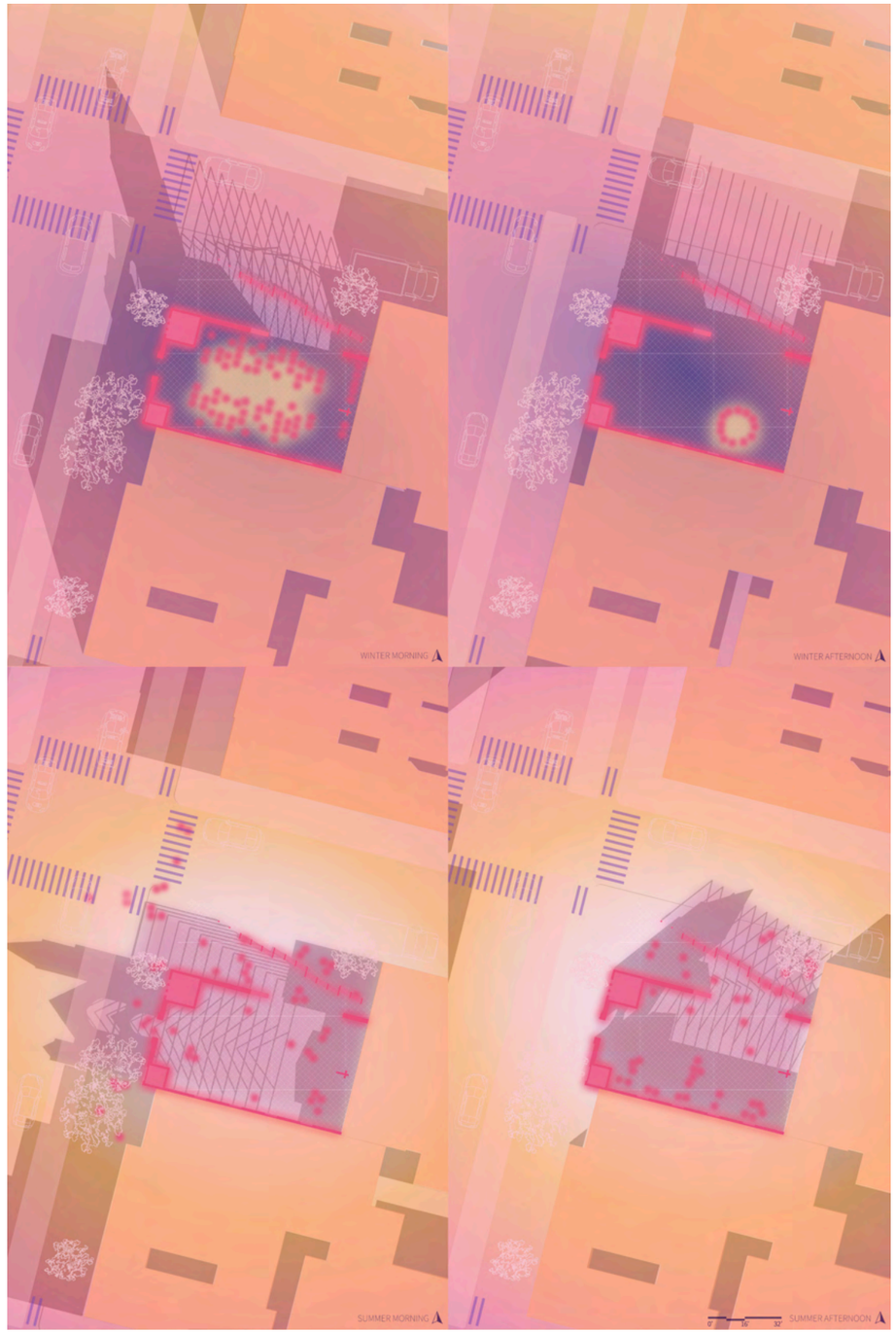
THERMAL COMFORT ANNEX

AT MIDDLE CHURCH EAST VILLAGE

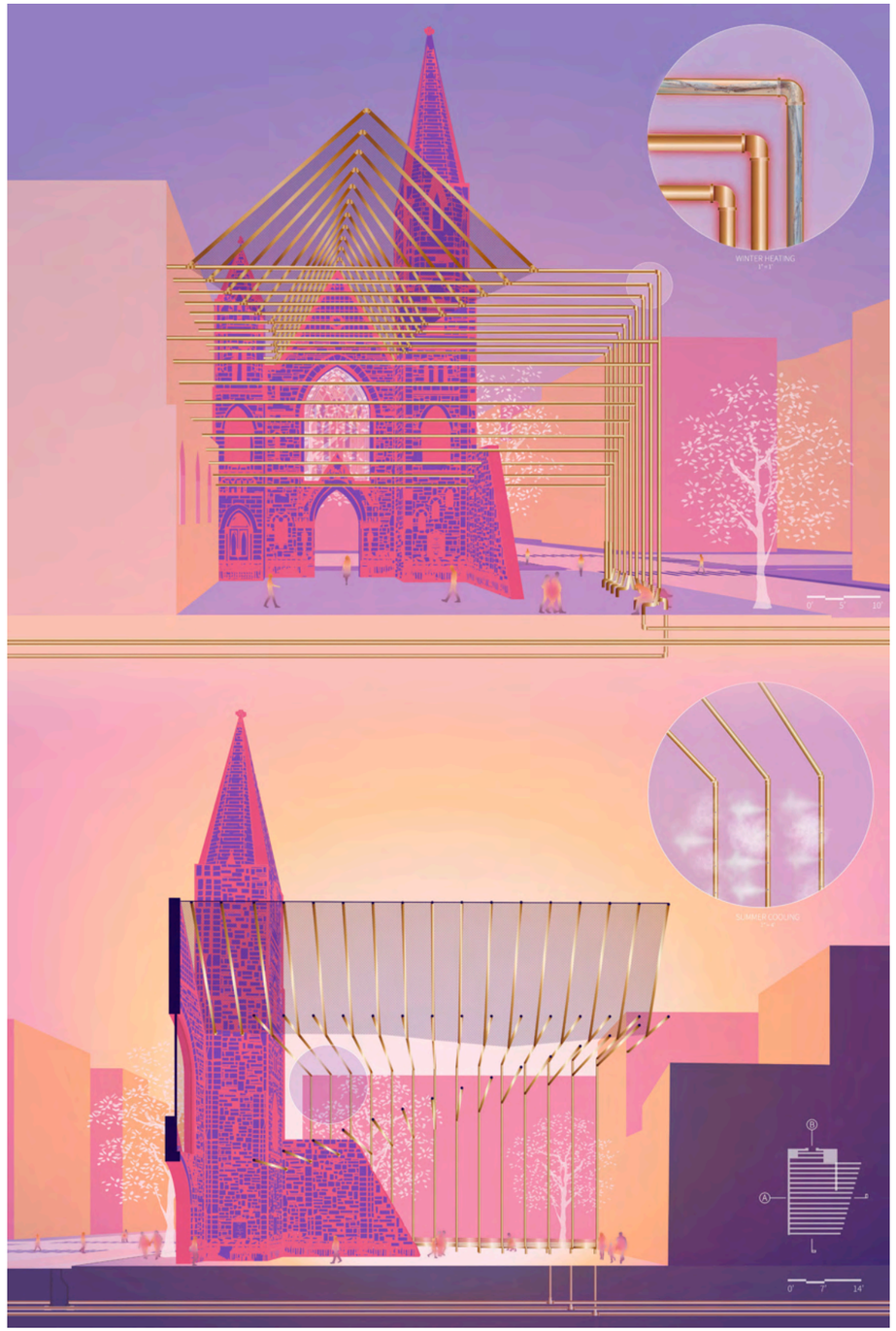
Course: Core I Studio - Broadway Stories
Semester: Fall 2022
Professor: Amina Blacksher
Location: East Village, Manhattan
Program: Public Pavilion

Description:

The site for this proposal is Middle Church at the corner of 2nd Ave and 7th St in East Village. The church was built in 1892 and sadly endured a devastating fire in 2020. As it stands today, the only surviving part of the church is the landmark facade left on a corner lot of rubble. The addition of a pipe system and the preservation of the existing facade work together to create an ethereal, sensorial experience of thermal self-regulation that offers an alternative building typology for the city. The boundary of the church vanishes, welcoming all to maximize its utilization all days of the week rather than the minimal operating hours of a traditional church in service. This rethinking of what a building could be questions the envelope to suggest a more inclusive approach to architecture in the city. The ultimate goal of this proposed form is to provide a sanctuary for the congregation that lost their house of worship in a fire while providing refuge to all who need thermal comfort throughout the year.



(above) thermal plans of pavilion in varying seasons



(above) section perspectives with warming & cooling details

(above) Train Street, Hanoi, Vietnam - photographed during Kinne week travels

TRANSFORMATIONS & PRESENCE

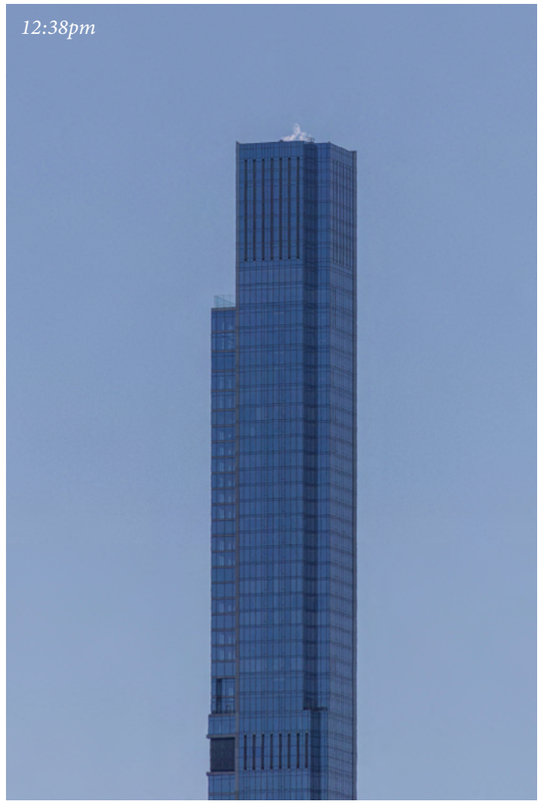
LIGHTING, SUBJECT, SCALE AND COMPOSITION

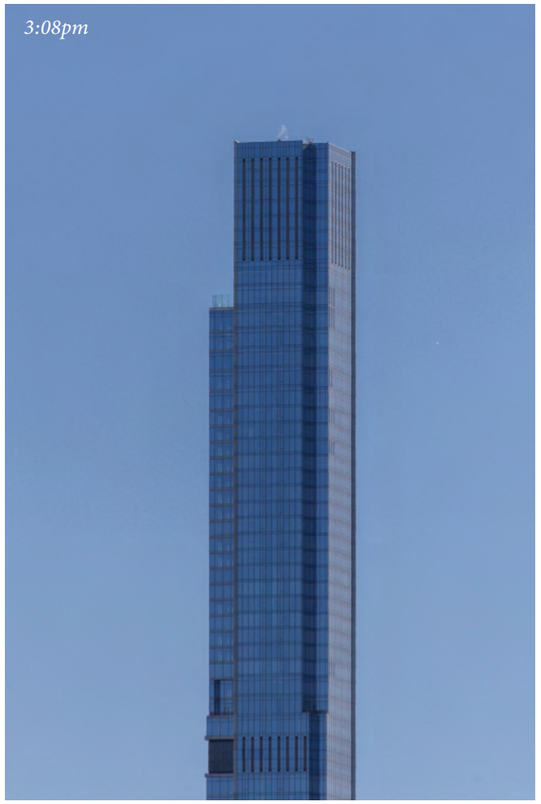
Course: Architectural Photography
Semester: Spring 2025
Professor: Michael Vahrenwald
Location: Kinne Travels & Manhattan
Camera: Canon 6D

Description:

Through concentrated assignments chronicalling technical features of architectural photography, this course enabled me to explore the complex scenes of urban conditions. The planning, adapting on-site, and post-processing merged to formulate photographic sequences with an emphasis on narrative and informative storytelling. Bringing viewers into the scenes through immersive images required sensitive compositions, emotive subjects, and a textural quality to the work. Balancing the technical with artistic liberty offered a unique chance to explore, challenge myself, and grow in photographic skills in an academic setting. Going forward, the lessons I want to take from this course and work developed is the care given to the conditions of the shoot, the individuality that each building demands as a subject, and the critical importance of capturing space and presence through the lens of a photographer and an architect. This course was a culmination of my interest in photography as a medium to portray the architectural landscape, especially in the context of New York City.

(above) lighting study of Midtown Manhattan





(left) lighting study of Central Park Tower
(right) lighting study of Upper West Side

(above) study of the Salt Shed in Lower Manhattan

(above) shadows add to the texture of the façade

(above) Spatializing Reproductive Justice Exhibiton, Avery 100

DIGITAL PHOTOGRAPHY

AVERY COMMUNICATIONS AND EVENTS

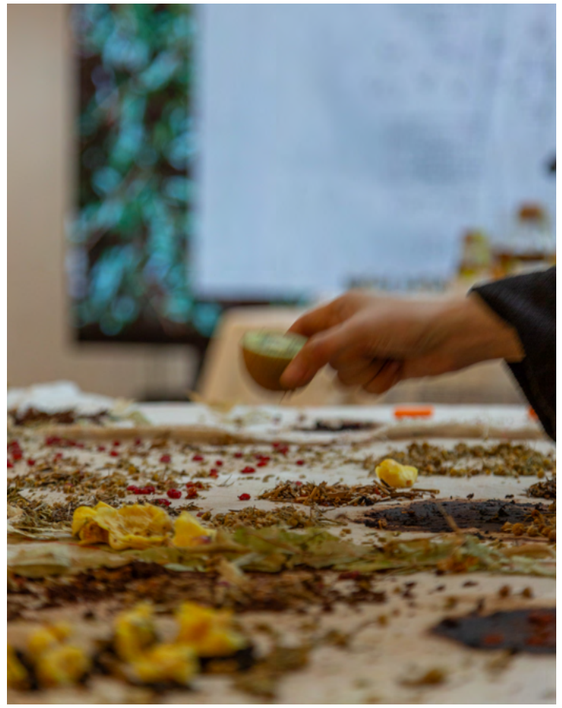
Position: GSAPP Communications Photographer
Semester: Fall 2023 - Spring 2025
Advisor: Ilana Curtis
Events: Lectures, Reviews, Exhibitions
Camera: Canon 6D

Description:

As a photographer for the Communications Office at GSAPP, I covered events and reviews for the student body and incredible guest speakers that we welcome to campus. This job allowed me to combine my extracurricular passion of digital photography, which I have been doing since early high school, with my love for my graduate program. I enjoy documenting and sharing the inspiring work and cherished moments of the school to capture an archive that can live on in the program. In addition to the live events and reviews that I attend, I also process and edit photos using Lightroom and Photoshop. I have exponentially grown in my skills and speed with capturing and editing, while enjoying the positive impact it has had on my classmates to receive photos capturing their important memories from their time in the program. I am passionate about celebrating the work in Avery Hall through my lens to give back to the community.

(above) Open House Lecture: Hilary Sample, Wood Auditorium

(above) Guest Lecture: Madelon Vriesendorp, Wood Auditorium
(below) Core III Final Reviews, Fall 2023, Avery 400



(above) Edible Summit, Avery 100

(above) Library is Open 14, Bernard Tschumi

(above) Actioning Summit 4, Wood Auditorium

(above) Buell Center Exhibition, Avery 200

(above) Feminist Spatial Practices, Avery 100

(above) Kenneth Frampton Symposium, Avery 400

GRADUATE M.ARCH PORTFOLIO, CLASS OF 2025 BY ***JORDAN HOWARD***