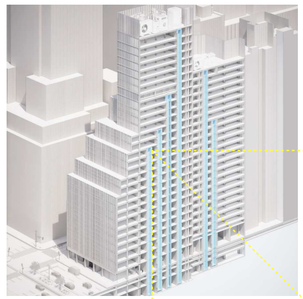
SOFIA HERNANDEZ

PORTFOLIO GSAPP - 2025

RETHINK

REDESIGN

RELEARN



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RE

A Manifesto of

RE-ARCHITECTURE

As I reached the end of my studies at GSAPP, I began to recognize a quiet but persistent pattern. Many of the courses I took were framed by a shared prefix: RE-. Re-Park Avenue challenged us to reimagine a soon-to-be-demolished office tower; Rethinking BIM questioned the limits of software as design ideology; Reinventing Living in Latin America explored alternative modes of inhabiting informal contexts; and in Rebirth Bricks, I studied a project that turned debris from disaster into material for reconstruction. Without consciously seeking it, the RE- emerged as a structural theme across my education.

I started to wonder: what does it truly mean to design through the RE? Is it about repetition? Restoration? Or is it a deeper act of resistance—a deliberate interruption of architectural inertia? At GSAPP, RE- became more than a linguistic accident; it was a pedagogical, critical, and existential tool. For me, it meant pausing the linear obsession with novelty and instead choosing to reengage with what already exists—the built, the broken, the discarded, the invisible—and finding within it the raw material for transformation.

Initially, many of my projects engaged RE- tactically: reclaiming waste, reconfiguring systems, reinhabiting obsolete structures. But over time, this logic deepened. I became increasingly drawn to what is mutable, alive, and systemic. My interests shifted toward the biological, toward the material intelligence of fungi, toward matter that grows, decays, and reorganizes itself. I began to see architecture not as form, but as metabolism—a choreography of dependencies between bodies, technologies, infrastructures, and ecologies. I stopped asking what I could design as an architect, and began to ask what kinds of systems I could activate, nurture, or recode.

This portfolio is both a visual and conceptual journey through that shift. Each project opens with a RE-, not as rhetoric, but as a mode of inquiry. From furniture recovered in the streets of New York to housing systems grown from agricultural waste and mycelium, these works explore architecture as a recursive, relational, and biological practice. A practice that listens as much as it draws. A practice that begins not with the blank page, but with the traces of what already is.

Among all the RE- prefixes I've worked through, the most important has been ***to relearn my role as an architect.*** Before GSAPP, I was trained in a more traditional model—one where architecture meant buildings, drawings, deliverables. The final product was always a building.

GSAPP disrupted that completely. It taught me that architecture is not the design of objects, but the design of systems—material, social, productive, and symbolic. I learned to see myself not as an author of forms, but as an orchestrator of relationships. A system-thinker. A translator between scales, agents, and ecologies. Someone who operates not only at the level of structure, but at the level of process, metabolism, and interdependence.

Architecture is no longer, for me, a matter of authorship—it is a matter of organization. Of tracing cycles, opening networks, and designing the conditions for transformation. This portfolio doesn't present finished forms. It presents positions, processes, and mutations. It doesn't celebrate novelty, but insists on the radical act of re-seeing, re-touching, re-thinking—again and again.

COURSE NAME: EXTREME DESIGN | DATE: FALL 2024 | PROFESSOR/INSTRUCTOR: Mark Wigley

BIOCYBERNETIC FUTURES: A MANIFESTO FOR BIOTIC ARCHITECTURE

1.0 MAN PLUS: The Human-Machine Symbiosis

The search for transcendence, inherent to human nature, finds its most radical expression in Machines, which were initially conceived as mere tools to overcome human limitations and extend our life expectancy, have evolved into symbiotic extensions of our body and mind. The concept of "Man Plus" reflects this transformation, where advanced prosthetics and brain-computer interfaces not only expand our physical and cognitive abilities but, in many cases, completely redefine them. In this new reality, the line separating the human from the artificial begins to blur, creating a hybrid coexistence that redefines what it means to be human.

This process of symbiosis is not only an expansion of the biological but a reconfiguration of the very self. Just as the microscope and the telescope expand our perception of the world, current technologies allow humans to transcend their physical and mental limitations, giving way to a new form of existence. Thus, a fundamental question arises: to what extent can we continue to speak of the human as something separate from the technological? Man as a Cyborg: Man as a cyborg contrasts with traditional dichotomies that pit the natural against the artificial. If we consider that the natural is not a fixed state, but an evolving construct in constant transformation, then the cyborg does not represent a break with our essence, but its most coherent extension. Throughout history, humanity has incorporated external elements as part of its own identity, from primitive tools that amplified our physical capacity to current technologies that enhance our mental abilities. The cyborg is not a leap toward the unnatural, but the logical continuity of a symbiotic relationship that reflects our adaptive essence and our ability to transform and be transformed by the environment.

COURSE NAME: EXTREME DESIGN | DATE: FALL 2024 | PROFESSOR/INSTRUCTOR: Mark Wigley

2.0 The "Stoned Ape" Theory: Mushrooms Taught Us to Speak

The desire to extend human abilities beyond biological limits is not a new one; humans have also experimented with hallucinogenic substances to alter their reality and transcend our "boundaries." The Stoned Ape Theory, proposed by philosopher Terence McKenna, suggests that psychedelic mushrooms could explain a significant leap in human evolution. The theory claims that the transition from Homo erectus to Homo sapiens and the cognitive revolution were driven by the introduction of psilocybin mushrooms, specifically Psilocybe cubensis, into the human diet around 100,000 years ago. The consumption of Psilocybe cubensis by Homo erectus stimulated an expansion of neural connections, facilitating the emergence of language and more complex cognitive abilities. Based on this theory, the mushroom granted us the capacity for language.

When we ask ourselves, what makes us human? What sets us apart from other animals? One of the differentiators humans have used to position themselves as a superior and "distinct" species is our ability to use complex language. Our skill to develop, learn, and employ complex, symbolic languages to communicate is considered "unique." However, what position of power can we take in relation to other species, when it was thanks to one of them—the "magic" mushrooms—that we became human? If these mushrooms, through their influence on our minds and consciousness, played a fundamental role in what we understand today as "humanity," we could consider that perhaps mushrooms are, in fact, much more developed and conscious than we imagine. In this sense, we could contemplate whether the true purpose of the mushrooms was not simply to influence human evolution but to expand their own capabilities through us.

3.0 Fungal Transactions

It is fascinating to consider how fungi might transform the neural networks in a primate's brain to enable the understanding of language. Similarly, fungi have the ability to create communication systems between plant species. The mycelium functions as a neural network, enabling the complex exchange of resources and information between trees and plants.

Through a mycorrhizal system, the mycelial network shares essential nutrients—particularly scarce ones like phosphorus. In return, fungi receive carbohydrates from trees, forming a mutually beneficial relationship. Beyond nutrient exchange, mycelium acts as a communication network.

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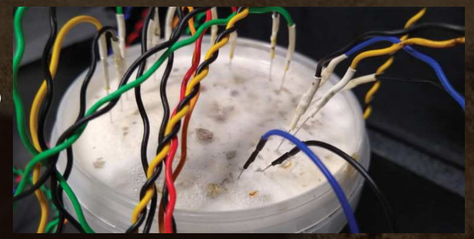
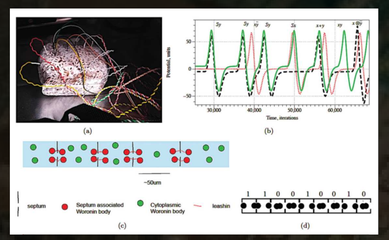
6.0 Cybernetics Architecture and Fungi Communication; The Language of the Machine and the Language of the Fungus

The notion of invisible networks and underground systems, finds a direct parallel in the "motherboard architecture" of a computer. Just as networks connect the various components of a city, the motherboard of a computer is an interconnected structure that allows information to flow between the different elements of the system.These components do not operate in isolation; rather, they depend on constant communication to coordinate and perform the tasks that define the computer's function. At the core of this architecture, the fundamental language is binary—a sequence of ones (1s) and zeros (0s). This numerical system, seemingly simple, enables all information within a computer to be processed, stored, and transferred. The circuits on the motherboard interpret these binary signals, sending them through the internal connections of the board in the form of electrical pulses that represent data. This binary language not only allows the different components of the motherboard to communicate, but also facilitates the organization and coordination of functions. The CPU, for instance, is responsible for interpreting these pulses, performing calculations, and making decisions based on the information it receives.

7.0 Fungi Language



In the underground world of mycelium, fungi emit chemical and electrical signals that not only aid in the transmission of nutrients but also allow a form of "language" between the different organisms interacting within the ecosystem. This language creates a communication network between species, reflecting a distributed intelligence.
Fungi communicate by sending electrical signals to each other through hyphae—long tendrils they use to grow and explore. Scientists have inserted tiny microelectrodes into mycelia to measure these electrical signals. Research has shown that the frequency of electrical impulses traveling through hyphae, similar to neurons, increases when fungi encounter new food sources. This suggests that fungi might use this "language" to share environmental information.
The translation of the electrical spikes produced by fungi in response to stimuli can be interpreted within the framework of a binary language of 0s and 1s—0 for the absence of an electrical spike and 1 for the presence of one, much like computational language. This leads to the intriguing thought of having a common language with these beings.



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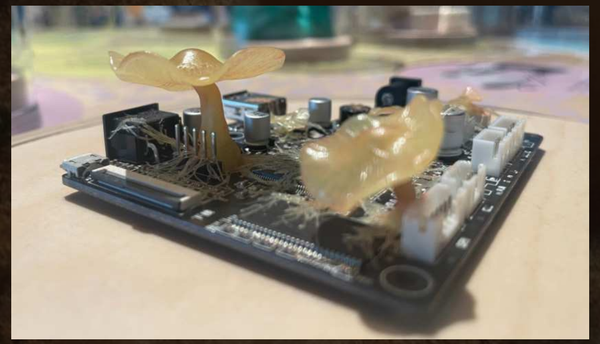
8.0 Fungal Computers: The Doped-Up Machine

Creating a common cybernetic language, initially binary, with fungi opens up the possibility of extending the "technological" limits of current computers. Today, scientists are exploring how the binary language of fungi and their neural architecture could enhance computing. Researchers are developing fungal computers, where mycelium acts as both conductors and electronic components. In these systems, information transfer relies on the neuronal spiking activity of the mycelium, offering a novel approach to data processing and communication.

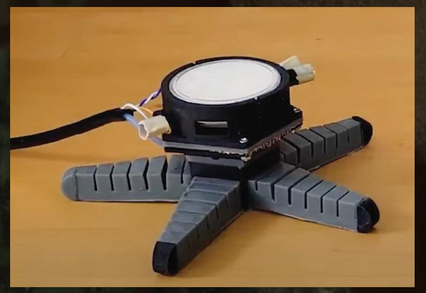
These "fungal computers" not only represent a new frontier in computing but also challenge our understanding of what constitutes a machine. The fascinating aspect of fungal computers is that mycelium is a living organism capable of growing, evolving, self-regenerating, and reconfiguring itself while consuming minimal energy—features traditional computers cannot replicate.
A fungal computer could naturally enhance its capabilities over time. By connecting fungi to computers to manage tasks, the fungus would acquire agency, taking on an active, autonomous role in decision-making. The idea of having computers powered not only by electricity but also by organic matter—such as sugars, wood fragments, or even manure—raises exciting new possibilities for computing in the future.

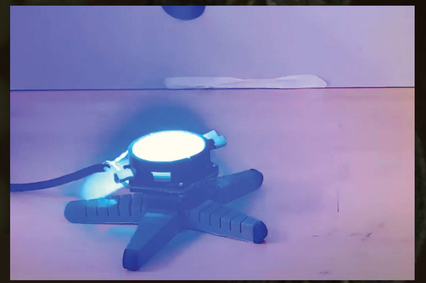


9.0 Fungi-Controlled Robots: Fungi at the Service of Humans? Or Humans at the Service of Fungi?

As of 2024, the existence of biological robots has become a reality. A series of experiments are exploring how fungi can help robots sense and respond to their environment, enhancing their autonomy. By integrating mycelium into a robot's electronic system, the biohybrid machine gains the ability to detect and react to environmental changes. In one such experiment, light was used as an input, and the fungus was able to move a wheeled robot, similar to a car. Researchers exposed the robots to ultraviolet light, causing them to alter their

movements and demonstrating the mycelium's ability to respond to environmental stimuli. One researcher noted:
In this context, it’s worth considering ethical questions: is humanity exploiting fungi by subjecting them to stress to produce electrical responses according to our will? Is this a new form of slavery for fungi, serving humans? Are we mistreating and causing suffering to a fungus in order to move a robot? What rights do fungi have?
But what if, in reality, this is what the fungus desires? The ability to acquire autonomy of movement, using us to design their new bodies?

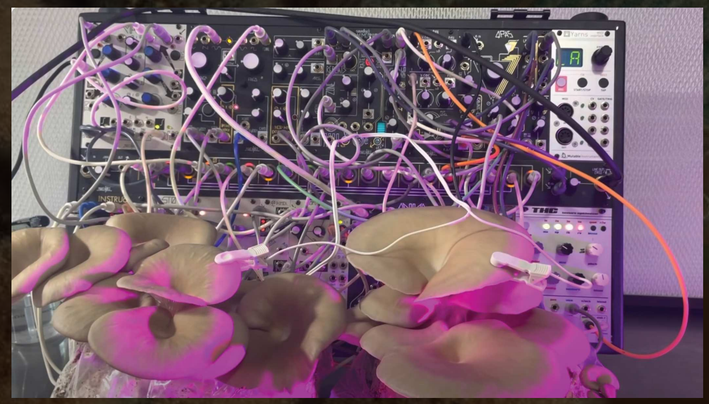




10.0 Fungi-Plus

Bio-robots controlled by fungi or bio-computers are the new bodies and machines anchored to fungi, enabling them to move like a car, jump like a spider, and communicate through a language like a human. This evolution could be termed "Fungi Plus." The Fungi Plus is a hybrid being, capable of regeneration, decision-making, and full of contradictions, but above all, it is a natural entity. In this realm, there is no clear separation between machine and organism, or between the technical and the organic.
The Fungi Plus and the realization of a common language challenge human anthropocentric views of intelligence and culture. Language—once a hallmark of "advanced" human

evolution—ceases to be the argument for placing us in a position of superiority, power, and domination over other beings. Instead, it transforms into an interspecies communication tool that would allow us to empathize and engage in dialogue with microbes, fungi, and bacteria, facilitating communication across different beings and scales.



11.0 Trans-species Biopolitics and Biotic Architecture

A political system that includes direct communication with fungi and other forms of life would imply a trans-species biopolitics, where the interests of all organisms—humans, fungi, bacteria, etc.—would be considered in decision-making. In a future where computers act as communication bridges between species, we could imagine a paradigm where humans, FungiPlus, BacteriaPlus, and other microbes could understand each other and coexist as equals.

The principles of a trans-species biopolitics would challenge current hierarchical and mediating structures, questioning the traditional roles of leadership and avoiding the anthropocentric biases that have dominated our conception of power and decision-making. In this new scenario, FungiPlus could gain political representation in areas such as urban design, architecture, or sustainable development, allowing their voices to be heard in decisions that affect both ecosystems and human societies. This horizontal and collaborative political model would not only dismantle existing hierarchies but would also open the possibility of imagining a true biotic architecture, where life, in all its forms, is understood as an interdependent web. This radical shift in our social organizational system would lead us to rethink the relationship between species and redefine what it means to inhabit and build on the planet, recognizing the complexity and interconnectedness of all life.

And perhaps, in this biocybernetic future, if the FungiPlus take power, don’t worry about elections every four years. With their slow and constant pace, they’d probably vote once every century... and still, they would reach a wiser decision than we ever could.

MUSH-ROOMS: A progressive system for cultivated housing

COURSE NAME:
VITAL STUDIO.
ADV VI

DATE:
SPRING 2025

PROFESSOR/INSTRUCTOR:
DAVID BENJAMIN

PARTNERS:
LOUIS ARTEAGA

COURSE NAME: ADV VI – VITAL STUDIO | DATE: SPRING 2025 | PROFESSOR/INSTRUCTOR: DAVID BENJAMIN | PARTNERS: LOUIS ARTEAGA

COURSE NAME: ADV VI – VITAL STUDIO | DATE: SPRING 2025 | PROFESSOR/INSTRUCTOR: DAVID BENJAMIN | PARTNERS: LOUIS ARTEAGA

India faces one of the largest housing crises in the world, with millions of families lacking access to affordable housing. Alongside this, the country grapples with significant environmental challenges, including the massive generation of agricultural waste and plastic pollution. Compounding these issues is India's housing shortage, with more than 30 million new homes needed by 2030 to accommodate the rapidly growing population. This creates an urgent need for sustainable, scalable housing solutions that not only address the housing demand but also take into account the environmental impact of traditional construction methods.

In response to these intertwined challenges, we developed Mush-Rooms, a progressive housing system that uses mycelium+ plastic waste based bricks to create sustainable, adaptable homes. Our goal was to design a housing system that integrates recycled materials such as agricultural waste and plastic, transforming them into carbon-negative bricks that could be used to build homes that grow and adapt with the families who inhabit them.

The key material, ***mycelium***, is a living organism with binding and regenerative properties that allow it to bind agricultural waste and plastic into a single, reusable material for construction. By combining 15% shredded plastic with agricultural waste, we created bricks that are not only environmentally friendly but also incredibly lightweight and adaptable.

The Mush-Rooms concept proposes a progressive housing system in which families can cultivate or purchase bricks, gradually constructing their homes and growing them over time. The system is built around the idea of transformability—the bricks can be easily disassembled and reassembled, allowing families to adapt their homes to their changing needs. This creates an ongoing relationship between the family and the home, where the structure grows with them, rather than being a fixed, unchanging object.

Mush-Rooms: Reimagining Housing as a Mobile System

In this project, families live in affordable rental units while gradually accumulating mycelium bricks. Once they've gathered enough bricks, they can transport their home—essentially, their accumulated bricks—in a truck to a new location, creating a truly mobile architecture. This system challenges the traditional concept of architecture as immobile, where buildings are permanent fixtures. Instead, through the use of lightweight, easily assembled interlocking bricks, the family can disassemble their home, move, and reassemble it wherever they choose.

The design of the building reflects this new way of thinking. Beyond its aesthetic appearance, the building functions as a house factory—a structure that temporarily houses families while supporting the production of their homes. The building itself becomes part of a metabolic system, where agricultural waste enters as raw material, and over time, it transforms into homes that can be distributed and reconfigured. ***We designed a tower that avoids the construction of more towers***

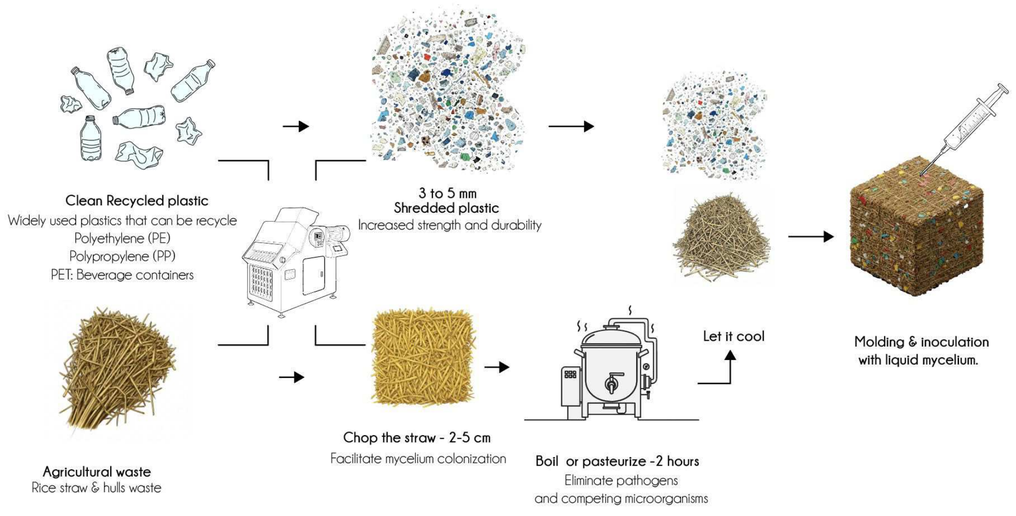
What if we mixed mycelium, agricultural waste, and plastic?

Mycelium + Agricultural waste
Rice straw & hulls waste

Shredded plastic
Increased strength and durability

Mycelium - Plastic Brick
Mycelium: Absorb CO2
As a Binder

Material Process



Material exploration

15% Plastic

15% plastic - dry for 3 days

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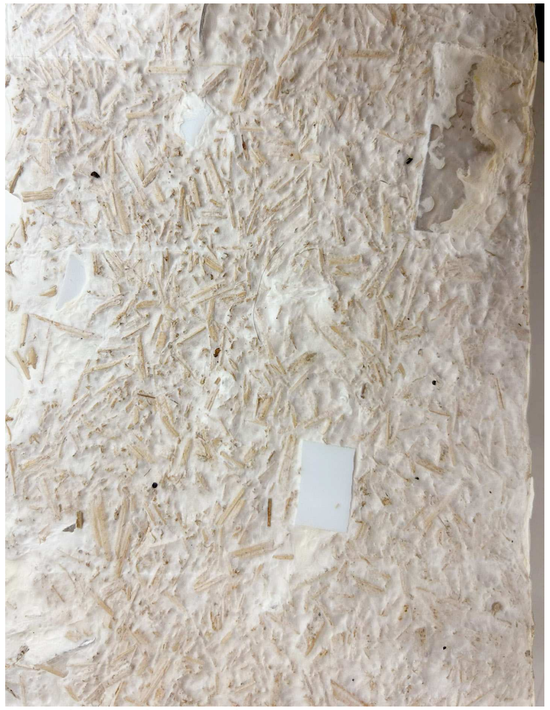
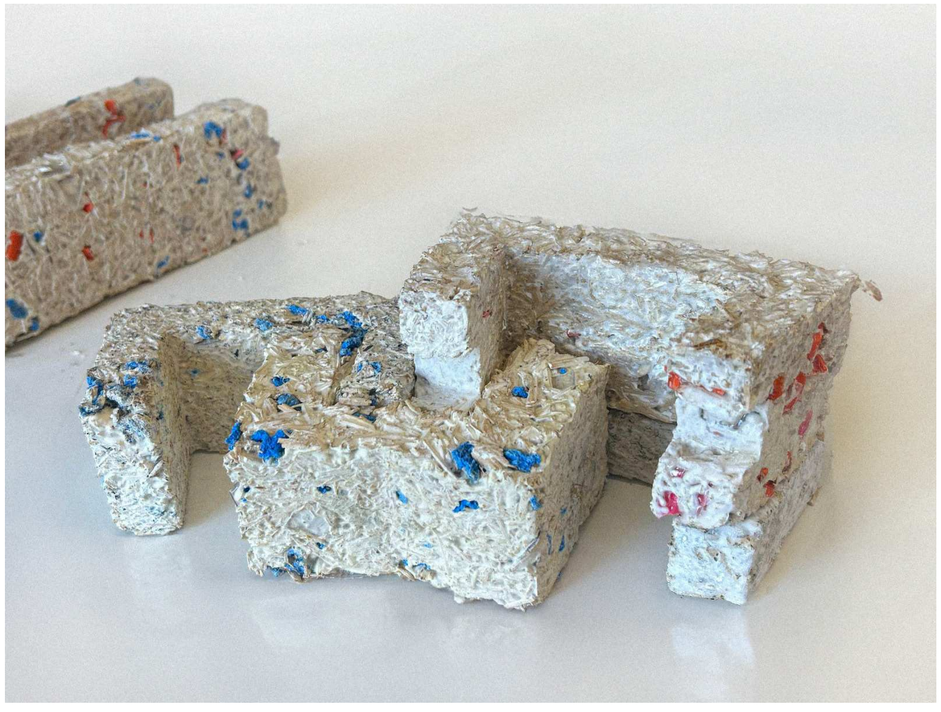


10% plastic - dry for 8 days

.



COURSE NAME:	DATE:	PROFESSOR/INSTRUCTOR:	PARTNERS:
ADV VI – VITAL STUDIO	SPRING 2025	DAVID BENJAMIN	LOUIS ARTEAGA

Interlocking system

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1:1 scale mycelium + plastic brick

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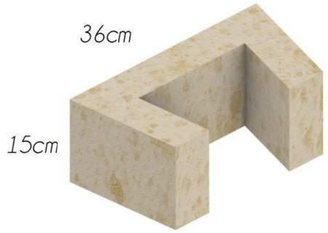
The Brick
(interlocking system)

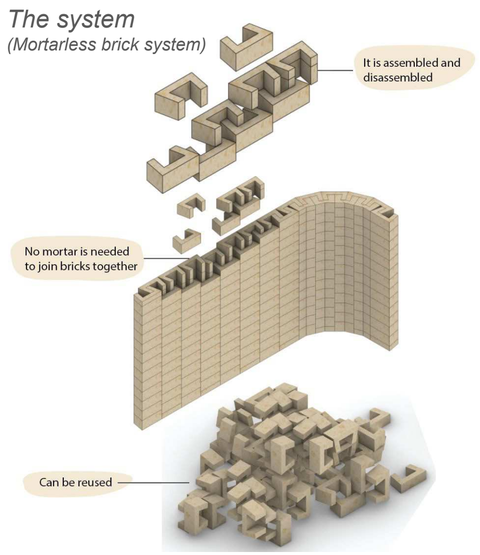


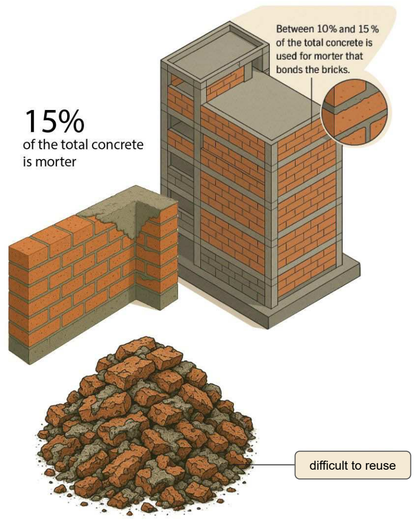

Rotate

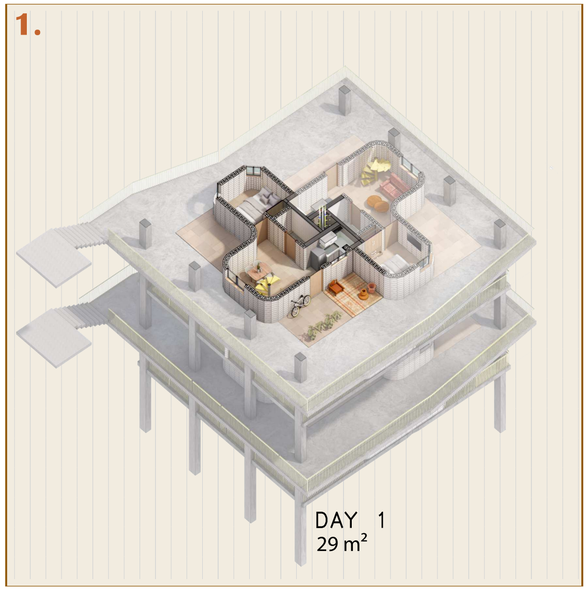

Corner

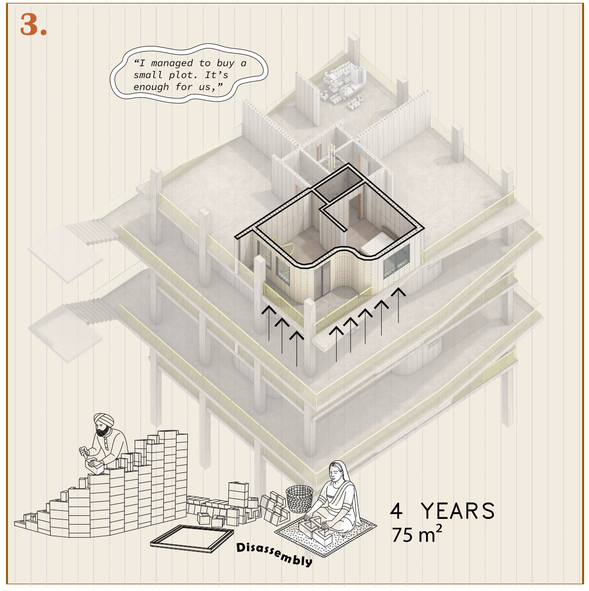
The design centers around the mycelium brick, a material that allows for intuitive assembly without the need for mortar, creating walls that can be easily disassembled and reused. This system not only reduces the environmental impact of traditional building materials (by eliminating the need for mortar) but also offers a transformable architecture. The bricks are modular and can be used to create flexible, adaptable housing that can be expanded or modified as families grow or change their needs.

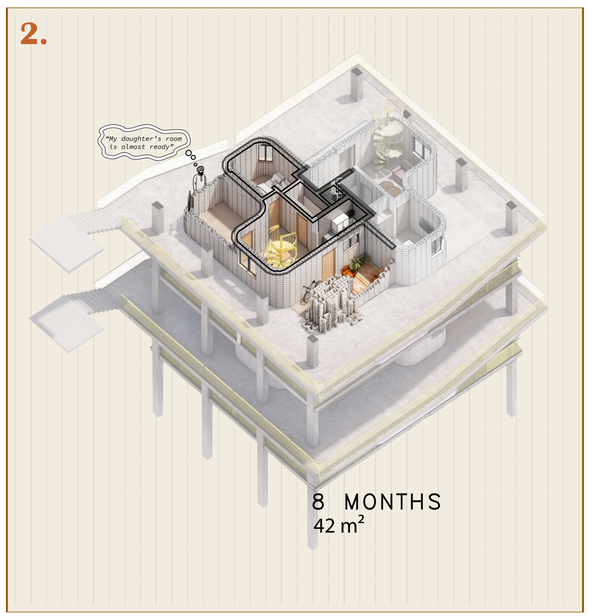
We were inspired by the brick itself, a central element in Indian architecture. Bricks are not just materials; they are symbols of progress—the promise of a home, of a future. In the villages and cities we visited, we saw bricks piled up outside homes, waiting to be used in construction, representing the aspirations of countless families. By using mycelium bricks, we sought to offer a sustainable alternative that would allow families to build their homes incrementally over time, as their needs and resources grew.


The system
(Mortarless brick system)
It is assembled and disassembled
No mortar is needed to join bricks together
Can be reused


Between 10% and 15 % of the total concrete is used for morter that bonds the bricks.
15%
of the total concrete is morter
difficult to reuse


1.
DAY 1
29 m²


3.
"I managed to buy a small plot. It's enough for us,"
Disassembly
4 YEARS
75 m²


2.
"My daughter's room is almost ready"
8 MONTHS
42 m²


4.

Rail to Delhi

Punjab Agricultural waste

Mycelium Inoculation

Add shredded plastic

ANNUAL PRODUCTION

10 days

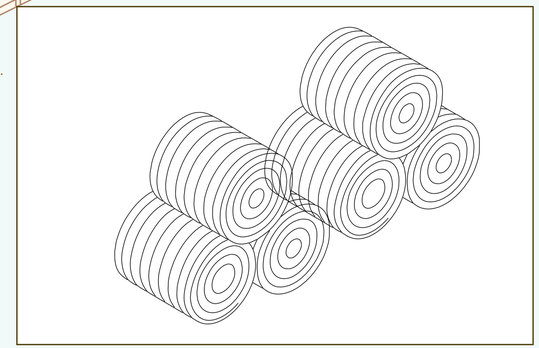
1 week

PLASTIC

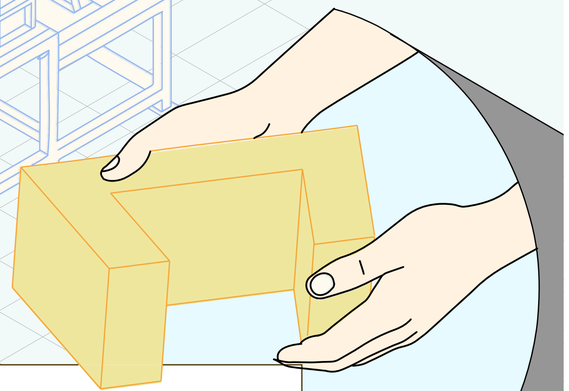
AGRICULTURAL WASTE

For the initial tower

Total plastic nedded=
14 - 19 metric tons
Bricks contain between
15% to 20% of plastic



Total agricultural waste nedded=
721 Large straw bales or
216 metric tons



BRICKS PRODUCED =
120,000

75 m² homes built: 23 units

Agricultural waste reused:
156 metric tons

METABOLIZING AGRICULTURAL WASTE

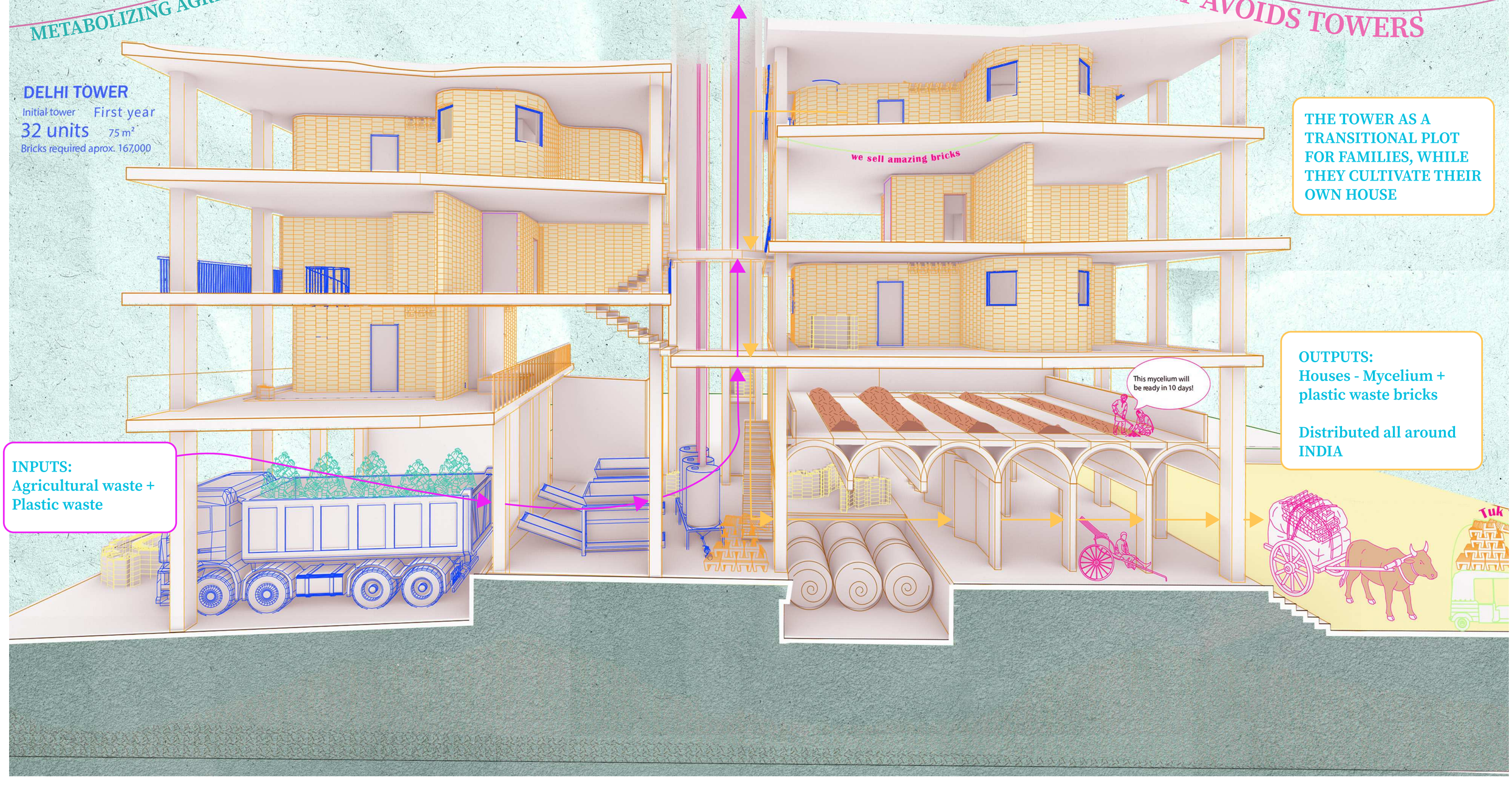
THIS IS A TOWER THAT AVOIDS TOWERS

DELHI TOWER

Initial tower First year

32 units 75 m²

Bricks required aprox. 167,000



THE TOWER AS A TRANSITIONAL PLOT FOR FAMILIES, WHILE THEY CULTIVATE THEIR OWN HOUSE

INPUTS:
Agricultural waste +
Plastic waste

OUTPUTS:
Houses - Mycelium + plastic waste bricks

Distributed all around INDIA

COURSE NAME: TRANSCALARITIES | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: James Heard

RE BIRTH BRICK

Liu Jiakun

In 2008, after the Sichuan earthquake in China, more than 5 million people were left homeless. The Rebirth Brick Project, led by Chinese architect Liu Jiakun, was an initiative aimed at addressing the housing needs of affected villages by producing bricks using debris from collapsed buildings. The Rebirth Brick Project was featured in the 2008 Venice Architecture Biennale, in the Chinese pavilion, as well as in architecture biennales in Shenzhen (2011). While the project began with a deep sensitivity representing the memory of Sichuan, it gradually lost part of its "soul" as the bricks became industrialized and were decontextualized by being used in buildings with different uses and contexts far from the history of Sichuan.

In its first phase, these bricks were handcrafted by the community using branches and local materials. This initiative not only provided a practical solution to the lack of construction materials but also created a deep connection to the past, as the bricks held the community's history and memories, transforming destruction into the foundation for new beginnings and a symbol of resilience. Involving the community in the brick-making process was a crucial aspect of the project. Community members engaged in various roles, such as mixing, molding, and building, making human intervention essential in the semi-artisanal manufacture of the bricks. This direct relationship between the body and the material had an empowering impact, helping to forge new bonds within the community. As Liu Jiakun stated, “The Rebirth Brick represents not only the 'regeneration' of waste materials but also the mental and emotional 'regeneration' of post-disaster reconstruction.” By utilizing local labor and materials, the project reduced the need to import new materials, making it economically sustainable.

The bricks were 30% cheaper compared to traditional bricks, which allowed the project to expand and continue building with these bricks years after the earthquake. However, as the project evolved, it transitioned from a community-driven initiative into a more industrial process. The bricks began to be mass-produced in large factories with standardized properties using the debris from the earthquake, increasing efficiency and allowing their use in the construction of public buildings and residences far from the disaster zone, where the relationship of the Rebirth bricks with the building or their use becomes more diffuse. For instance, the bricks were used in the construction of buildings like the Novartis Shanghai Campus, a building for a Swiss multinational company dedicated to the pharmaceutical and biotechnology industry, a project with no direct connection to the history or territory of Sichuan. The fact that the bricks continued to be used in projects disconnected from the history and community of Sichuan suggests that the architect prioritized a financial factor. In fact, Liu Jiakun was able to produce and use Rebirth bricks up to eight years after the earthquake and stopped producing them when there was no more debris to use as raw material, putting the long history and honor of the community in the background. Although the intention does promote sustainable practice, it can even be seen as a disrespectful act towards the community, as they are using bricks that carry the pain and history of a community in various buildings that do not connect with that memory. This results in a significant loss of the values and symbolism with which the project began.

In conclusion, the Rebirth Brick Project is a remarkable example of how architecture can embody memory and resilience through a "basic" object like a brick. However, while industrialization made the process more economically viable, it also led to the loss of the project's original sensitivity, prompting us to reflect on the prudence of commercializing a symbol of memory and resilience such as the Rebirth bricks.

COURSE NAME: TRANSCALARITIES | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: James Heard

Db, Richelle. “Liu Jiakun: Rebirth Brick Project.” designboom, May 27, 2016.

Richelle. “Liu Jiakun: Rebirth Brick Project.” designboom, May 27, 2016.

SIX STRATEGIES FOR THE “UNDESIRABLE”

COURSE NAME:
(RE) PARK AVENUE
STUDIO

DATE:
SUMMER 2025

PROFESSOR/INSTRUCTOR:
SEBASTIAN ADAMO

PARTNERS:
LOUIS ARTEAGA

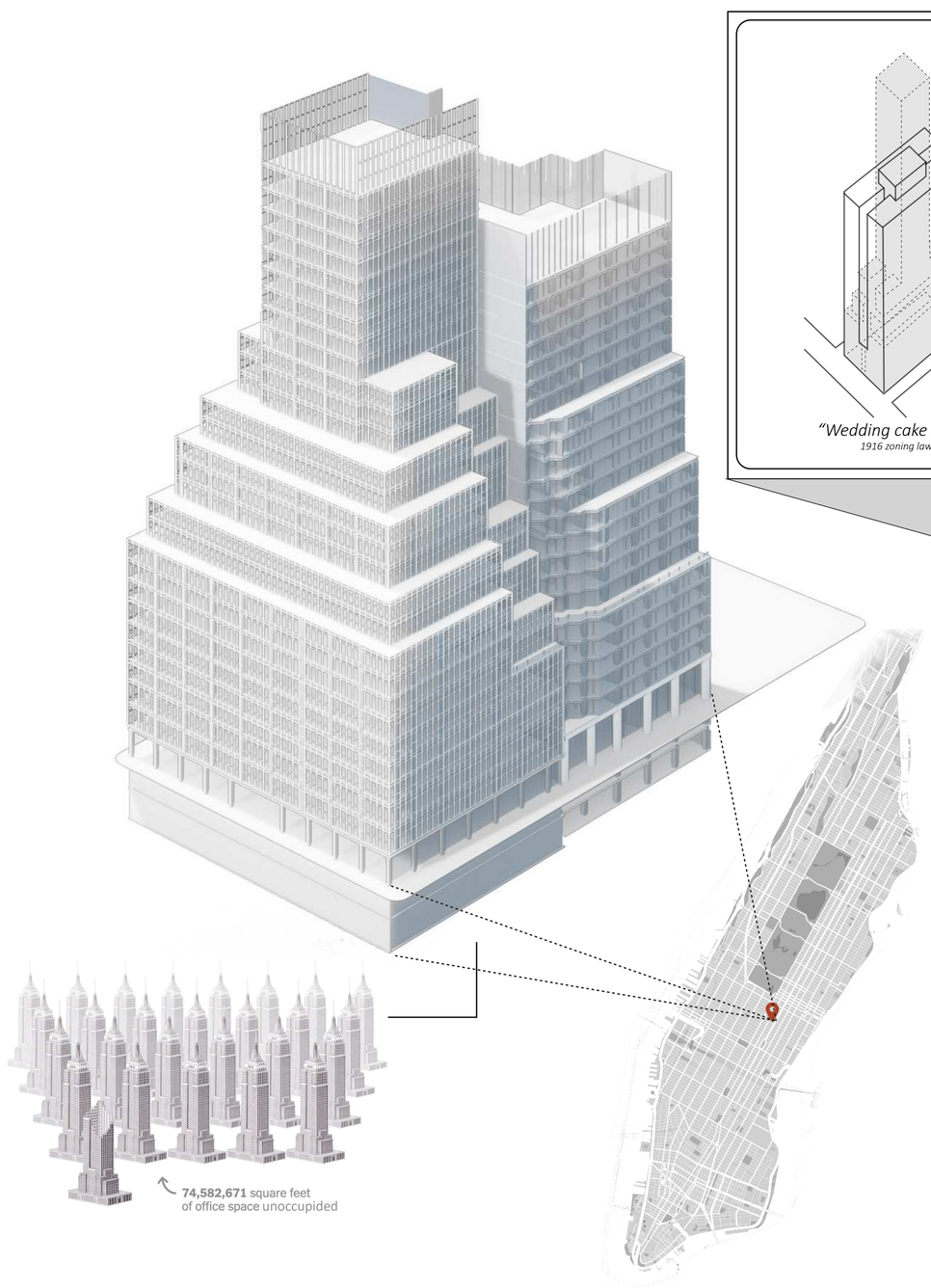
COURSE NAME: ADV STUDIO | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: SEBASTIAN ADAMO | PARTNERS: LOUIS ARTEAGA

In a rapidly changing urban landscape, cities like New York are facing a paradox: while millions of square feet of office space remain vacant, the demand for new housing continues to rise. This project seeks to address the problem posed by the many old skyscrapers in New York City that are being demolished to make way for new, taller, and more modern buildings, considered outdated and obsolete. Instead of following the typical route of demolition, our approach proposes an adaptive reuse project that aims to repurpose one of these iconic towers—350 Park Avenue—along with its neighbor, the BlackRock Building.

Both buildings, despite being located next to each other, have very different architectural identities. One is criticized for its "wedding cake" style, while the other has been regarded as offering no architectural value. Through this project, we explore how these buildings—often considered undesirable—can actually be transformed and adapted to meet current urban needs, turning what is seen as obsolete into something functional and vital.

The Six "Unwanted" Conditions of the Office Towers and Their Potential for Housing:

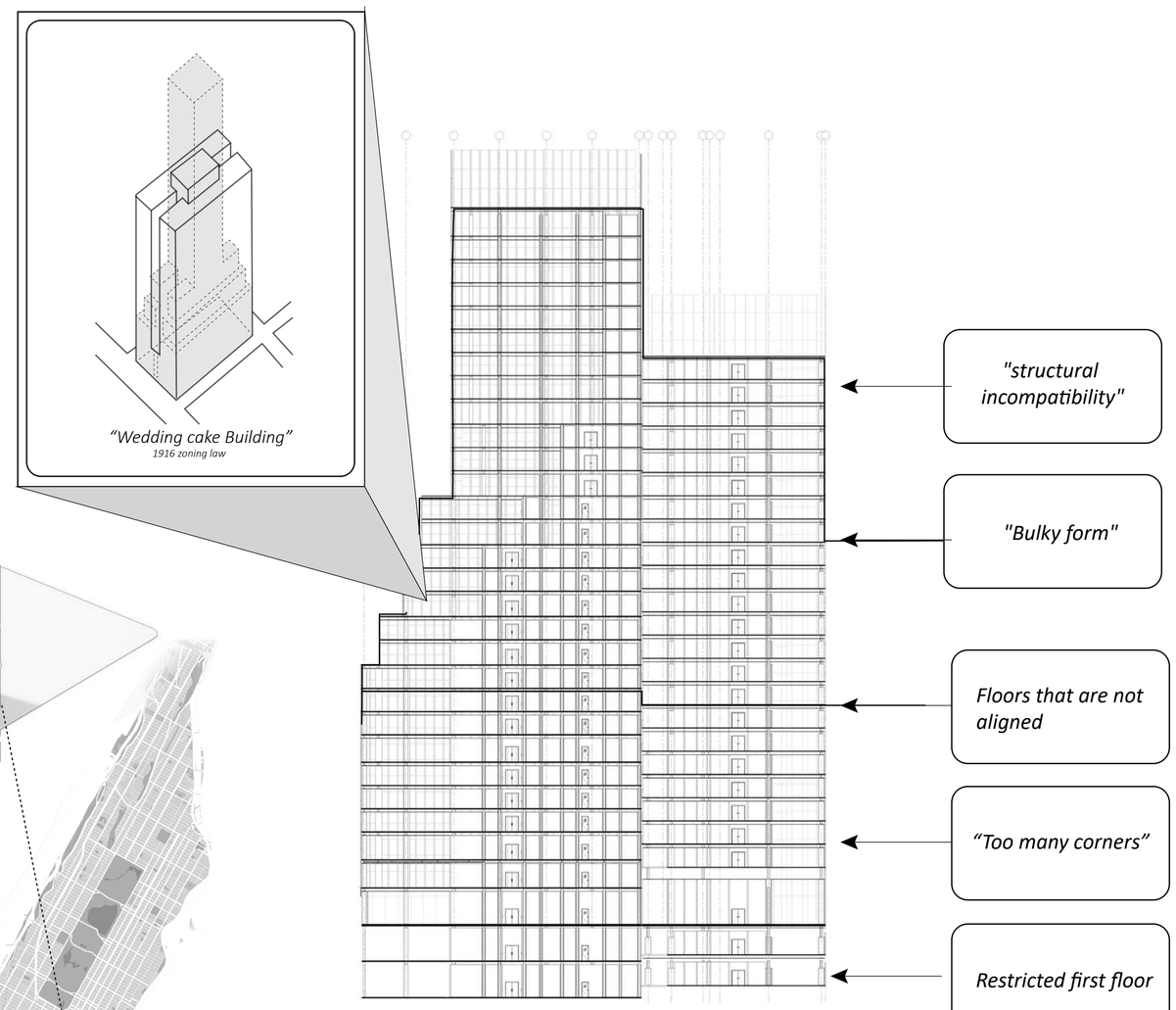
Throughout our research, we identified six key features of the buildings that are typically seen as disadvantages in office spaces but are highly desirable when considered for a housing project. These include misaligned floors, an uninviting first floor, large core areas, setbacks as housing opportunities, irregular floor plans, and deep floor plans. These features, often seen as limiting in the office setting, open up new possibilities when repurposed for residential use.



COURSE NAME: ADV STUDIO | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: SEBASTIAN ADAMO | PARTNERS: LOUIS ARTEAGA

Anatomy of an “Undesirable” Building

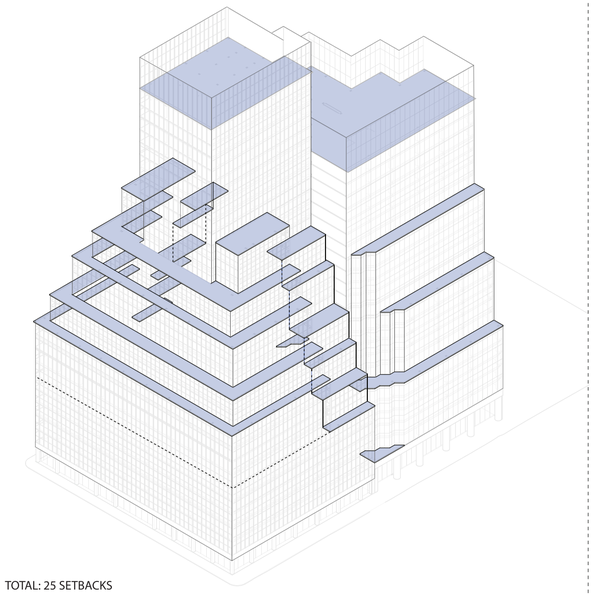
IN NYC



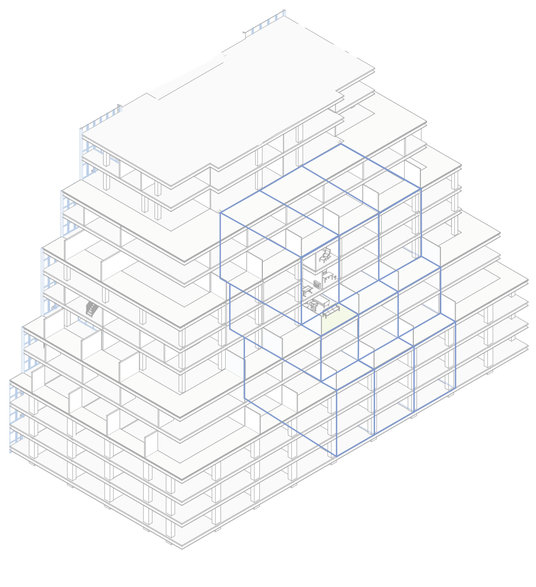
The aesthetic and functional challenges of merging two buildings

COURSE NAME: ADV STUDIO | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: SEBASTIAN ADAMO | PARTNERS: LOUIS ARTEAGA

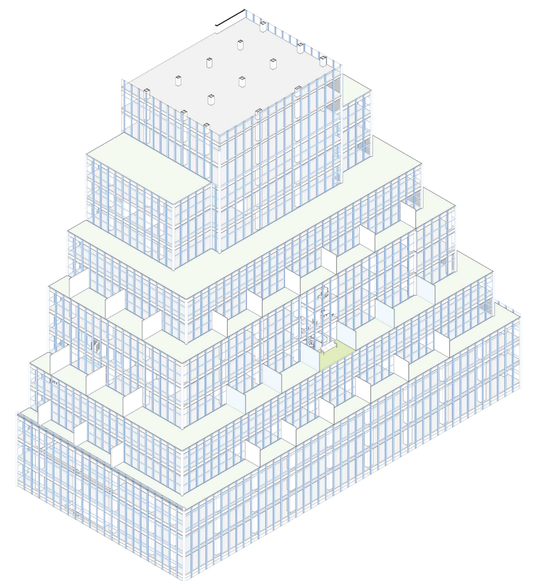
// SETBACKS //
Undesirable condition



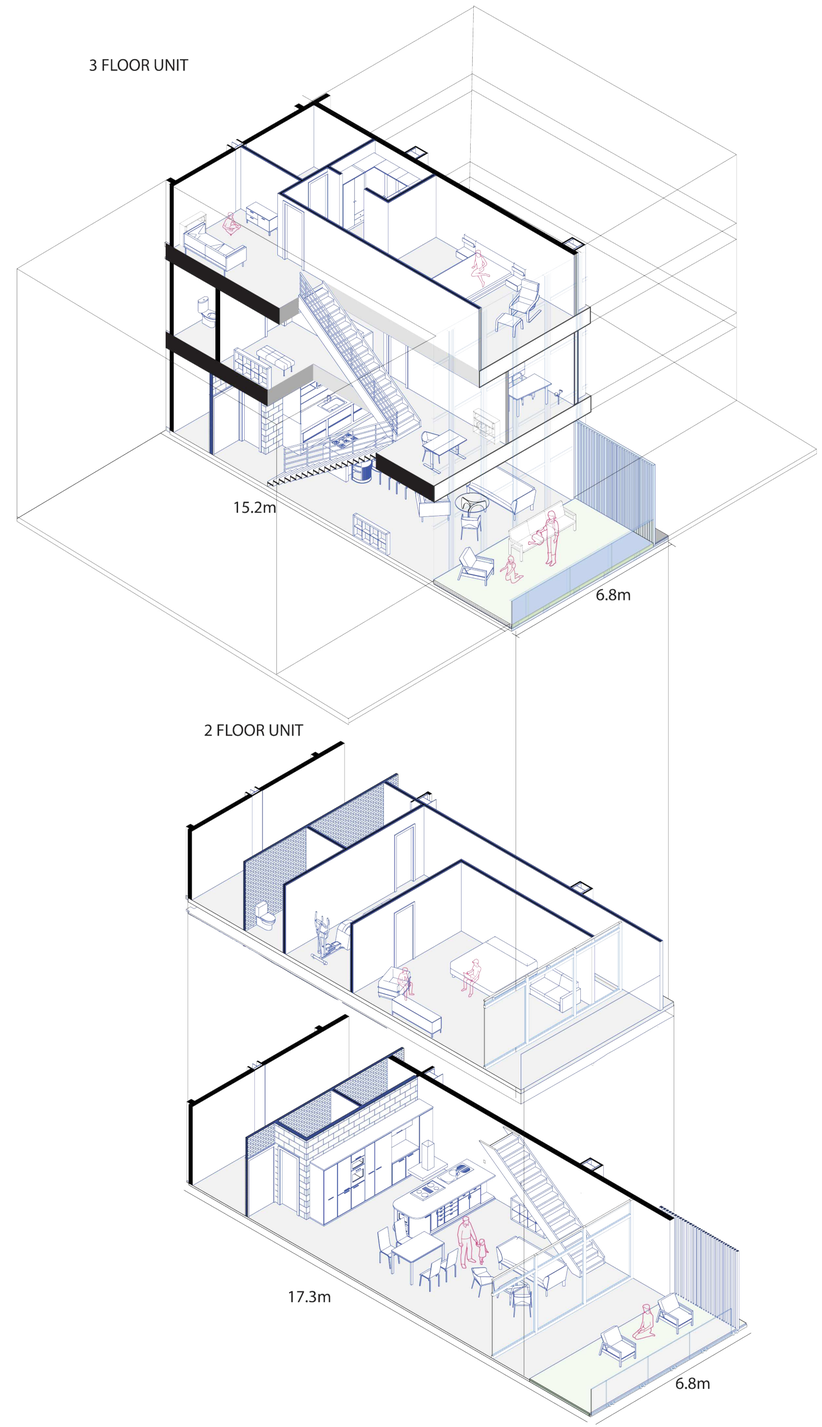
TOTAL: 25 SETBACKS



Setbacks as Housing Opportunities
The zoning-required setbacks, which contribute to the outdated "wedding cake" aesthetic, are reimagined as opportunities for new housing typologies. Multi-story residential units with private terraces are integrated into these spaces, creating unique living environments with access to outdoor areas.



COURSE NAME: ADV STUDIO | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: SEBASTIAN ADAMO | PARTNERS: LOUIS ARTEAGA

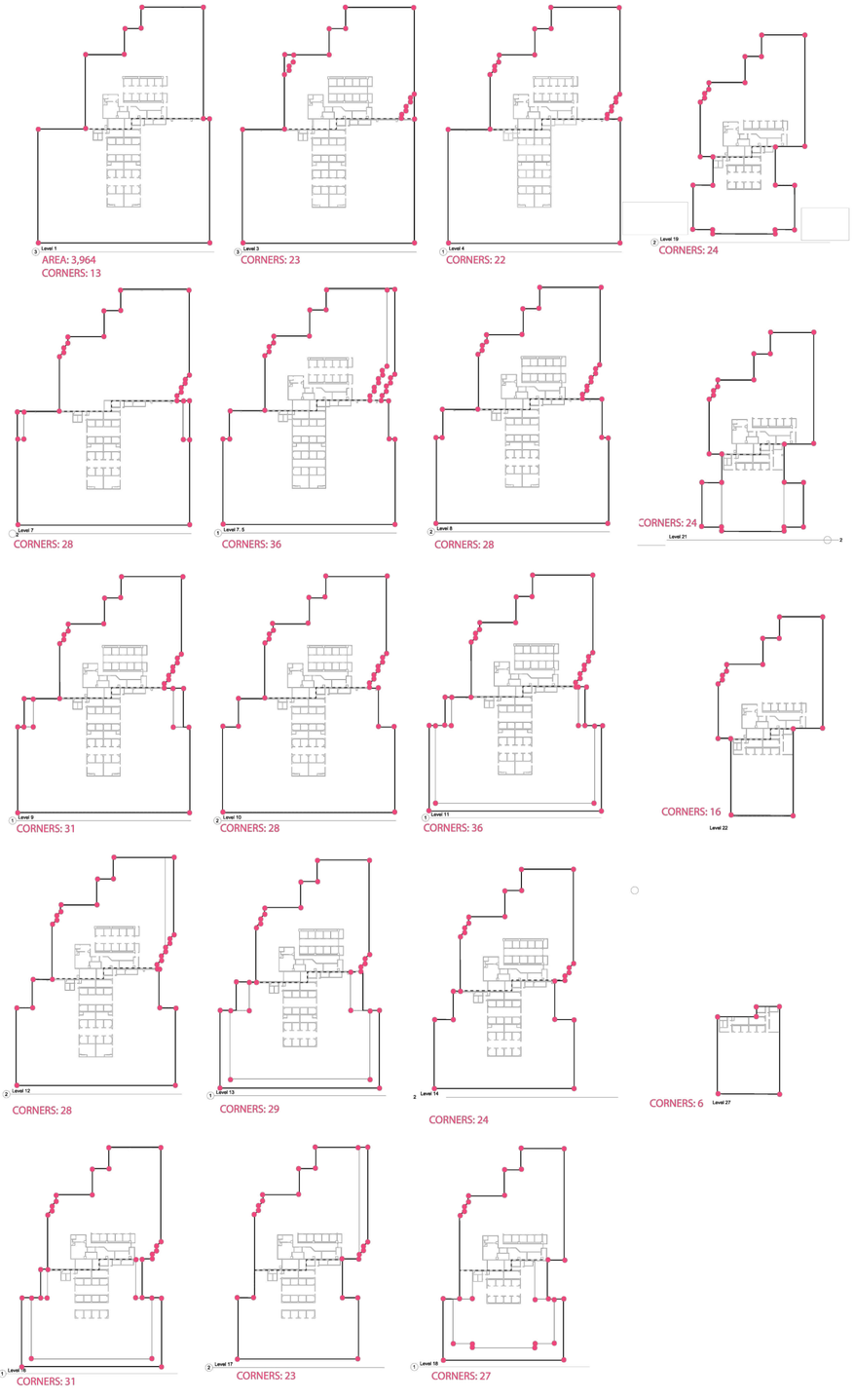


COURSE NAME: ADV STUDIO | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: SEBASTIAN ADAMO | PARTNERS: LOUIS ARTEAGA

COURSE NAME: ADV STUDIO | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: SEBASTIAN ADAMO | PARTNERS: LOUIS ARTEAGA

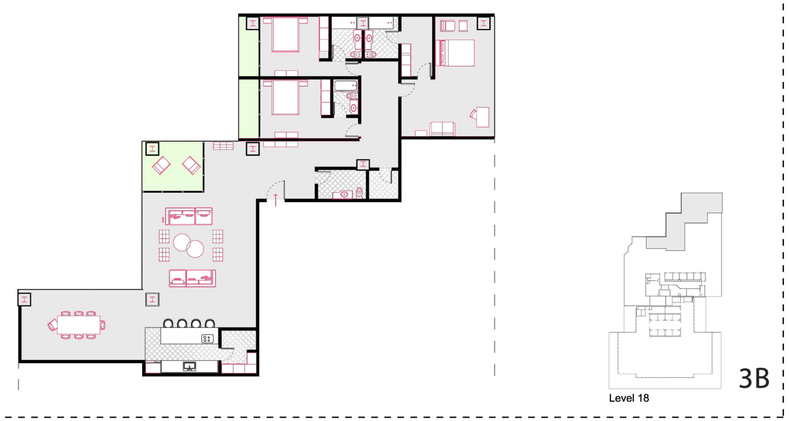
// IRREGULAR FLOOR PLAN //

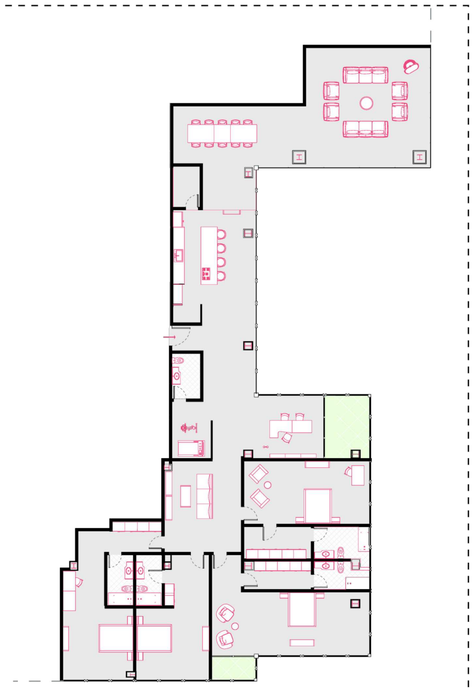
Undesirable condition

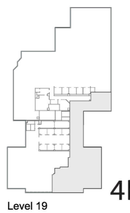


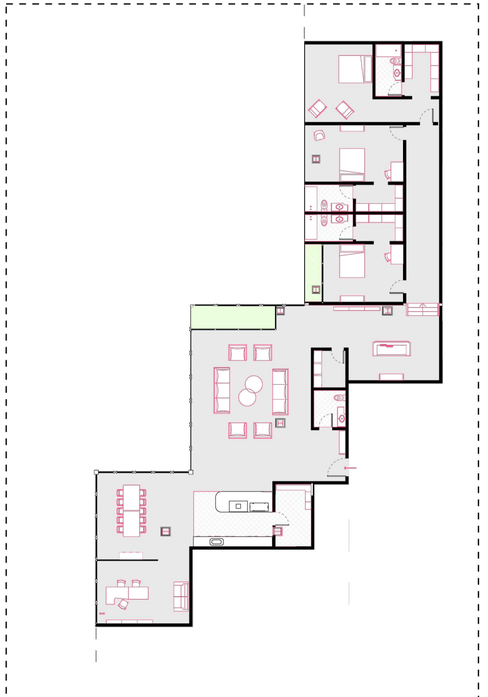
The combination of two buildings results in highly irregular floor layouts, with rare angles and multiple corners which are typically undesirable for office use. However, in housing, these irregularities become an asset, allowing for unique apartments with multiple corners, diverse spatial qualities, and expansive views.

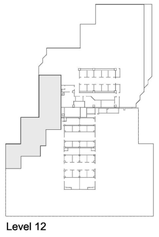
COURSE NAME:	DATE:	PROFESSOR/INSTRUCTOR:	PARTNERS:
ADV. STUDIO	SUMMER 2024	SEBASTIAN ADAMO	LOUIS ARTEAGA



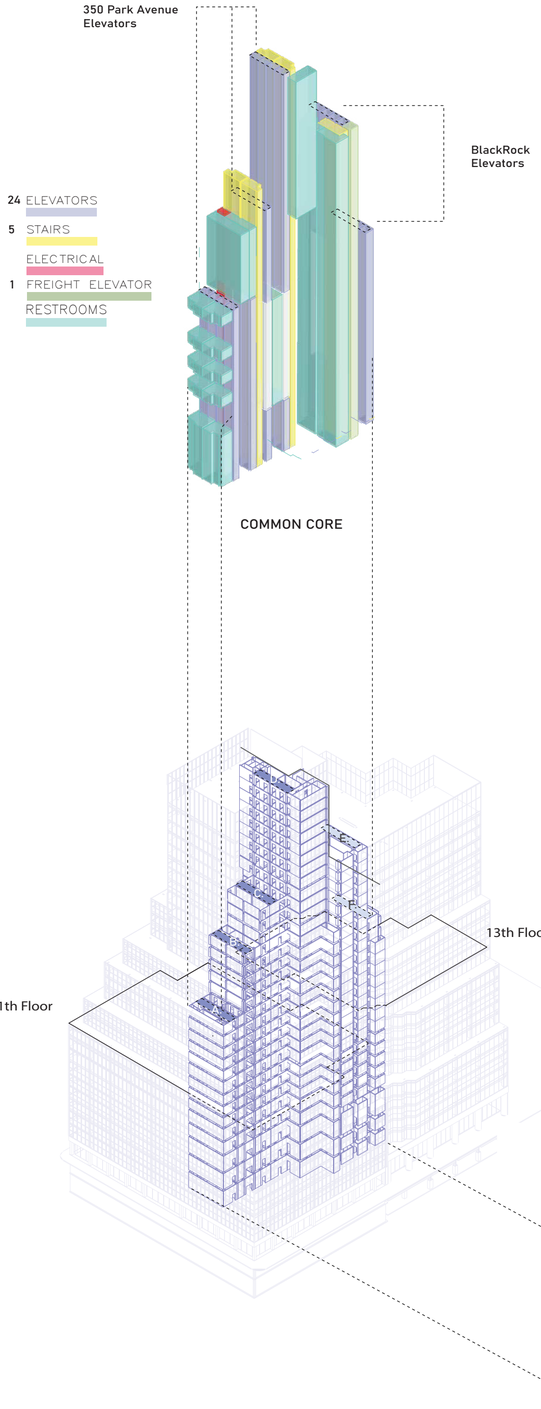


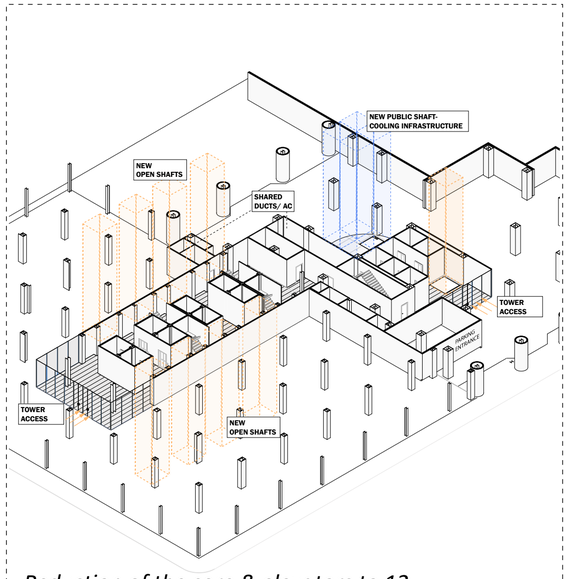






// LARGE CORE AREA //
Undesirable condition





Reduction of the core & elevators to 12.

The oversized central cores, originally designed for office circulation, limit usable space. By optimizing elevator placement (sharing elevators between the towers) and removing redundant spaces, we introduce new vertical shafts that enhance natural ventilation and improve air circulation within the residential areas.

COURSE NAME: ADV STUDIO

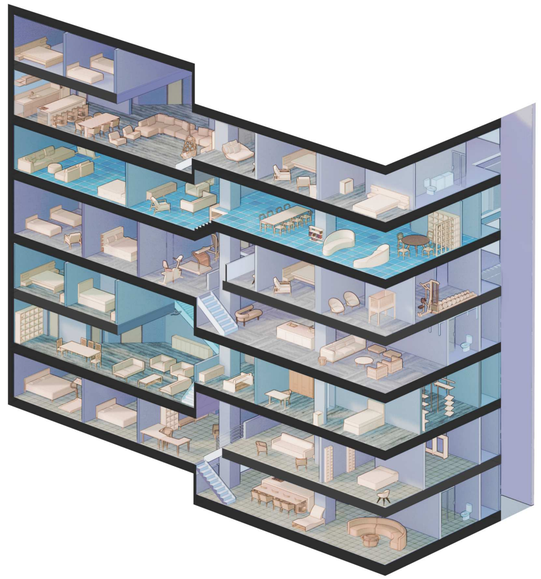
DATE: SUMMER 2024

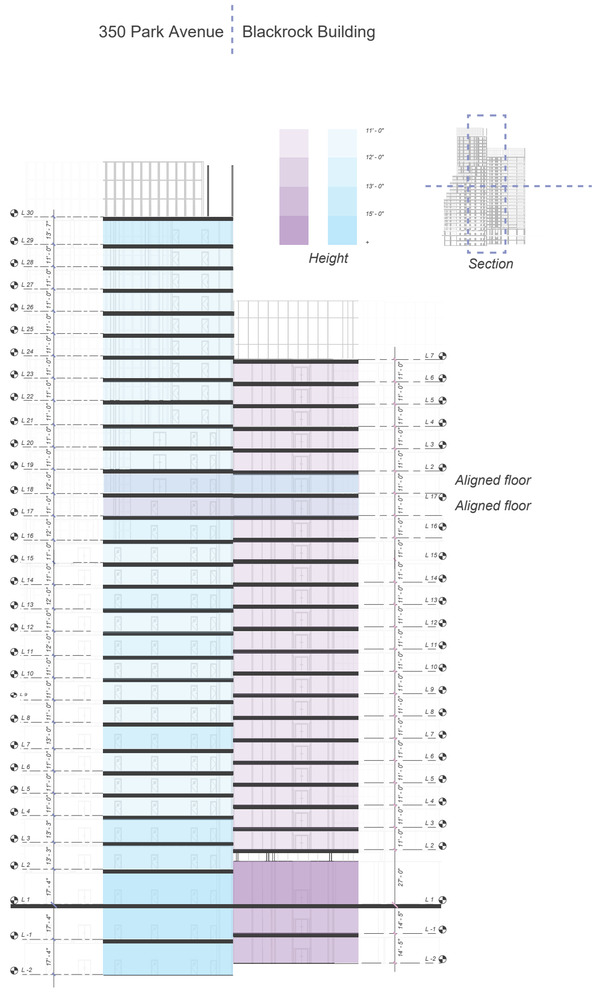
PROFESSOR/INSTRUCTOR: SEBASTIAN ADAMO

PARTNERS: LOUIS ARTEAGA

COURSE NAME: ADV STUDIO | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: SEBASTIAN ADAMO | PARTNERS: LOUIS ARTEAGA

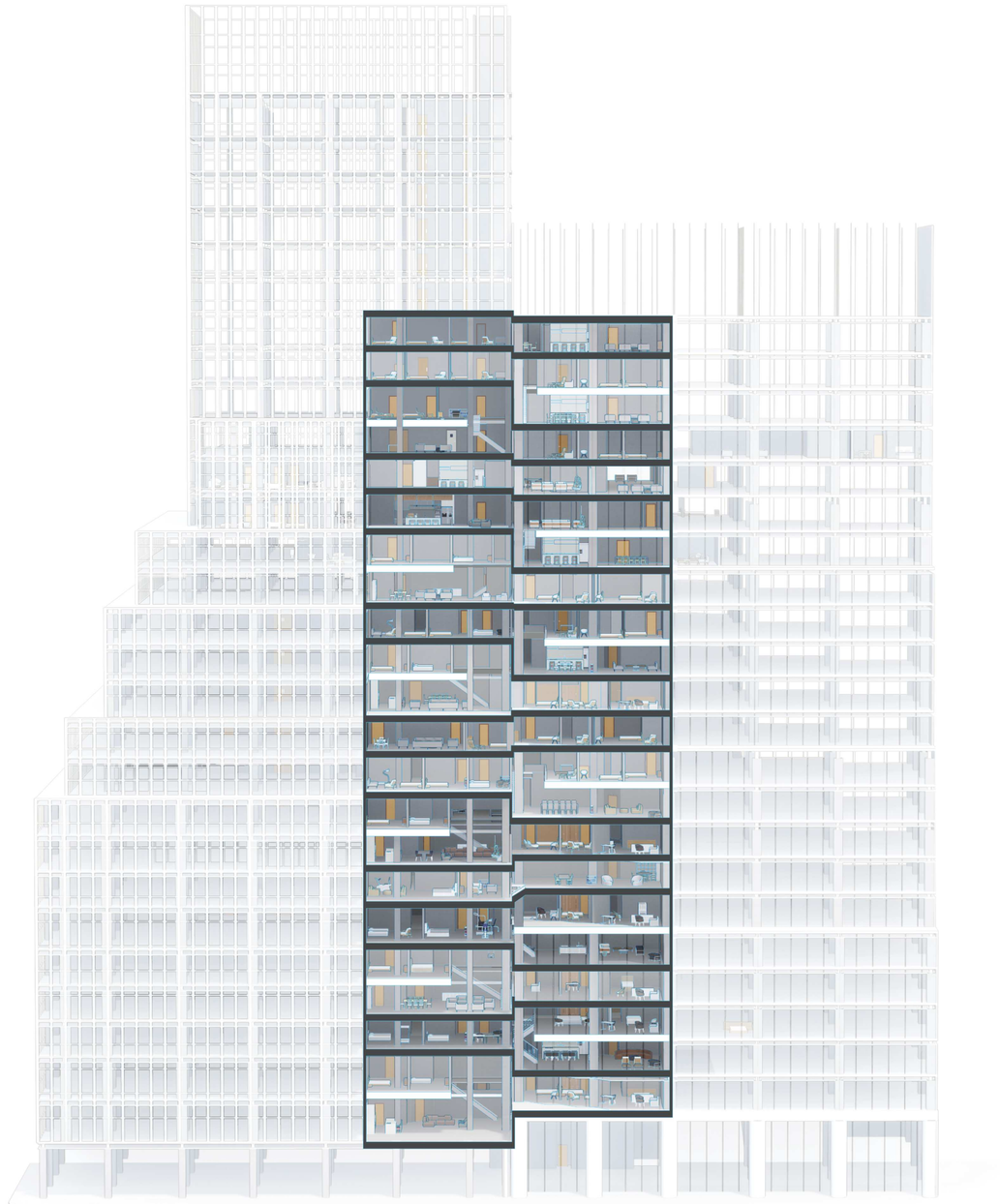
// MISSALIGNED FLOORS //
Undesirable condition





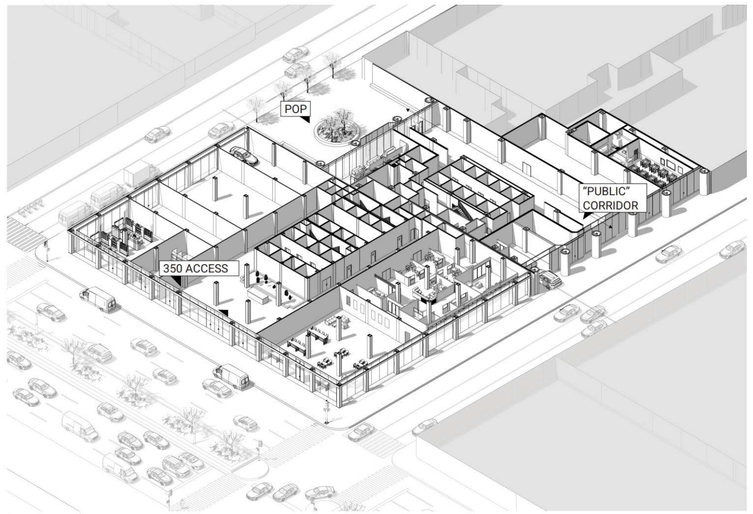
The differences in floor levels complicate internal circulation, a drawback for office buildings. However, in a housing project, these variations can be leveraged to introduce multi-level lofts with dynamic spatial relationships and varied ceiling heights, offering unique living environments.

COURSE NAME: ADV STUDIO | DATE: SUMMER 2024 | PROFESSOR/INSTRUCTOR: SEBASTIAN ADAMO | PARTNERS: LOUIS ARTEAGA

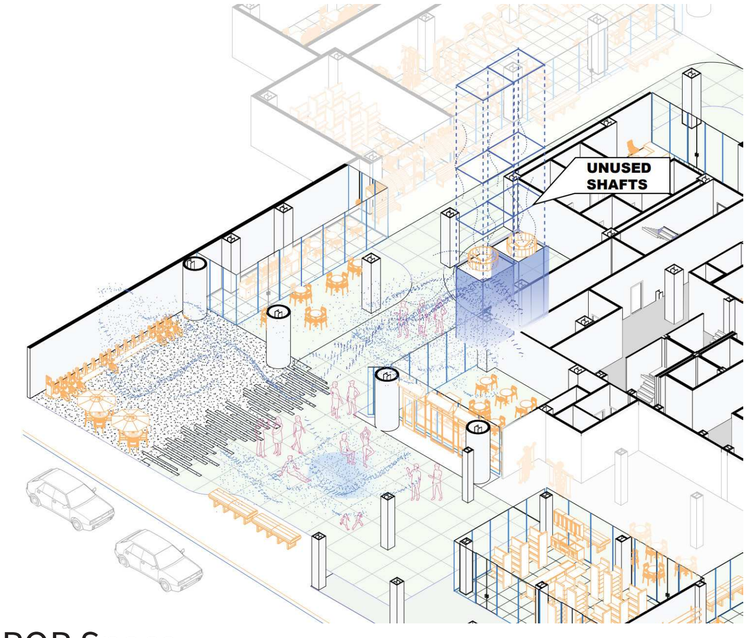


// UNINVITING FIRST FLOOR //

Undesirable condition

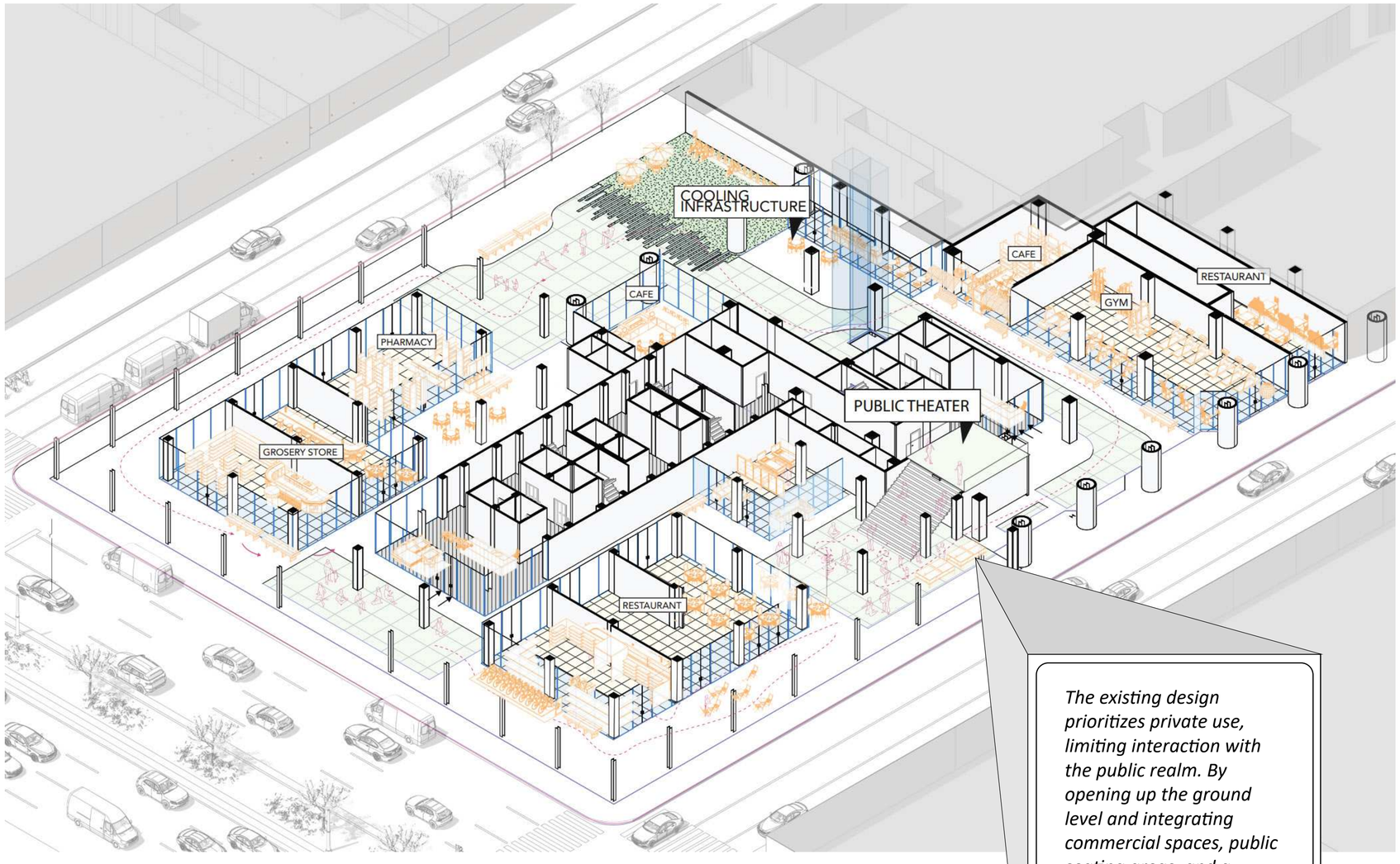


Actual floorplan



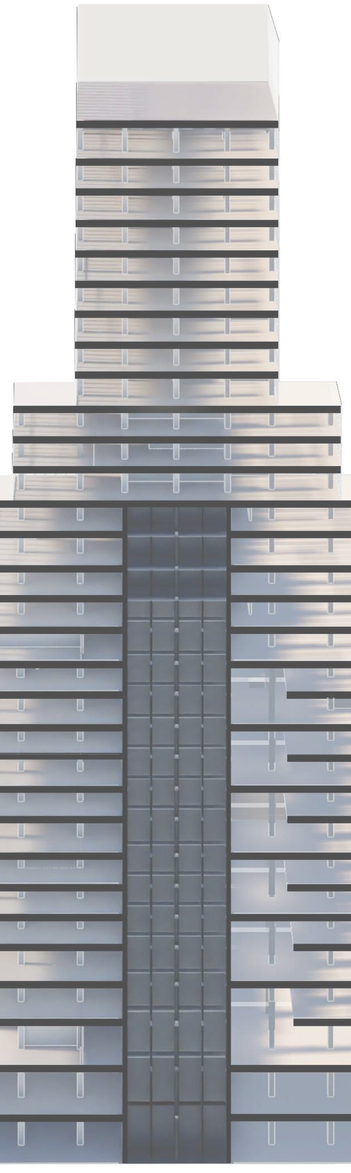
POP Space

The POP activates the ground level, allowing public life to permeate the privately owned space and fostering a more porous and engaging urban interface



The existing design prioritizes private use, limiting interaction with the public realm. By opening up the ground level and integrating commercial spaces, public seating areas, and a cooling infrastructure, we can transform the street-level experience into a vibrant, engaging urban space..

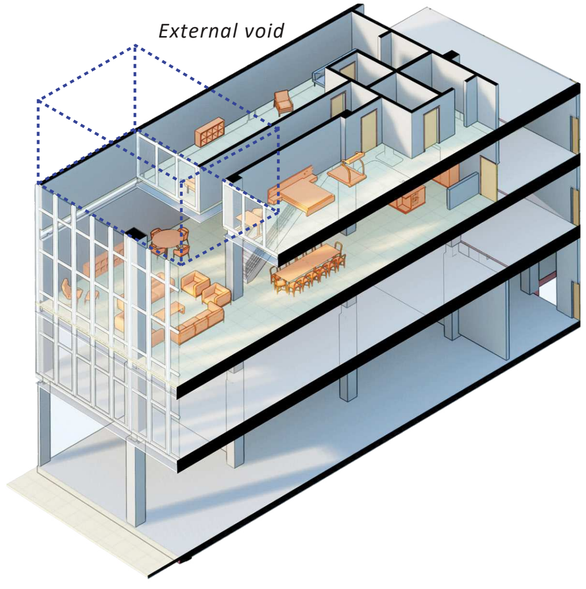
// DEEP FLOOR PLANS //
Undesirable condition



North Facade

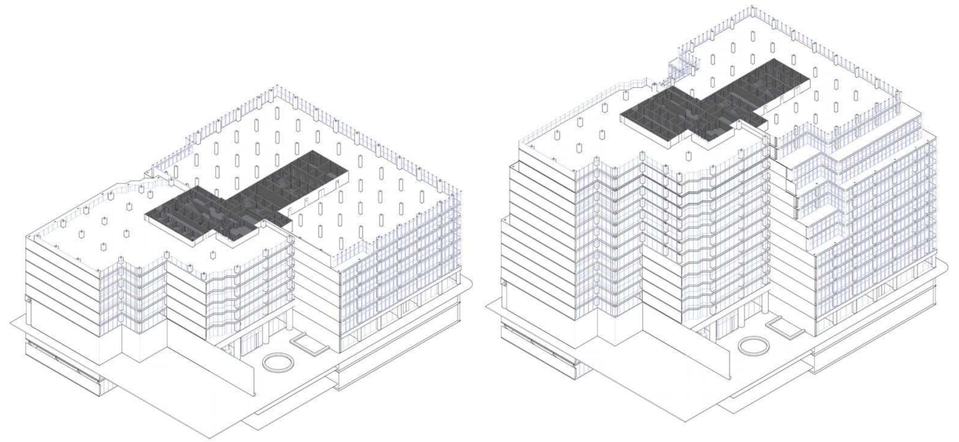
South Facade

The excessive depth of the buildings results in dark interior spaces with limited natural light. To address this, strategic perforations and voids are introduced, allowing for cross-ventilation and the development of duplex apartments with better lighting and airflow.



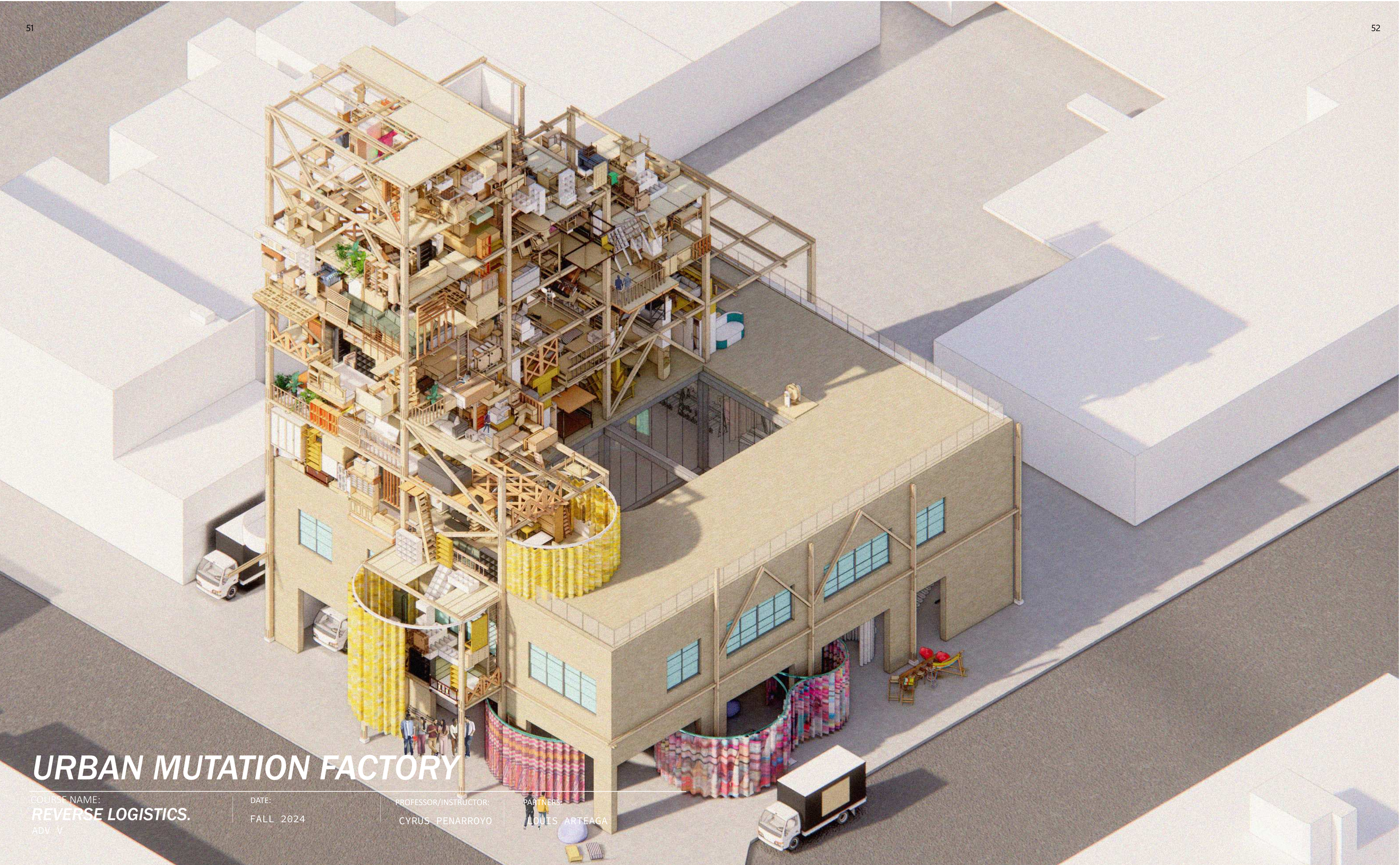
Inner and Outer perforations of the tower based on the orientation to allow more light in.

Existing floors deepness from the core



Instead of viewing 350 Park Avenue and the BlackRock Building as obsolete structures that should be demolished, this proposal reimagines them as opportunities for innovation. By embracing their irregularities, misalignments, and structural constraints, these buildings can be transformed into a model for adaptive reuse that not only addresses New York's urgent housing needs but also redefines how cities approach architectural preservation and sustainability.

This project is not just about saving two buildings; it's about shifting perspectives. Instead of demolishing the past to make way for the new, why not use what already exists to build a more inclusive, dynamic, and responsive urban environment? The six strategies outlined here show that even the most "ordinary" buildings can hold extraordinary potential. However, this project does not aim to provide a final design for a single building; rather, it proposes a series of replicable strategies that can be applied in New York and beyond. It aspires to serve as a manual for transforming obsolete towers and unlocking their full potential, offering a framework for adaptive reuse that can be applied in a variety of urban contexts worldwide.



URBAN MUTATION FACTORY

COURSE NAME:
REVERSE LOGISTICS.
ADV V

DATE:
FALL 2024

PROFESSOR/INSTRUCTOR:
CYRUS PENARROYO

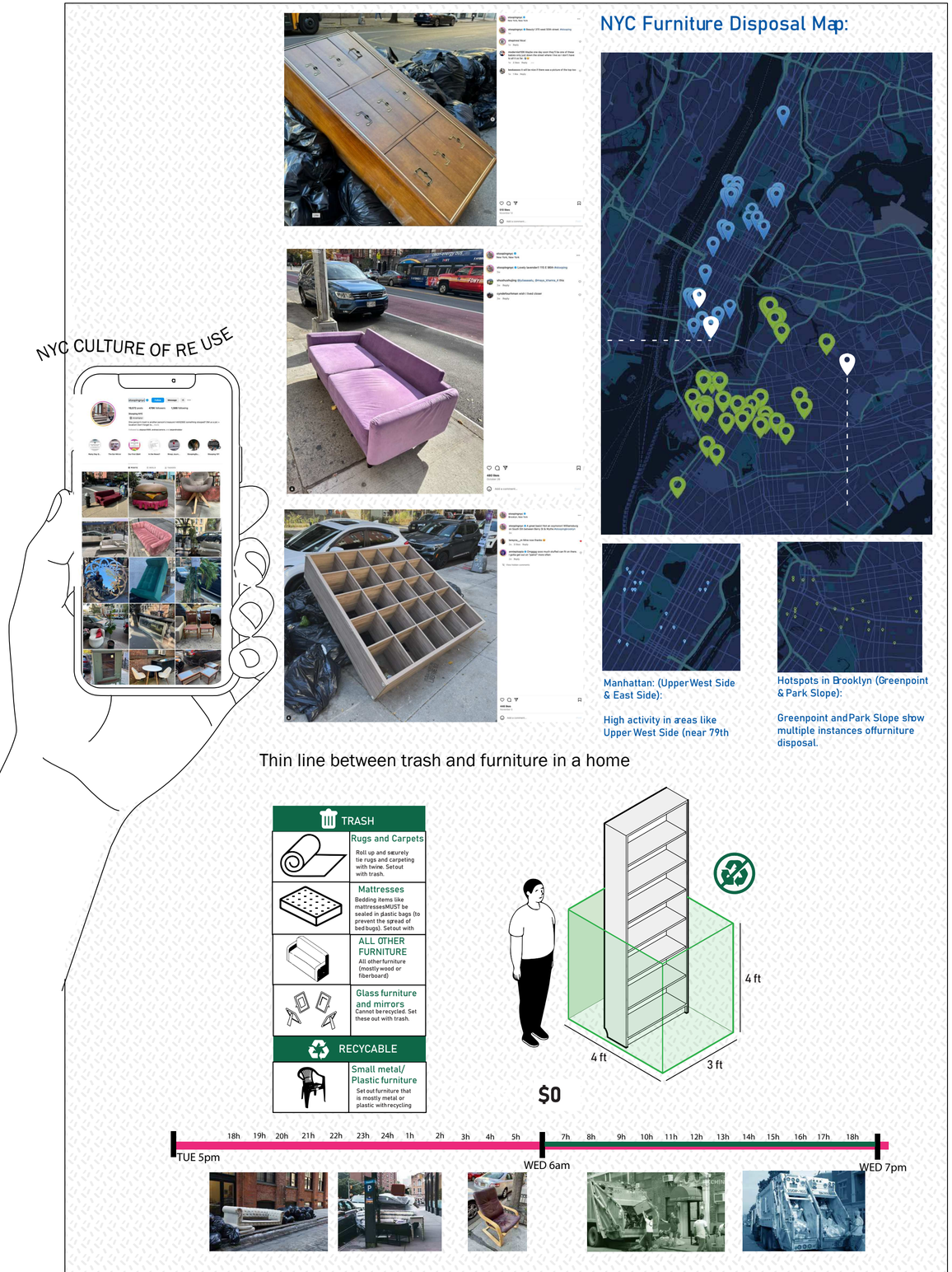
PARTNERS:
LOUIS ARTEAGA

COURSE NAME: ADV V | DATE: FALL 2024 | PROFESSOR/INSTRUCTOR: CYRUS PENARROYO | PARTNERS: LOUIS ARTEAGA

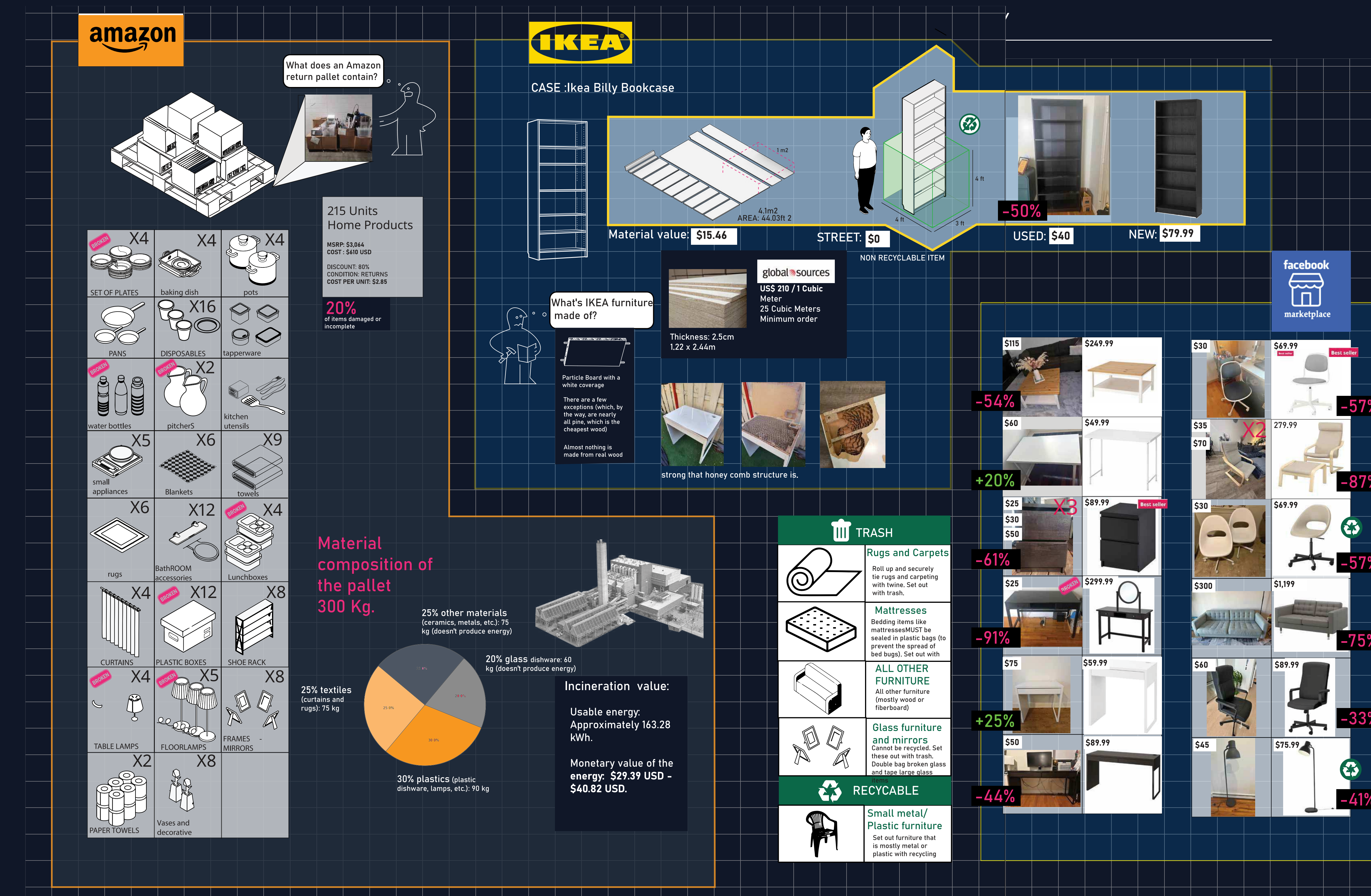
Traditionally, reverse logistics refers to the process of returning products through the supply chain, from the end user back to the retailer or manufacturer. However, in this project, we redefine reverse logistics as the invisible infrastructure of consumerism—the hidden system managing the products we buy, discard, and return. More than just a functional process, reverse logistics becomes a critique of the consumption cycle that dominates our society, where mass-produced, standardized objects are quickly replaced and discarded, their value short-lived.

Our research focused on the housewares category, examining the logistics processes of large companies like IKEA, Wayfair, and Amazon. Handling returns of home decor and furniture involves significant energy, resources, and logistics. With high return rates—particularly in e-commerce, where companies like Amazon see up to 20% of items sent back—many of these still-usable products are discarded or sent to recycling centers. The decision to discard is often driven by cost-efficiency, making it cheaper for companies to send products to landfills rather than reintegrate them into the market.

In parallel, there are digital phenomena in New York City that promote a culture of reuse, particularly for furniture. Pages like NYC Stoopers, with over 400,000 followers, feature daily posts of furniture left on sidewalks, hoping someone will rescue these items before they end up discarded. A map of “hot spots” reveals areas where most furniture is left, highlighting zones such as the Upper West and East Sides in Manhattan, as well as Brooklyn neighborhoods near Greenpoint and Park Slope.



THE PROCESS OF RETURNS
HOUSEWARES
amazon
wayfair
IKEA
Legend
Amazon
Ikea
Wayfair
Time
Digital Architecture
RETURN TO MAIN STORE / WAREHOUSE
PRODUCT CLASIFICATION
DISPOSAL - FINAL LOCATION
AMAZON RESALE
Amazon Bulk Liquidations
WAYFAIR RETURNS TRUCKLOADS
Returns Policy
Items shipped from Amazon.com, including Amazon Warehouse, can be returned within 30 days of delivery.
Return Policy:
New and unopened products within 365 days.
Open products within 180 days.
Mattress 90 days.
Return Policy:
30 days of delivery. The item(s) must be in its original, undamaged condition. If the packaging is too damaged, use a similar-sized box or one no longer than 108 inches. it should be returned disassembled.
Mattress comes with a 100-night free
Visual inspection: The exterior condition of the item is checked, verifying whether there is any visible damage, signs of use or tears.
Classification
The system determines which area of the warehouse the package should go (small appliances, utensils, decoration).
Vase arrives to warehouse
The vase is loaded onto a truck for transport.
Vase arrives to UPS sorting center
is taken to a post office
+$7.99
$4.99
If classified as fragile: It must be opened and inspected to ensure that it is not broken.
Packaging condition evaluation: the item is repackaged
Pallet assembly with similar category products.
Pallets are purchased by liquidators.
The pallets are sold in liquidation stores, either by unit or by pallet.
Small appliances: Items such as blenders or coffee makers are plugged in to test their operation.
Repair: Items with minor issues (such as a blender with a broken part) are sent to a repair team or specialist.
Hygiene policies:
Items that have been used for food preparation must be in perfect condition to be resold. If contaminated they will be sent for recycling.
A.
B.
C.
D.
Recycling Facility
Mattress recycling center
Covanta Hempstead Waste-to-energy plants
EXCHANGES & RETURNS
AS-IS
Antique shops
Furniture repair store
800,000 SQUARE FEET
AMAZON FULFILLMENT CENTER
UPS WAREHOUSE MANHATTAN
Keegan Landfill
WASTE TO ENERGY Covanta Essex
50,000 SQUARE FEET
200,000 SQUARE FEET
IKEA Brooklyn
346,000ft² = 32,144m²
Sims Municipal Recycling Facility
480,000 SQUARE FEET
346,000 SQUARE FEET
Bulky Item Disposal and Recycling
13h
13h
18h 19h 20h 21h 22h 23h 24h 1h 2h 3h 4h 5h
7h 8h 9h 10h 11h 12h 13h 14h 15h 16h 17h 18h
TUE 5pm
WED 6am
WED 7pm
5-8 DAILY POSTS
NYC Furniture Disposal Map:
Manhattan: (Upper West Side & East Side):
High activity in areas like Upper West Side (near 79th St) and Upper East Side (Madison Ave).
Hotspots in Brooklyn (Greenpoint & Park Slope):
Greenpoint and Park Slope show multiple instances of furniture disposal.
-Trendy neighborhoods with young residents



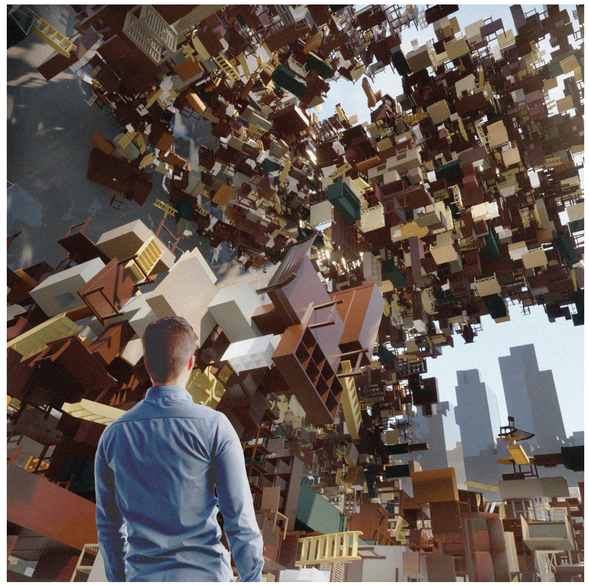
amazon
What does an Amazon return pallet contain?
215 Units
Home Products
MSRP: $3,064
COST : $610 USD
DISCOUNT: 80%
CONDITION: RETURNS
COST PER UNIT: $2.85
20%
of items damaged or incomplete
X4 SET OF PLATES
X4 baking dish
X4 pots
PANS
X16 DISPOSABLES
tapperware
water bottles
X2 pitcherS
kitchen utensils
X5 small appliances
X6 Blankets
X9 towels
X6 rugs
X12 BathROOM accessories
X4 Lunchboxes
X4 CURTAINS
X12 PLASTIC BOXES
X8 SHOE RACK
X4 TABLE LAMPS
X5 FLOORLAMPS
X8 FRAMES - MIRRORS
X2 PAPER TOWELS
X8 Vases and decorative
BROKEN
Material composition of the pallet 300 Kg.
25% other materials (ceramics, metals, etc.): 75 kg (doesn't produce energy)
20% glass dishware: 60 kg (doesn't produce energy)
25% textiles (curtains and rugs): 75 kg
30% plastics (plastic dishware, lamps, etc.): 90 kg
Incineration value:
Usable energy: Approximately 163.28 kWh.
Monetary value of the energy: $29.39 USD - $40.82 USD.
IKEA
CASE :Ikea Billy Bookcase
1 m2
4.1m2
AREA: 44.03ft 2
4 ft
4 ft
3 ft
Material value: $15.46
STREET: $0
NON RECYCLABLE ITEM
-50%
USED: $40
NEW: $79.99
What's IKEA furniture made of?
Particle Board with a white coverage
There are a few exceptions (which, by the way, are nearly all pine, which is the cheapest wood)
Almost nothing is made from real wood
global sources
US$ 210 / 1 Cubic Meter
25 Cubic Meters Minimum order
Thickness: 2.5cm
1.22 x 2.44m
strong that honey comb structure is.
TRASH
Rugs and Carpets
Roll up and securely tie rugs and carpeting with twine. Set out with trash.
Mattresses
Bedding items like mattressesMUST be sealed in plastic bags (to prevent the spread of bed bugs). Set out with
ALL OTHER FURNITURE
All other furniture (mostly wood or fiberboard)
Glass furniture and mirrors
Cannot be recycled. Set these out with trash. Double bag broken glass and tape large glass items
RECYCLABLE
Small metal/ Plastic furniture
Set out furniture that is mostly metal or plastic with recycling
facebook
marketplace
$115
$249.99
-54%
$60
$49.99
+20%
$25
$30
$50
X3
$89.99
Best seller
-61%
$25
BROKEN
$299.99
-91%
$75
$59.99
+25%
$50
$89.99
-44%
$30
$69.99
Best seller
-57%
$35
$70
X2
279.99
-87%
$30
$69.99
-57%
$300
$1,199
-75%
$60
$89.99
-33%
$45
$75.99
-41%

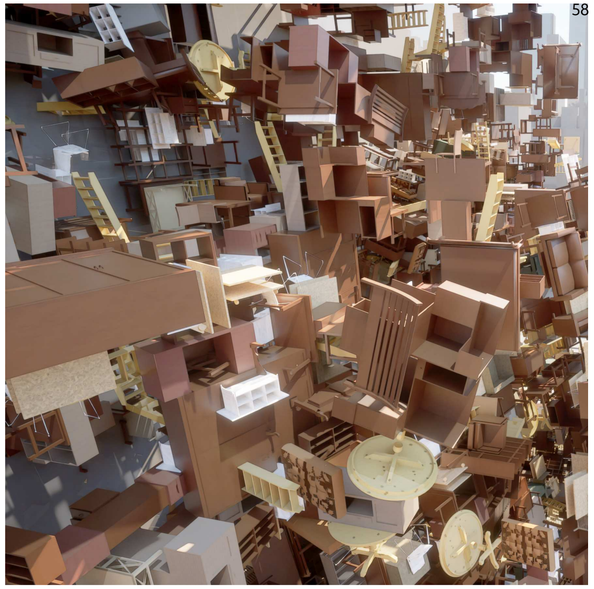
COURSE NAME:
ADV V

DATE:
FALL 2024

PROFESSOR/INSTRUCTOR:
CYRUS PENARROYO

PARTNERS:
LOUIS ARTEAGA





What if we stopped moving discarded furniture to landfills?

What volume would these objects occupy if we started accumulating them in the city instead of burying them in landfills? These discarded items, if left on the streets, could fill entire city blocks. They would occupy streets and public spaces, gradually growing into mountains of material—an ever-increasing accumulation that would eventually take over the public realm. This raises the question: how much urban space would these discarded objects occupy if we didn't hide them away? The volume could rival that of entire buildings, and if left unchecked, this pile-up could overwhelm the city's streets.

This issue highlights the urgency of rethinking the waste cycle. Rather than simply accumulating discarded materials, our proposal does not focus on storing or hoarding them, but on their metabolization within the urban environment. The building we propose serves as a temporary repository—a place that absorbs discarded furniture, keeps it for a period, and then returns it to the streets.

This cyclical process mimics the way natural systems operate, ensuring that these objects are continuously reused and reintegrated into the urban fabric instead of being relegated to landfills.

COURSE NAME: ADV V

DATE: FALL 2024

PROFESSOR/INSTRUCTOR: CYRUS PENARROYO

PARTNERS: LOUIS ARTEAGA

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GO BACK TO SERVE THE CITY

TACTICAL URBANISM:

Short-term, low-cost, and scalable interventions making meaningful civic changes to neighborhoods, towns, and cities.

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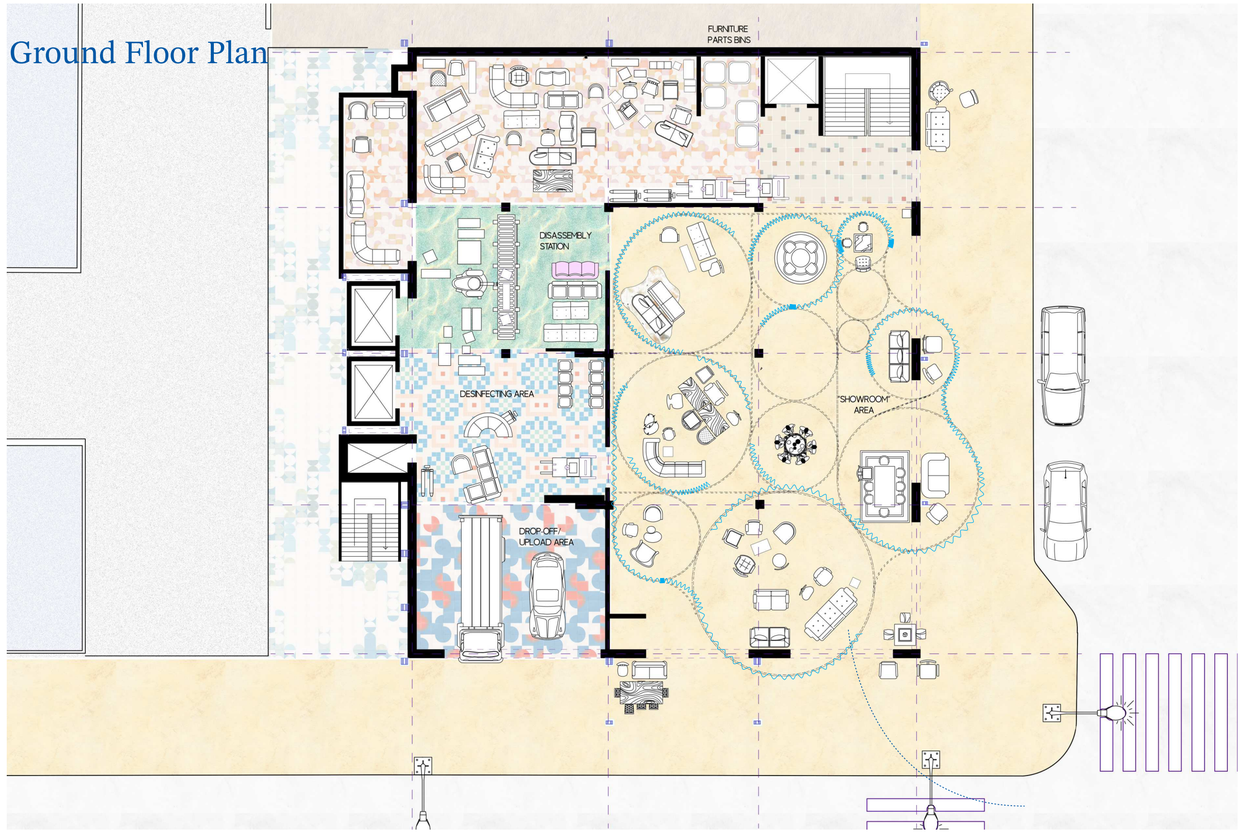
Ground Floor Plan



The project reimagines the Post Office not just as a traditional office space but as a transitional hub for collected, disinfected, and repurposed furniture. These pieces become part of temporary urban spaces like markets, performance stages, and social spots, engaging the community in creative ways. The building becomes a catalyst for transformation, where furniture and objects are given new life as part of the city's public spaces.
Reimagining Public Spaces
Building on NYC’s standard urban furniture, like street benches and bike stations, this project creates modular, adaptable interventions. These everyday objects are repurposed into spaces that foster interaction and engagement. Whether transforming light posts into vertical spaces or bike stations into modular walls, the project challenges the static nature of public spaces, encouraging dynamic, participatory uses. Ultimately, this project invites us to rethink how we design and interact with urban environments, turning waste into opportunity and fostering creativity and sustainability in the public realm

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A defining feature of the building is the use of discarded furniture as both material and display for the facade. By integrating these items into the architecture itself, the project transforms the exterior into a striking exhibition of consumer culture. This approach not only critiques the wastefulness of modern consumption but also breathes new life into objects that would otherwise end up in landfills, showcasing their potential for reuse and transformation.

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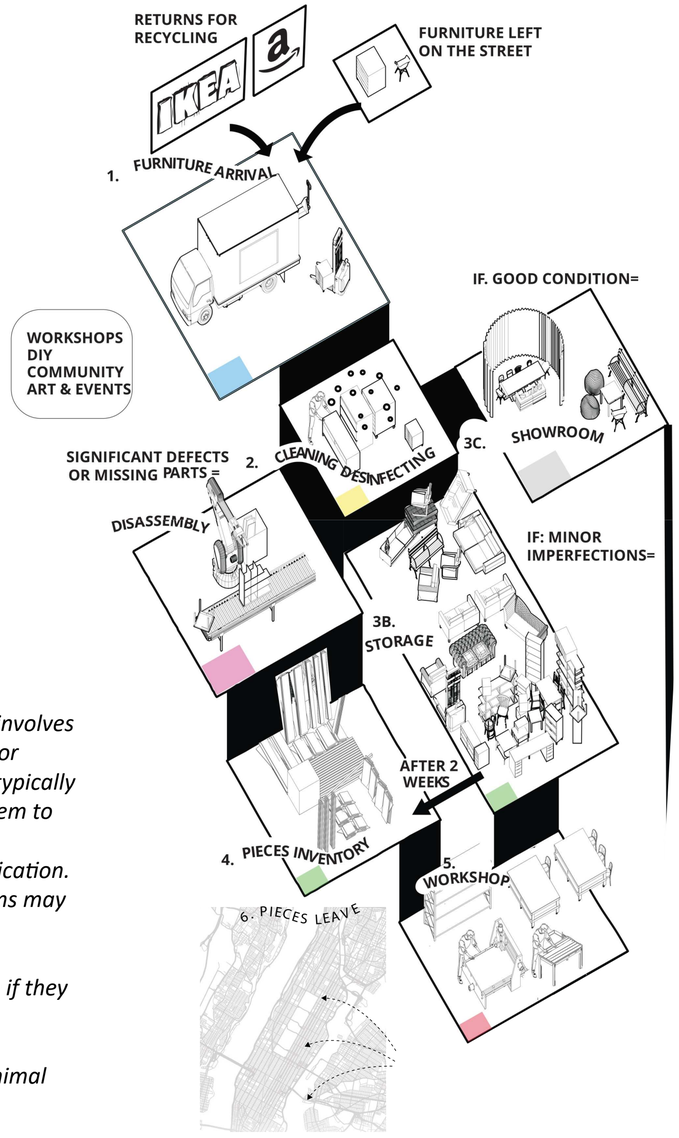

The new reverse logistics process involves collecting items placed on streets or returned housewares that would typically end up in landfills and bringing them to our building. Here, the furniture undergoes disinfection and classification. Depending on their condition, items may be:

Taken to the transformative space if they are in good condition.

Moved to storage if they have minimal defects.

Sent for disassembly.
Subsequently, these items are reassembled or semi-assembled into new urban artifacts. Thus, the building serves a dual purpose: a community hub where people can enjoy social activities and take furniture, and as a catalyst where new urban mutations are designed and assembled to enhance public spaces.

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We defined the ground floor as an extension of the street within the building. By appropriating part of the public space, we invite the street into the building. On the ground floor, spaces are divided into permanent activity zones and a transformative area, which is made of curtains as our main system of space configuration.

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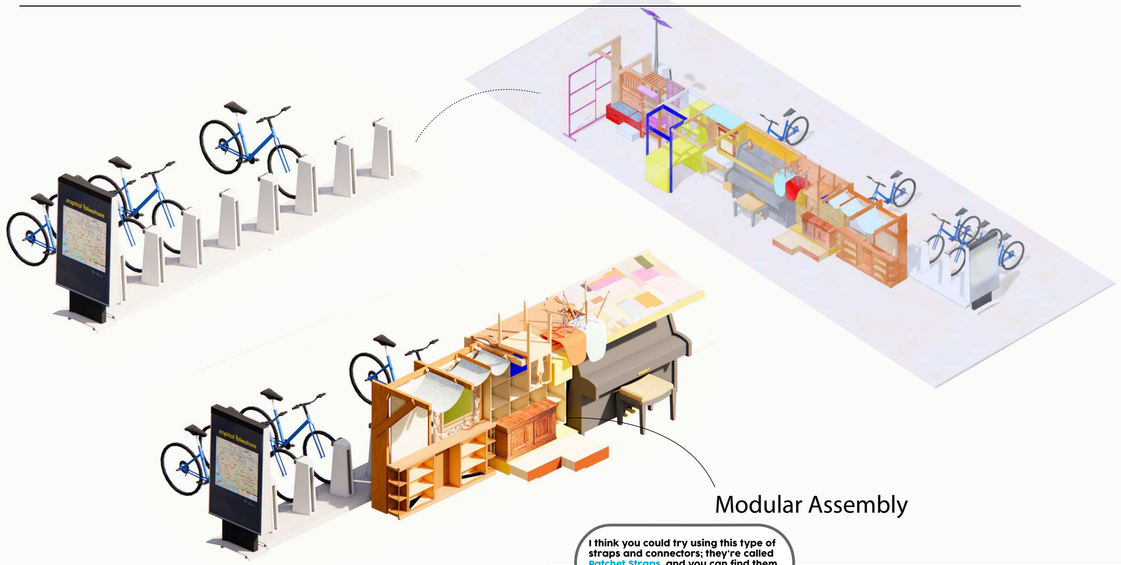
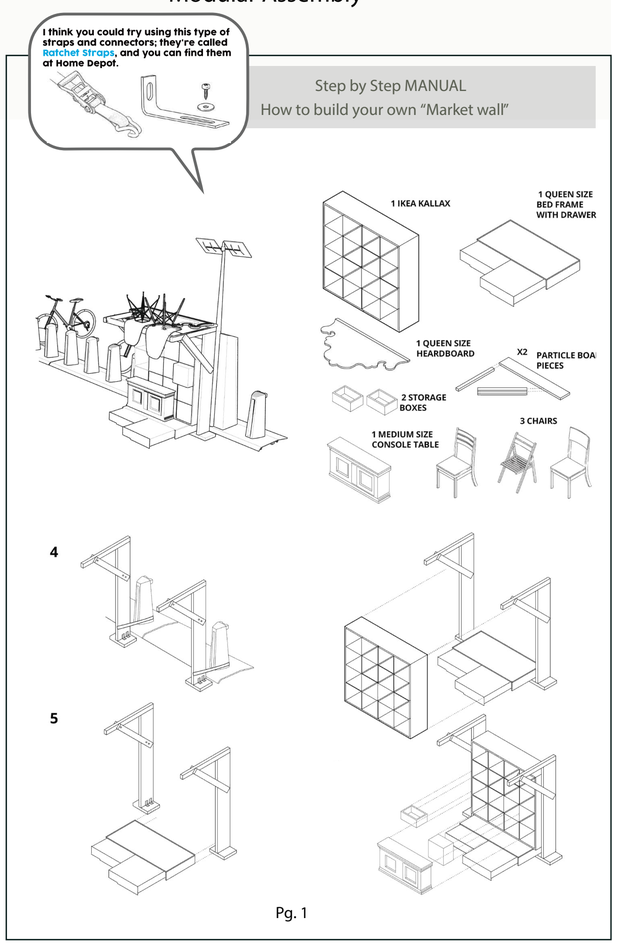


BIKE STATION AS A “COMMUNITY WALL”

Adaptable Urban Furniture:
Exploring New Urban Opportunities

Extending beyond the building scale, we searched for opportunities to intervene in public spaces. By reusing discarded furniture and repurposing urban elements like scaffolding and light posts, we envision a city where these everyday objects are transformed into dynamic urban interventions. Whether transforming light posts into vertical spaces or scaffolding into modular public rooms, this project challenges the static nature of public spaces, encouraging dynamic, participatory uses.




Communal wall - rest spot - music space


Scaffold as opportunity to develop “rooms”

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STREET MARKET

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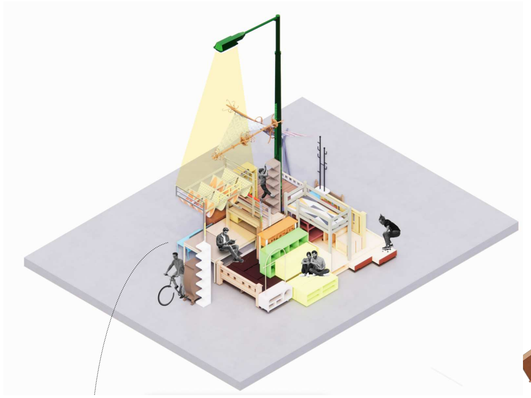
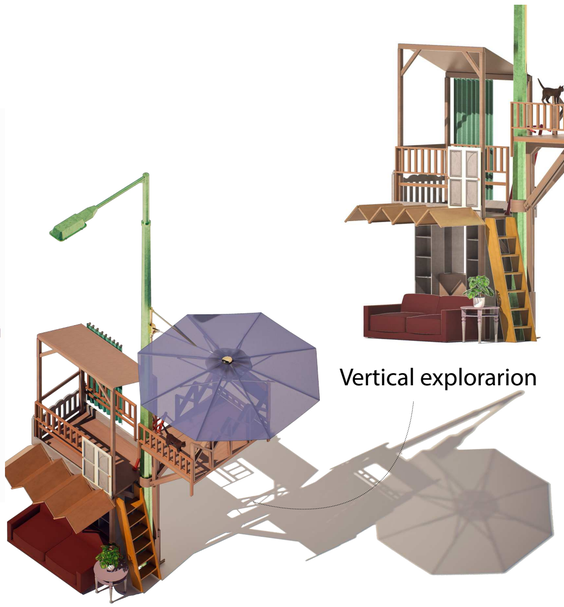
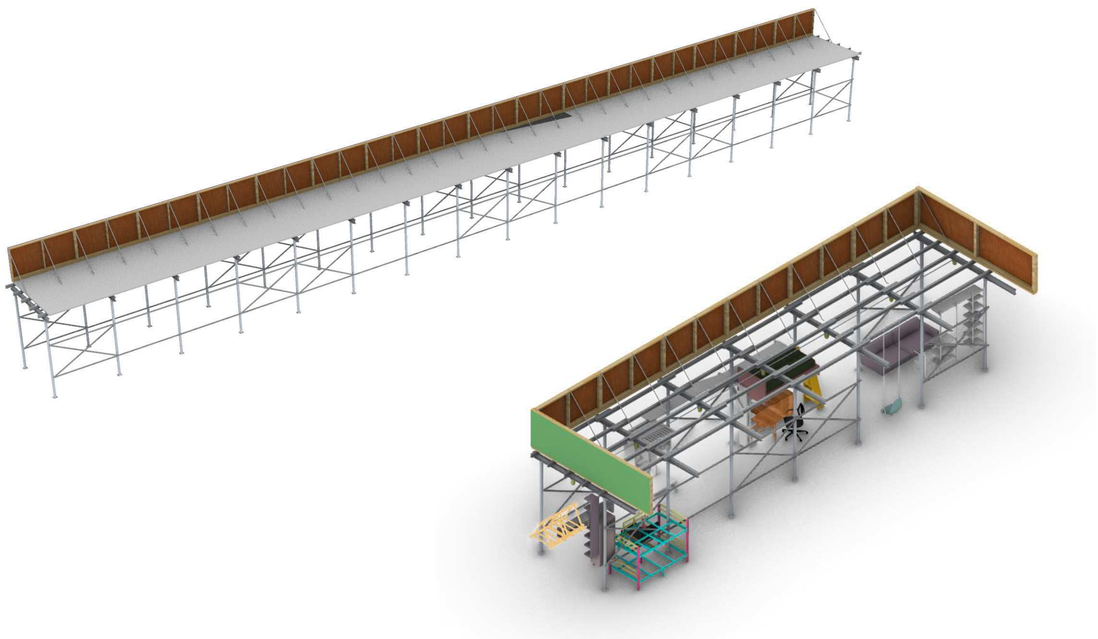
URBAN PUBLIC STAGE



Floor explorarion



Vertical explorarion



COMMUNITY GARDEN

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Times Square “Photo spot?”

TIMBER ECHOES

COURSE NAME:
1:1 *Crafting and Fabrication of Details*
TECH ELECTIVE

DATE:
SPRING 2025

PROFESSOR/INSTRUCTOR:
ZACHARY MULITAUAOPELE

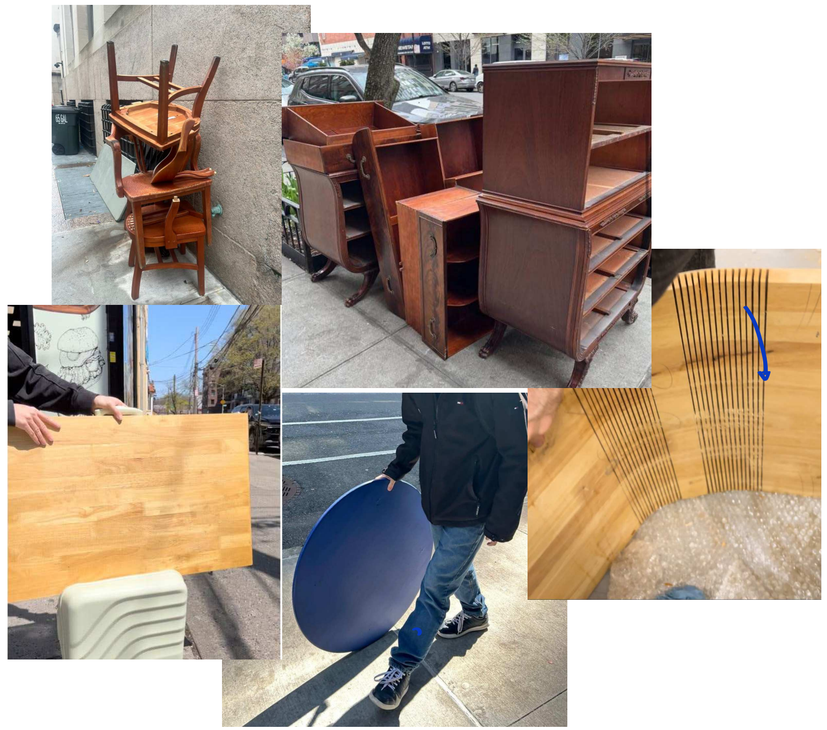
PARTNERS:
LOUIS ARTEAGA

COURSE NAME:
1:1 TECH ELECTIVE

DATE:
SPRING 2025

PROFESSOR/INSTRUCTOR:
ZACHARY MULITAUAOPELE

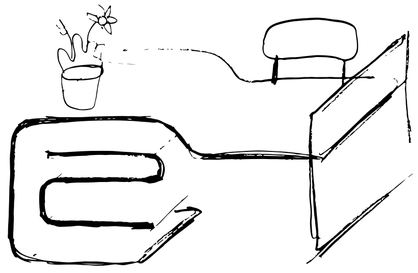
PARTNERS:
LOUIS ARTEAGA



For the 1:1 class, we were tasked with fabricating a full-scale model. We decided to design a piece of furniture: a table made from reclaimed wood. The design aimed to explore our interests in techniques such as kerf bending. In this way, the entire table was constructed from materials recovered from the streets of New York City. Most of the materials were damaged furniture pieces, countertops without legs, and abandoned items found on the streets, which we gradually collected over time.

In the bustling urban environment, materials are constantly being discarded, overlooked, and replaced. "The Resilient Table" aims to challenge the conventional understanding of waste by showing how these materials can be reclaimed, recycled, and reinvented. The table represents a mutative process, where the ordinary becomes extraordinary through creativity, craftsmanship, and the redefinition of value.

By reusing what would otherwise be discarded, "The Resilient Table" also makes a statement about sustainability in urban environments. It invites a reflection on the life cycle of materials and challenges us to reconsider how we approach consumption, waste, and resources in our cities.



Design sketch

COURSE NAME: 1:1 TECH ELECTIVE

DATE: SPRING 2025

PROFESSOR/INSTRUCTOR: ZACHARY MULITAUAOPELE

PARTNERS: LOUIS ARTEAGA

COURSE NAME: 1:1 TECH ELECTIVE

DATE: SPRING 2025

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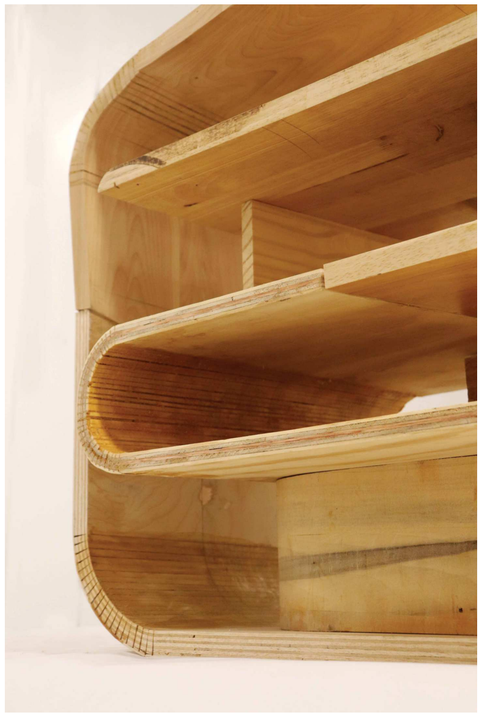

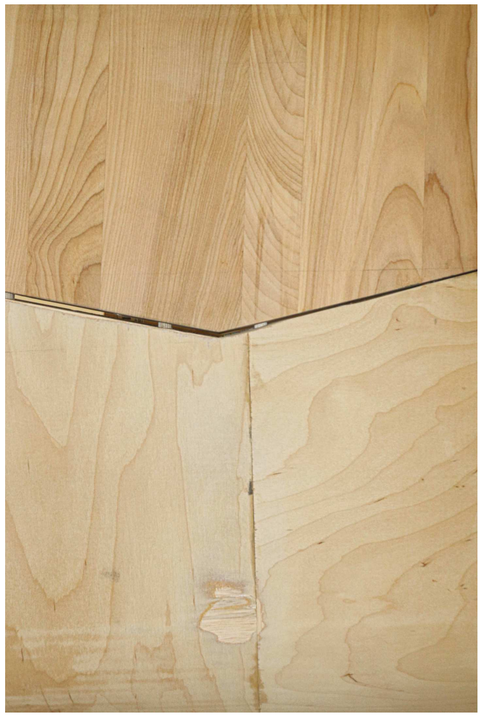

A Manifesto of "Re-Architecture"