JOYCE CHEN

Portfolio

TRANSIT

FERMENTATION

SHREDDING

EVAPORATION

SORTING

DELIVERY

DISTRIBUTION

RECREATION

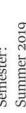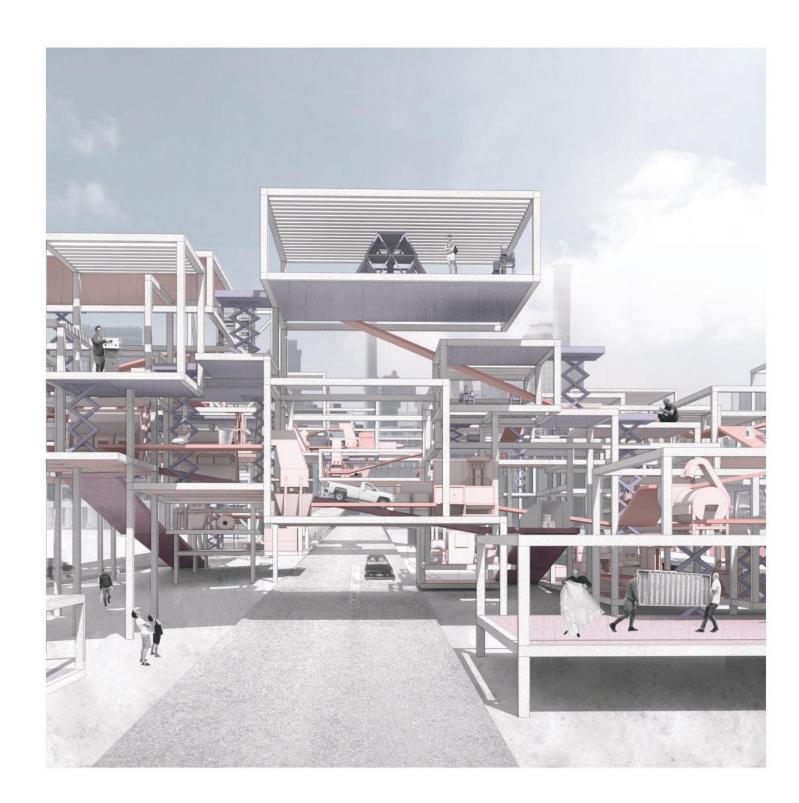# Contents

Plastic Nation

Instructor: Tei Carpenter

Parther:
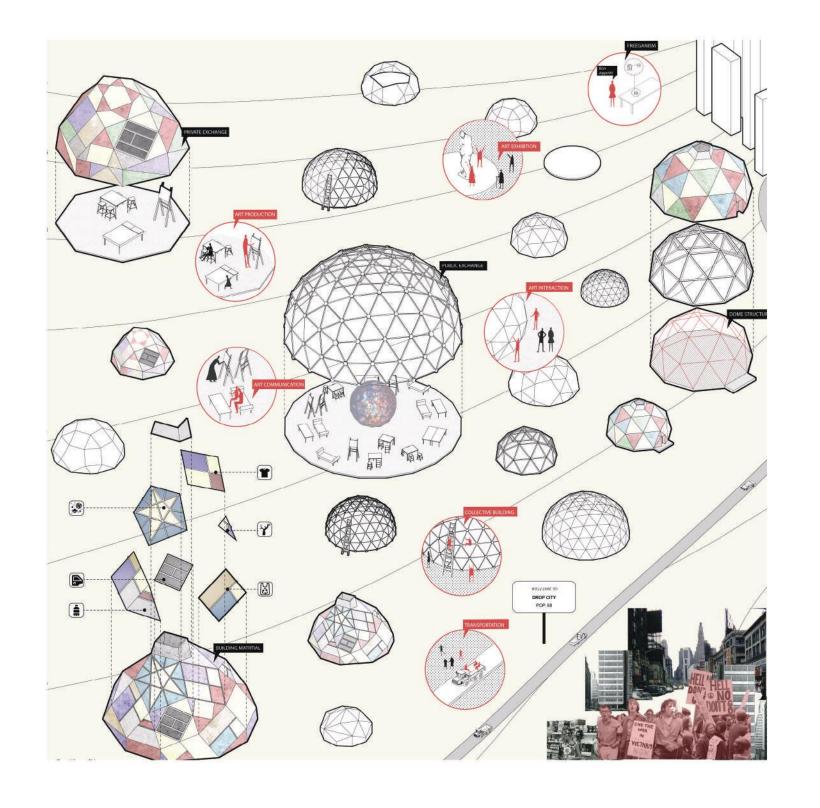Yixuan Shi
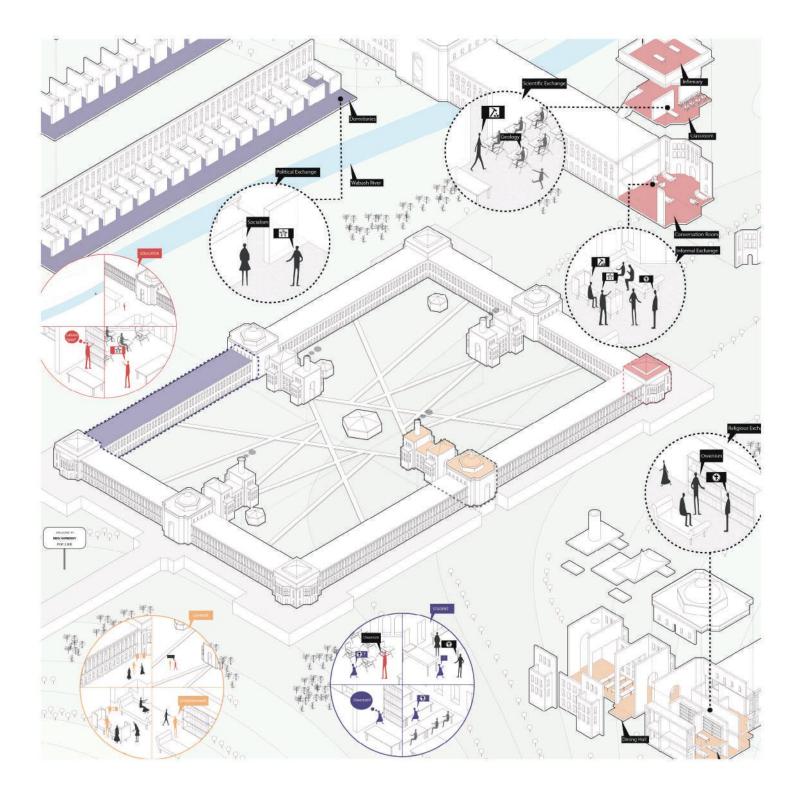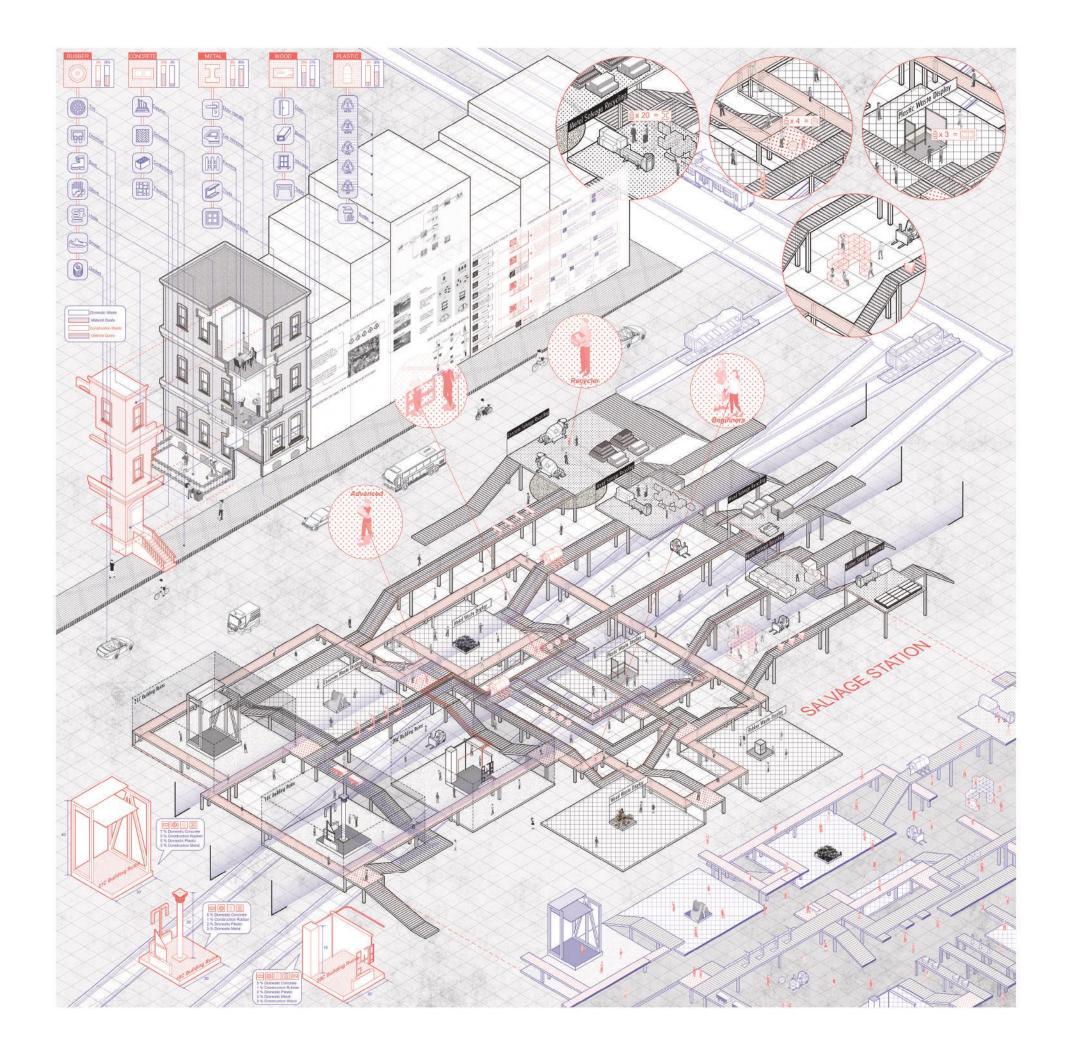
Plastic Nation takes place in a future where New York City no longer accepts plastic products as a result of laws recently enacted to reduce the carbon footprint within the city, such as the banning of plastic bags in the state of New York and the zero waste initiative. In eliminating the production of new plastics, a new circular economy would emerge based on the existing supply, commodifying plastic and eliminating its typical single use purpose in a series of interlocking spaces where the transformation process of plastic is observed and exchanged in various states.
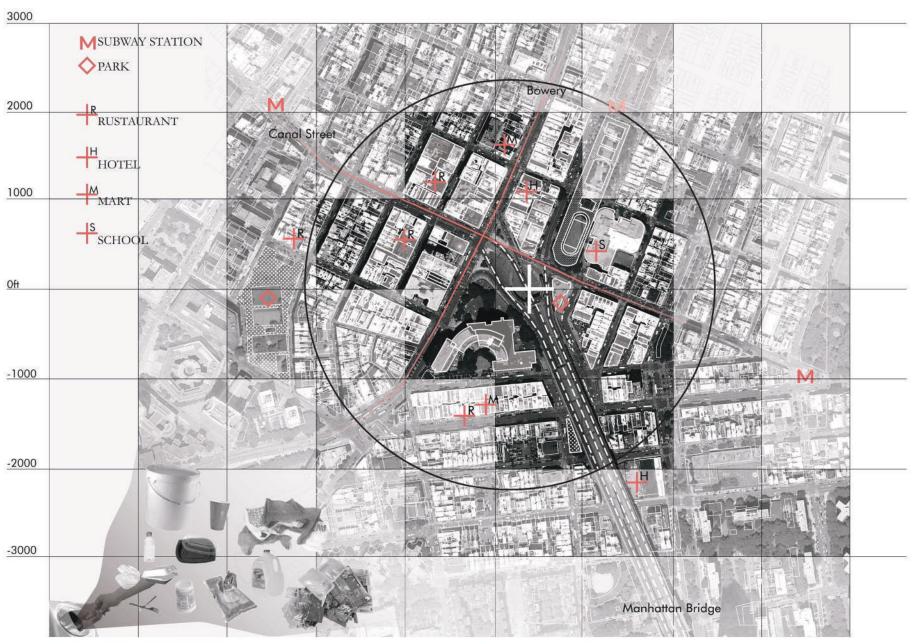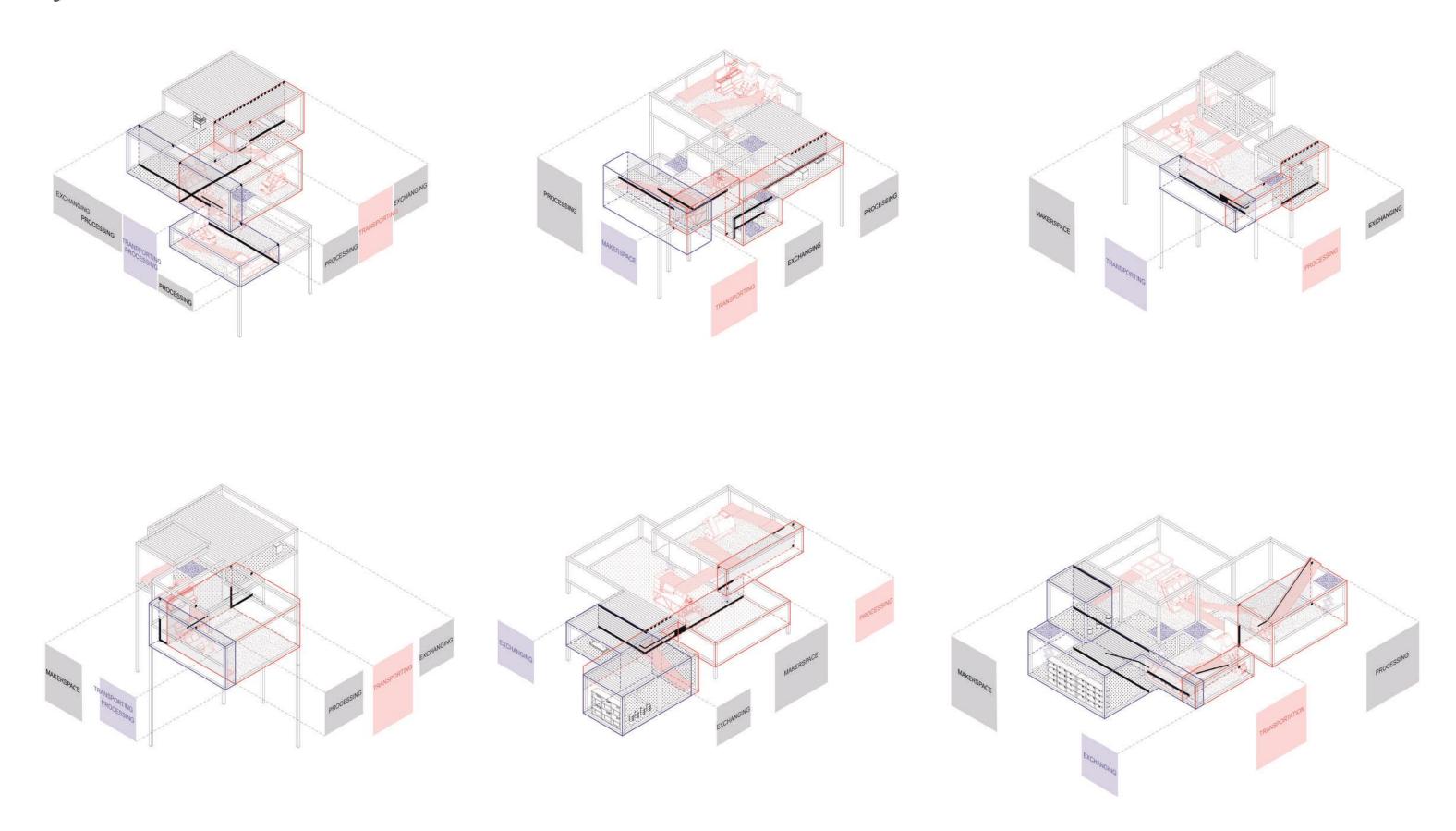
Manifesto

SALVAGE STATION

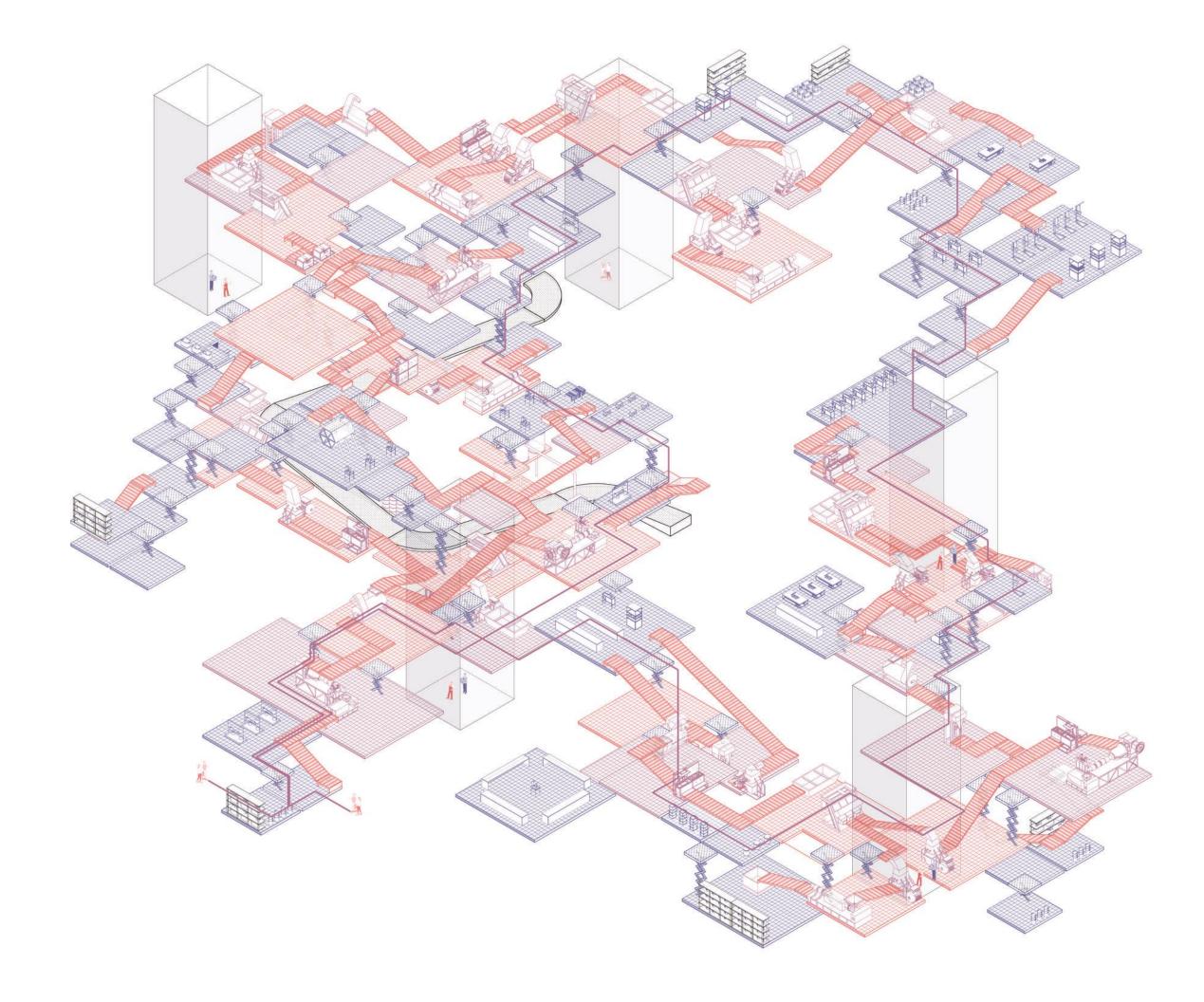*Site: Canal Street*

3000

M SUBWAY STATION

◇ PARK

┼R RUSTAURANT

┼H HOTEL

┼M MART

┼S SCHOOL

2000

1000

0ft

-1000

-2000

-3000

Bowery

Canal Street

Manhattan Bridge

Program

Section

Plan

VEHICLE ENTRANCE

VEHICLE ENTRANCE

Program

Program

PLASTIC NATION

CLOSED-LOOP
RECYCLING

OPEN-LOOP
RECYCLING

PRCESSING STATION

SHREDDING

EXTRUDING

CLEANING
DEHYDRATING

MATERIAL
TRANSPORTATION

MAKER SPACE

MARKET

CHEMICAL
RECYCLING

OIL COLLECTING

GENERATOR
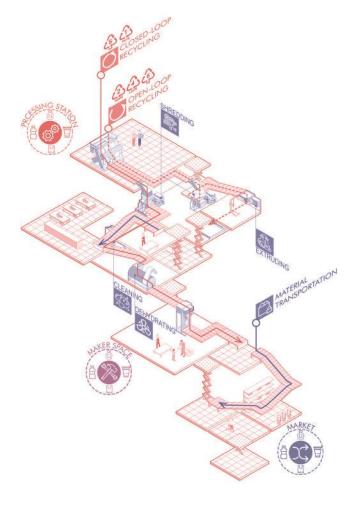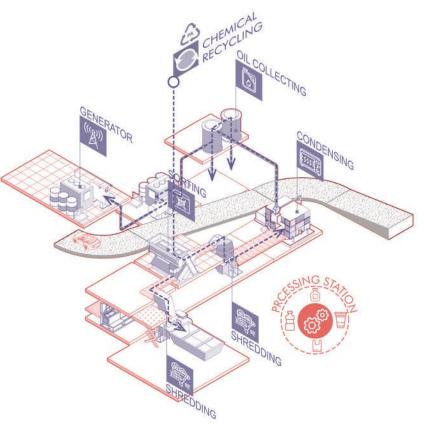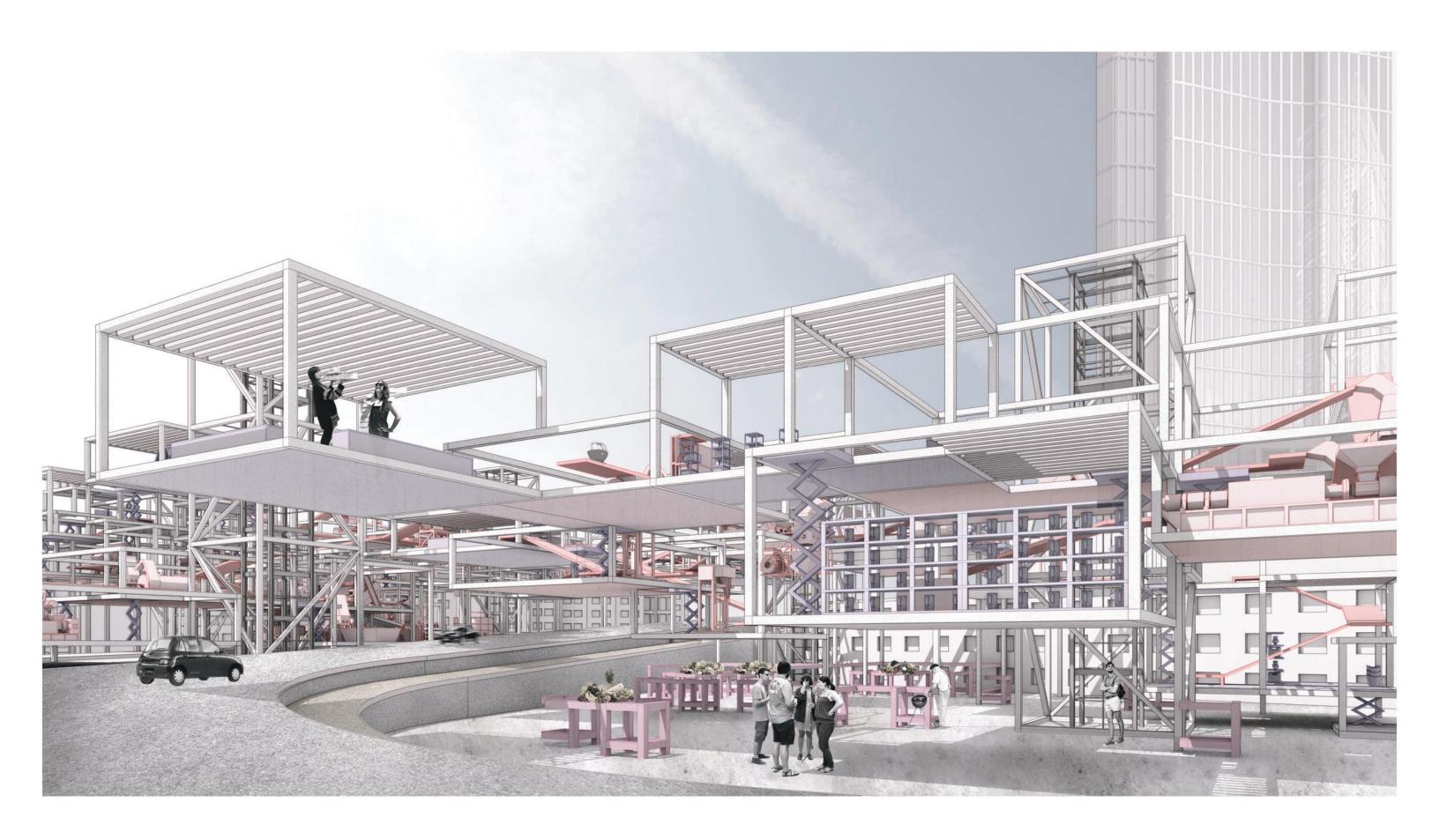
SORTING

CONDENSING

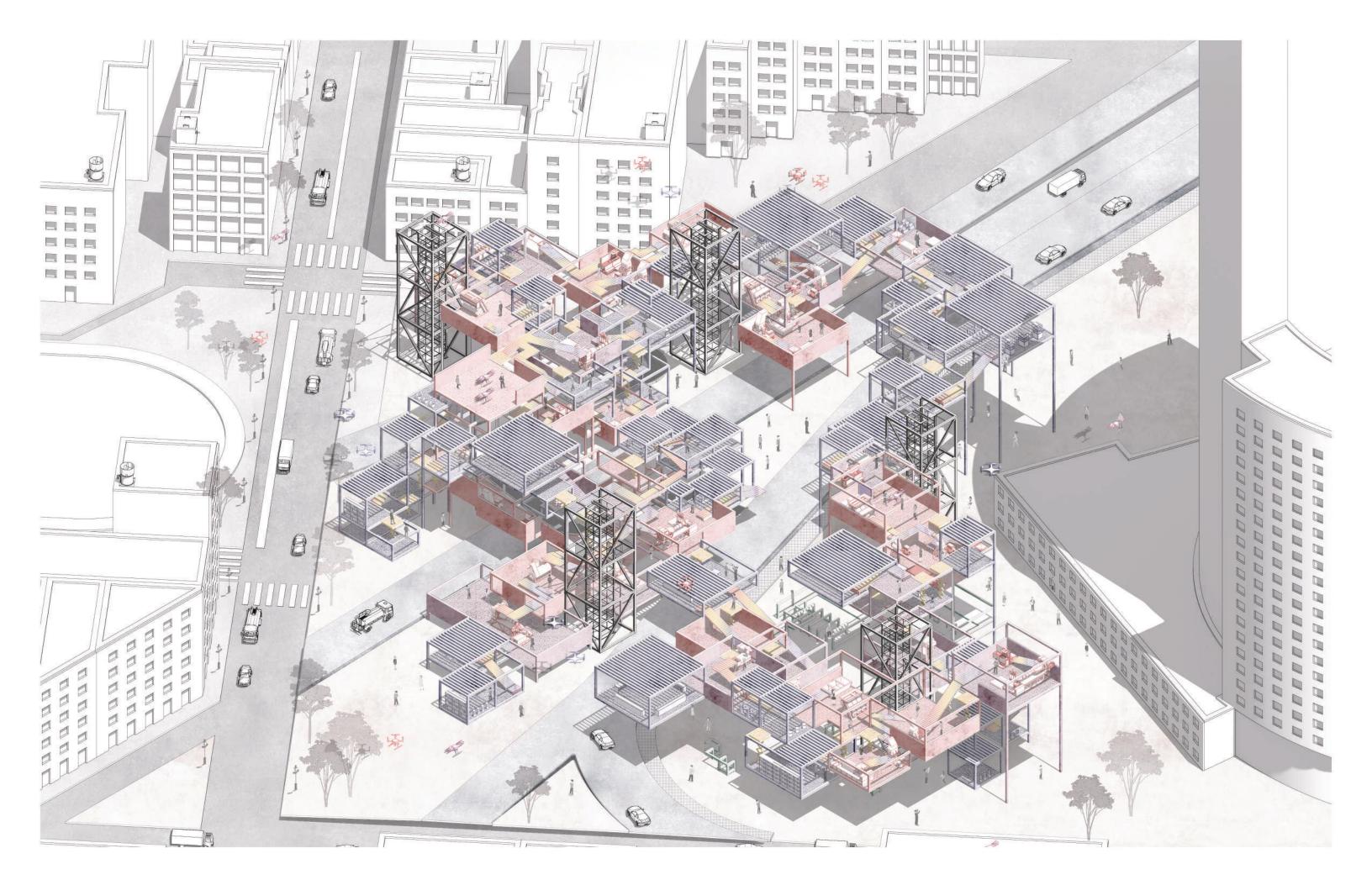PRCESSING STATION

SHREDDING

SHREDDING

The framework of the design is centered on principals obtained through the manifesto drawing, an experiential diagram that illustrates the players within our market space as well as the transformational process of material, and the potential spaces and programs that the market may hold.
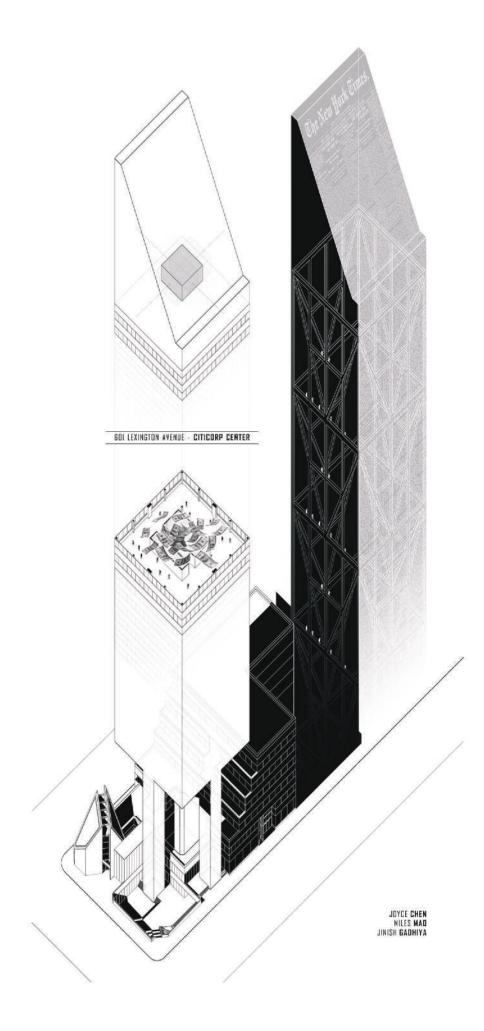
Transcalarities

Instructor: Andres Jacques

Work:
Individual

This course queries the ways in which architectural devices of reference, which have shaped the discourse of the field over the last 3 decades, are characterized by their transitioning through spatial and temporal scales. The course explores the agency architectural devices unfold through this transscalar condition—this is to say, the specific political modes that architectural devices perform, and the way they multiply their reach, influence, and sensitivity: for instance, from the microbiological to the mineral, the atmospherical, the ecosystemical, the genetic, and the planetary.

601 LEXINGTON AVENUE - CITICORP CENTER

JOYCE CHEN
MILES MAO
JINISH GADHIYA

Joyce Chen

Andres Jacques

06/20/19

Transcalarities

Dipesh Chakrabarty's *Postcolonial Studies and the Challenge of Climate Change* examines the present geological influence of humanity, or the Anthropocene period, and how humans must expand beyond their ontological thinking capabilities in order to take

It is perhaps through recontextualizing climate change and viewing the state of the world through multiple timelines generated by artificial natures that humanity gains a new perception of the ecological world.

created to satisfy the avarice of humanistic desires. Due to these creations humanity has entered an ecological state that has transcended qualitative values. It is perhaps through recontextualizing climate change and viewing the state of the world through multiple timelines generated by artificial natures that humanity gains a new perception of the ecological world. By introducing simultaneous states of consciousness, the linear timeline introduced by previous scientists becomes muted, and multiple states of consciousness emerge to provide an objective framework.

Joyce Chen

Andres Jacques

06/29/19

Transcalarities

The Postman

Rossi Braidotti's chapter *Compensatory Humanism* argues against extending humanistic values to animals, and instead advocates that humans must recognize the symbiotic relationship between humans and animals. In hybridizing human and animal

It is within this temporality, through the contextual perspective of chimeric humans and animals, that equality may truly be achieved and the human centric notions of the other becomes disbanded.

responsible for the current environmental climate, anthromorphizing animals is a fruitless endeavor that will not quell the current environmental issues. It is only by acknowledging that a bond between humans and animals exists in which they function in tandem with one another allows for the transcendence of all species into another plane of awareness. It is within this temporality, through the contextual perspective of chimeric humans and animals, that equality may truly be achieved and the human centric notions of the other becomes disbanded.

Joyce Chen

Andres Jacques

07/11/19

Transcalarities

Rotor's *A Reverse Engineering and Methodology Practice* demonstrates designing in response to the current environment and illustrates the significance of

By immersing the participants within the lived realities of the landscape, the human removes its self-imposed barriers constructed by urban dwellings, and reclaims its place within the interlocking network of ecosystems in which all species are a part of.

element of the natural to participants in order to generate a sense of ecognosis, or awareness of the human in relation to its natural environment. By immersing the participants within the lived realities of the landscape, the human removes its self-imposed barriers constructed by urban dwellings, and reclaims its place within the interlocking network of ecosystems in which all species are a part of. The recognition of readapting existing materials is critical in the modern climate, as sustainable typologies facilitate critical discussions in an era of converging environmental crises.

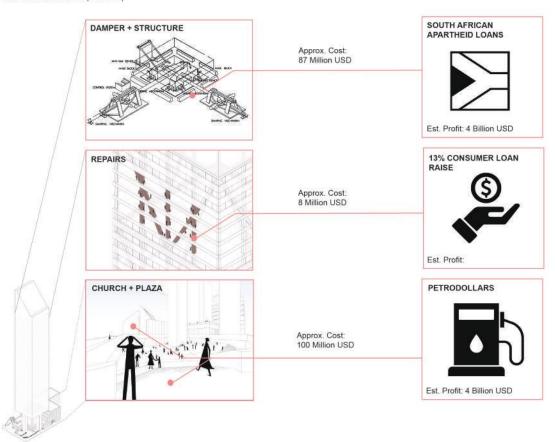Joyce Chen

Andres Jacques

07/18/19
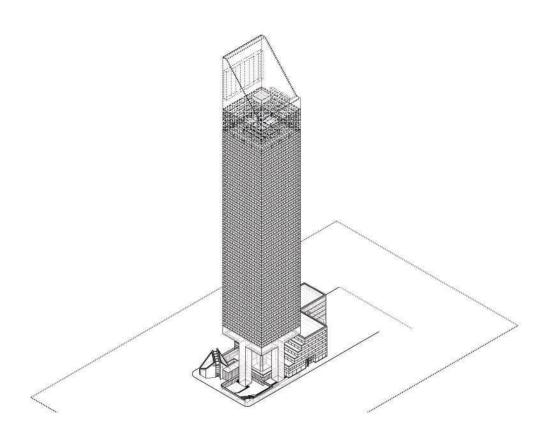
Transcalarities

Baroque Technopatriarchy

Paul B. Preciado's *Baroque Technopatriarchy* advocates for the synthesis of the organic reproductive body and the inorganic technologies of mechanical production in order to overcome the sexist and fascist modern paradigm ushered in by the Trump era
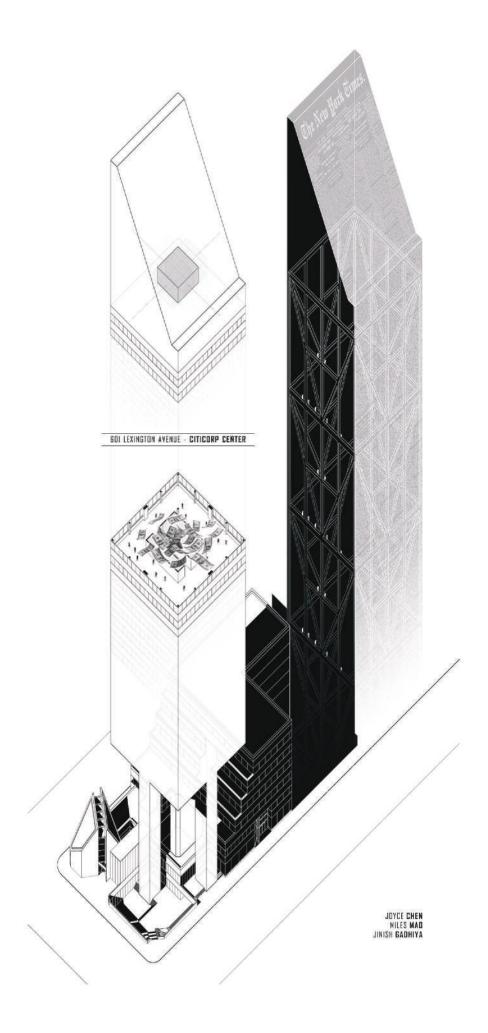
The implementation of hybridizing technology and biology requires further explorations and investigations into the context of cultures, and how such a practice is applicable within the context of the global network in an era of converging ecological crises.

addition to this, by reframing existing technological frameworks in order to establish systems of equality, one questions potential futuristic scenarios and how society as a whole may operate within an era of removed preconceptions of beings previously considered to be second class citizens. The implementation of hybridizing technology and biology requires further explorations and investigations into the context of cultures, and how such a practice is applicable within the context of the global network in an era of converging ecological crises.

TOTAL:
195 MILLION USD (1970)
806 MILLION USD (TODAY)

DAMPER + STRUCTURE

Approx. Cost:
87 Million USD

SOUTH AFRICAN APARTHEID LOANS

Est. Profit: 4 Billion USD

REPAIRS

Approx. Cost:
8 Million USD

13% CONSUMER LOAN RAISE

Est. Profit:

CHURCH + PLAZA

Approx. Cost:
100 Million USD

PETRODOLLARS

Est. Profit: 4 Billion USD

601 LEXINGTON AVENUE - CITICORP CENTER

JOYCE CHEN
MILES MAO
JINISH GADHIYA

Arguments

Instructor: Jana Berankova

The course interrogates the way architectural devices and architectural practices gain collective relevance by participating in the making of contemporary realities; by facing current environmental, technological and representational challenges; and by being part of ongoing interactions, collaborations, disputes and coexistences. Organized around a series of case-studies (half of them coming from the field of architecture, half of them brought by speakers who approach architecture from non-architectural fields) this course has as a main goal to interrogate the way architecture is part of the shared concerns that shape the evolution of the world's societies; that is to say, to explore what is the way architectural practices are evolving by confronting and being part of shared concerns.

QUARRY

NEW INVESTIGATIONS IN COLLECTIVE FORM

UNAUTHORIZED AND POWERLESSNESS

FORMA FANTASMA

Quarry

In her film Quarry Amy implements a choreographic sequence of camera techniques in conjunction with the crescendo of orchestra music to convey the opulence and wealth displayed through the use of marble within a montage of Manhattan apartments. Can a camera ever be used to capture a space without manipulating the viewer or creating political connotations through the composition?

Unauthorized and Powerlessness

Andreas Angelidakis states that the city of Athens appears to be in a state of constant revolt due it's chaotic history of migrations and crises. Would the character that defines Athens exist if not for the people who developed their own typology of afthereto and antiparochi?

New Investigations in Collective Form

Therefore, although The Open Workshop seeks to remove the essences behind structures by creating "open artifices," could it be argued that the limitations of the human conceptions of space and objects can only transform these suspended forms into a limited catalogue of configurations?

Forma Fantasma

At building scale, what would the level of waste production be and what conversations would it facilitate in regards to future construction?

Contents

Residency in Frames

Instructors: VPPR

Work:
Individual

Semester:
Fall 2019
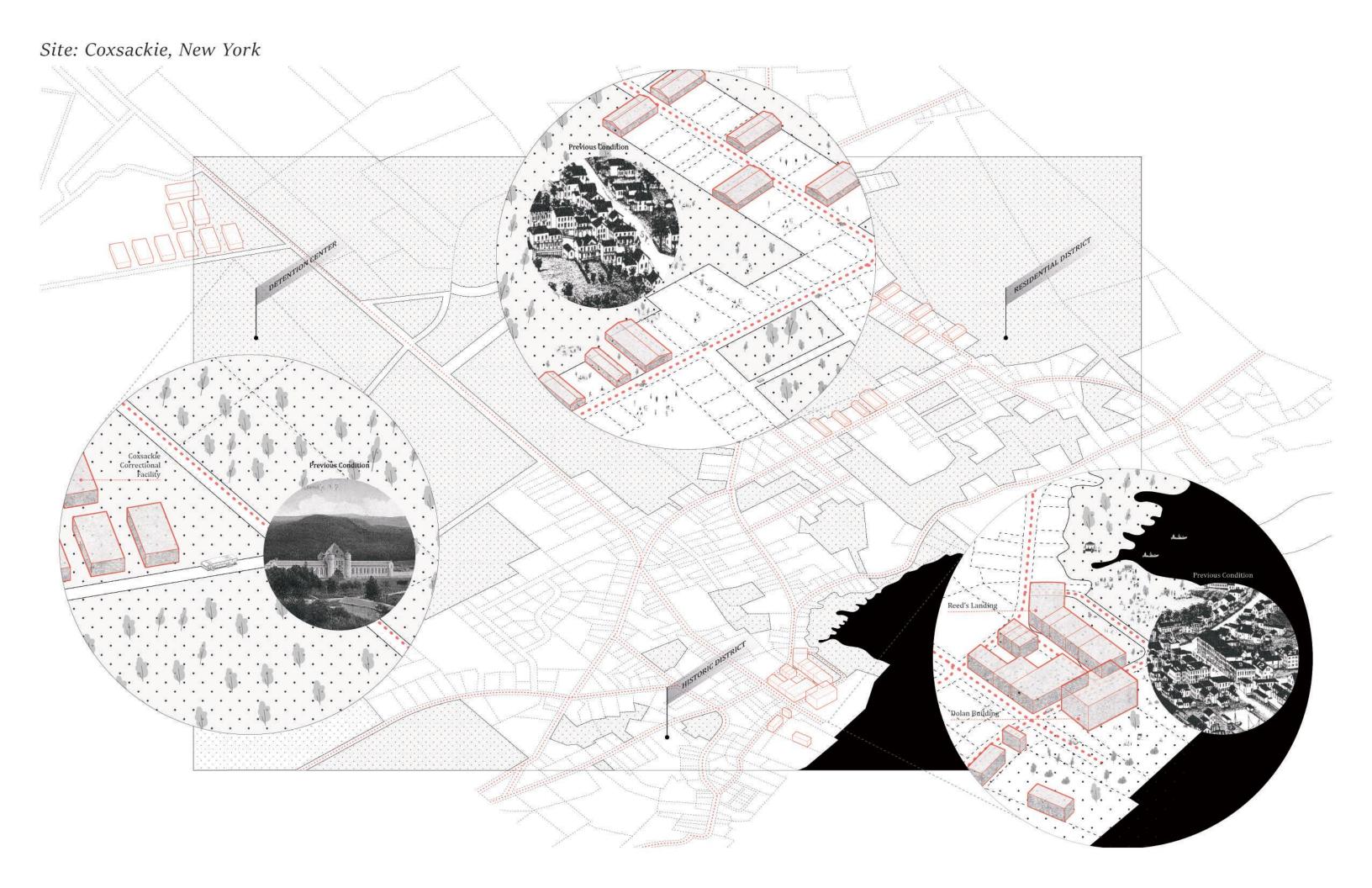
Residency in frames is an artist's community primarily designed for landscape artists. The project activates the existing site by challenging the depth of vision through a series of sequentially framed perspectives aligned with artworks that direct inhabitants to proceed towards the Hudson River. Units and galleries are customized to accommodate different types of landscape artists ranging from painting, sculpture, photography, and performance, and are organized along a radial grid system responsive to the existing site typology. It is through these devices that views become intentional moments set along the Hudson River, reinvigorating the abandoned town and creating a contemplative communal space for artist residencies primarily focused on artworks activated by the site.

Site: Coxsackie, New York

DETENTION CENTER

RESIDENTIAL DISTRICT

Previous Condition

Coxsackie
Correctional
Facility

Previous Condition

HISTORIC DISTRICT

Reed's Landing

Dolan Building

Previous Condition
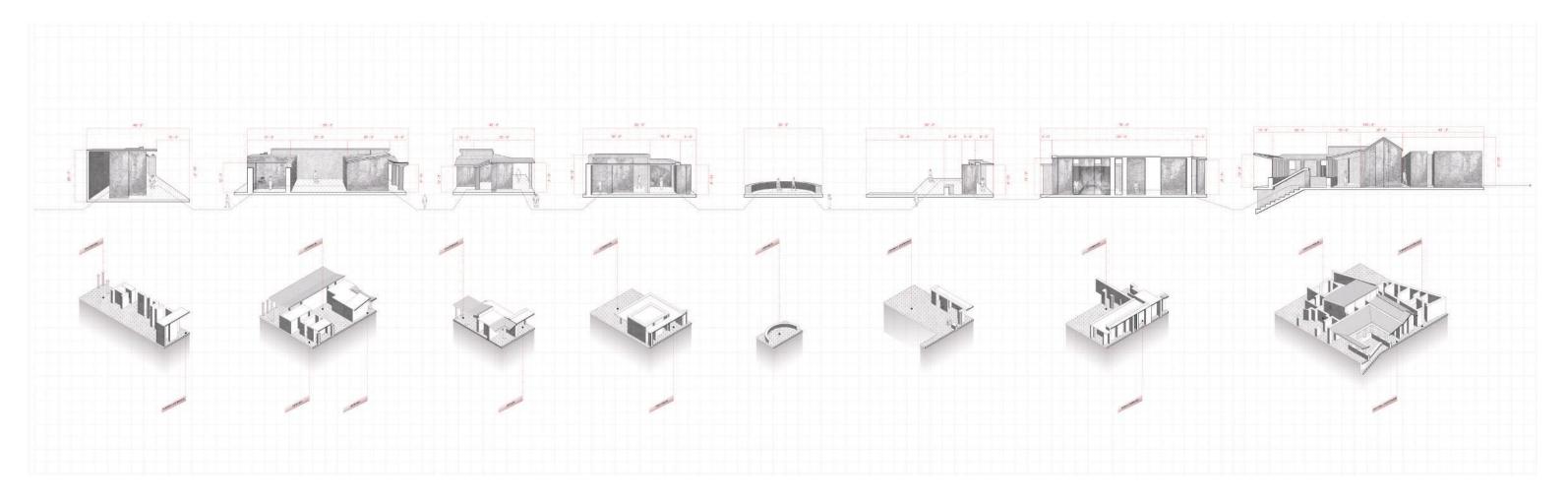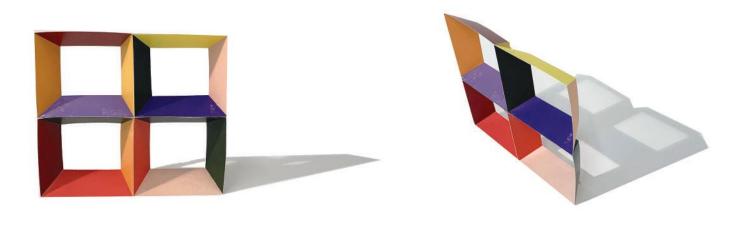
Studies
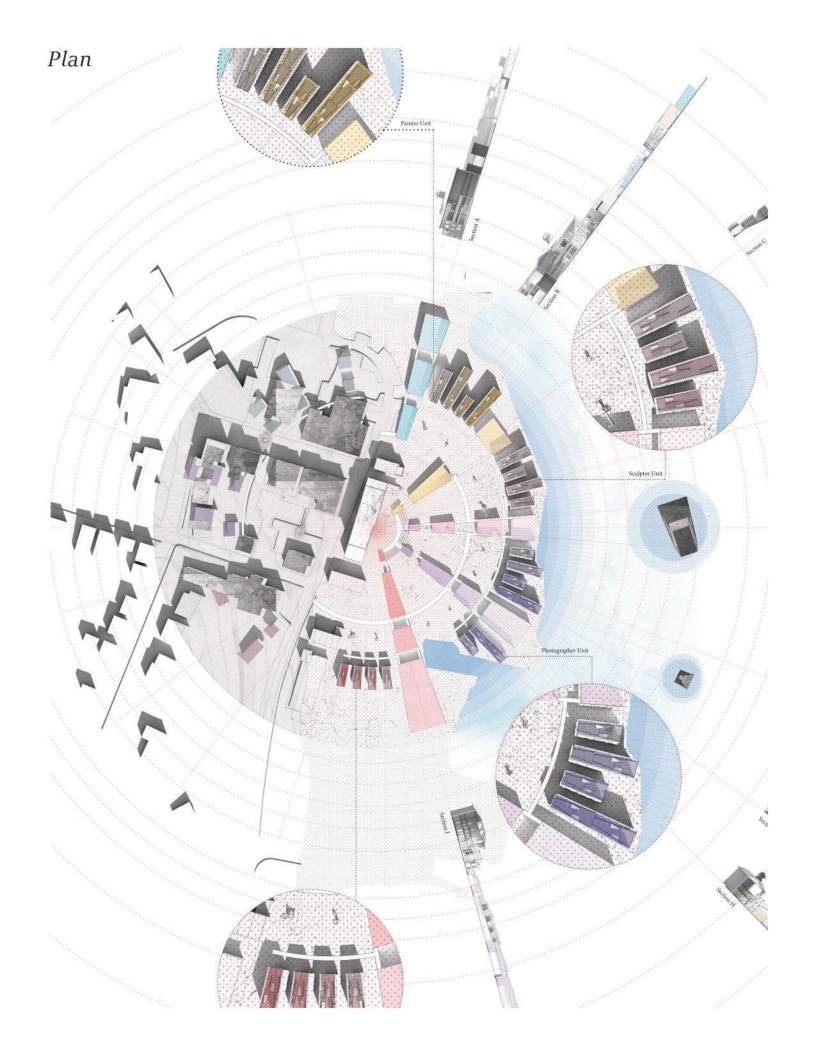
First, I selected the artist Ad Minoliti, a painter and digital artist based in Argentina. I extrapolated 5 key manifesto points in order to develop my final wall model; color, geometry, layering, framing, and scale. Beginning with study models that abstracted her works and transforming them into physical manifestations, I then selected the model with the most spatial potential. Minoliti's works are metaphysical, consisting primarily of geometric abstractions in which beings in her art find each other, exchange information (shapes and colors), and go their separate ways to run into other subjects and continue their mutation.
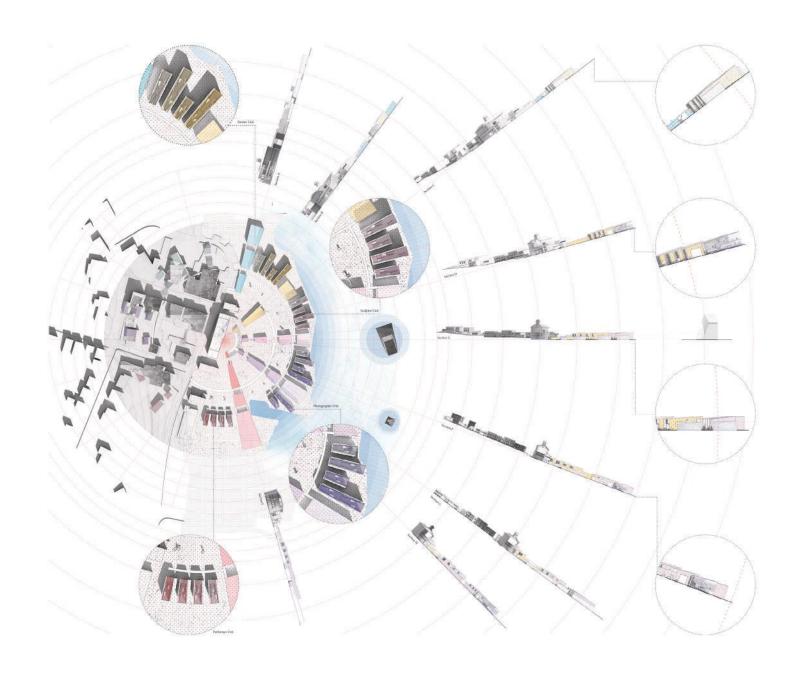
The 3 walls reflect the transformative nature of Minoliti's art, and begins to investigate the potentially operative nature of frames. Combining these investigations led to the development of the current master plan, an intervention that combines the concepts of framing and intersecting corridors to generate spatial conditions.

Plan

Painter Unit

Section A

Section B

Section C

Sculptor Unit

Photographer Unit

Section I

Section H

Site Model

The existing roads on the site function as the primary access points to the project, and the space behind the Dolan Building functions as the core, or central gathering space in which public performances may take place, activating the Dolan Building's initial purpose as a public theater.

Axon

Painter Unit

ARTIST UNITS

Performer Unit

Painter Unit

ARTIST UNITS

Performer Unit

Sculptor Unit

Photographer Unit

GALLERIES

Sculptor Unit

Photographer Unit

Techniques of the Ultrareal

Instructors: Joseph Brennan, Phillip Crupi

Partners:
Xueqi Hu, Feibai An, Yixuan Shi

Semester:
Fall 2019
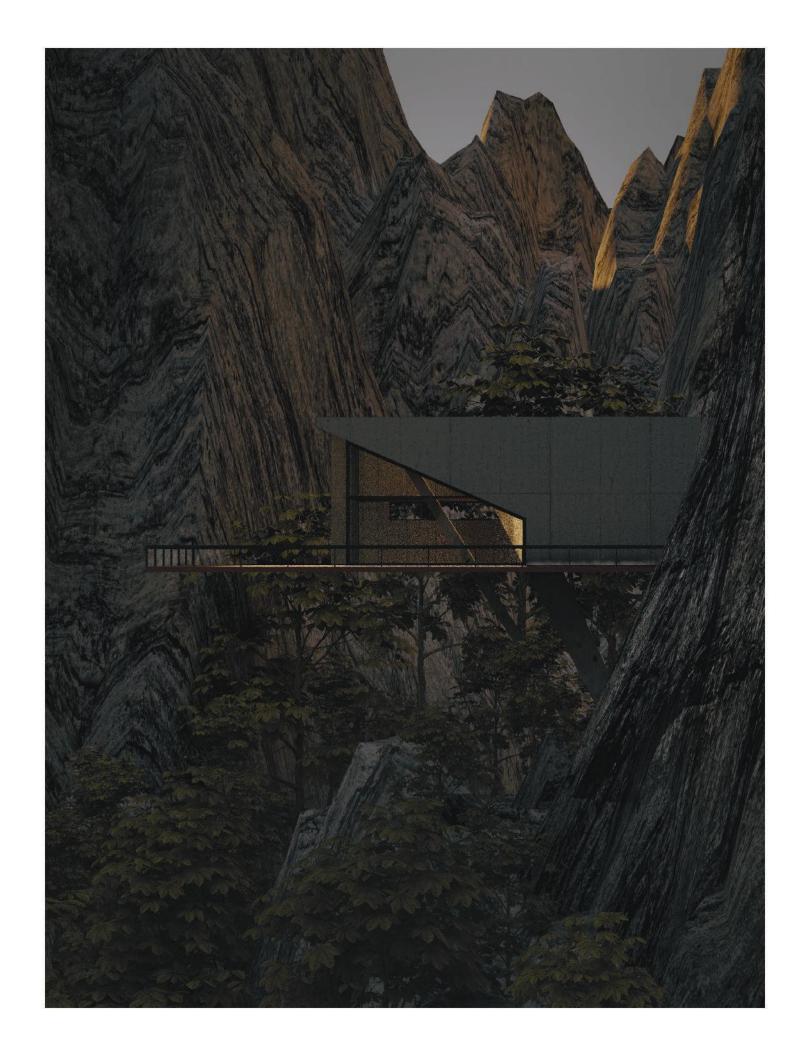
With the abundance of 3D modeling software and the ability to see every angle of a project instantaneously, renderings are often thought of as a last minute tool for representation. This class challenges participants to not only think of rendering as a method of presentation, but also a tool for design. The class uses V-Ray for 3D Studio Max as the main engine for exploration, but also encourages the use of other modeling applications, post-processing software, and 3rd party plug-ins.

Architectural Theory

Work:
Individual

Instructor: Mark Wigley

Semester:
Fall 2019

Architecture emerges out of passionate and unending debate. Every design involves theory. Indeed, architects talk as much as they draw. This class will explore the way that theory is produced and deployed at every level of architectural discourse from formal written arguments to the seemingly casual discussions in the design studio. A series of case studies, from Vitruvius through to social media, from ancient treatises on parchment to flickering web pages and tweets, will be used to show how the debate keeps adapting itself to new conditions while preserving some relentless obsessions. Architectural discourse will be understood as a wide array of interlocking institutions, each of which has its own multiple histories and unique effects.

The Sound of the Architect: Between Words and Drawings

The Reign of the Classical Treatise: Digesting Vitruvius

Curriculum as Polemic: Disciplining Architecture from Academy to University

The Invention of Architectural History: Strategic Narratives

The Invention of Criticism: Buildings in Review

Theory as Weapon: System versus Manifesto

The Canonization of Modern Theory

Domesticating Discourse: Soft Packages

Theory on the Couch: Self-Analysis

Postmodern Theory: Engaging the Other

The Commodification of Architectural Theory

Transgressive Theory: Sciences of Insecurity

Jeyce Chen
History of Architecture Theory
Mark Wigley
18 December 2019

Theory of Subnatures

Gissen's subnatural theory is situated within the current period of modernity, as it predicates upon analyzing and challenging historical precedents of architectural practice, from the inception of architectural theory by Vitruvius to modern practices reactive to existing infrastructures that attempt to address future conflicts.

The Vitruvian influence on architecture has significantly impacted Gissen's categorizations of the subnatural as well. In using Vitruvius' theories as precedent, Gissen establishes the framework upon which he expands his own theoretical approach to modern architectural practice.

According to Gissen, gas was central to emerging architectural concepts of the 19th century and fascinated scientists due to its ability to transform a space.

Seen as a register of time, dust is a future material that ultimately consumes ruins until becoming one with the earth again.

By categorizing and analyzing each element considered to be a subnature in relation to existing architectural concepts and designs, Gissen provides evidence that the theory of alternative forms of nature have consistently been present throughout the development of society.

While Gissen's theory raises awareness in regards to the external forces that operate outside of the typical practices of architecture and how these subnatures can be integrated to confront contemporary designs, the text does not elaborate how these confrontations seek to benefit society. In bringing to the forefront elements that have previously only existed within the subconscious of society, how does architecture become further advanced?

Upcycling: Food Factory
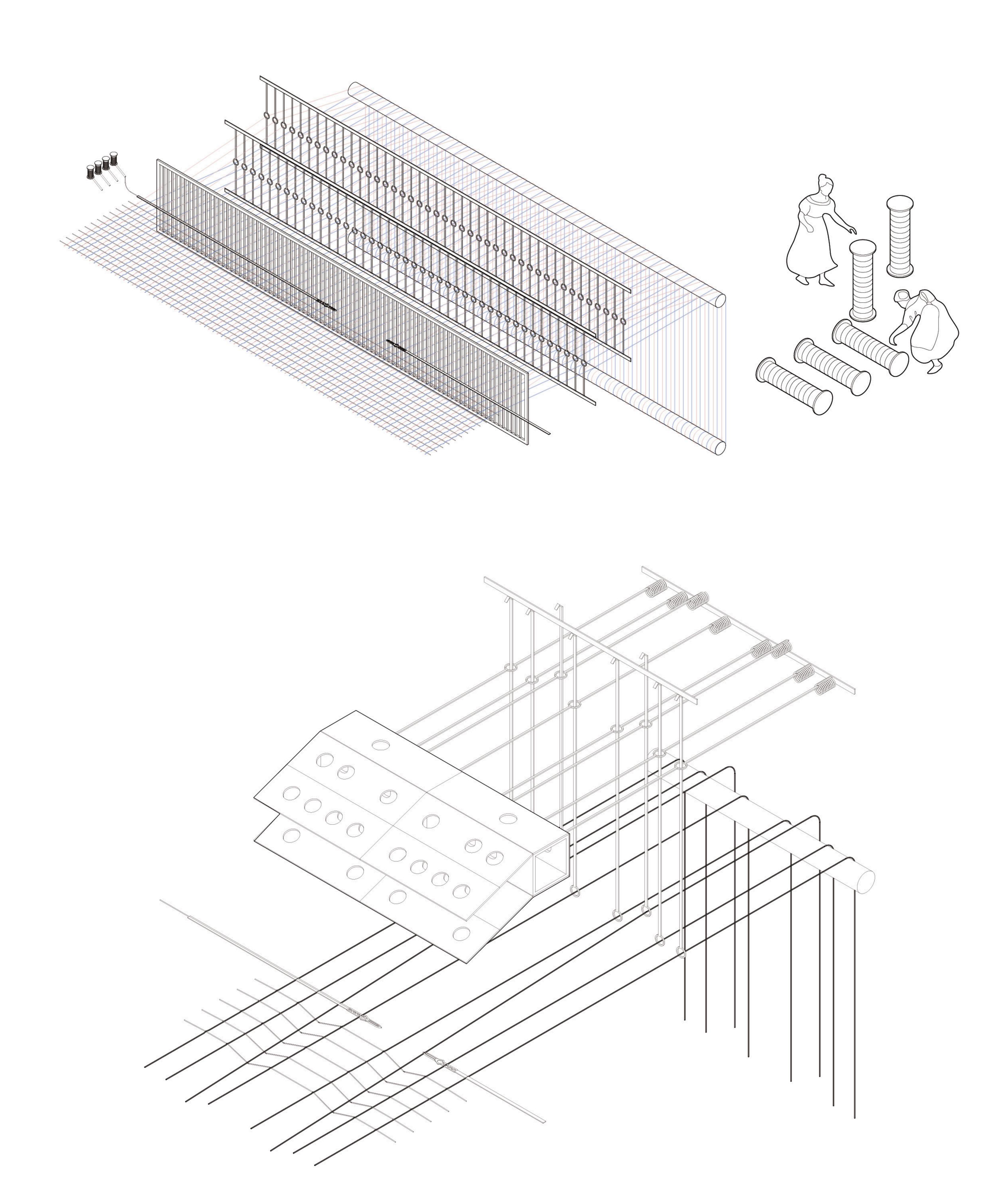
Instructor: Mimi Hoang

Partner:
Junwei Li
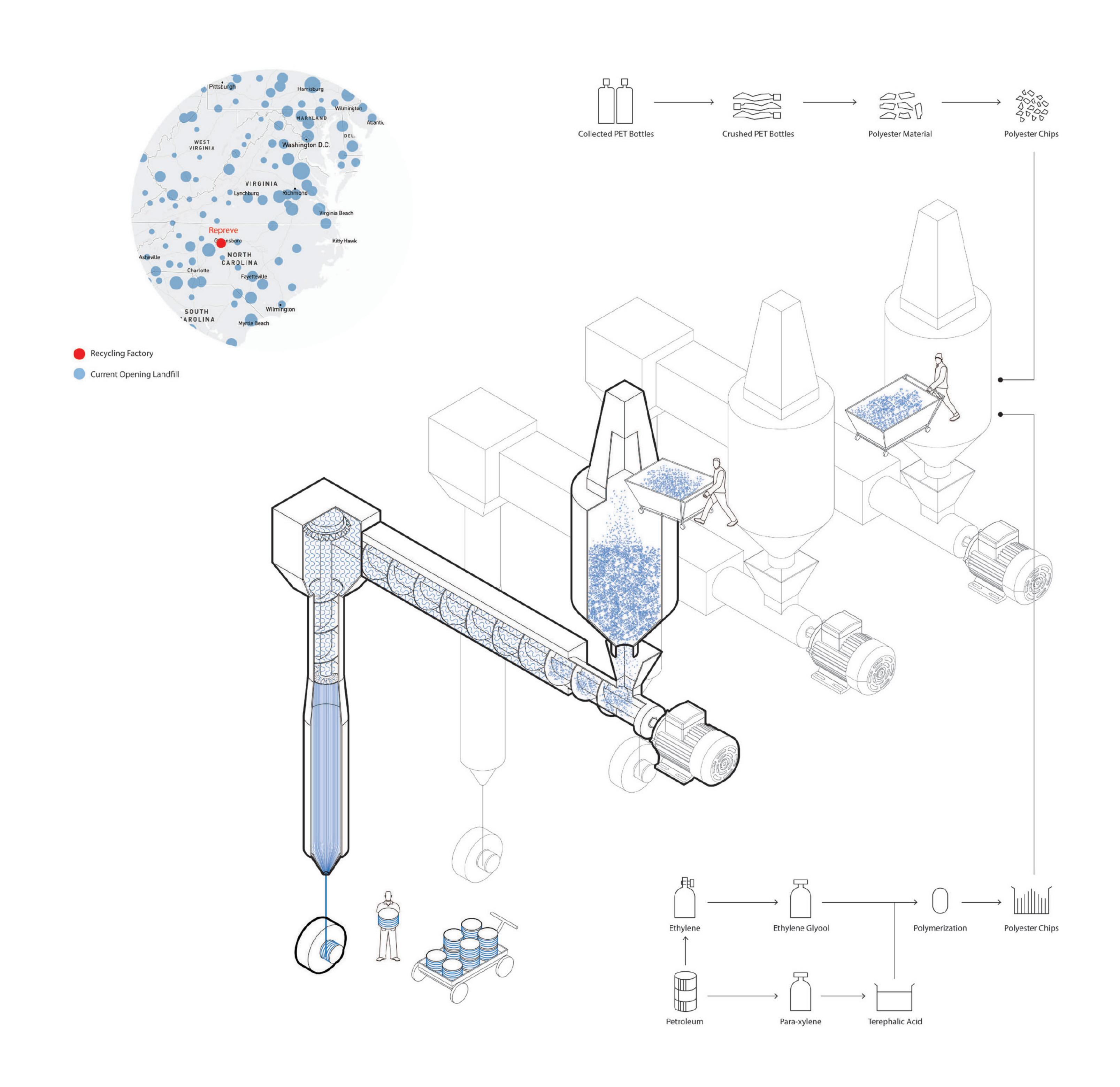
The factory upcycles food waste and provides a shared roof garden for the community and facilitates transparent relationships that connect local food producers to the Brooklyn community and the upcycling of discarded food products. A new system that synergizes the existing typologies of market and production, the factory is a modular and flexible proposal capable of expanding throughout New York City, the beginning prototype currently situated in Bush Terminal at Sunset Park. Bringing the manufacturing process to the forefront, the factory aims to reduce food waste and facilitate a transparent relationship between the buyers and the producers. This new factory system may expand along the city of New York, inviting different communities throughout the city to contribute with their varying scales of businesses and practices.

Manufacturing Processes

Collected PET Bottles → Crushed PET Bottles → Polyester Material → Polyester Chips

- ● Recycling Factory
- ● Current Opening Landfill

Ethylene → Ethylene Glycol → Polymerization → Polyester Chips

Petroleum → Para-xylene → Terephalic Acid

Manufacturing Processes

Collection

Cleaning

Sorting

Processing
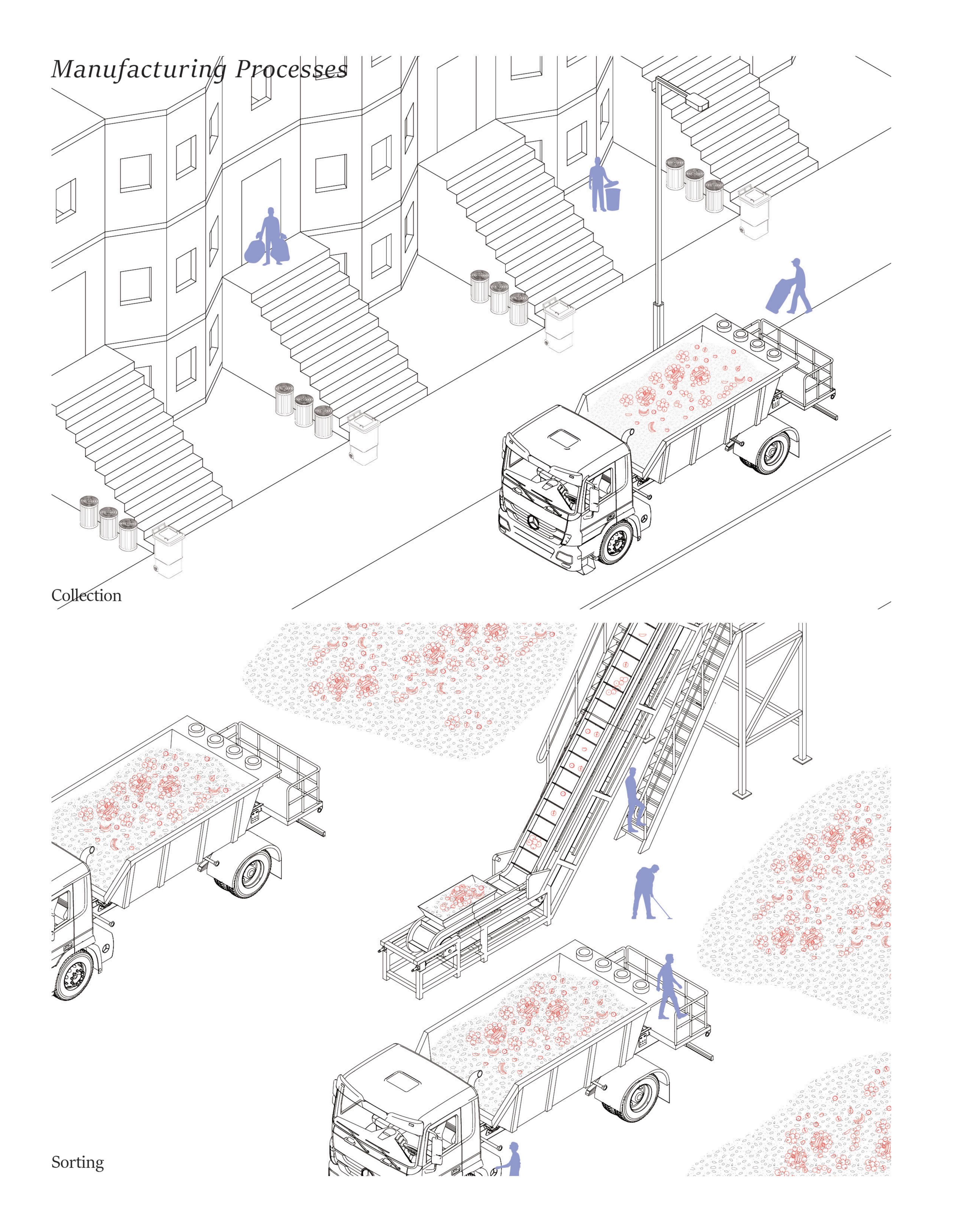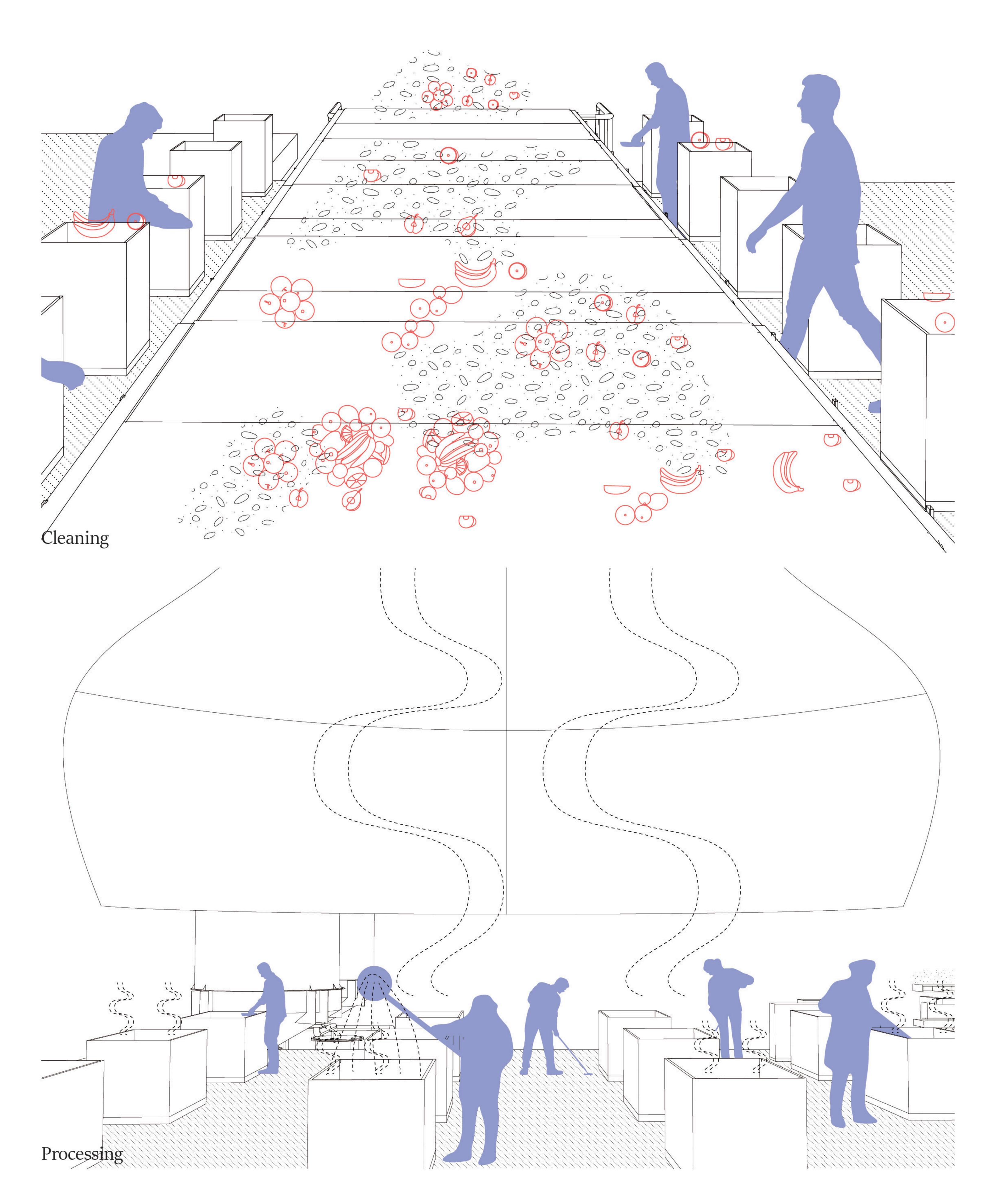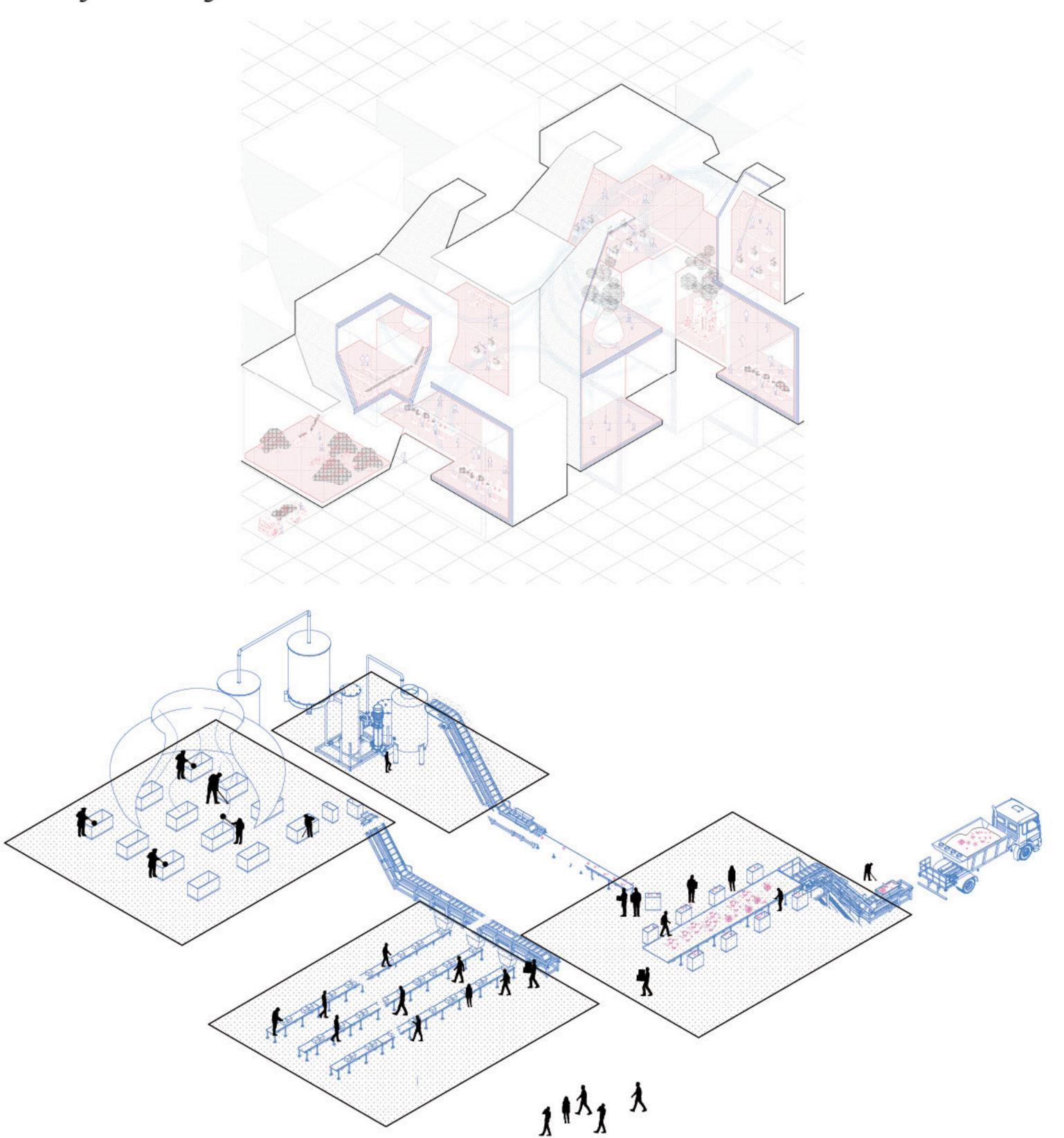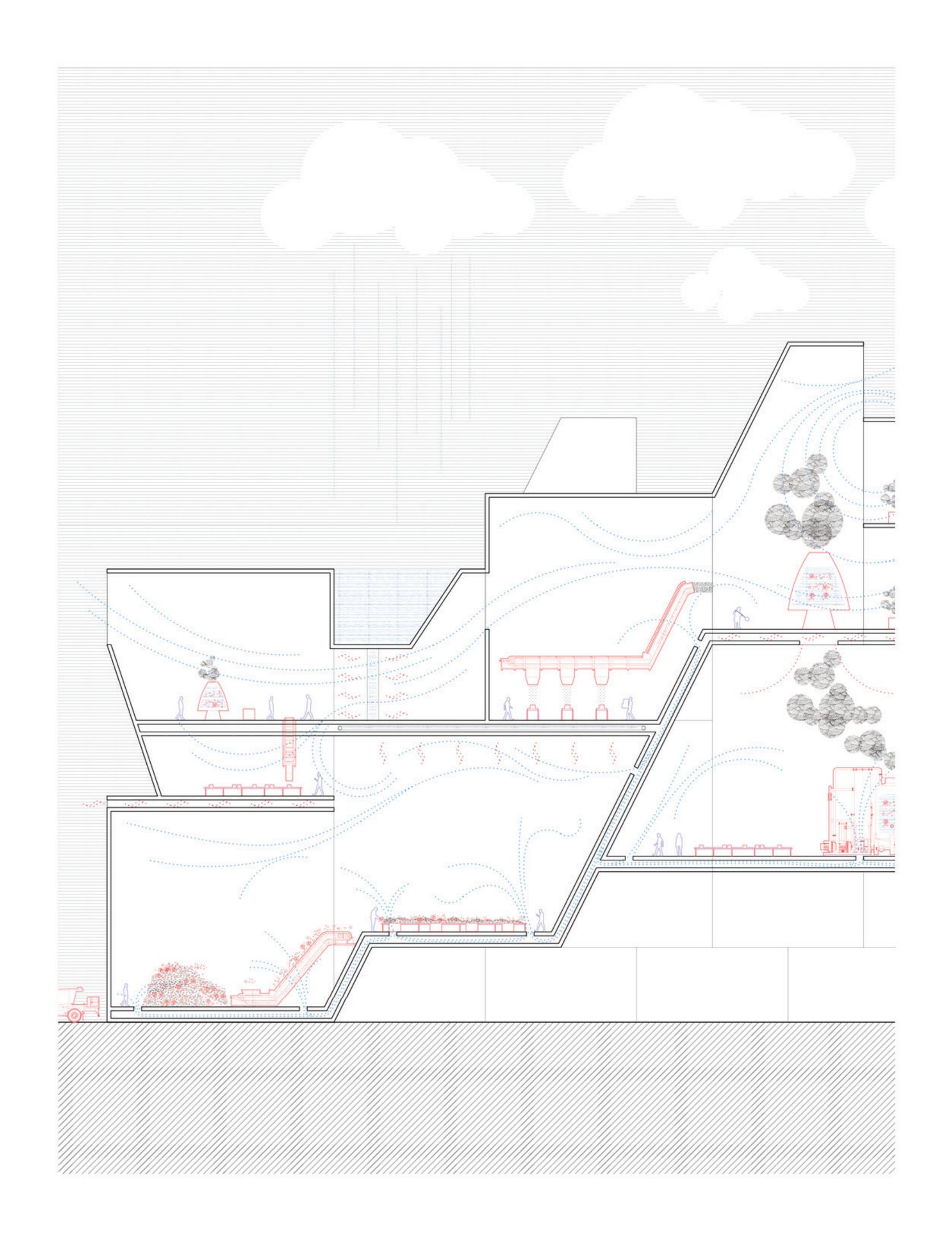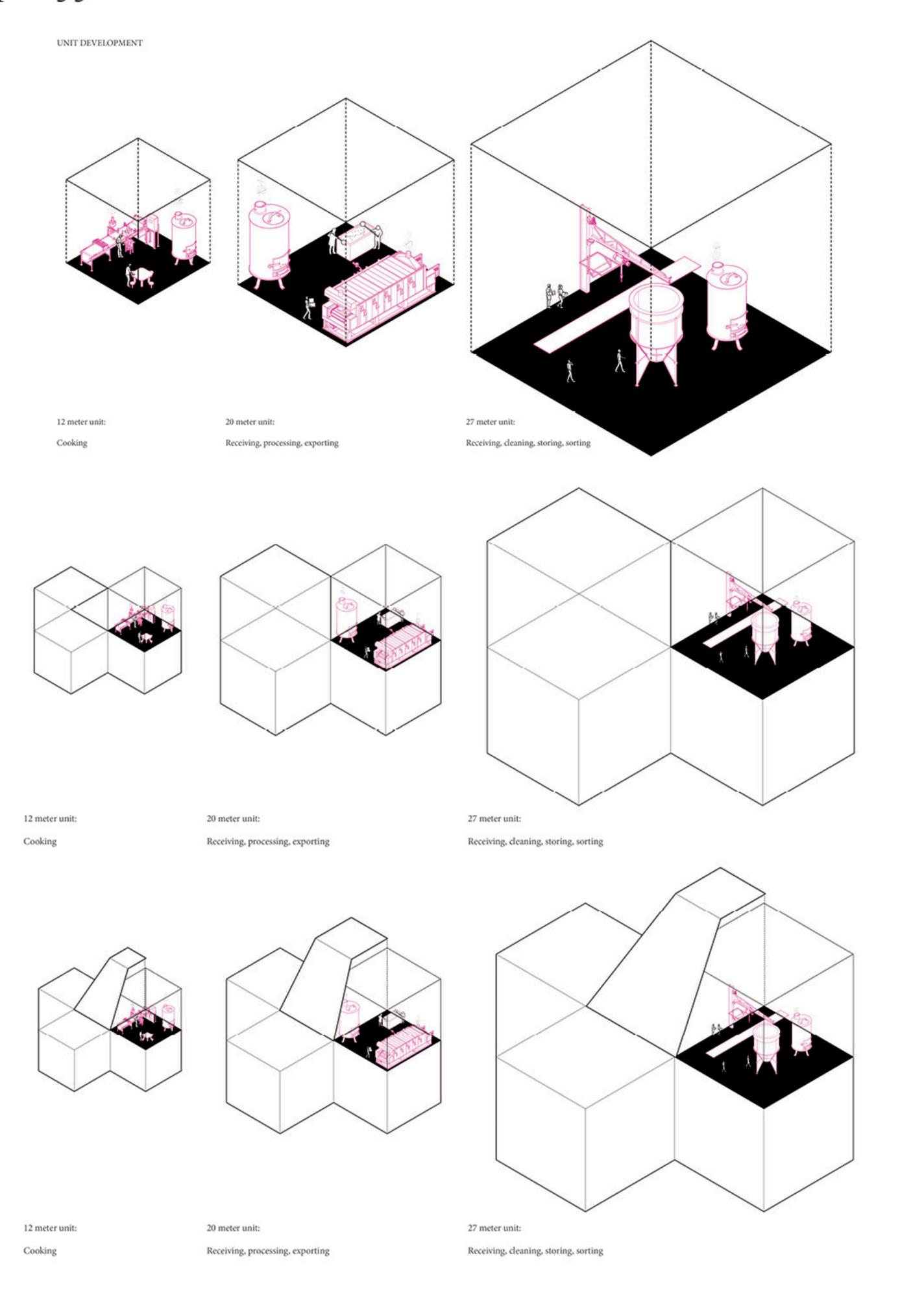
Manufacturing Processes
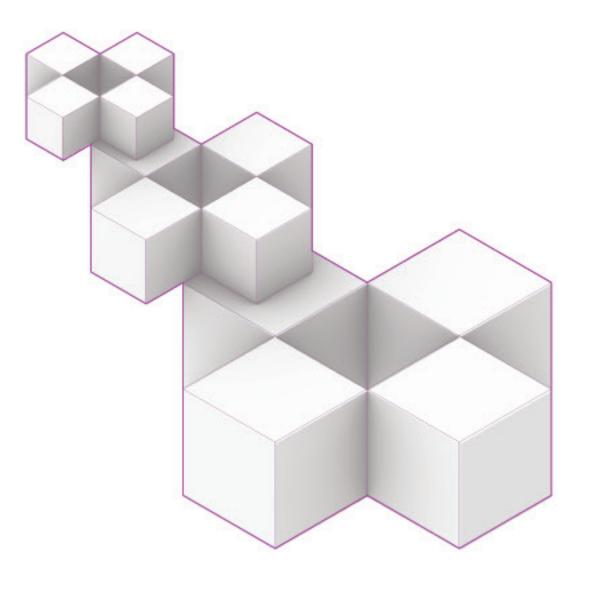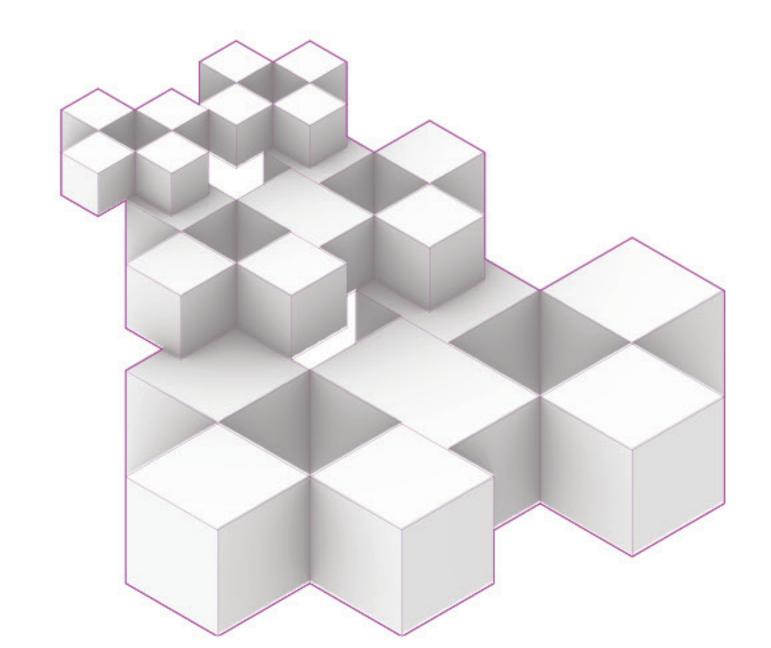
We began by studying and diagramming the life cycles of food waste, from collection, to sorting, cleaning, and processing of salvageable food waste into new products. In doing so, the analysis produced a template in which to develop the factory based on the scale of the food waste and the different types of communities who would be using the factory.

Typology

12 meter unit:

Cooking

20 meter unit:

Receiving, processing, exporting

27 meter unit:

Receiving, cleaning, storing, sorting

12 meter unit:

Cooking

20 meter unit:

Receiving, processing, exporting

27 meter unit:

Receiving, cleaning, storing, sorting

12 meter unit:

Cooking

20 meter unit:

Receiving, processing, exporting

27 meter unit:

Receiving, cleaning, storing, sorting
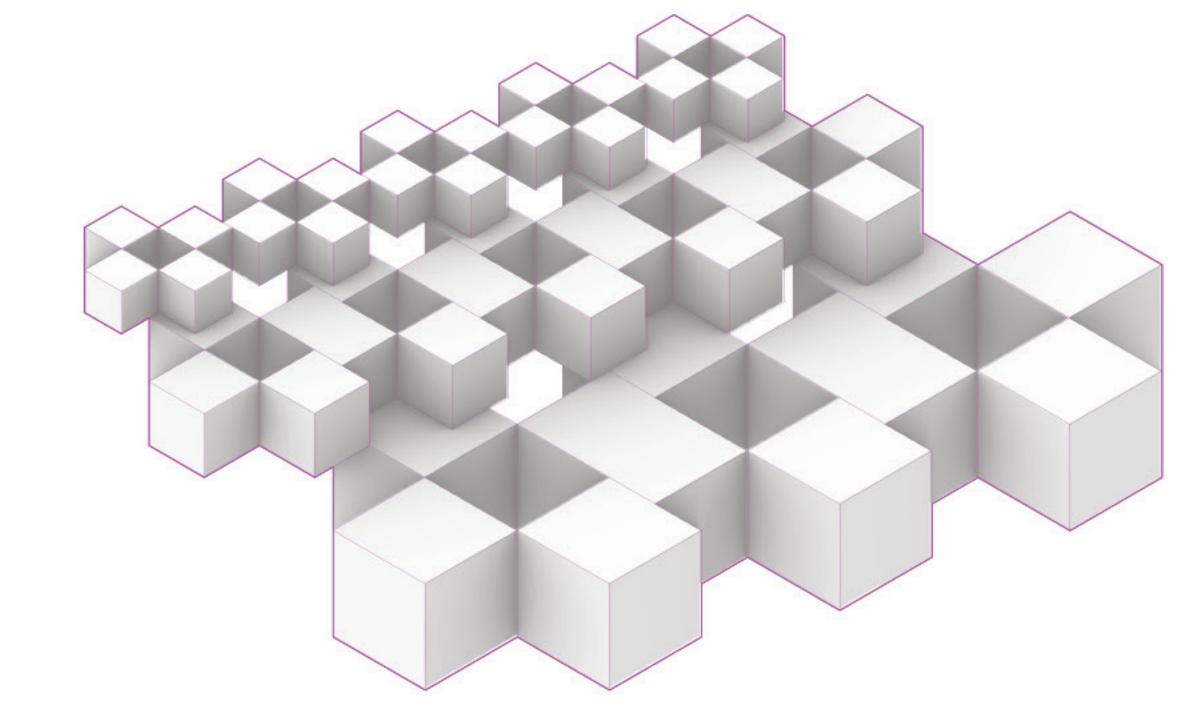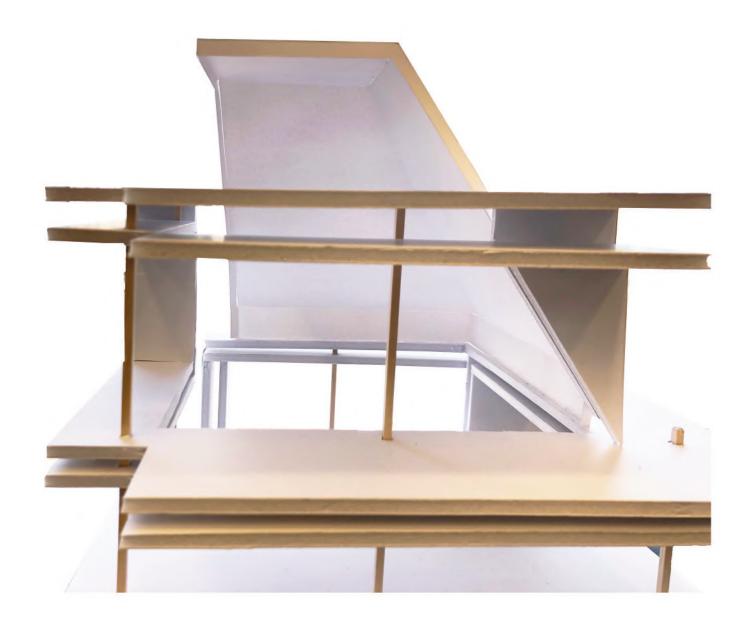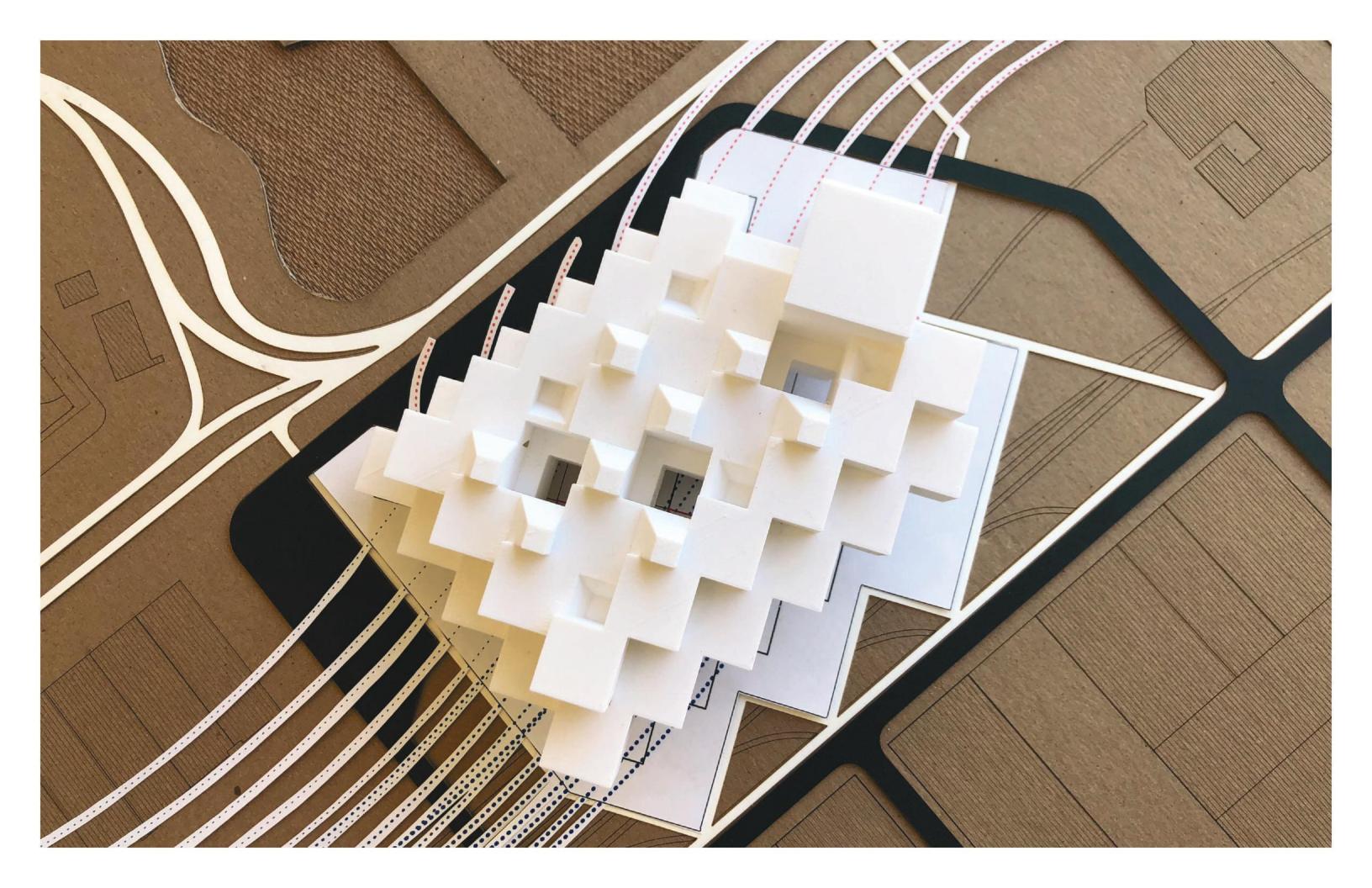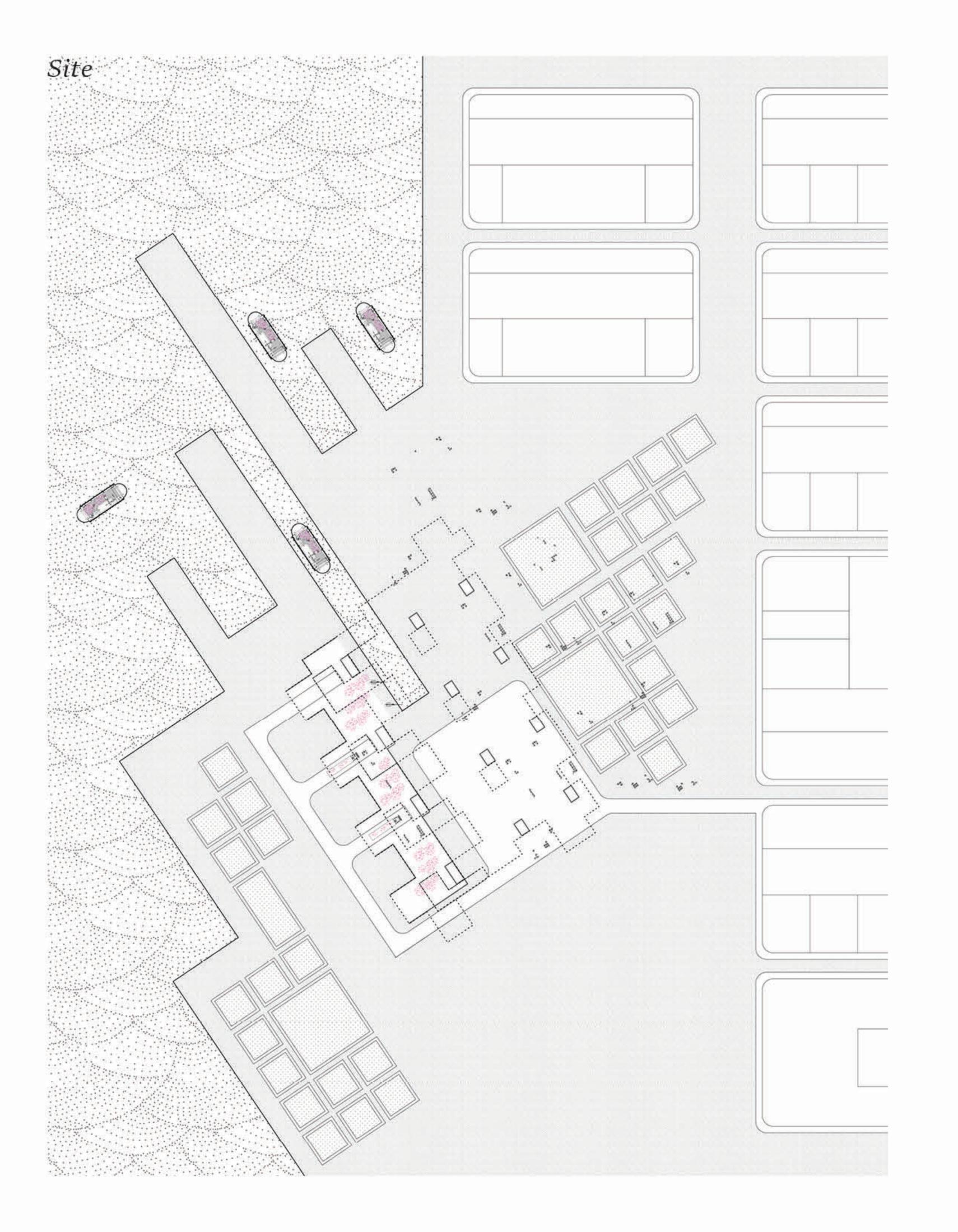
Sharing a common core space in order to allow each unit equal access to a wind chamber oriented West in the direction of New York's prevailing winds which will passively cool the excessive amounts of heat produced by the machinery.
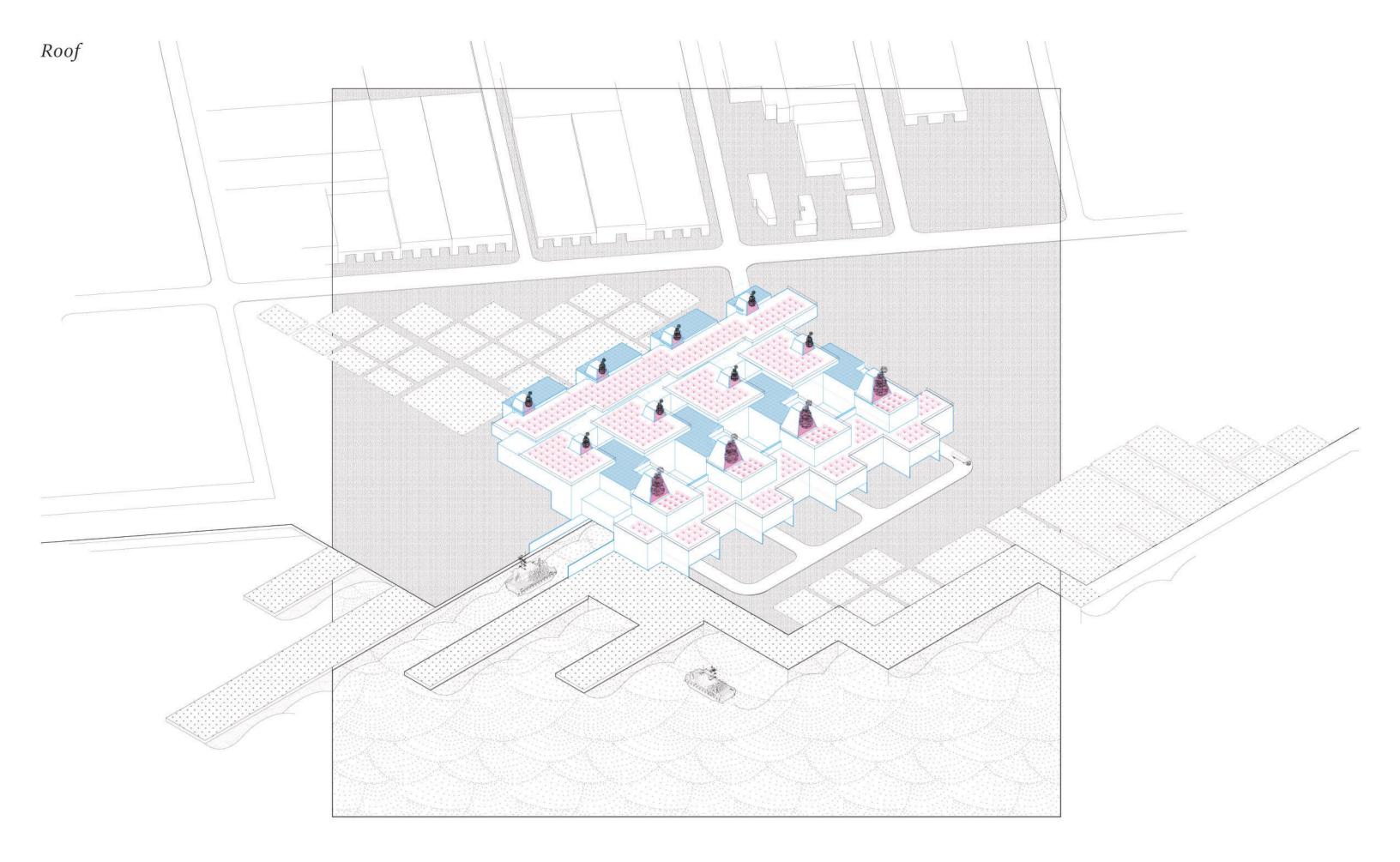
Pipes pitched throughout the double wall cavities allow
each factory access to water in order to effectively clean
and manufacture products. The pipes channel downward
into the ground, where a culvert network system runs in
parallel to the factory.

Site

Level 2

Level 3

Level 4

Axon

Section

Section Perspective
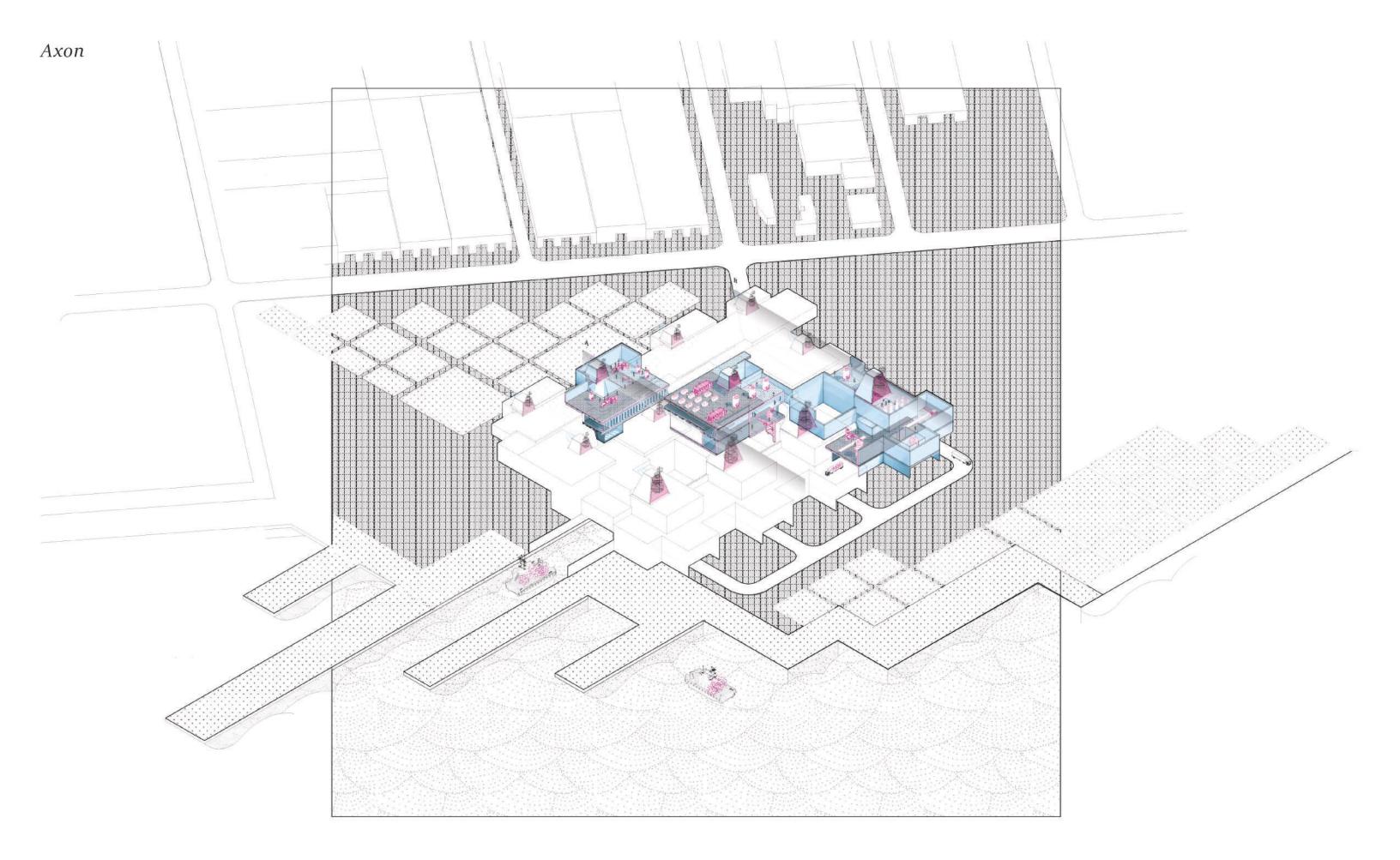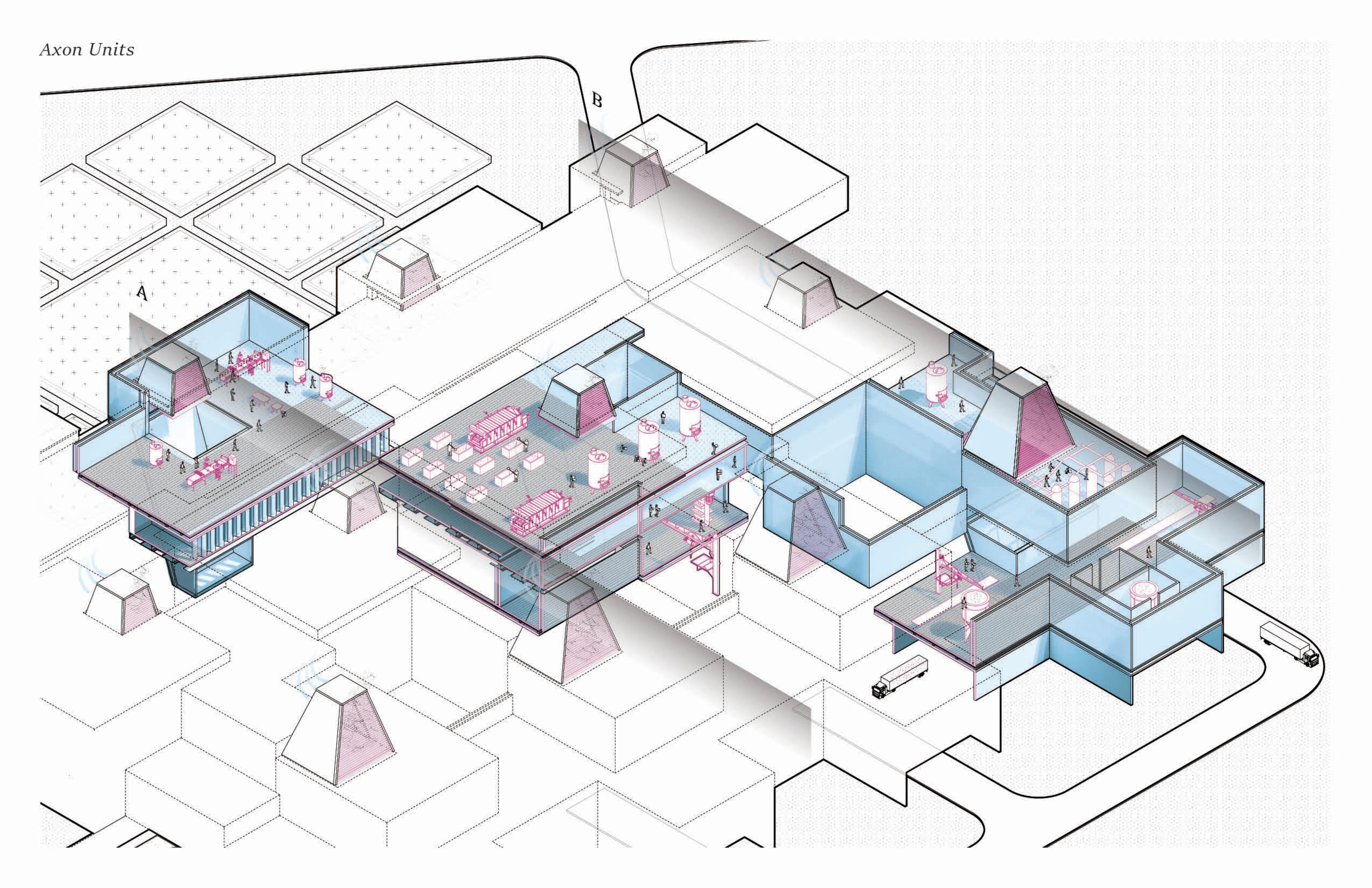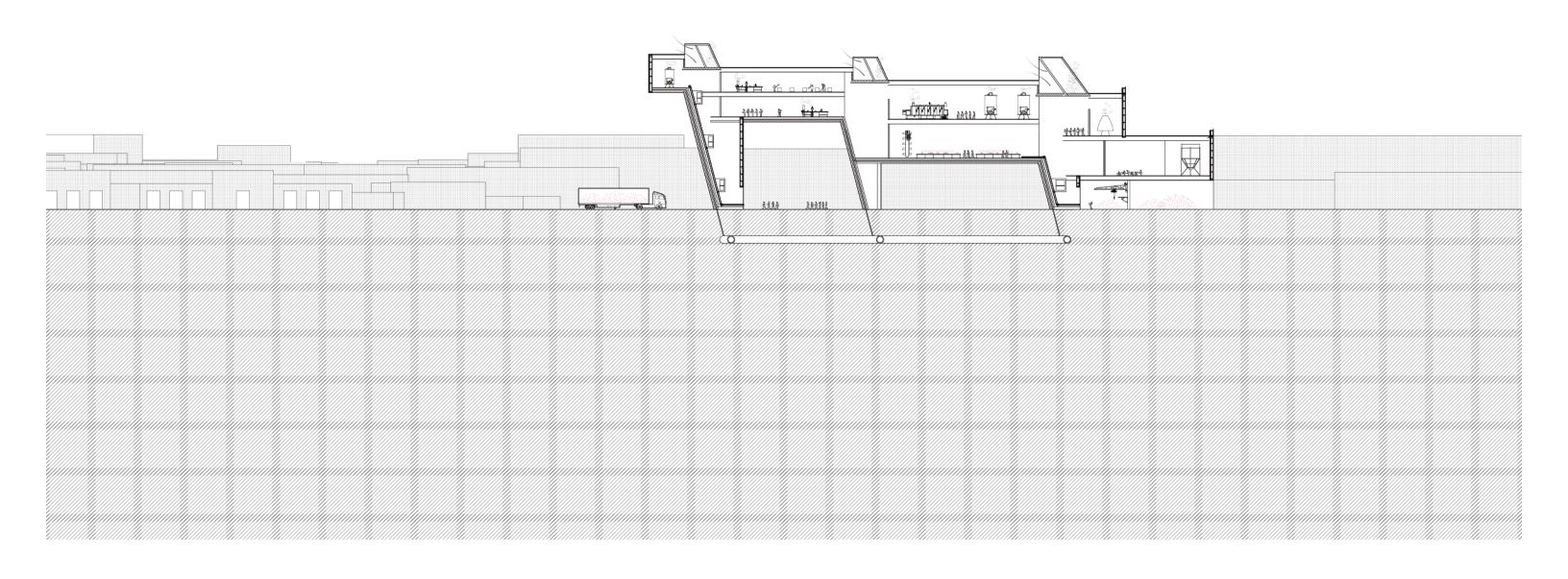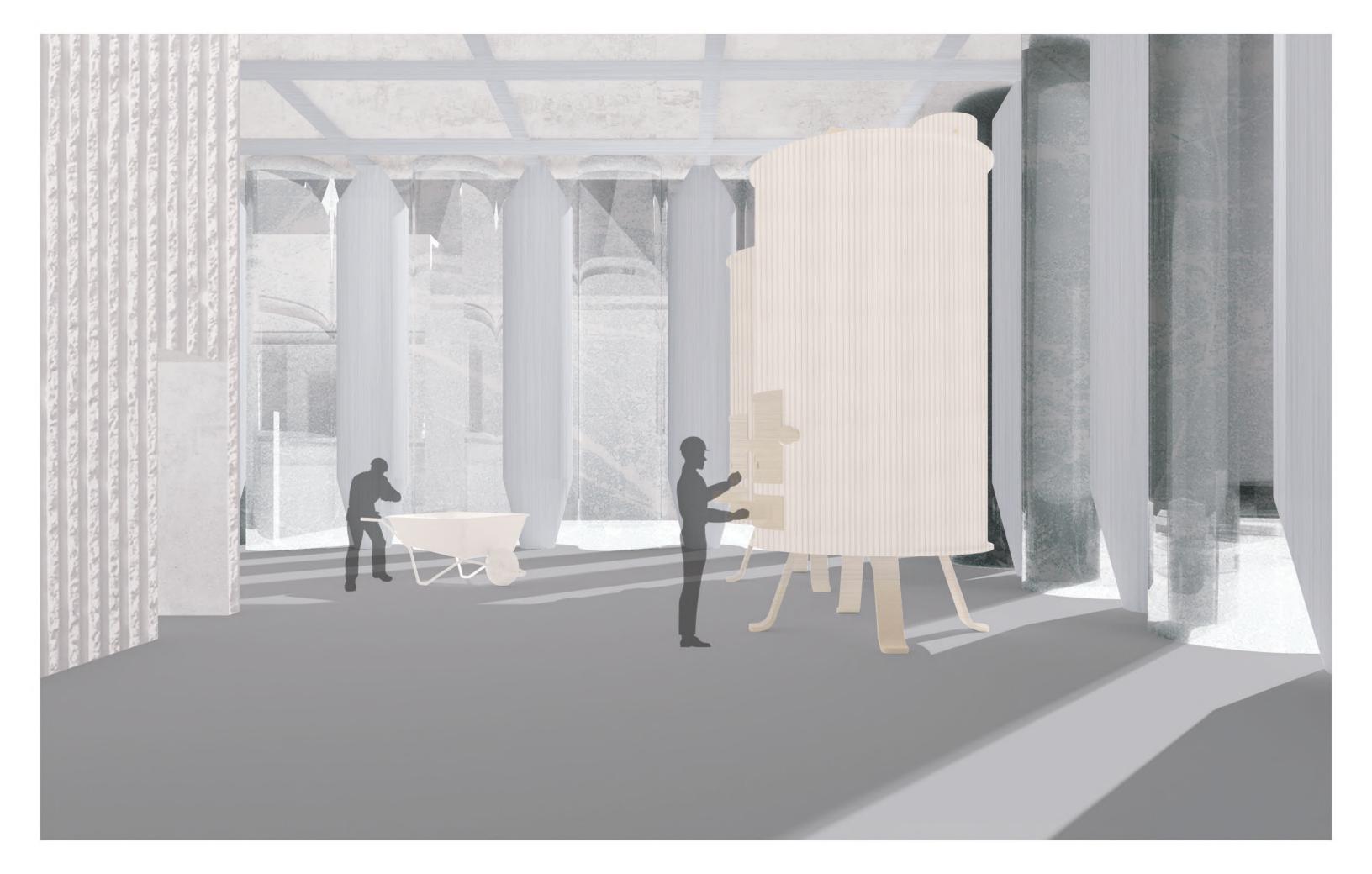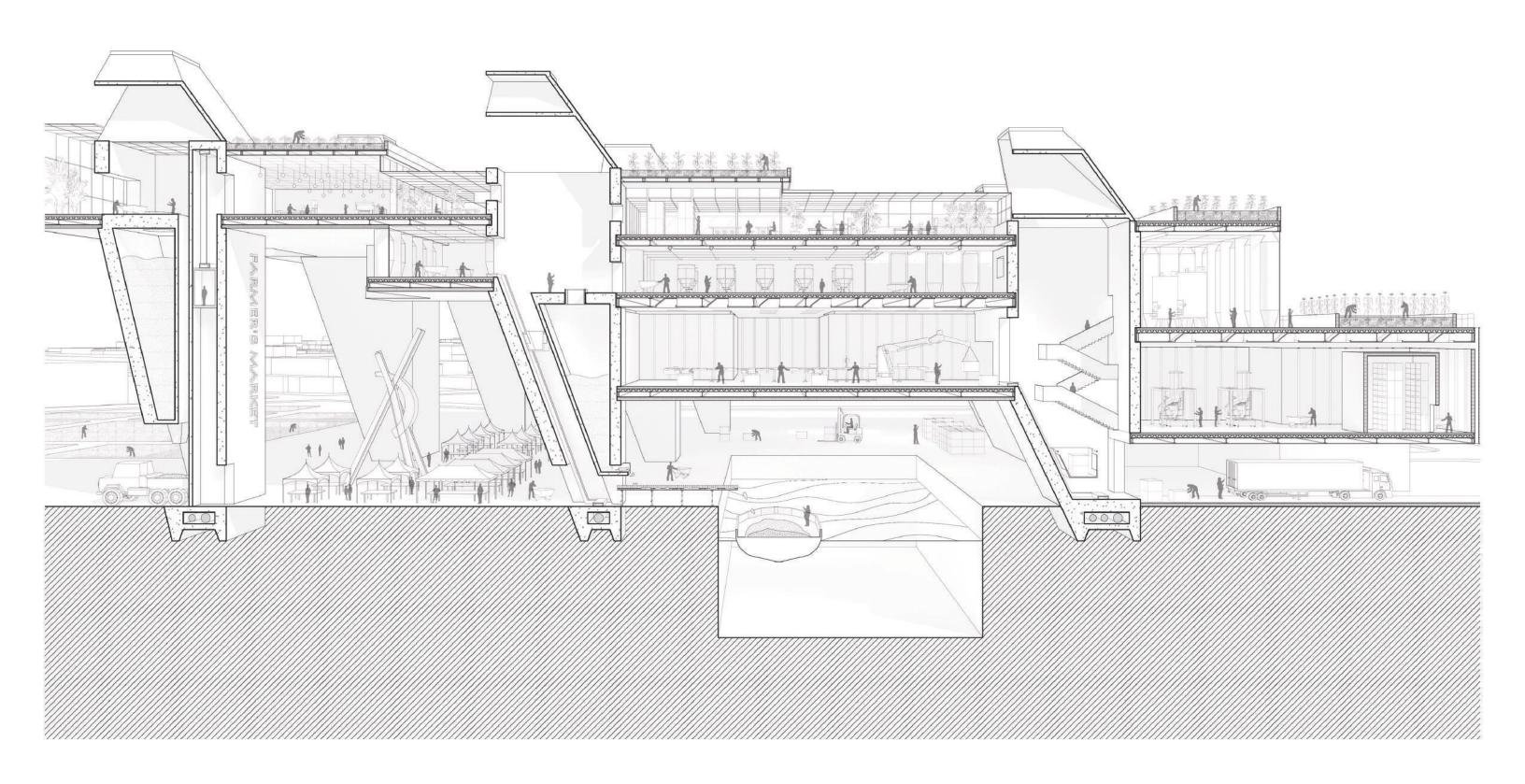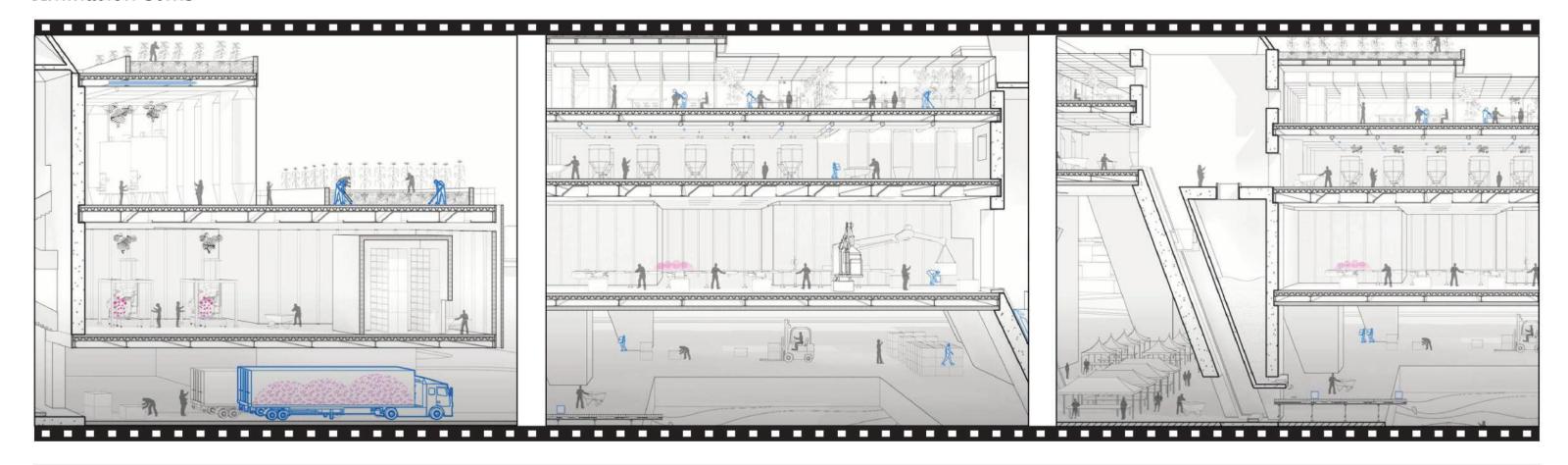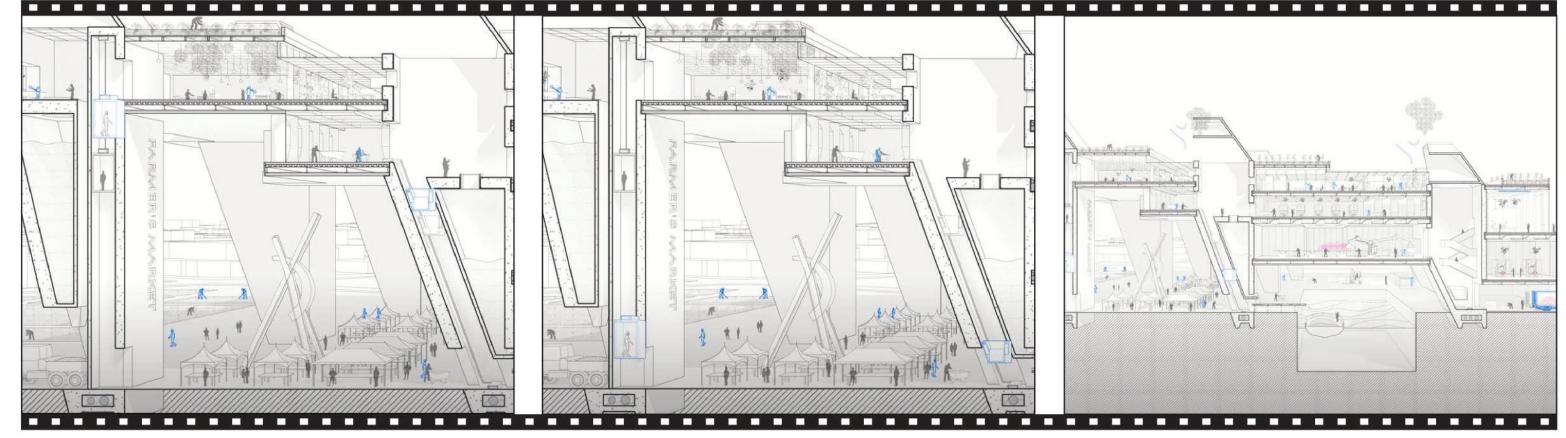
Animation Stills
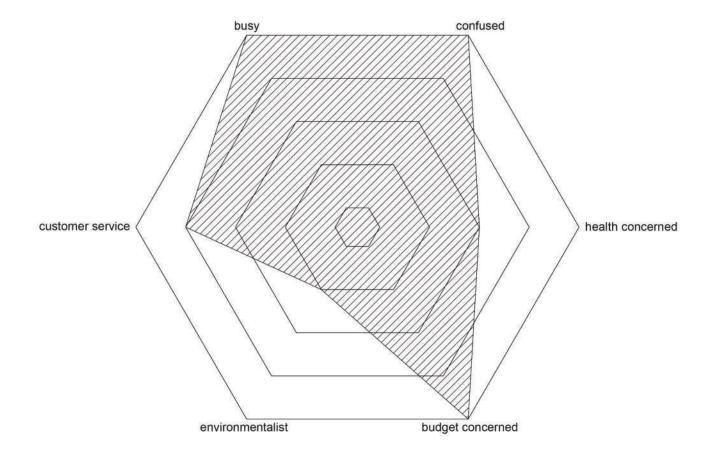
User-Centered Design

Instructor: Agnes Chang
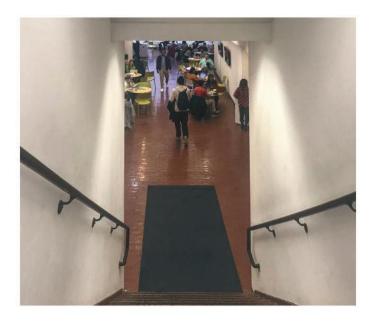
Partners:
Niki Kourti, Jingyi Shao, Ruisheng Yang

As emerging technologies such as VR/AR dissolve prior divides between the digital and physical experience, how can we draw upon interdisciplinary methods to design for the future mixed reality that is just around the corner? We will survey current technology trends and examine their implications for design and for society. Students will develop skills in user research, rapid-prototyping, usability testing, and data collection as methods for excellent interaction and spatial design.

Introduction

Brownie's is the place where students and instructors of GSAPP usually come together for grabbing quick lunch/snacks/drinks. However, it can be difficult for people to efficiently sort their garbage generated through food and drink consumptions since neither trash categories in brownie's are clearly tagged nor their locations are distinctly directed.

Observations

Students tend to choose Brownie's because, among all, they are really concerned about time, and this cafeteria is the most easily accessible from their studios. At the same time, GSAPP students tend to be environmentally conscious, and understand the importance of correct waste sorting. However, there is confusion about what can be recycled/composted and where, which leads to sometimes throwing reusable materials into garbage, especially when they need to leave Brownie's in a hurry.

Survey

Q1: How do you feel about the line in Brownie's?

Not enough seating during rush hour; not quite for study

It is so overwhelming; too long, uncomfortable; even to pay! At some point
there are three lines, so you do not know where to go!

Too long. Always takes too long. And complicated - multiply lines

Q3: What do you value most from a sandwich?

Taste + warm or not

Maybe the size!

Flavor and taste

How soft the bread is

Q5: What influences your decision on choosing Brownie or not?

Do I have time to eat somewhere else or not

Definitely the line! And the variety!

The weather outside and time availability

The convenience and the cookies, which I cannot find anywhere else

Q2: How do you decide which sandwich to buy?

Depends on which ingredient I like

Depends on my mood

Always the same one. Never looked at the menus

Depends on how familiar I am with the ingredients

Q4: What do you want to know from Brownie's on a daily basis ?

How much food they throw away?

What time are the food prepared?

Its prices and sales

Specialty Soup kinds on a weekly basis

Images of the food, such as the soups and sandwiches

Q6: What do you like best about Brownie's?

Nice people! Good service

That I do not have to waste time going out, especially in the cold days

Proximity and friendliness of staff

It's convenient and their coffee is cheap

Personas
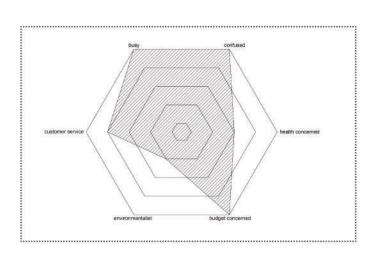
How might we...?

How might we make sure that no one is frustrated because of the line?

How can we make user time more efficient?

How can we make the product more accessible and transparent?

How can we raise the awareness of health and environment among customers?
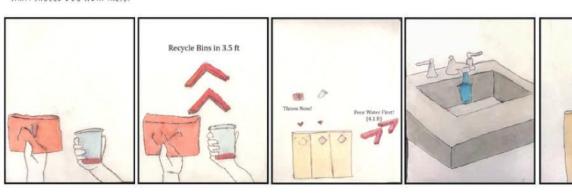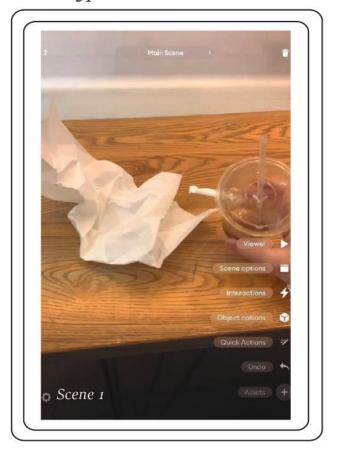
Conclusion
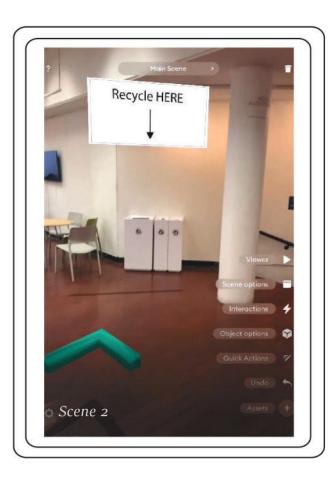
It's sometimes difficult to know where to put different types of garbage, but AR could remove any confusion. Informing the customers how to effectively sort and process their trash through augmented reality removes previous confusion in regards to the recycling procedures of Brownie's.

Prototype

Scene 1 → Scene 2 → Scene 3 → Scene 4

Scene 2: Recycle HERE

Scene 6: Available Sinks: 35 ft away

Scene 5: Please remove any excess **liquids**!!!

Scene 5 → Scene 6 → Scene 7 → Scene 8

Scene 8: Good Job!

Future work

Encountered many technical issues with the Torch AR prototyping application (arrows and signs would not stay in same location, world anchor and interaction toggles did not always work, tutorials provided were misleading).

If more time was given, we could consider redesigning our graphics that give directions through the AR application.

We could also experiment with other AR prototyping platforms in order to determine which one would produce the most user friendly interface in the future.

Maybe the virtual suggestions are too much. For example, green arrows may be replaced by highlighting the recycle bin. People can decide the way to go and the screen will be more concise.

The arrow doesn't really showing me where to go or it's not that instructive of showing the direction. Maybe I need more information about the different types of trash, like a title and maybe add some color coded symbols. The "Remove liquids" text box can be viewed more directly instead of step back to see the whole text box.
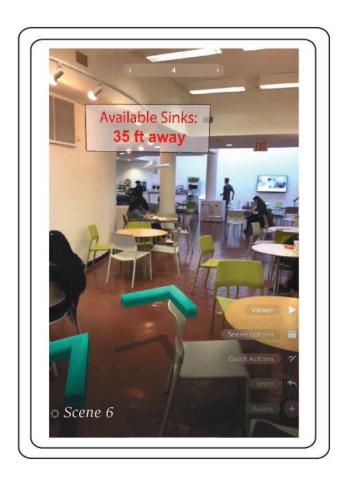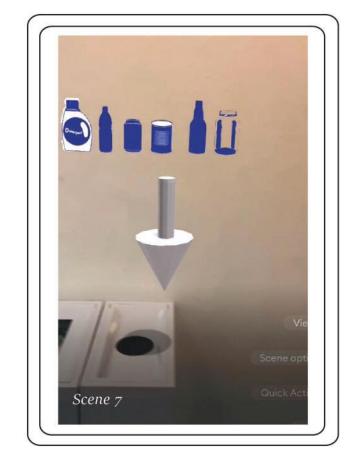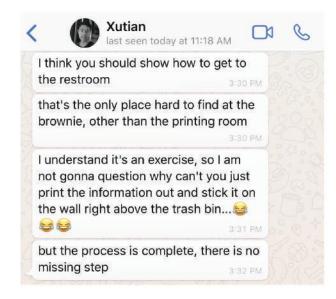
Ryan Alexand... Tue, Mar 10, 3:45 PM (11 hours ago)
to me

To avoid redundancy with signage that is already in brownies your VR could provide only iconographies that are relevant to the user, i.e. just a coffee cup not pizza box or an aluminum can.

Xutian
last seen today at 11:18 AM

I think you should show how to get to the restroom
3:30 PM

that's the only place hard to find at the brownie, other than the printing room
3:30 PM

I understand it's an exercise, so I am not gonna question why can't you just print the information out and stick it on the wall right above the trash bin...😂😂😂
3:31 PM

but the process is complete, there is no missing step
3:32 PM

Super-Tall

Instructor: Nicole Dosso

Work:
Individual

This class follows an analytical approach by dissecting individual building components and their interrelationships to each other to build a comprehensive understanding of how Super-Tall Buildings behave. What are the building blocks of this unique typology? How do users circulate? How are such structures challenged by the wind? What are the operational considerations and how are they maintained? How do we ensure the health, safety, and welfare of occupants? How can we design and build smarter?

Window Washing Track

Curtain Wall Track

Building Maintenance Unit

Perimeter Protection

osition

Interior Perimeter

Fin Tube and Convector Cover

Shading Device