

SELECTED WORK

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Columbia University Graduate School of
Architecture, Planning and Preservation

Master of Architecture, 2020

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PROFESSIONAL

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New York City, 2050:

THE CIVICS OF POWER

ACADEMIC / Advanced V Studio / Fall 2019

Critic: Marc Tsurumaki (LTL Architects)

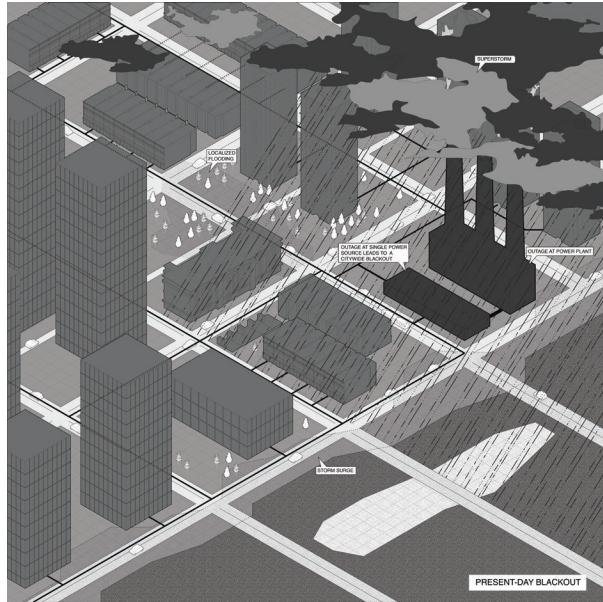
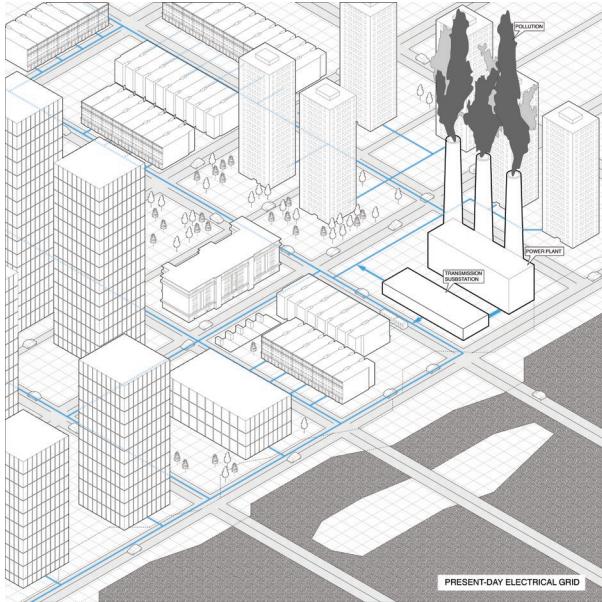
Team: Sanggyu Shin

Program: Civic + Infrastructure

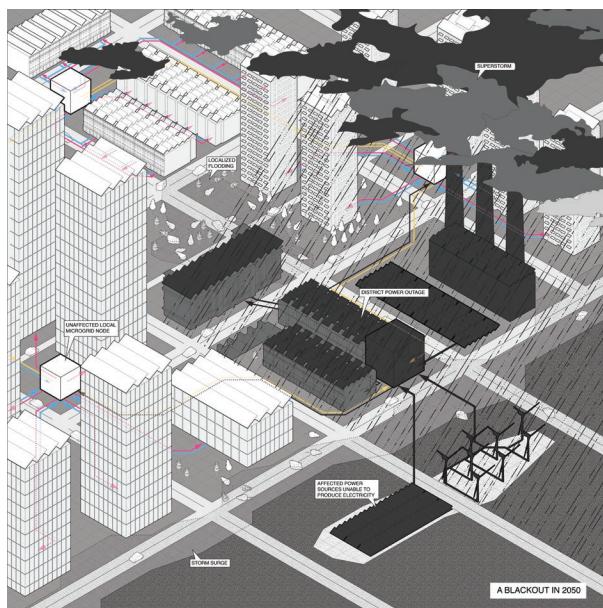
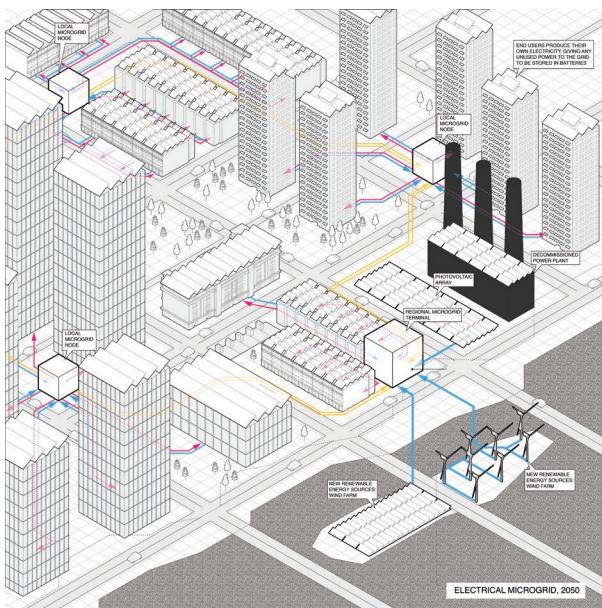
Location: Tribeca, NYC







Present-Day Electrical Grid

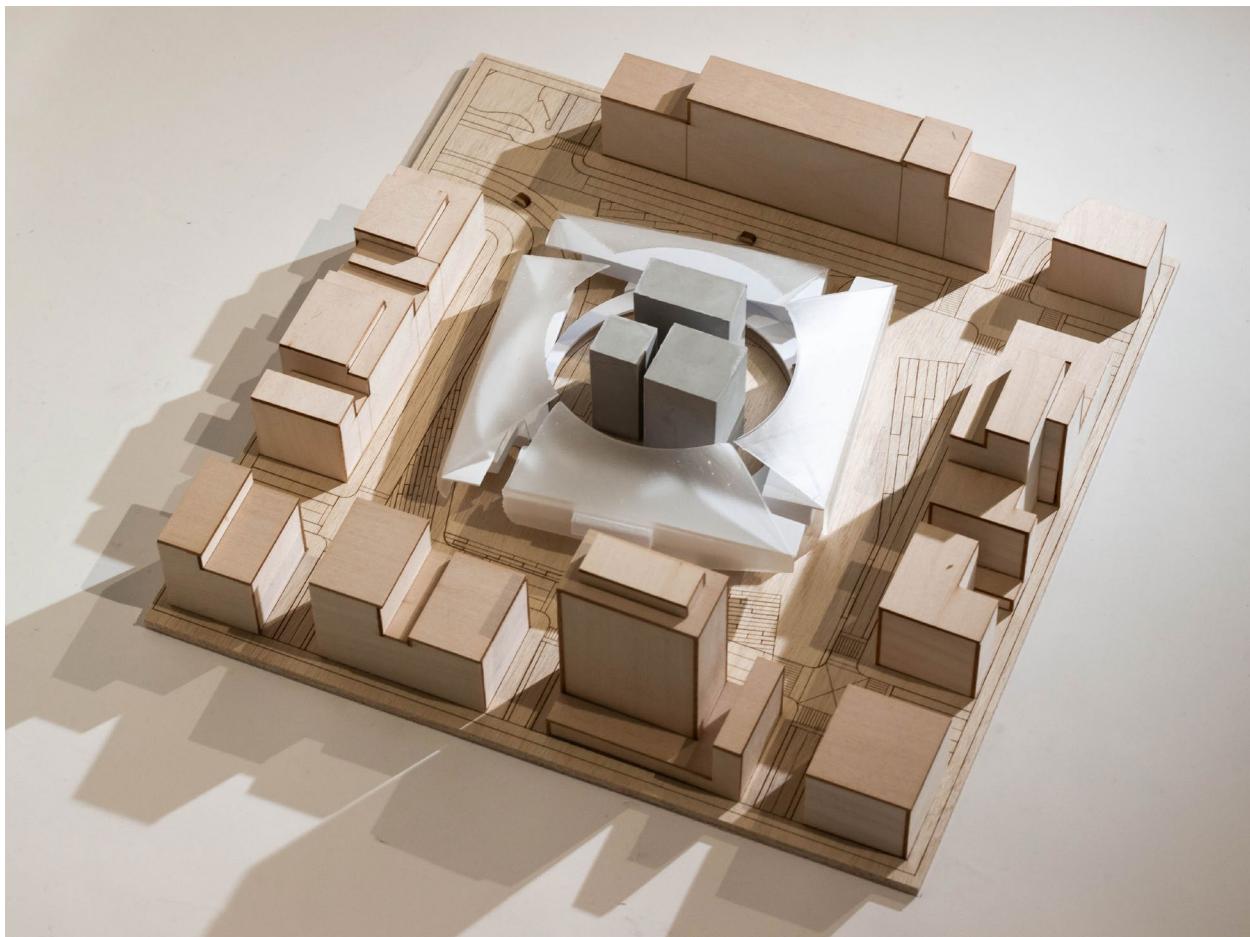
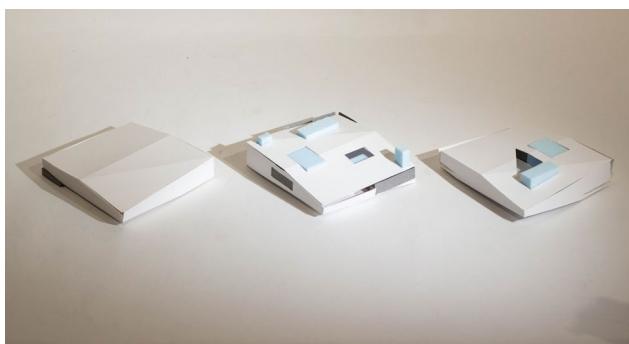
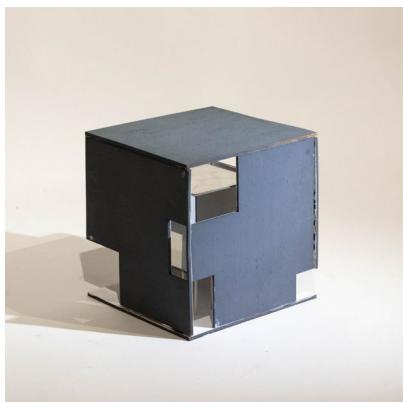


New Microgrid Network

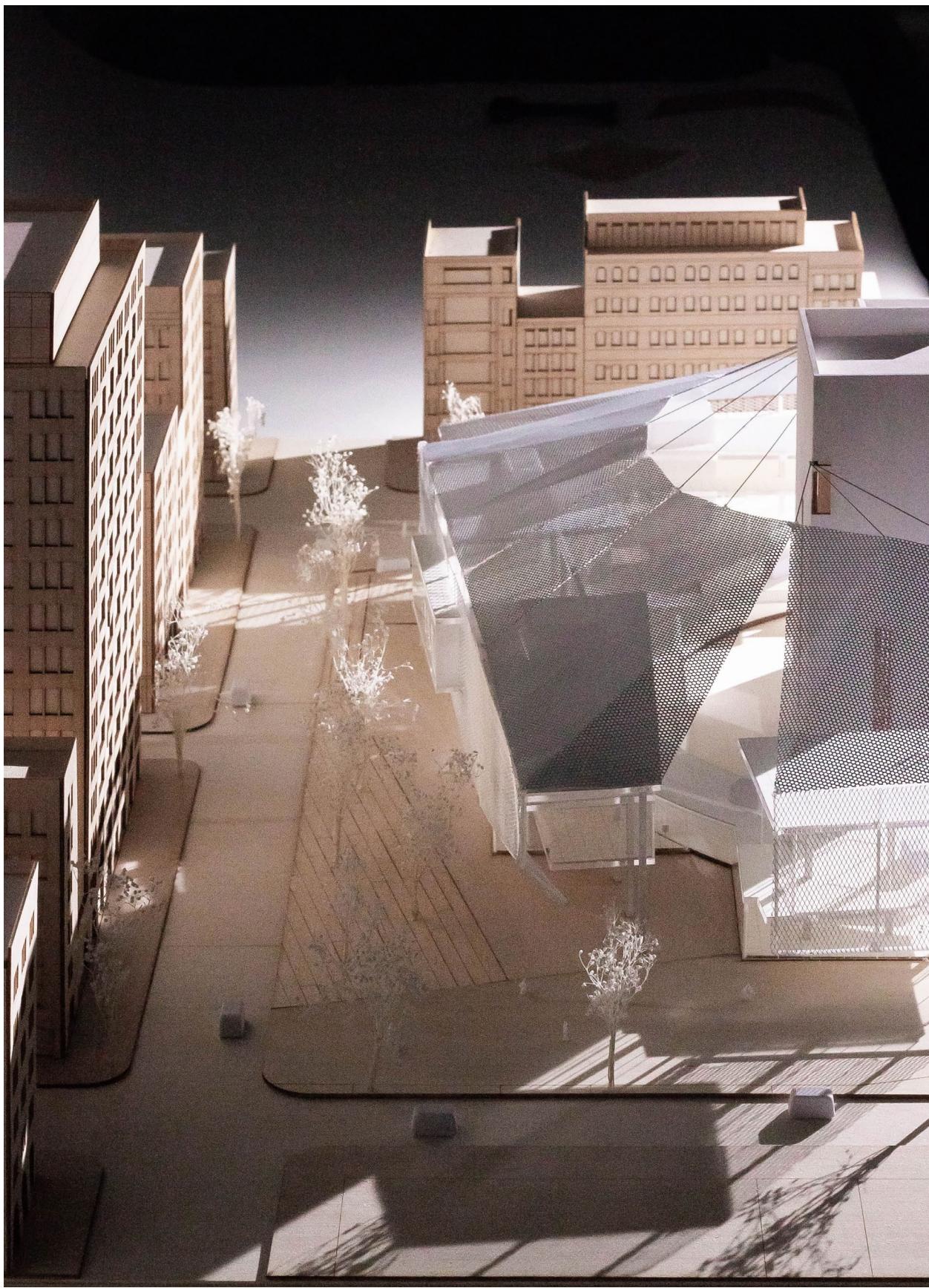
The electrical grid today is woefully obsolete. As Hurricane Sandy revealed, the disruption of a single source of power caused power loss for a wide swath of downtown NYC. In order to cope with increasing storm events by 2050, the grid must be revamped.

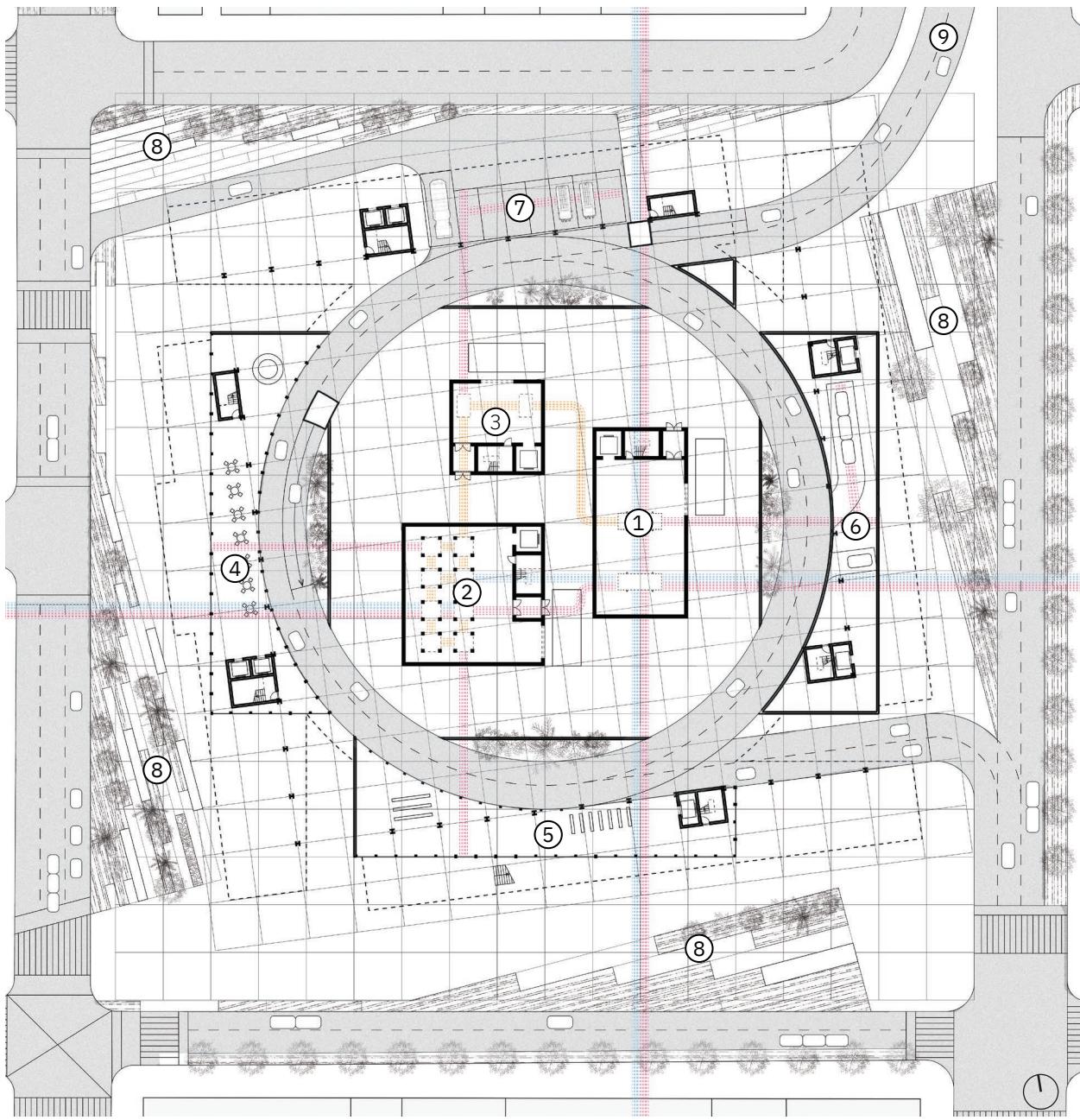
With the rise of renewable energy production through solar and wind, a new **“smart” microgrid system** is created where electrical production and distribution is localized into clusters that can store and distribute any excess power produced from one node to another. If one cluster experiences a loss of power, other nodes will not be affected.

These nodes provide opportunities for a **new civic-infrastructure identity** to be created.



THE CIVICS OF POWER

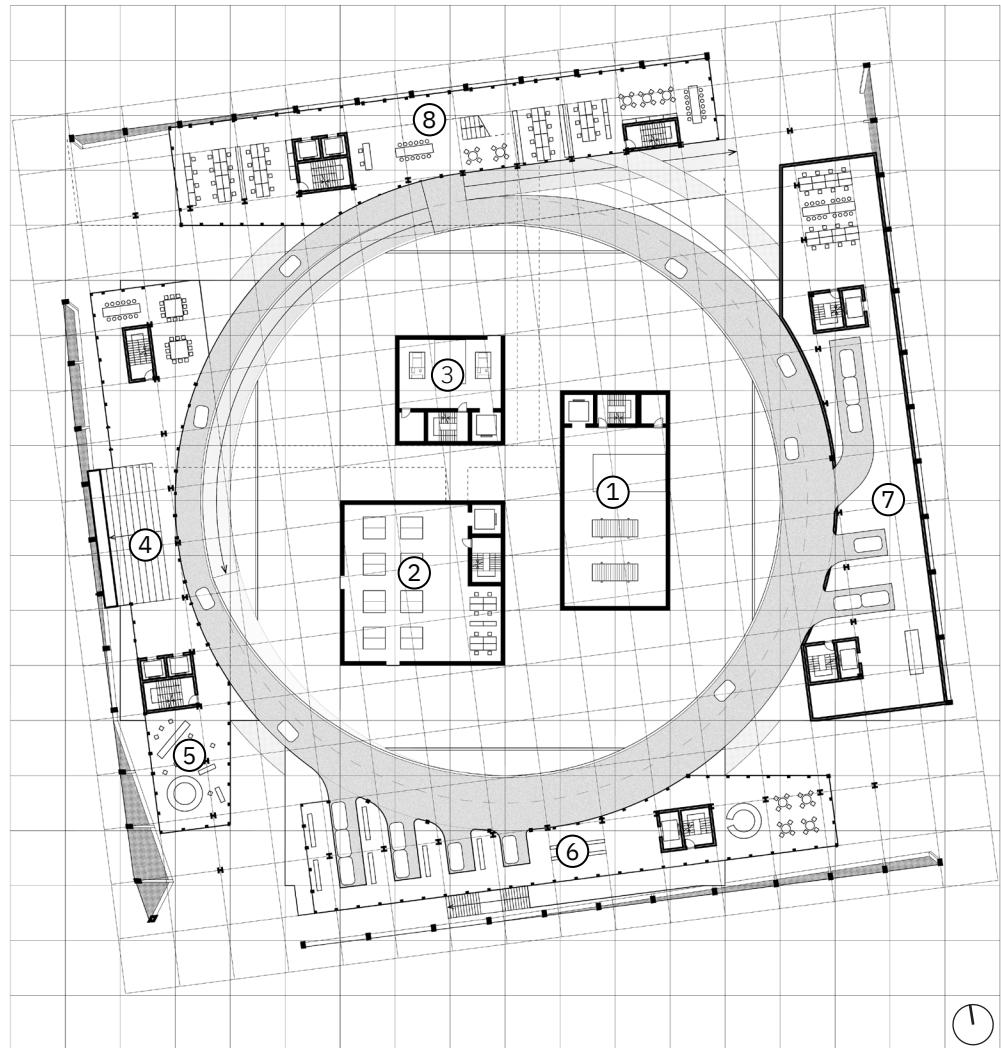




Level 1



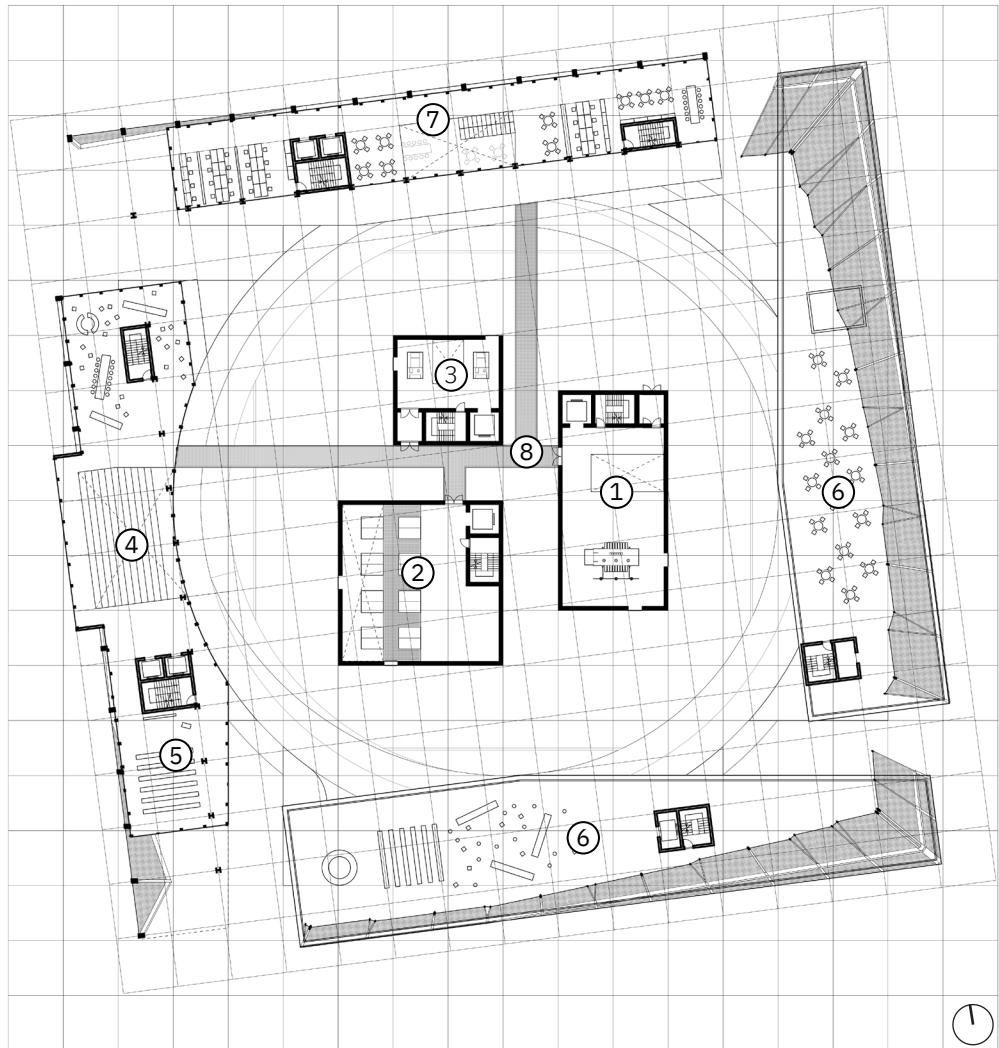
1. Substation Transformer Tower
2. Battery Storage Tower
3. Cogeneration Tower
4. Learning Center
5. Personal Rapid Transit Station
6. Maintenance Shop
7. Office Parking
8. Outdoor Plaza
9. Holland Tunnel Exit



Level 2

1. Substation Transformer Tower
2. Battery Storage Tower
3. Cogeneration Tower
4. Main Amphitheater
5. Flex Community Space
6. Personal Rapid Transit Station
7. Maintenance Shop
8. Substation Office

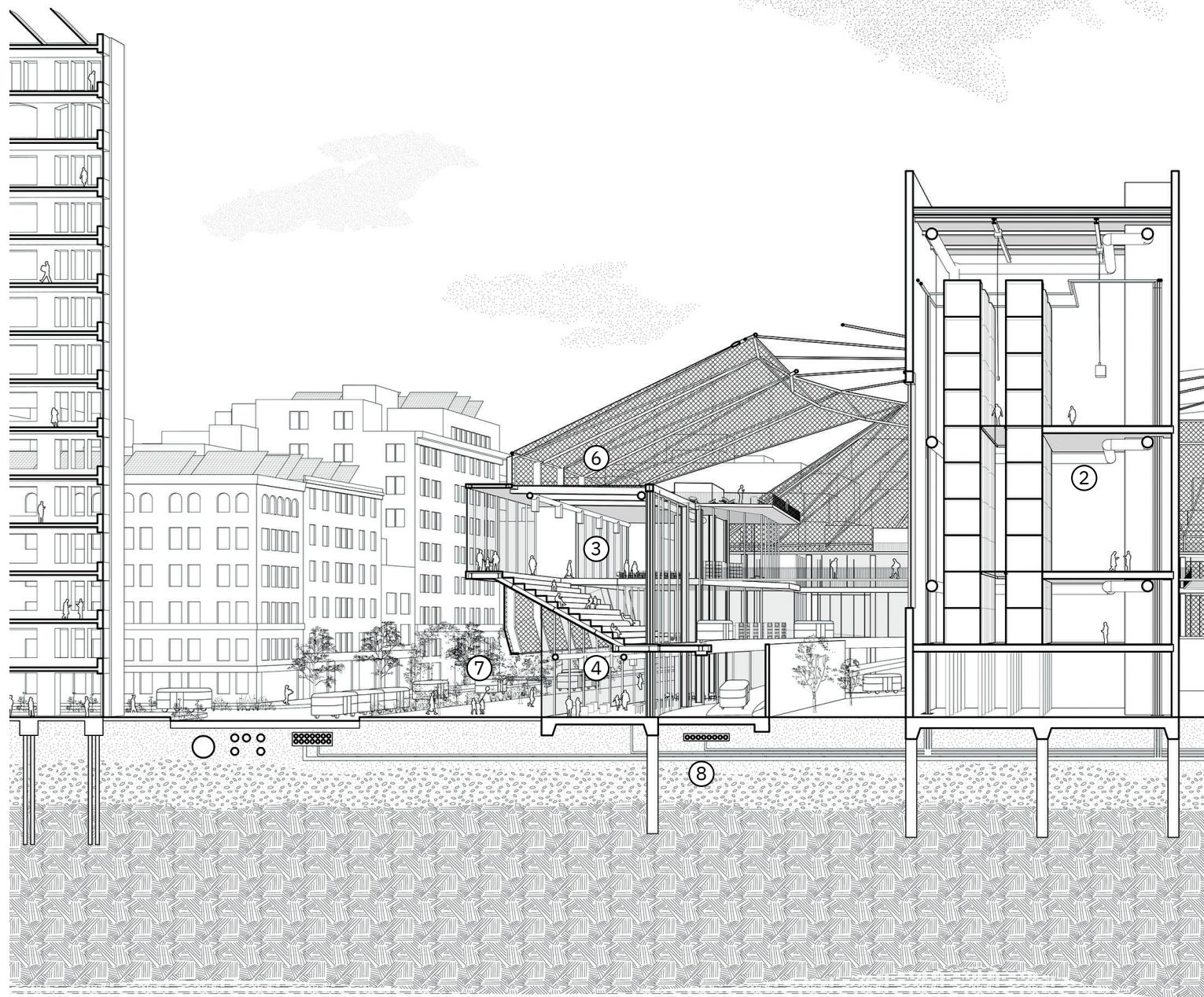
THE CIVICS OF POWER

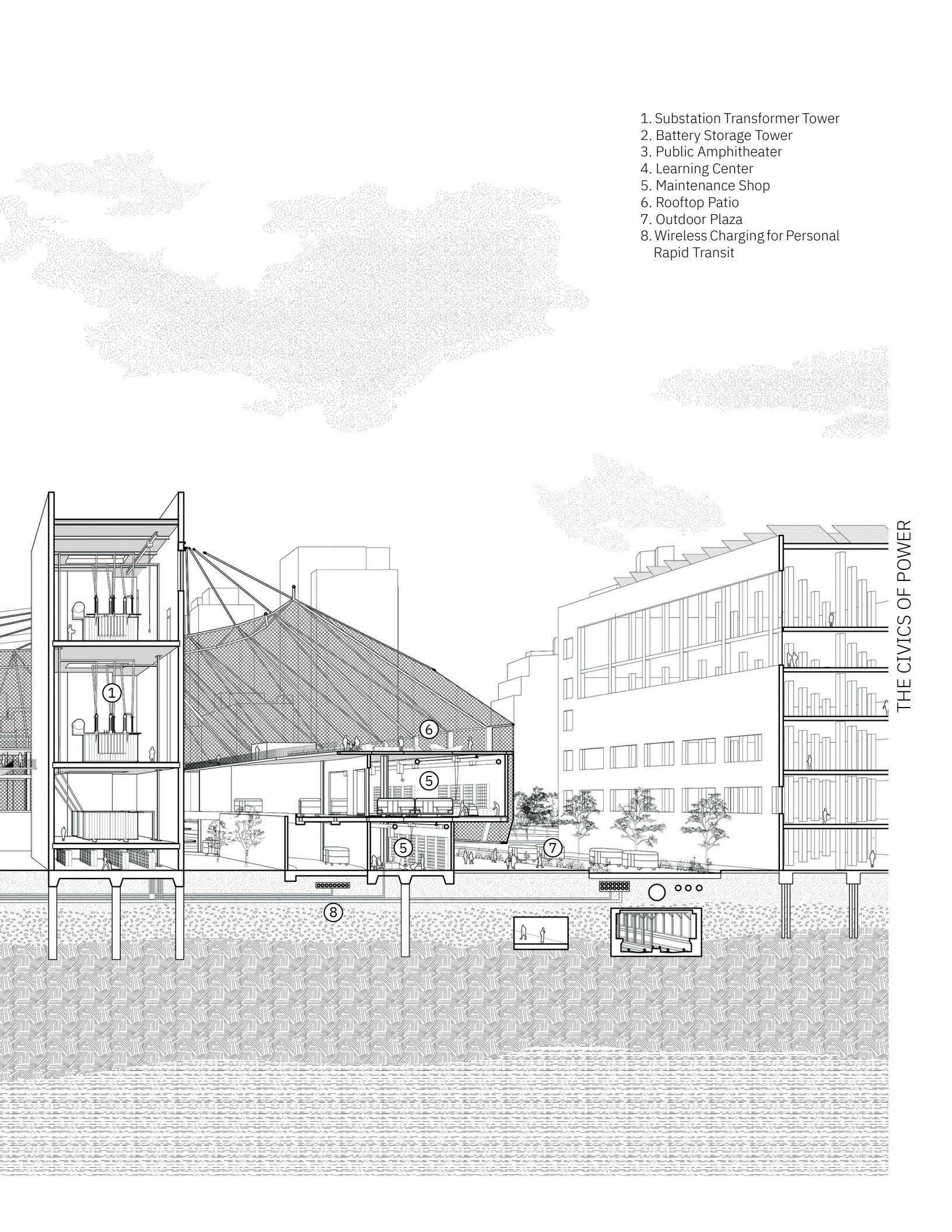


Level 3

1. Substation Transformer Tower
2. Battery Storage Tower
3. Cogeneration Tower
4. Main Amphitheater
5. Flex Community Space
6. Outdoor Root Terrace
7. Substation Office
8. Tower Maintenance

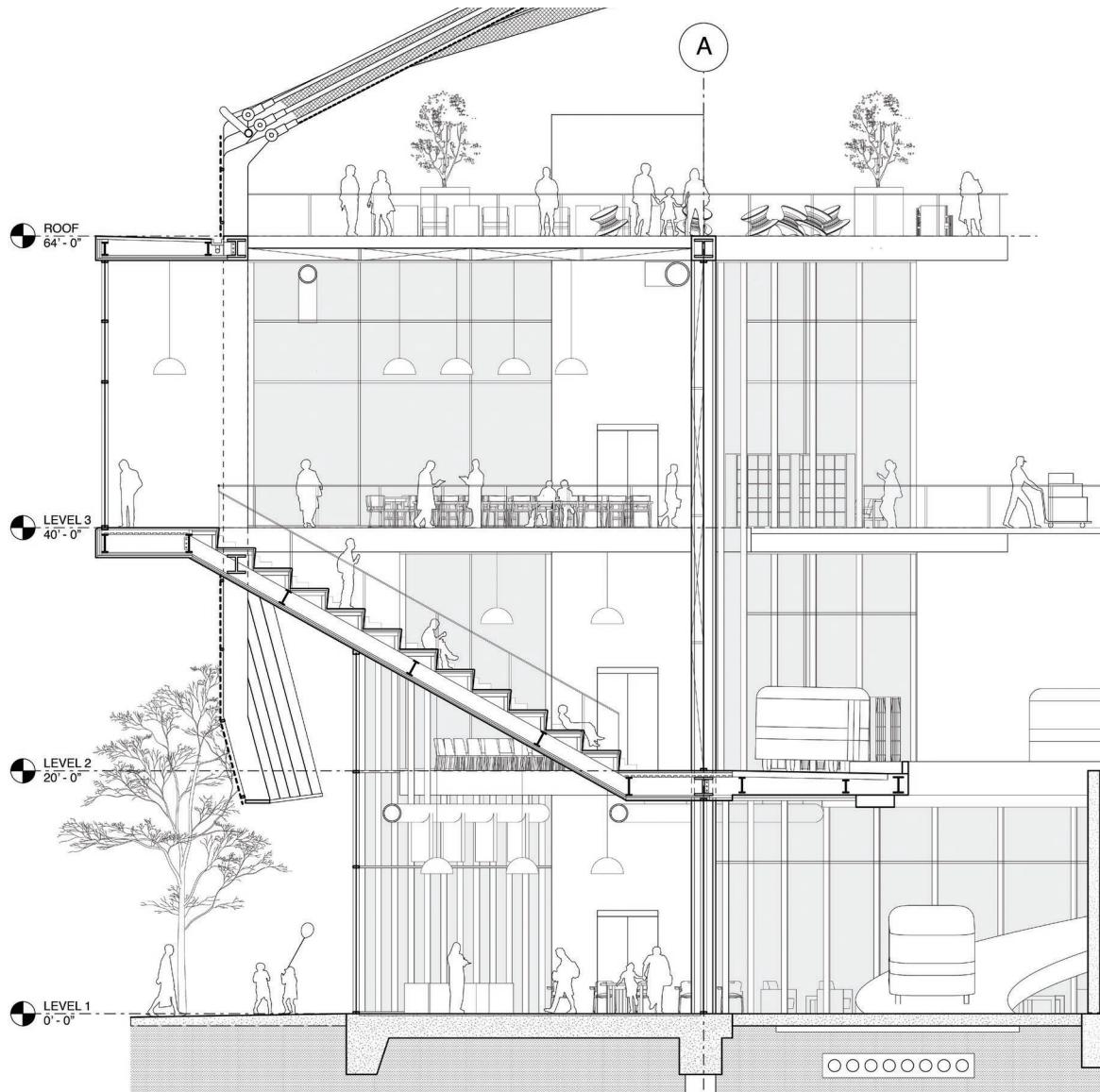
ADVANCED V STUDIO

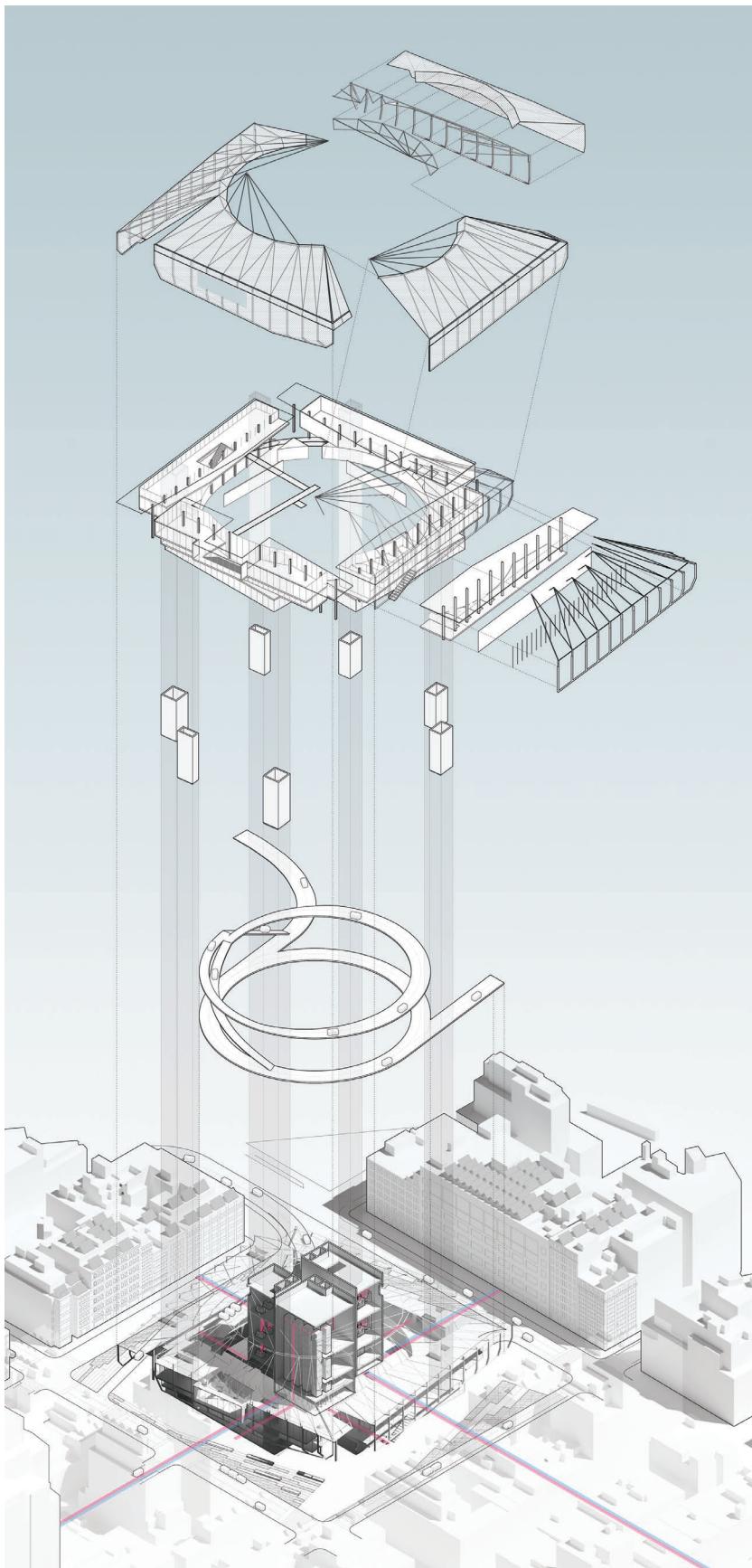




1. Substation Transformer Tower
2. Battery Storage Tower
3. Public Amphitheater
4. Learning Center
5. Maintenance Shop
6. Rooftop Patio
7. Outdoor Plaza
8. Wireless Charging for Personal Rapid Transit

THE CIVICS OF POWER





Inside the battery storage tower.

THE CIVICS OF POWER

The electrical infrastructure is rendered as large masses, celebrating infrastructure as civic-scaled objects, with a ring of public programs covered in a mesh-like skin to create an ephemeral veil. The form of the building itself hints at the energy and dynamism of the types of spaces contained within.



The building becomes a public amenity, centered around a technological hearth that powers the city. Personal rapid transit pods zoom by the public amphitheater as one views the monolithic infrastructural cores. Infrastructure becomes celebrated as citizens begin to understand the importance of these spaces in their everyday lives.



THE CIVICS OF POWER

Less is Enough:

SPLIT-LINE HOUSING

ACADEMIC / Core III Studio / Fall 2018

Critic: Gabriela Etchegaray (Ambrosi | Etchegaray)

Team: Tim Zhou

Program: Mixed-Use Public Housing

Location: South Bronx, NYC

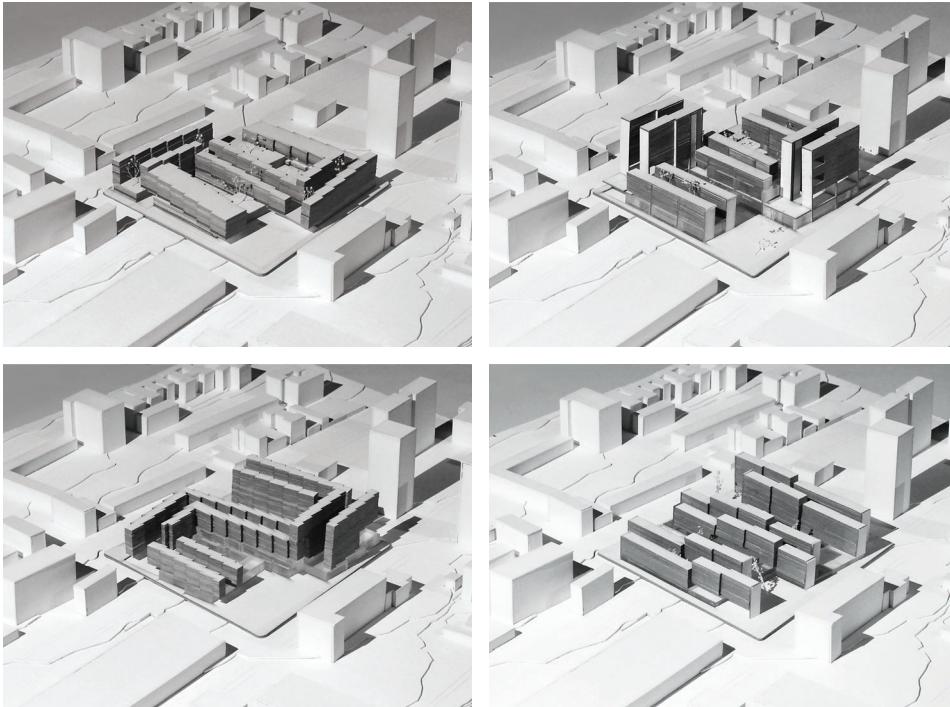




The South Bronx is full of hard edges that encourage separation to provide security, but also limits any genuine interaction between neighbors. Split-Line Housing softens these hard edges, increasing moments of intersection & interaction between residents and the community alike through a series of minimal architectural gestures. These include re-adapting the double loaded corridor typology into residential atriums and also weaving a public market hall through the buildings, creating a spine of activity and interaction.

New bonds between people are created in order to make them feel invested where they live. The South Bronx begins to become a space of engagement. It makes a person feel like they belong and have a sense of ownership, which in turn creates an engine of change.

SPLIT-LINE HOUSING



Massing iterations.



Worm's eye axonometric.

A public market hall acts as a spine connecting the three buildings, creating a corridor for the neighborhood through the block.

SPLIT-LINE HOUSING



A central atrium connects the public market hall with the units above, creating **visible yet secure connections** with the residential and neighborhood communities.

SPLIT-LINE HOUSING



SPLIT-LINE HOUSING



Level 1

- 1. Market Hall Spine
- 2. Courtyard
- 3. Daycare
- 4. Community Center for the Aging
- 5. Youth Art & Science Center

- 6. Residential Lobby
- 7. Resident Amenity Space
- 8. Flexible Multi-Function Spaces
- 9. Public Plaza

SPLIT-LINE HOUSING



Level 2

1. Residential Atrium
2. Resident Gym
3. Resident Patio

SPLIT-LINE HOUSING



Typical Level

SPLIT-LINE HOUSING



1. Market Hall Spine
2. Courtyard
3. Daycare
4. Resident Lobby
5. Resident Amenity Space
6. Resident Atrium
7. Resident Gym
8. Resident Pool
9. Rooftop Lounge

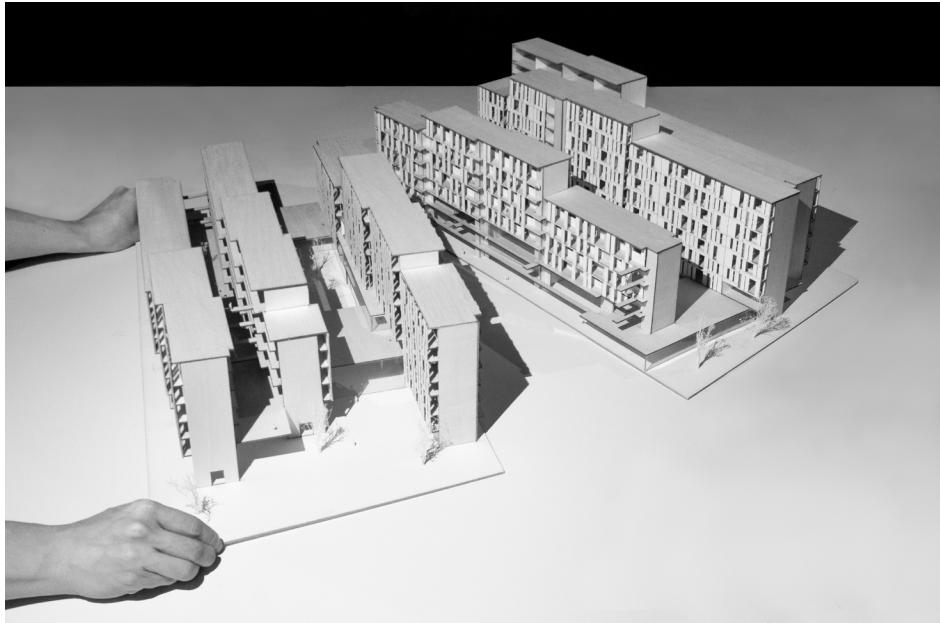
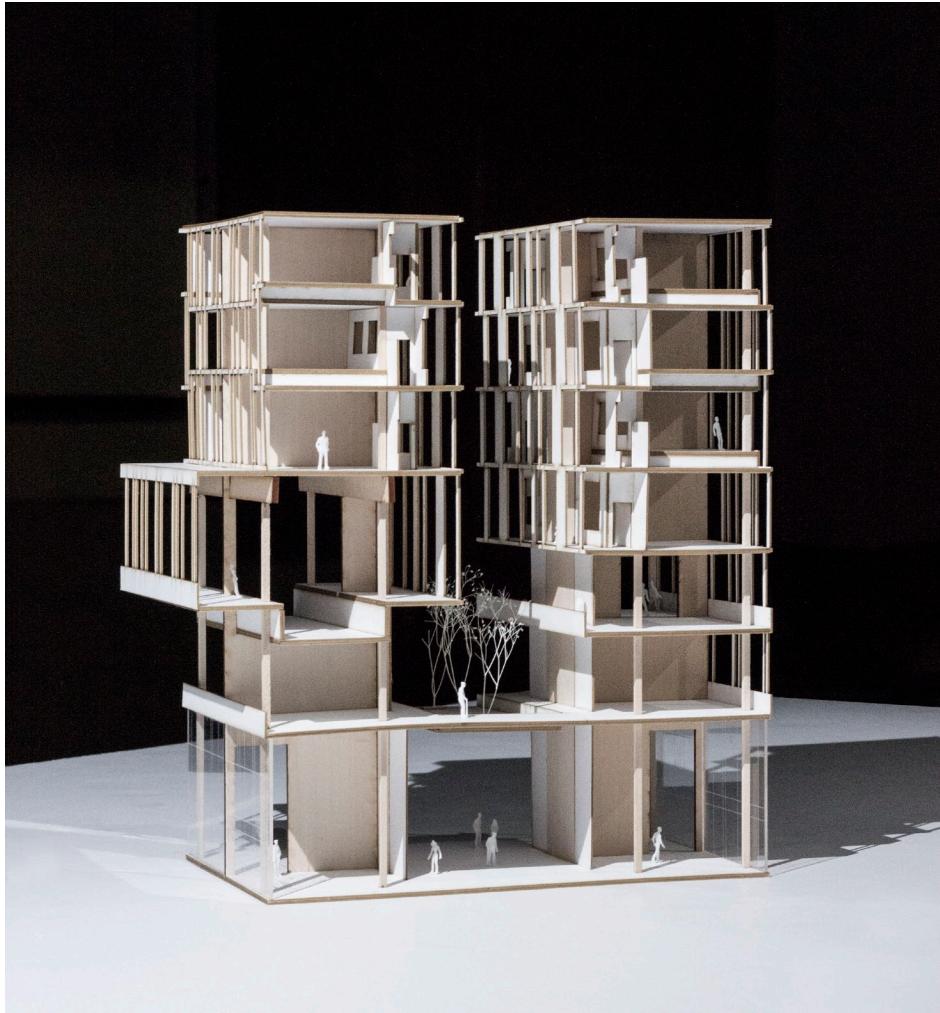


SPLIT-LINE HOUSING

SPLIT-LINE HOUSING



SPLIT-LINE HOUSING



Instead of cloistering residents away from the outside, they have the opportunity to go out and find meaningful interactions with their neighbors and the larger community of the Bronx. For instance, a walkway connecting the buildings above the Market Hall provide visible connections that is still secure for the residents. **The architecture does not attempt to build boundaries but to blur them.**



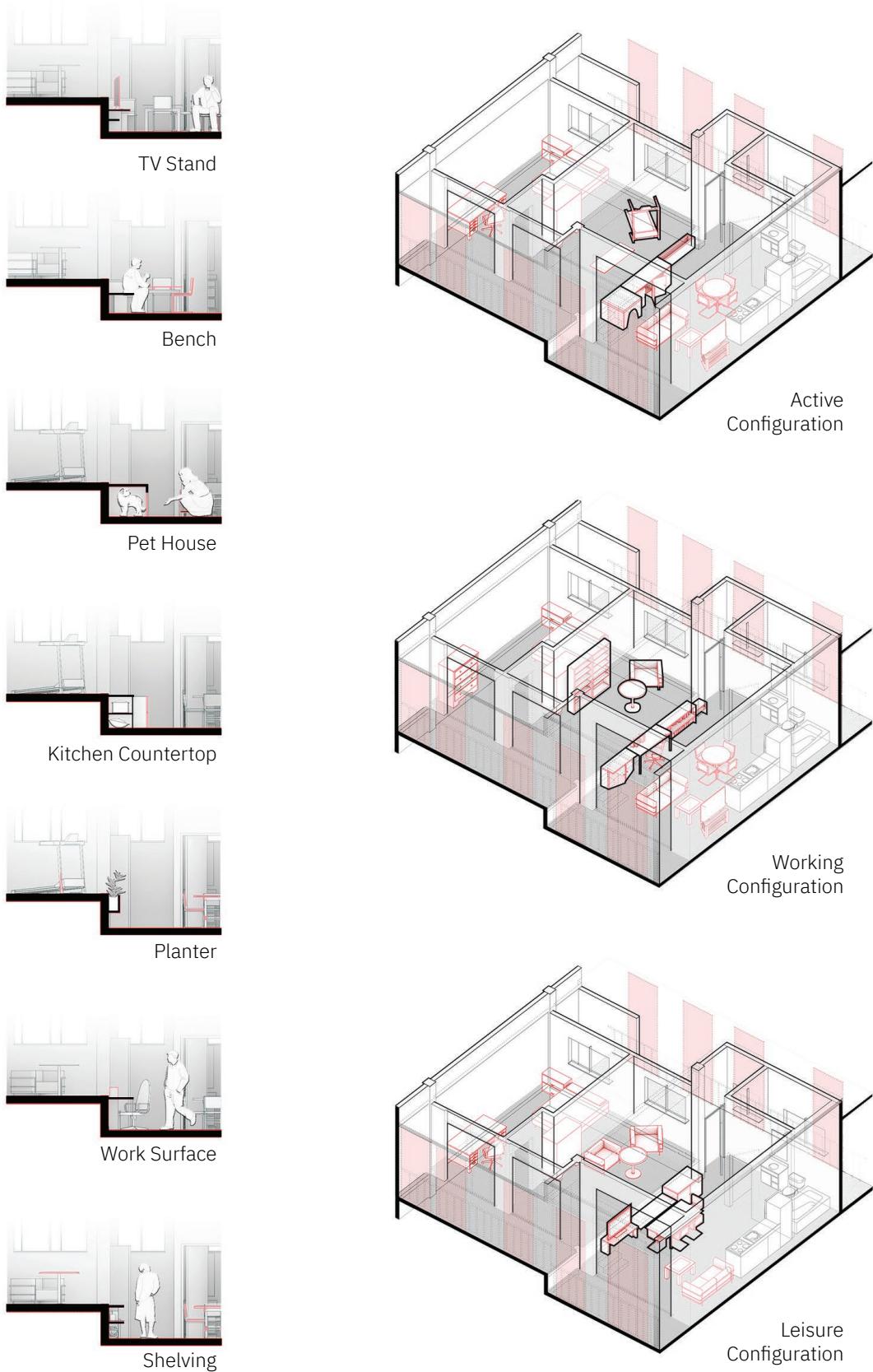
Slab steps for privacy and customization.

SPLIT-LINE HOUSING



A simple step of 3.5 feet in the structural slab maximizes the potential of the home. It maximizes privacy for each unit, preventing views directly into each home from the public corridor, and also can be configured for different functions based on a resident's need. These customizable built-in options **creates a sense of ownership for the tenant**, making them feel invested and that they truly belong here.

SPLIT-LINE HOUSING



SPLIT-LINE HOUSING



A system of movable perforated metal screens at each unit provides shading, privacy, and the ability to create a dynamic facade that changes with the day. **The building becomes a living presence within the Bronx and activates the site around it.**



SPLIT-LINE HOUSING

BIM COURSE: GREENPOINT THEATER

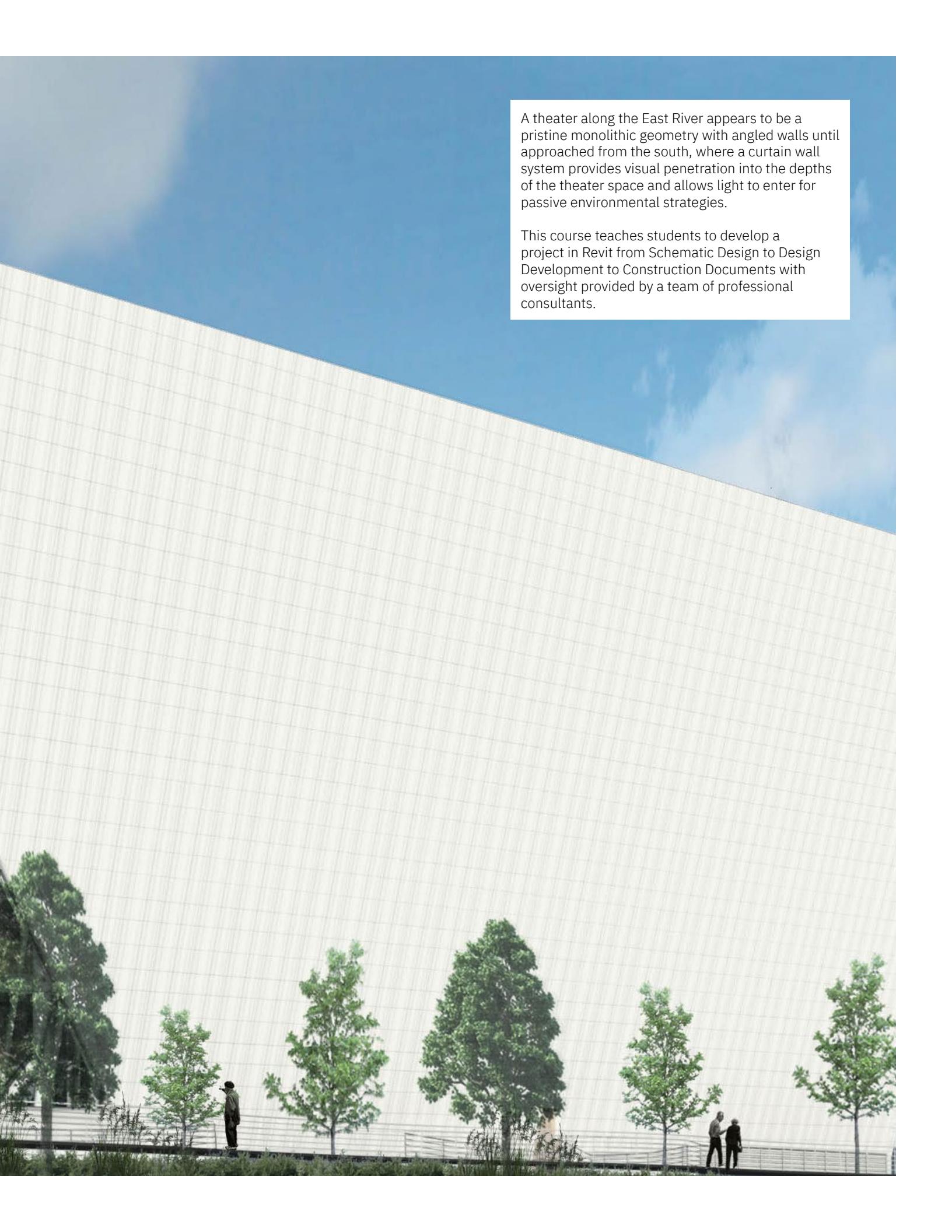
ACADEMIC / Building System Integration / Fall 2018

Critics: Architecture - Joe Hand (SHoP Architects)
Structural - Aaron Campbell (Bluezees Dev.)
MEP - Oliver Meade (Buro Happold)
Enclosure - Ashley Reed (Eckersley O'Callaghan)

Team: Joud Al Shdaifat, Hyung Rok Do, Sanggyu Shin

Location: Greenpoint, Brooklyn, NYC

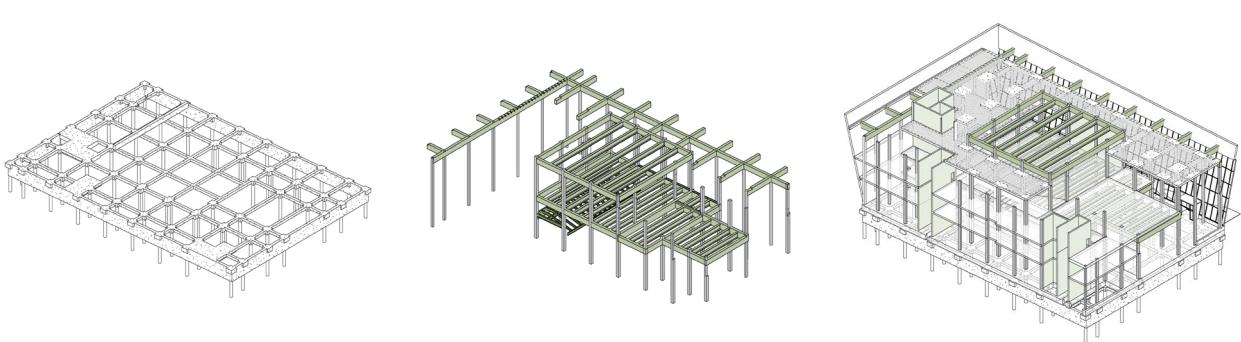
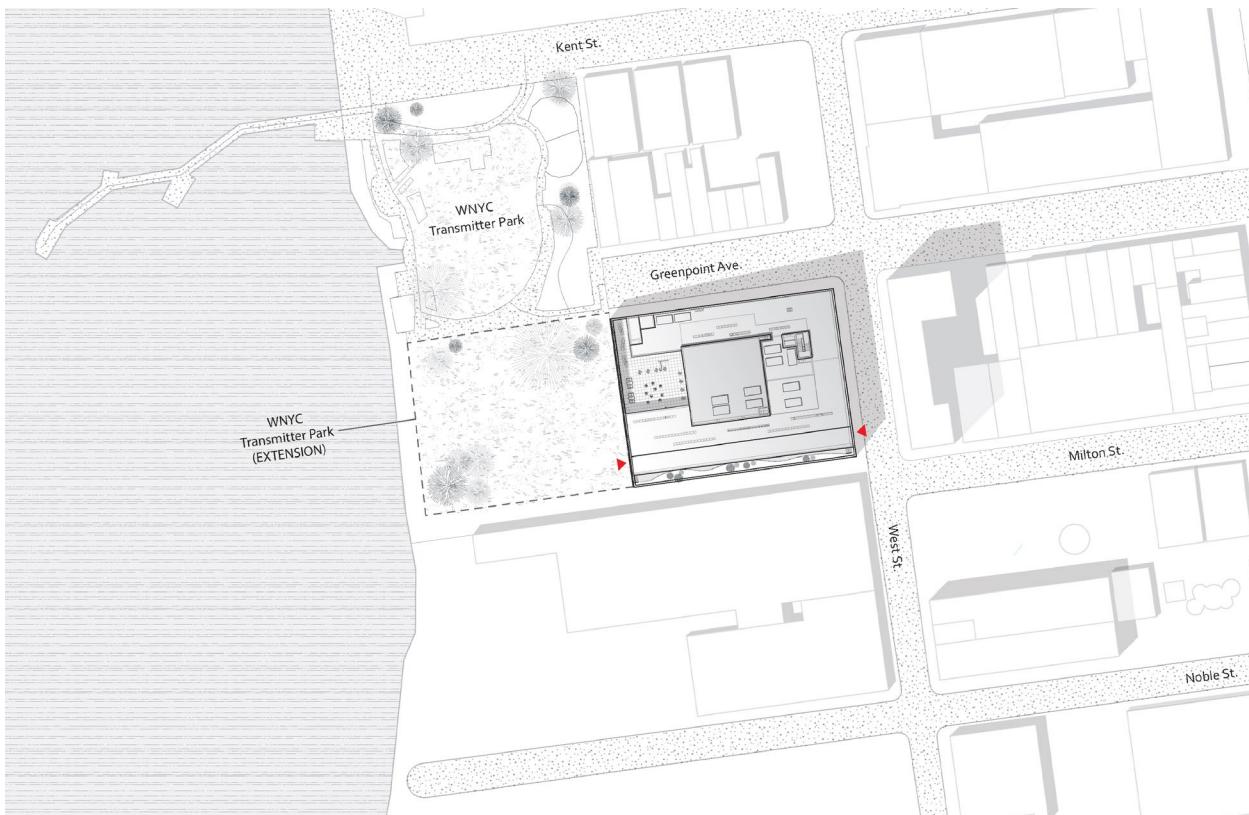
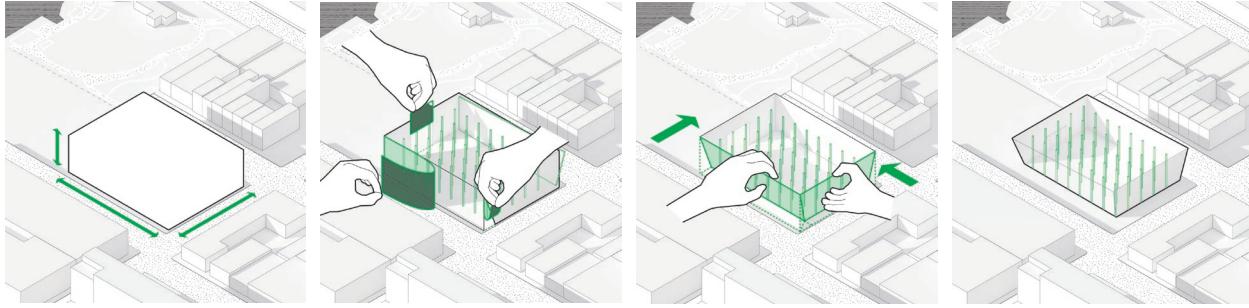




A theater along the East River appears to be a pristine monolithic geometry with angled walls until approached from the south, where a curtain wall system provides visual penetration into the depths of the theater space and allows light to enter for passive environmental strategies.

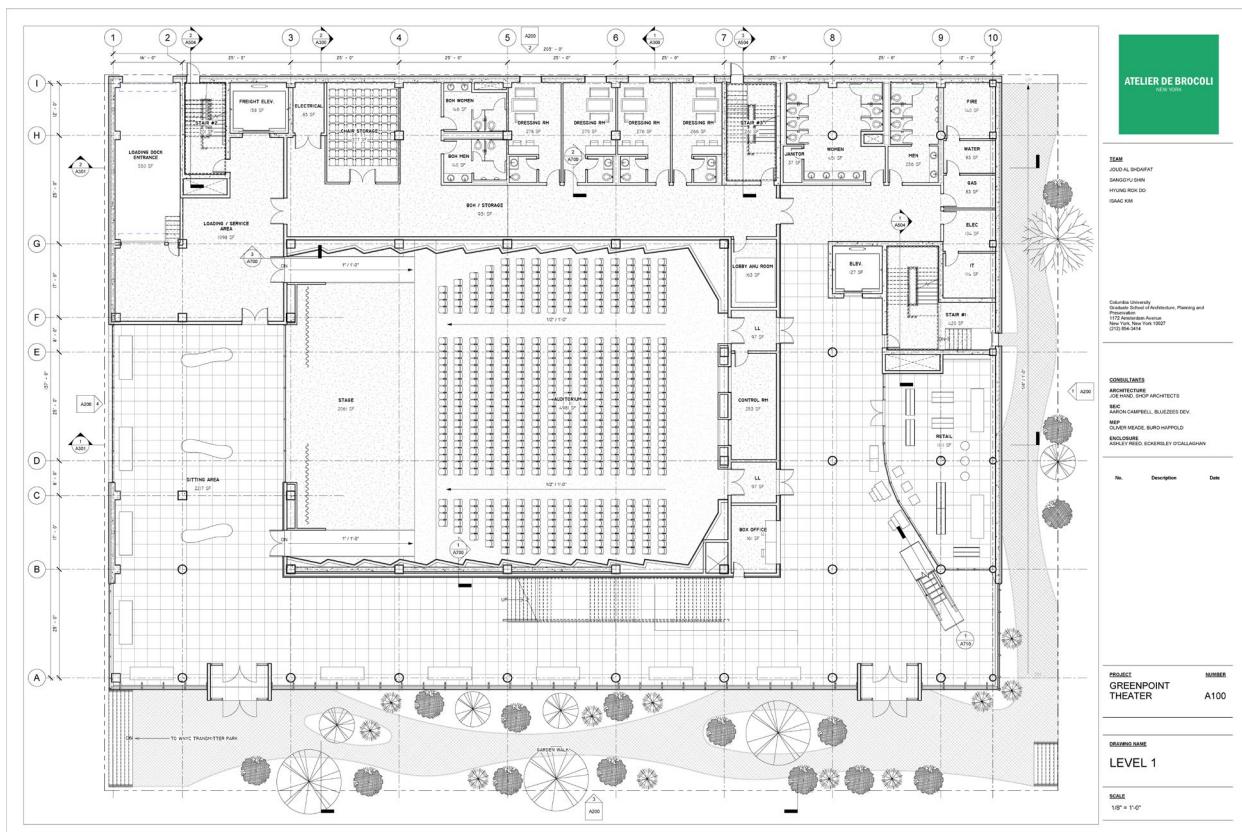
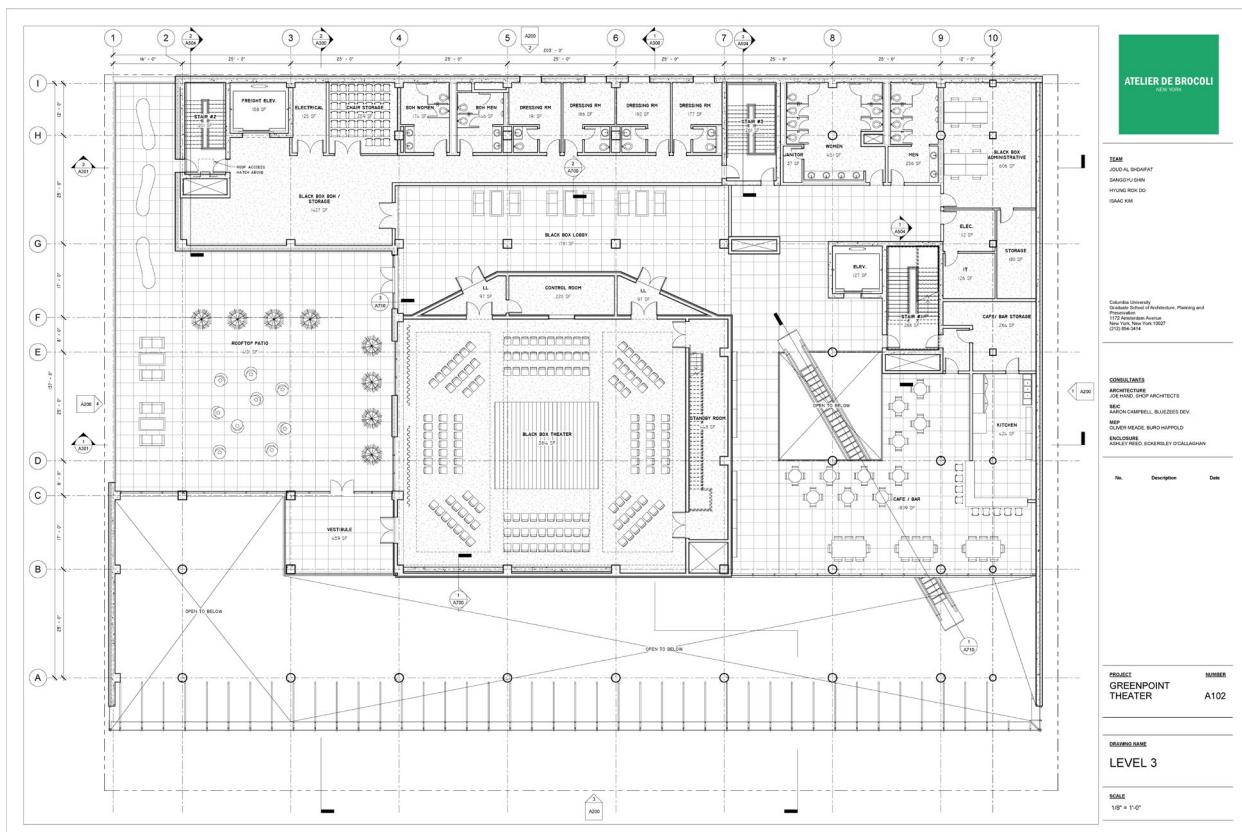
This course teaches students to develop a project in Revit from Schematic Design to Design Development to Construction Documents with oversight provided by a team of professional consultants.

BUILDING SYSTEM INTEGRATION

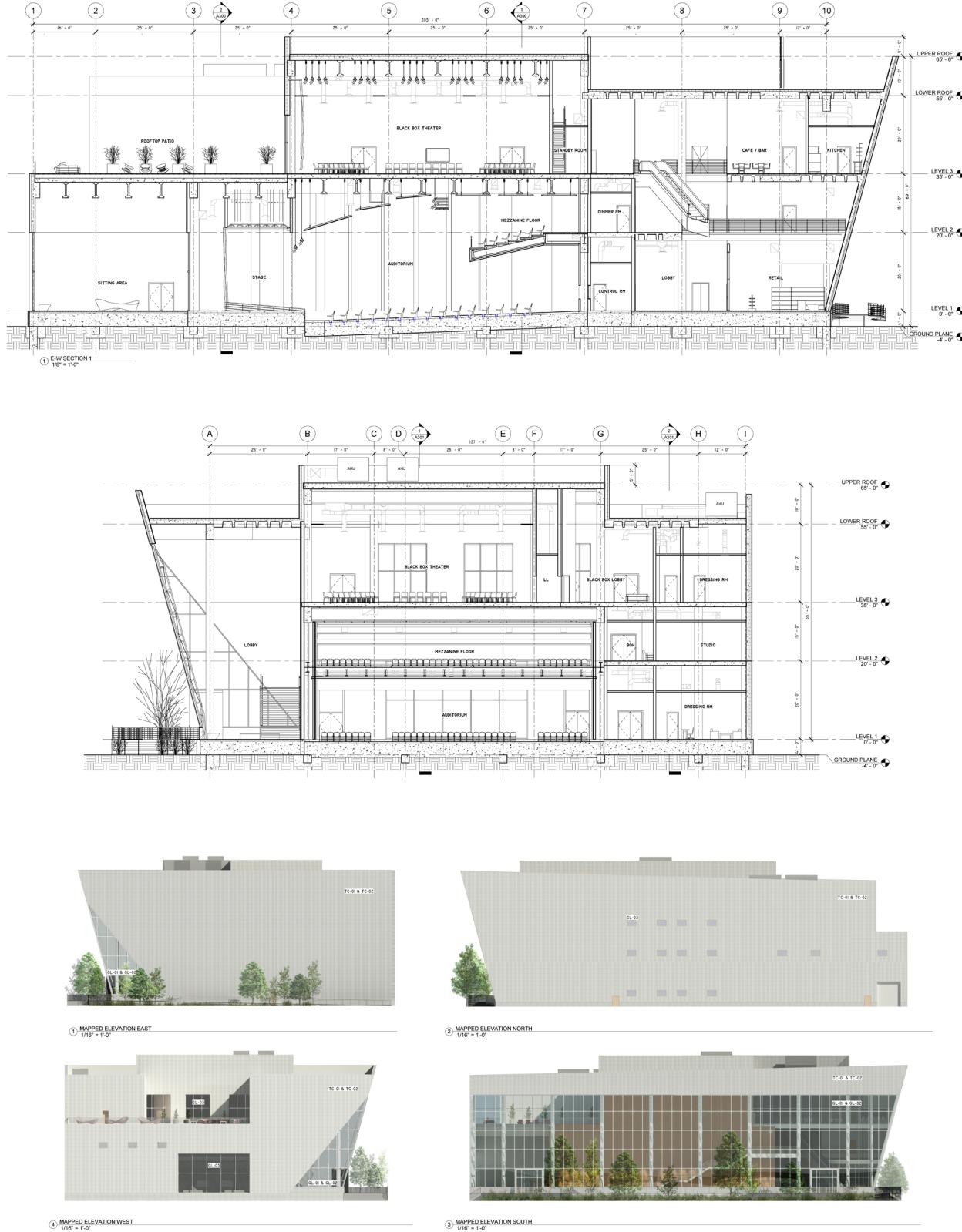


The prototypical theater box is ripped and pushed in order to create visibility through the space. The building is constructed entirely through a series of concrete beams, slabs, and columns.

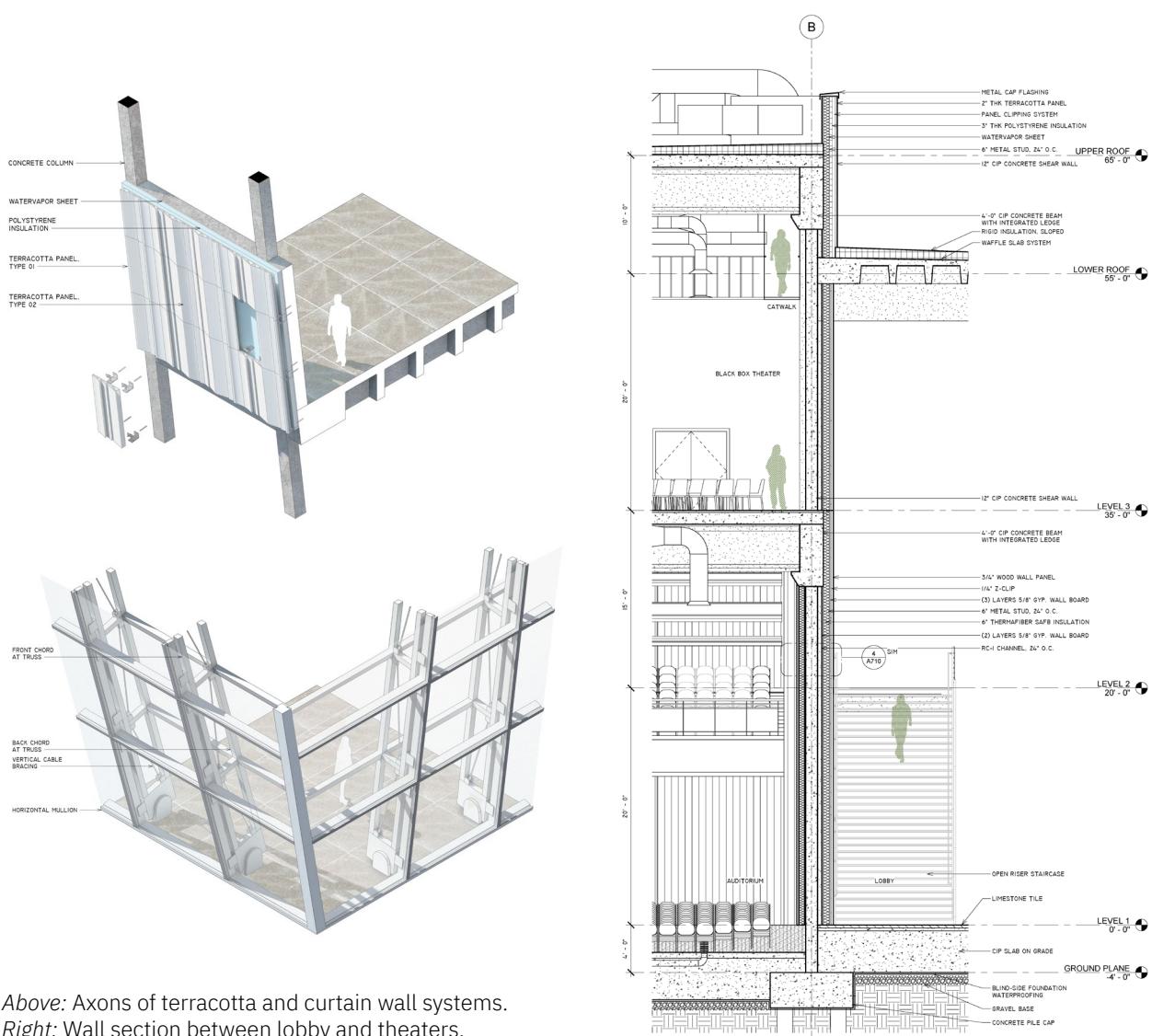
BIM COURSE: GREENPOINT THEATER



BUILDING SYSTEM INTEGRATION



A separate Black Box theater sits above the main theater on a concrete girder system. The primary envelope system consists of terracotta panels and an angled curtain wall, allowing views into the concrete-framed interior highlighted by the warm tones of the theater masses within.



Above: Axons of terracotta and curtain wall systems.
Right: Wall section between lobby and theaters.



THE LEARNING TRACK

ACADEMIC / Advanced IV Studio / Spring 2019

Critic: Adam Frampton (Only If Architecture)

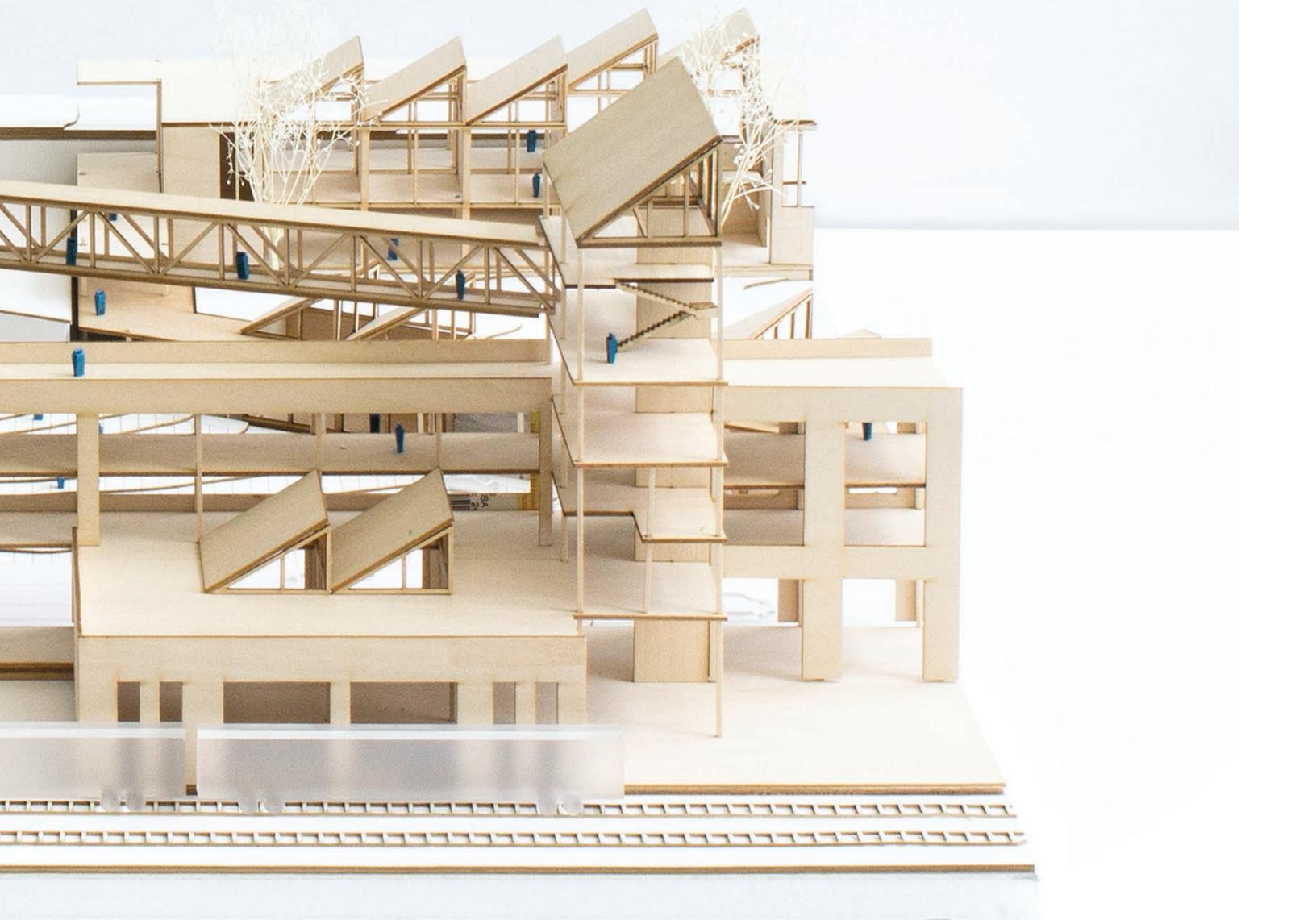
Team: Krista Wiryomartono

Program: Education + Transportation

Location: Newburgh, NY

Winner of the 2019 AIANY + ASLANY Transportation + Infrastructure Design Excellence Awards, Student Award

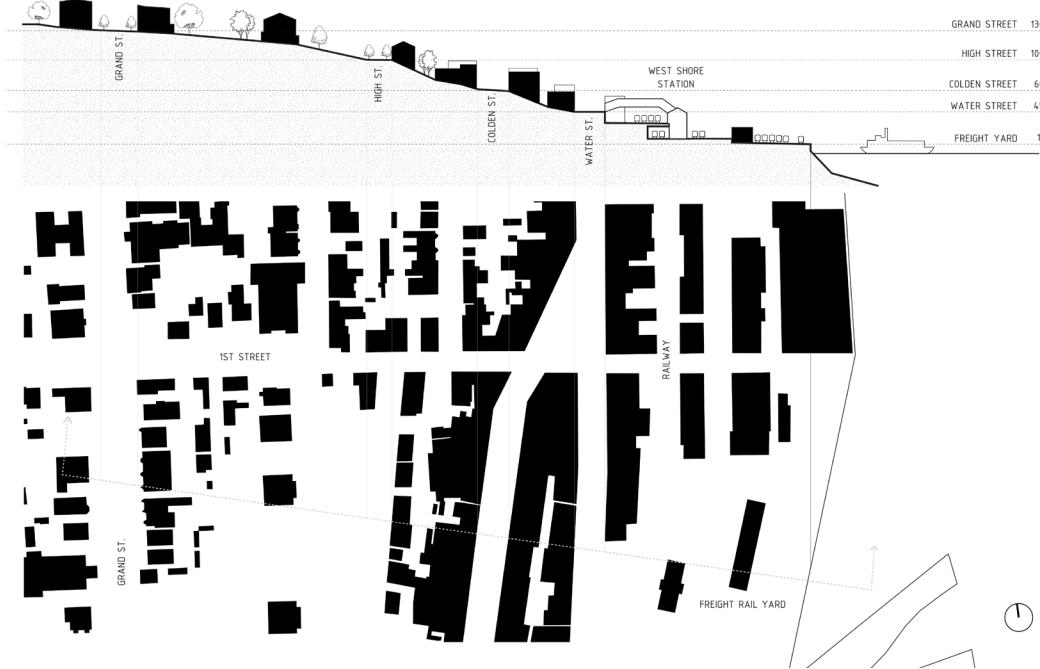




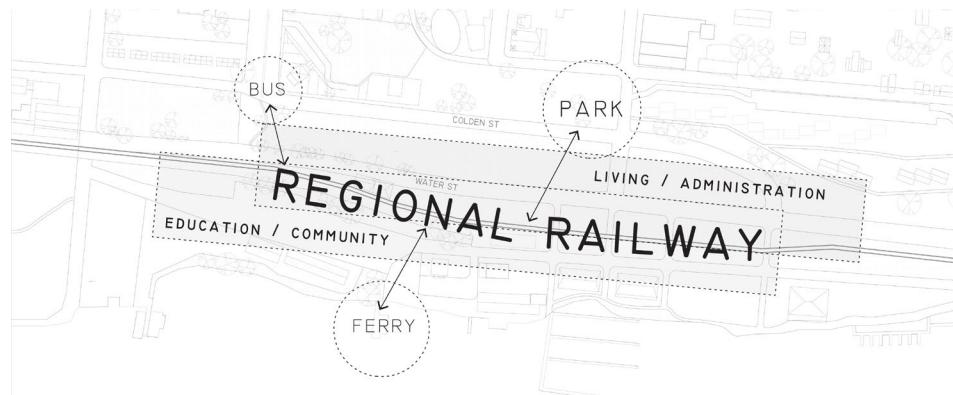
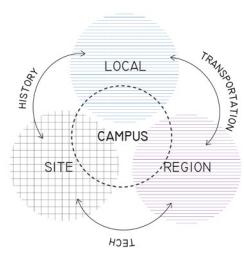
A new SUNY campus extension seeks to connect communities regionally, municipally, and locally by integrating existing inter-modal transit stations (rail, ferry, and bus) on site. By activating the West Shore Railway as a new commuter route, the campus will take advantage of these new connections and accommodate the increased influx of community and public commuters.

Formally, we are inspired to return lost densities from Urban Renewal by tracing settlement lots of historical Sanborn maps on the waterfront. Through historical perimeter mapping, we propose the reintroduction of the historical Colden Square and the lost junction off Water Street to reinstate urban life and prioritize the pedestrian experience. Through providing new residences and co-working spaces in response to the growing tech community along the Hudson Valley, the new campus environment will facilitate inclusivity, entrepreneurship, and social cohesion.

THE LEARNING TRACK



Through tracing historic Sanborn maps of the waterfront, a comparison of Newburgh's waterfront in its heyday in 1900 can be made versus today. **Much was lost to urban renewal, creating a void in the city fabric in both plan and in section. The campus reinstates the lost fabric by being constructed within the same boundaries as the historic built form.** Colden Square, once a major public space, is re-introduced.



THE LEARNING TRACK

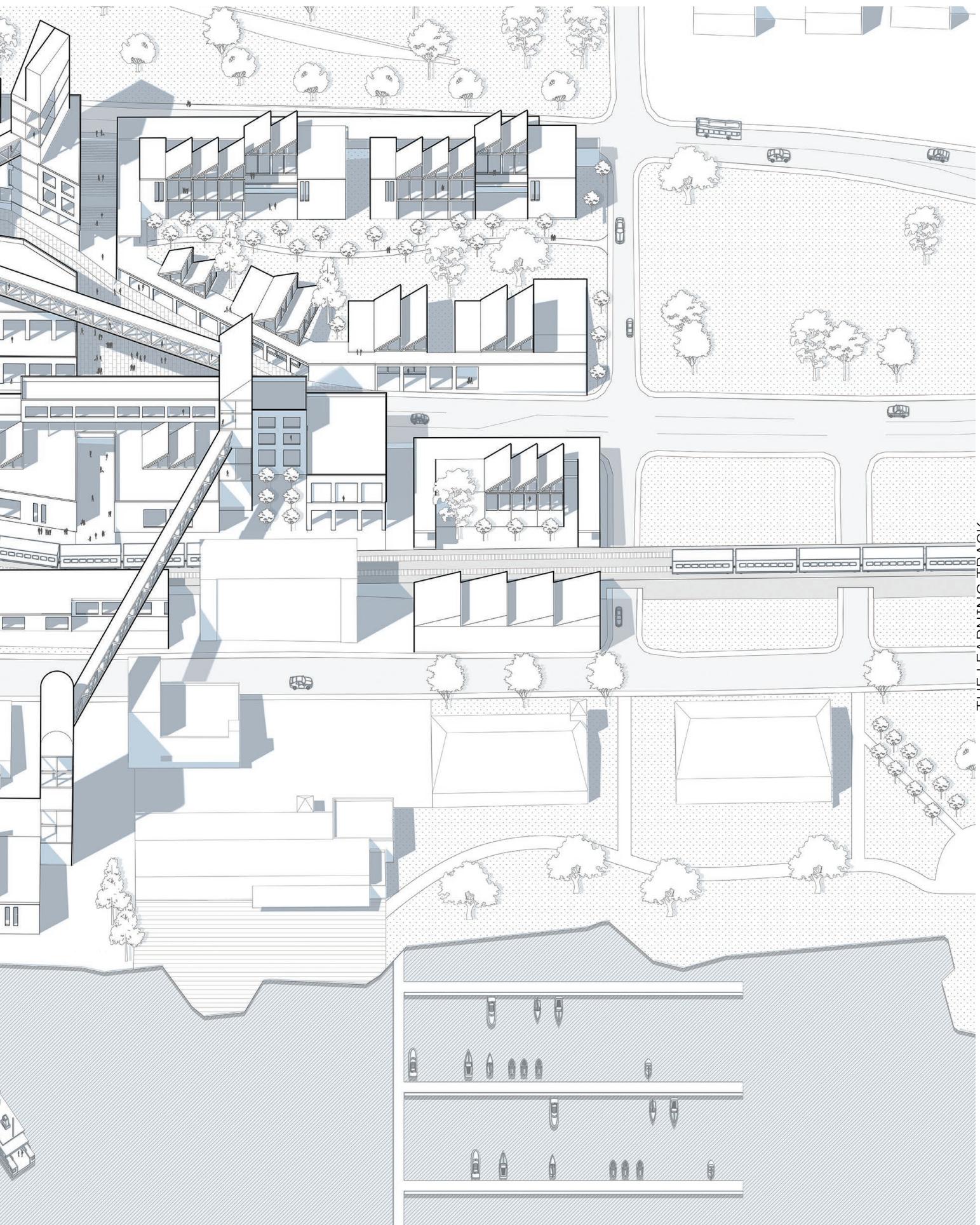


The history of Newburgh is deeply intertwined with its modes of transit. The campus physically threads these together, creating spaces that once again fill the urban fabric and to tap into the potential future of tech in the Hudson Valley connected by bus, rail, and ferry.

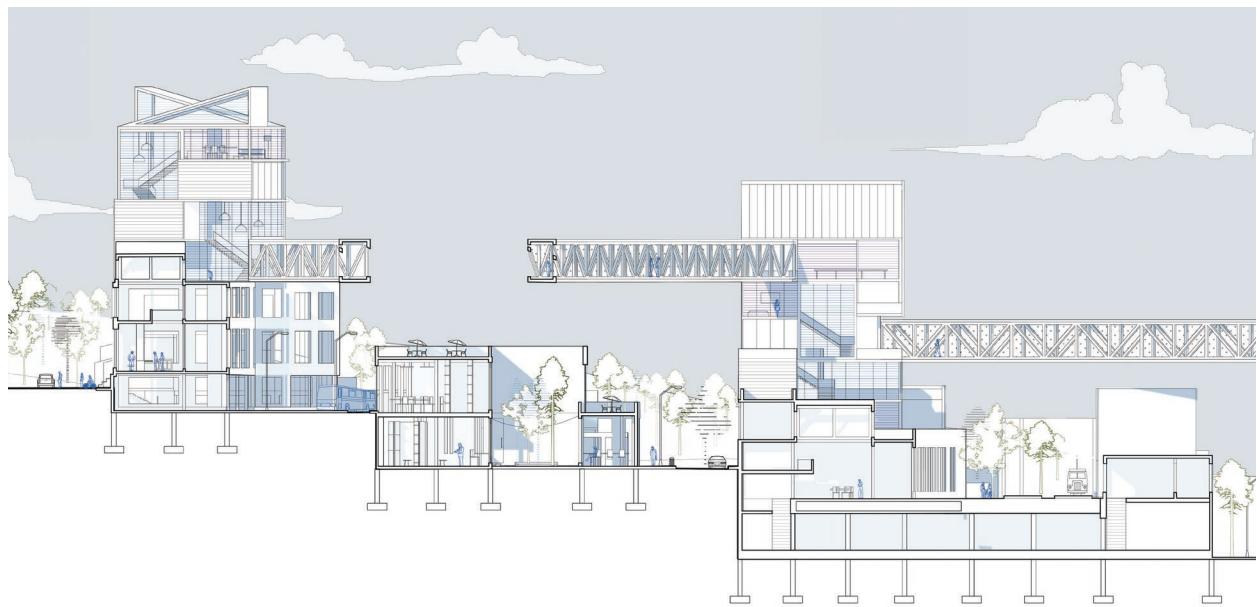
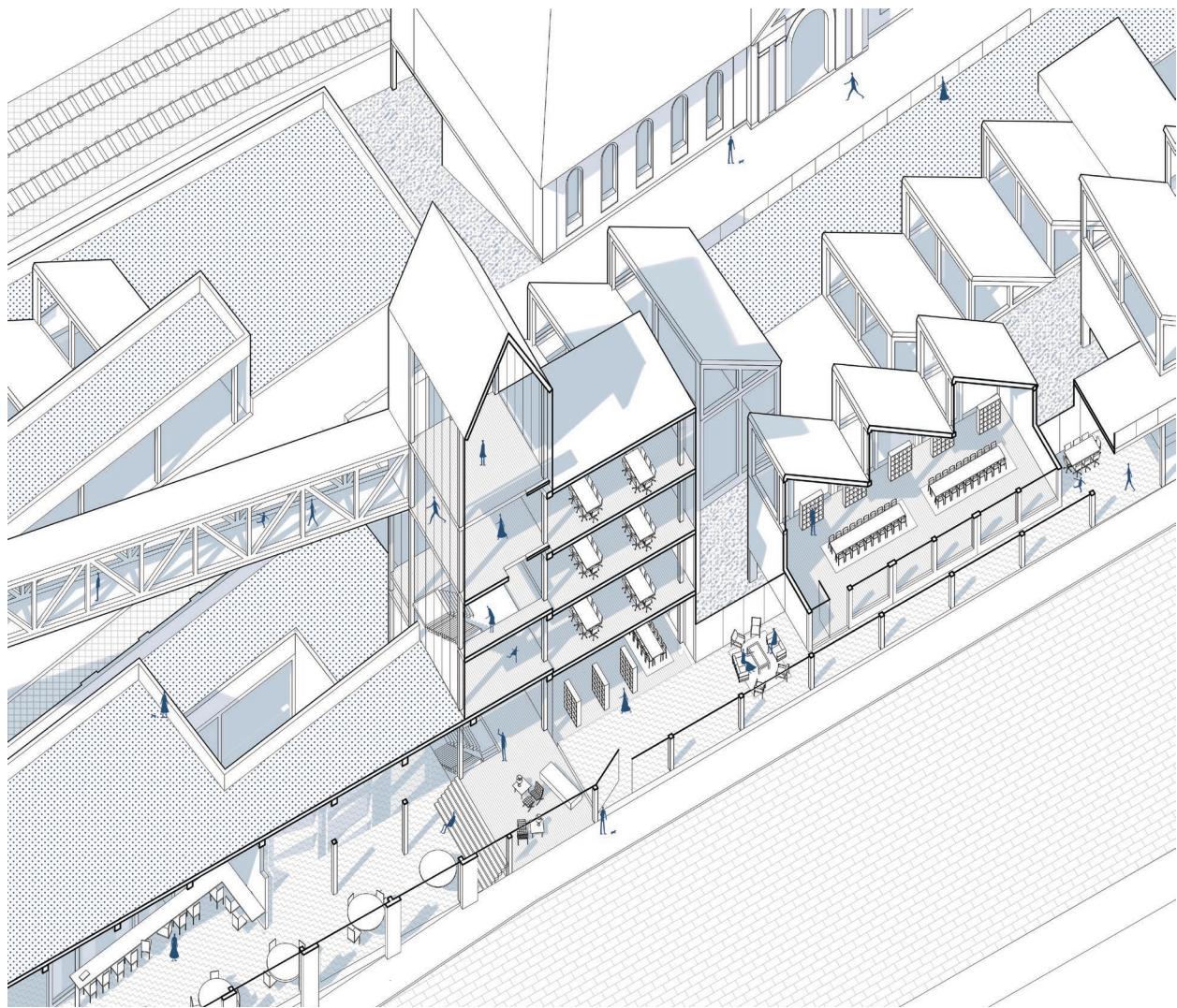
THE LEARNING TRACK



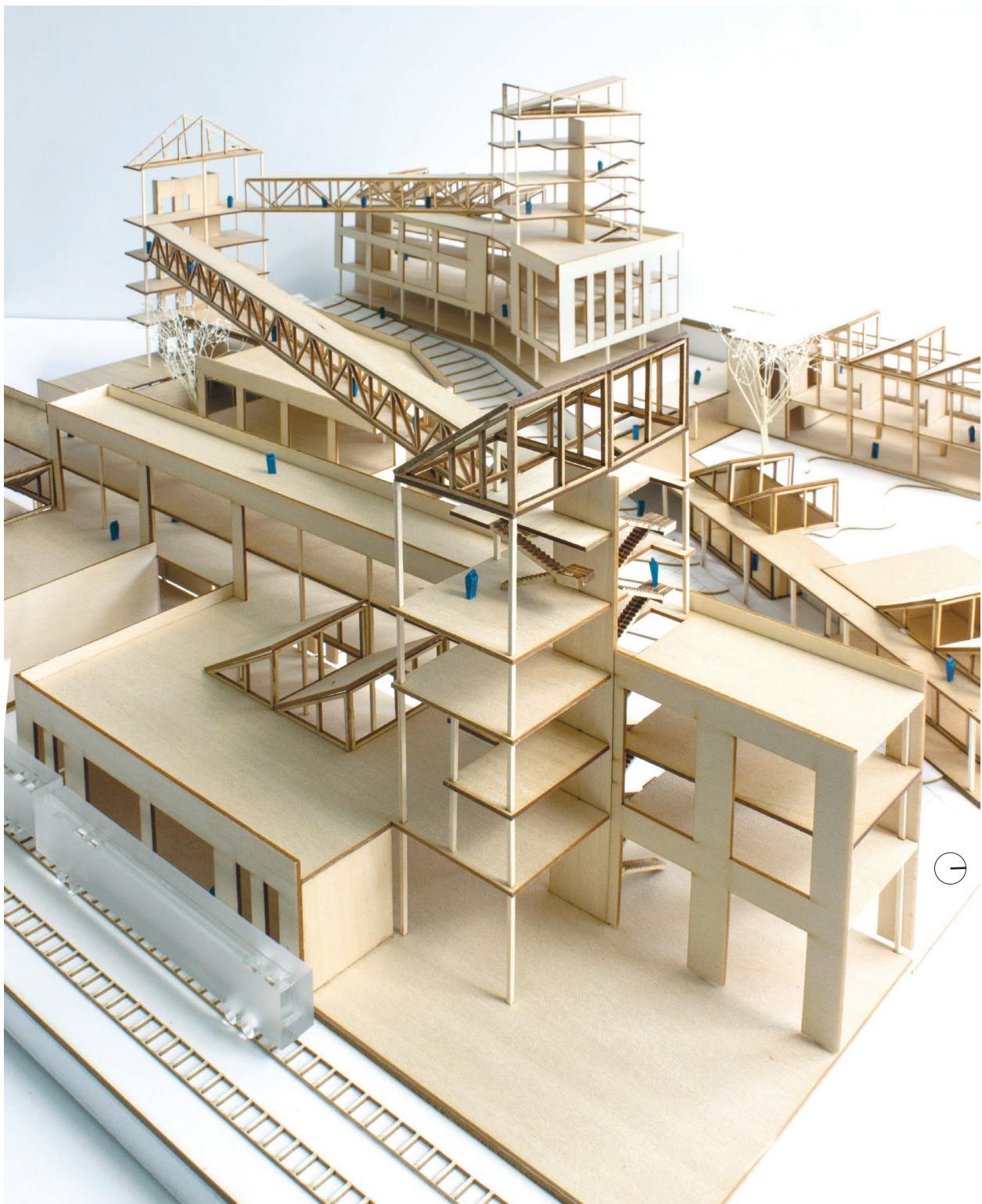
THE LEARNING TRACK



THE LEARNING TRACK



THE LEARNING TRACK



A commuter traveling to the campus by train, bus, or ferry, are able to circulate through the towers and find a place to work, or move on to other areas of the campus or to other means of transit.

SERENDIPITY LIBRARY

ACADEMIC | Core II Studio | Spring 2018

Critic: Erica Goetz (Studio Goetz)

Program: Public Library

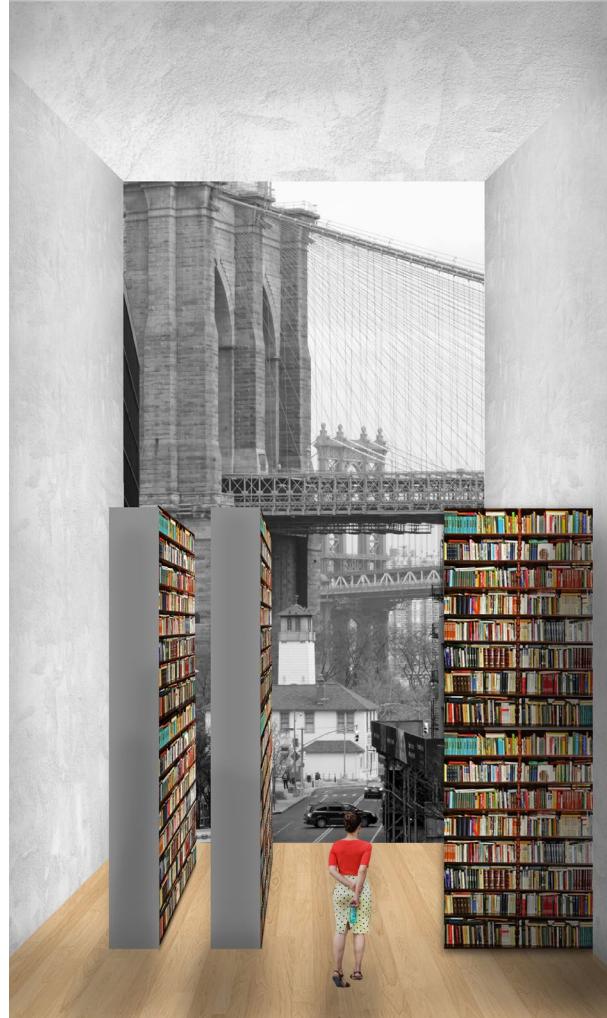
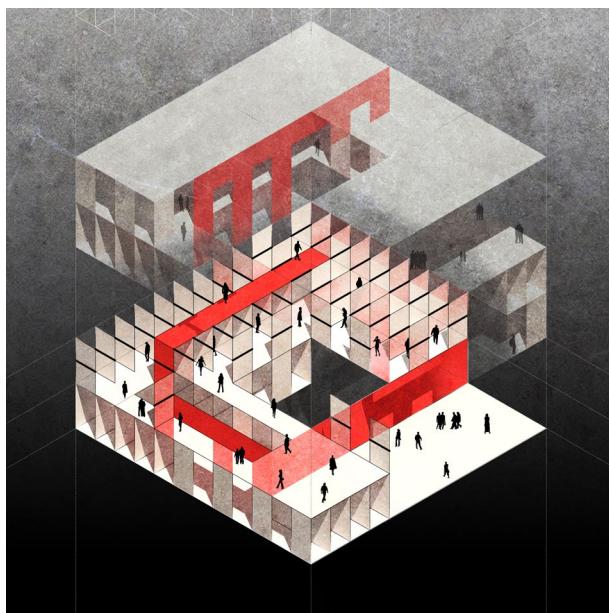
Location: DUMBO, Brooklyn, NYC





What is the relationship between structure and space? How does that relationship inform the future identity of a library as it transitions from the analog to the digital age? In the case of the Serendipity Library, a community library that offers a new experience for each visit, the typology of the structural stack as seen in the Bibliotheque Nationale or the New York Public Library is evolved into a dense matrix of shelves that form the very structure of the building. The frame, though dense, is at a human scale and is intertwined with open-grate pathways so that patrons can take a different route on each visit. This density of stacks and meandering pathways inevitably increase chance encounters, such as the surprise of finding a treasured book that is not being looked for or a revealing of a space or view. No two journeys are alike.

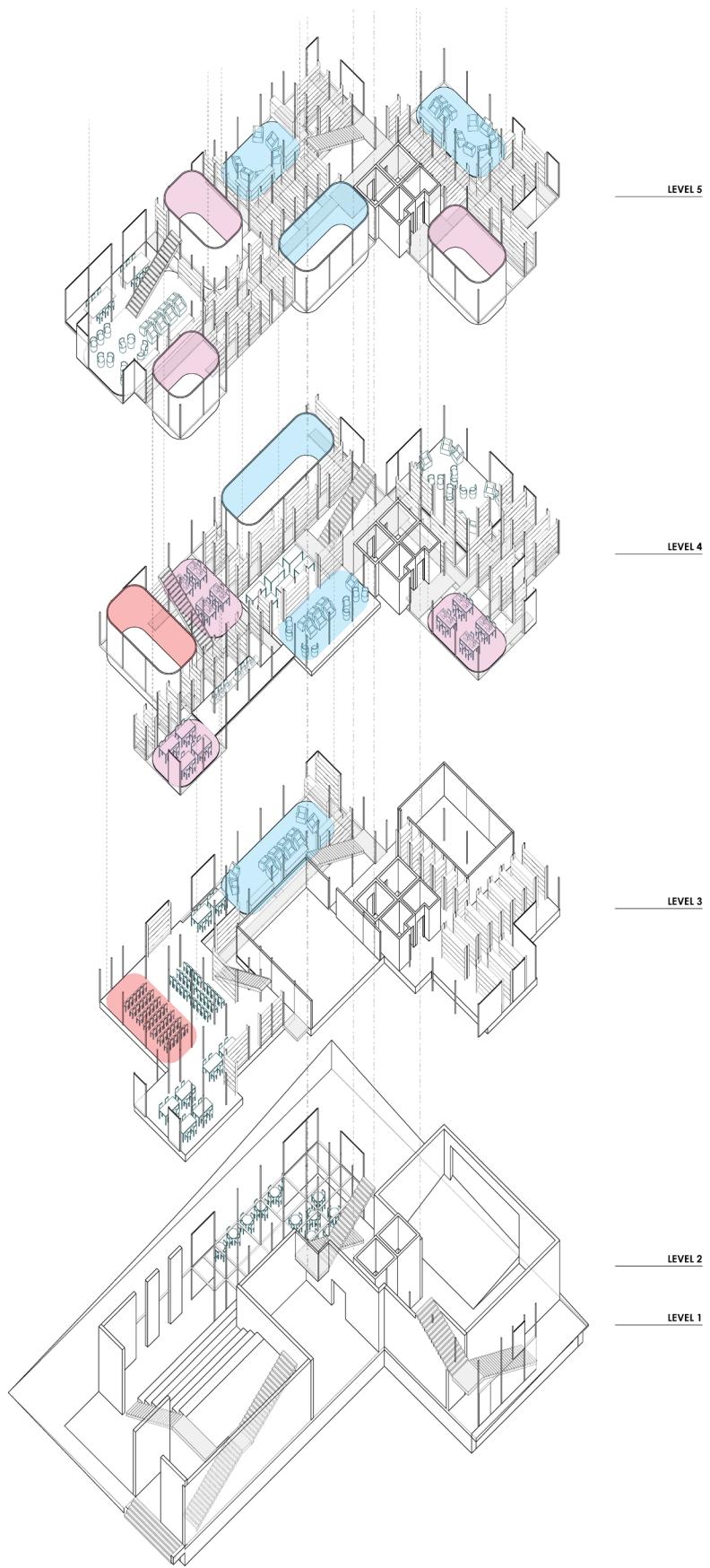
SERENDIPITY LIBRARY



A series of spatial and structural concepts learned through designing a “proto-building” create the crux of the project. With **exploration and discovery** as key themes, these are translated into the building to create moments of walls and bookshelves as walls framing views of the Manhattan skyline.



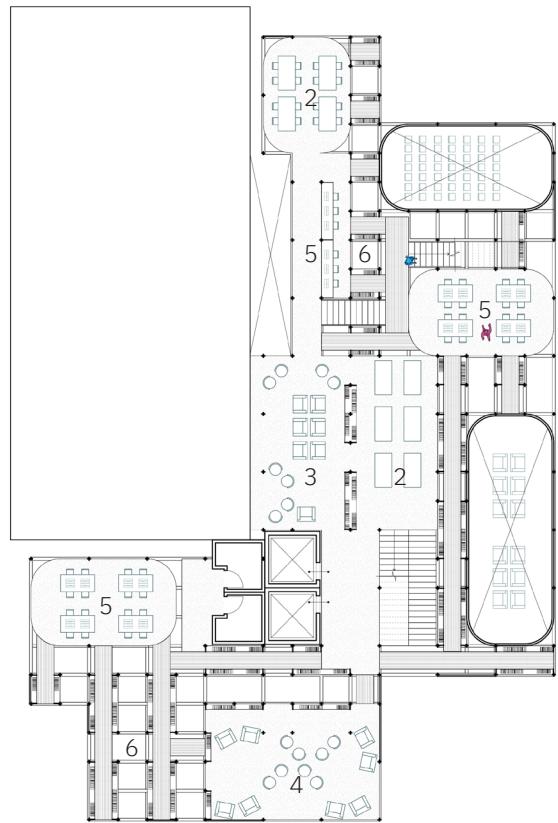
SERENDIPITY LIBRARY



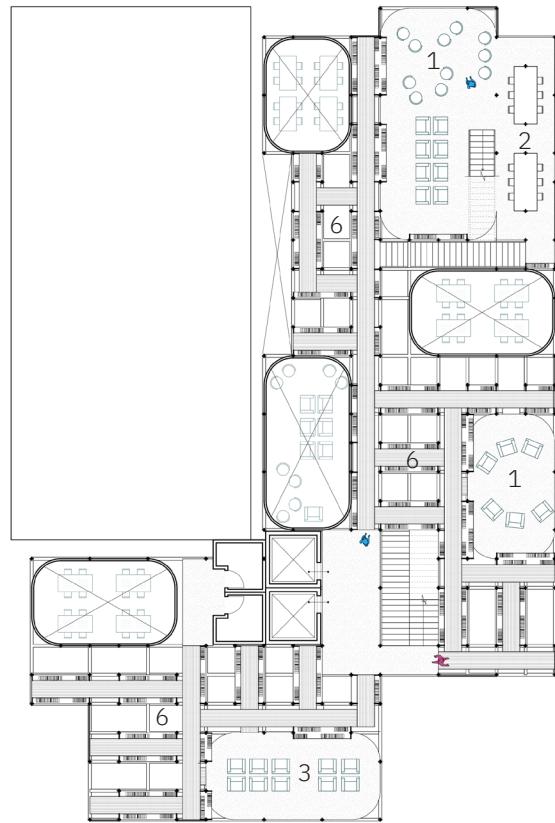
Caught within the tartan grid of stacks, special rooms called “clearings” arise unexpectedly. They provide both **programmed public space and spaces of release from the density of the books**, allowing a patron to rest on their journey. The clearings open to pointed views of the city or to meandering atria within the building, connecting the depths of the stacks to the outside world.

Partial axonometric.

SERENDIPITY LIBRARY



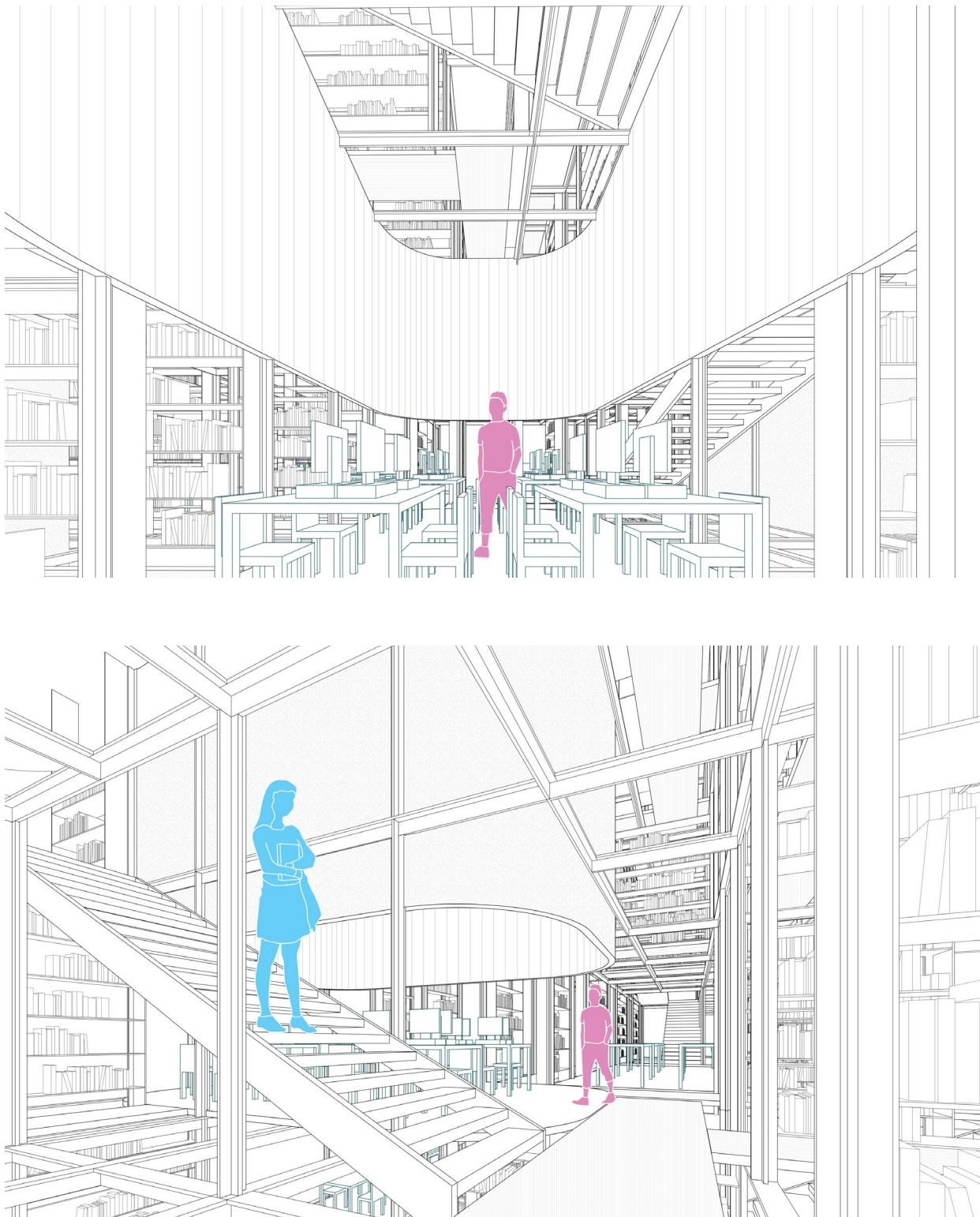
Level 3



Level 4

1. General Reading Room
2. Study / Work Area
3. Teen Reading Room
4. Children's Reading Room
5. Digital Lab
6. Stacks

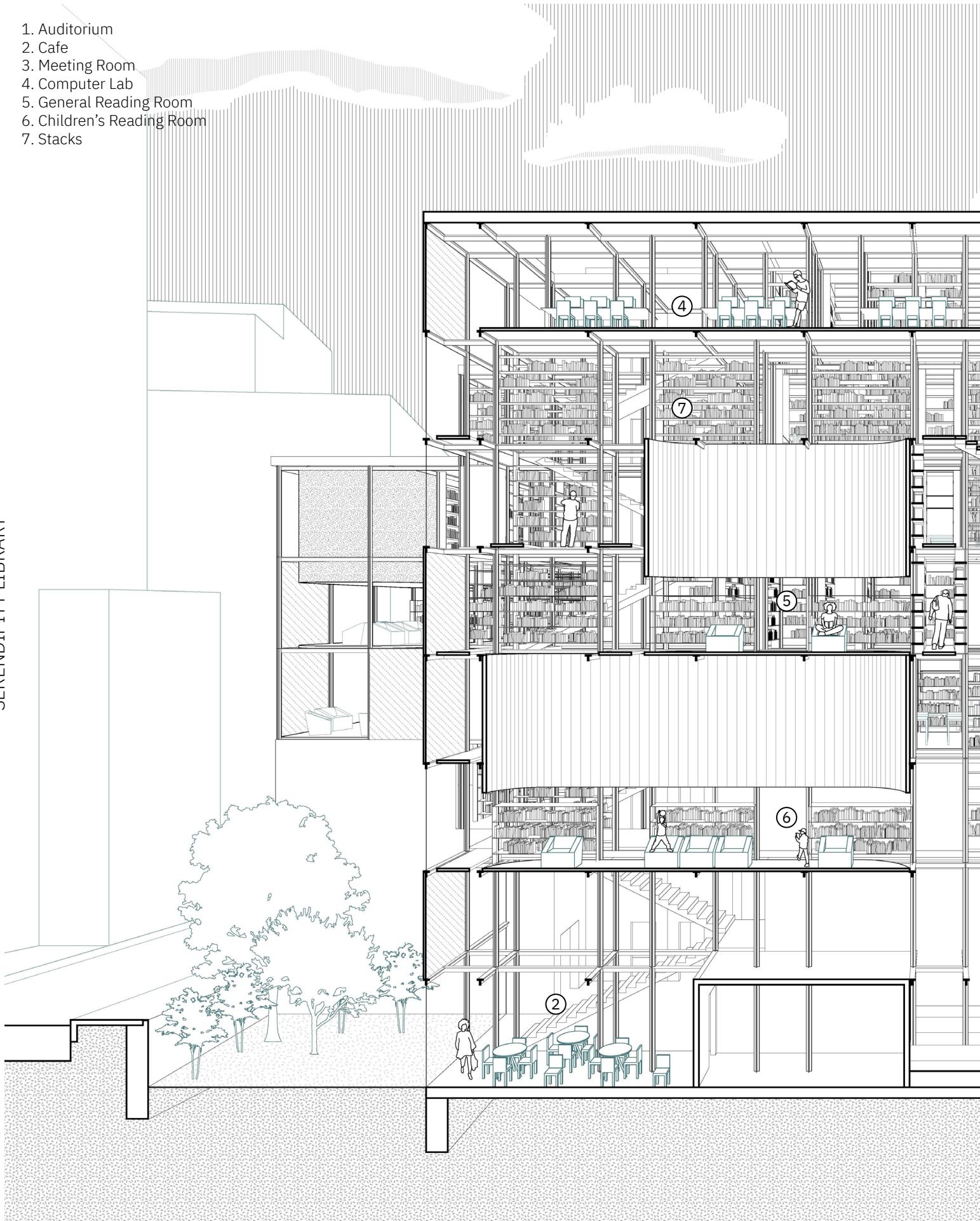
SERENDIPITY LIBRARY



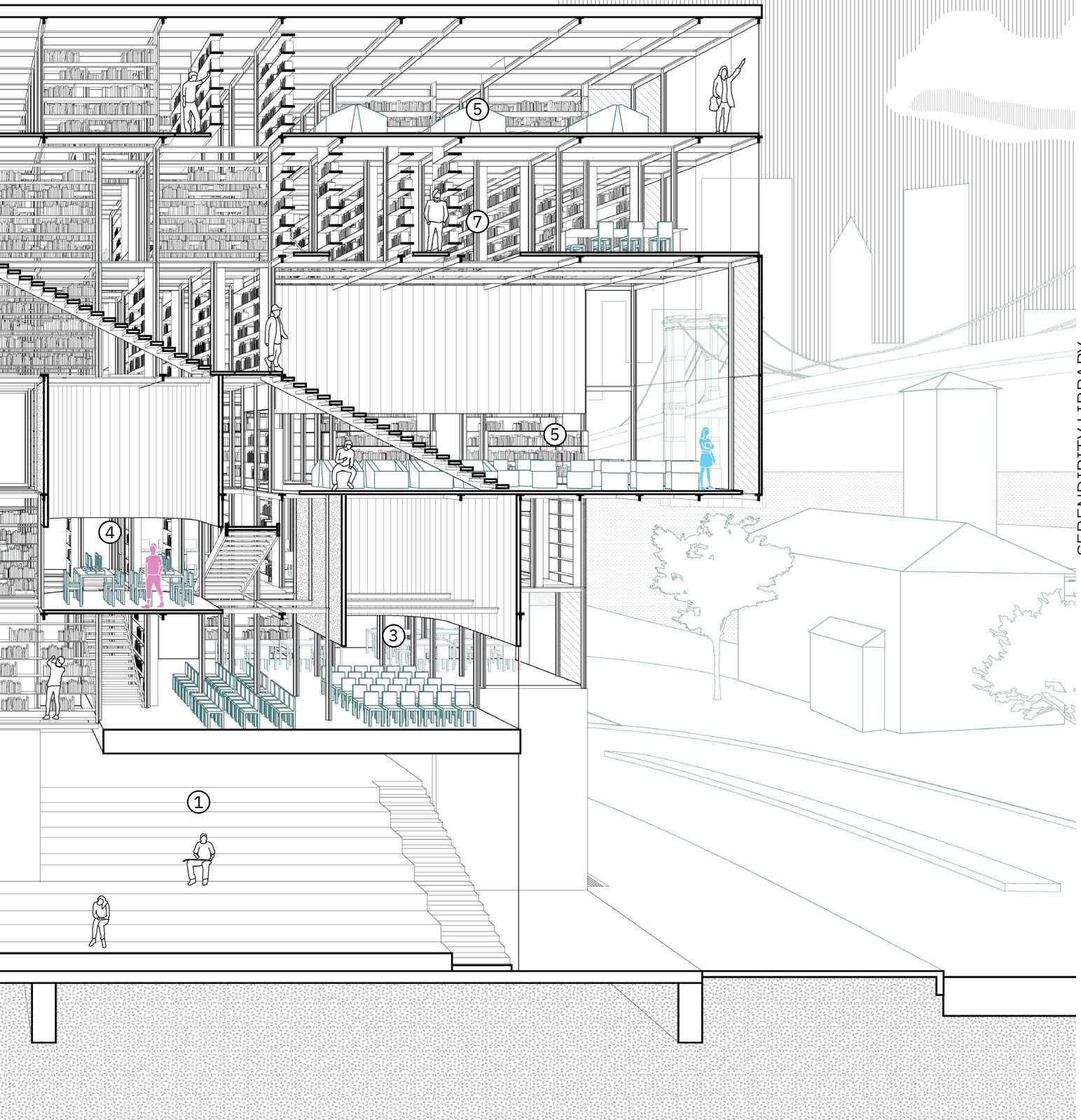
Just as a visitor can make a serendipitous discovery of a book, they can also discover different kinds of program scattered throughout the stacks. The relationship between stacks and clearings are at a human scale, and ambiguous enough to allow an **uninterrupted sense of journey**.

SERENDIPITY LIBRARY

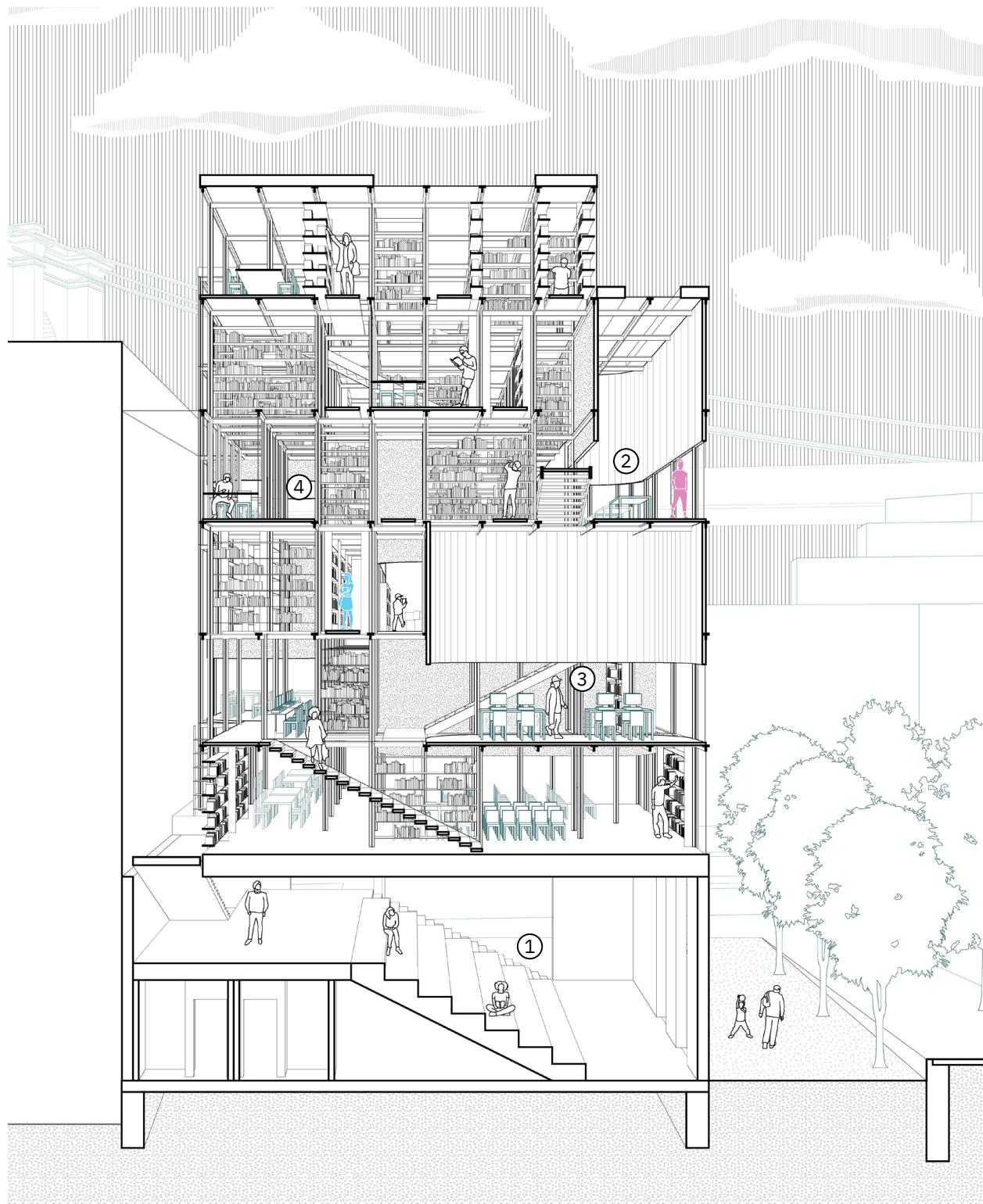
- 1. Auditorium
- 2. Cafe
- 3. Meeting Room
- 4. Computer Lab
- 5. General Reading Room
- 6. Children's Reading Room
- 7. Stacks



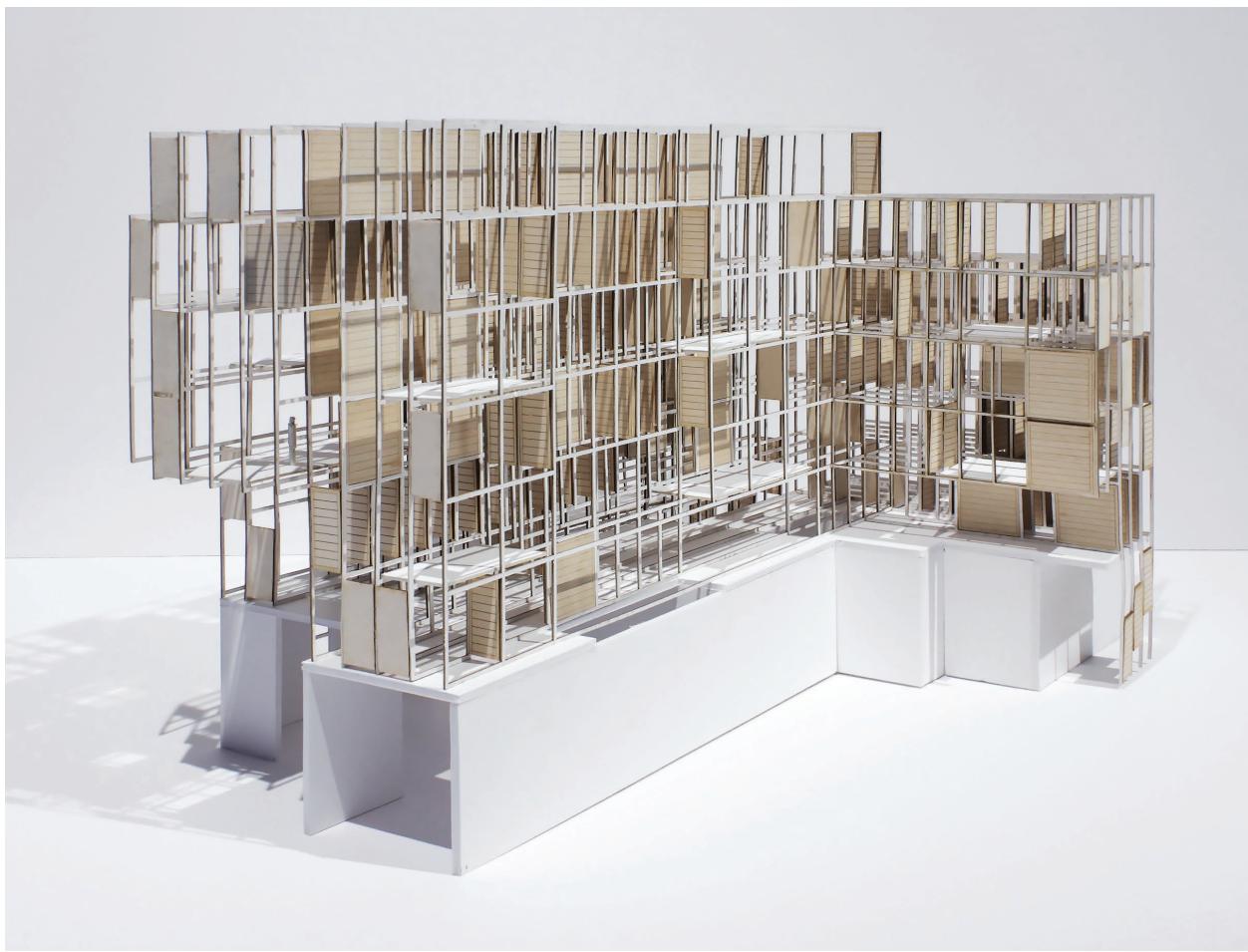
SERENDIPITY LIBRARY



SERENDIPITY LIBRARY



1. Auditorium
2. Teen Reading Room
3. Computer Lab
4. Stacks



SERENDIPITY LIBRARY



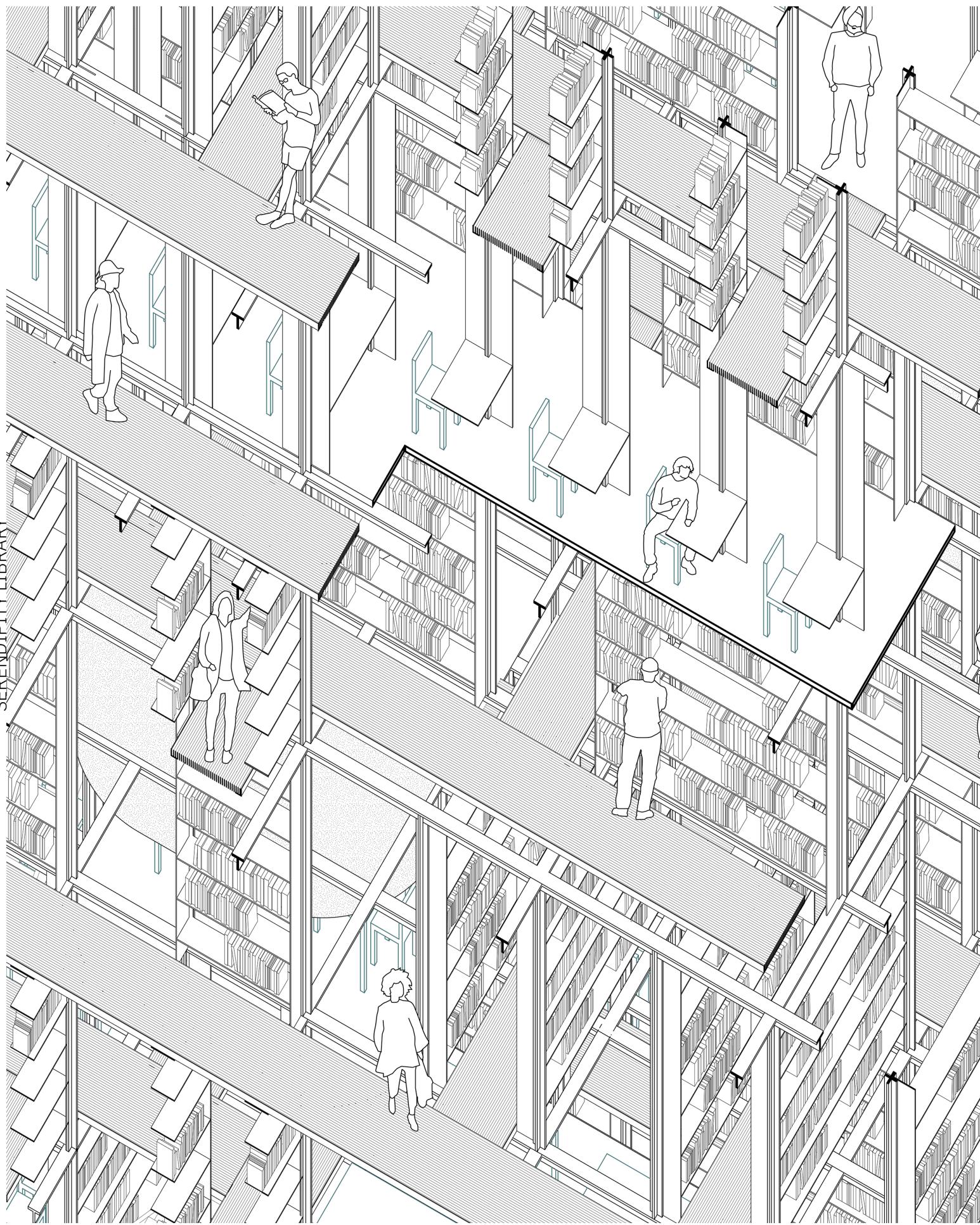
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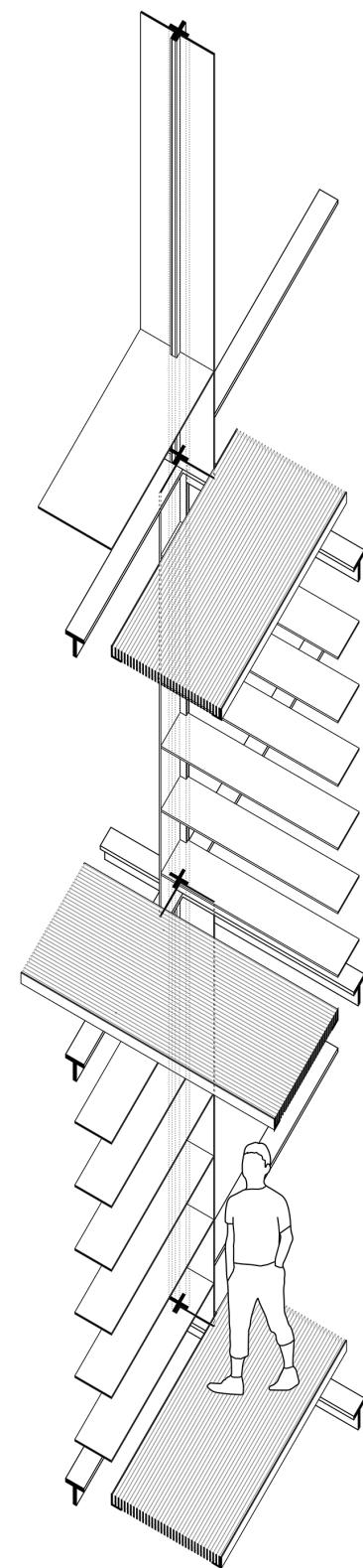




The experience inside the stacks is compressed yet open, with metal grate walkways, open shelves, and a porous structure creating a multitude of spatial relationships. The structural module has shelves of varying lengths spanning between columns, creating porous walls. Based on the orientation of a walkway parallel or perpendicular to this wall, the perception of openness in the space changes.

SERENDIPITY LIBRARY





A cutaway axonometric and the structural module. A cruciform column allows shelves to be built in different configurations, orienting and disorienting library users as they meander through the building and make surprising discoveries.

DELUGE PIER

ACADEMIC / Core I Studio, Project 4 / Fall 2017

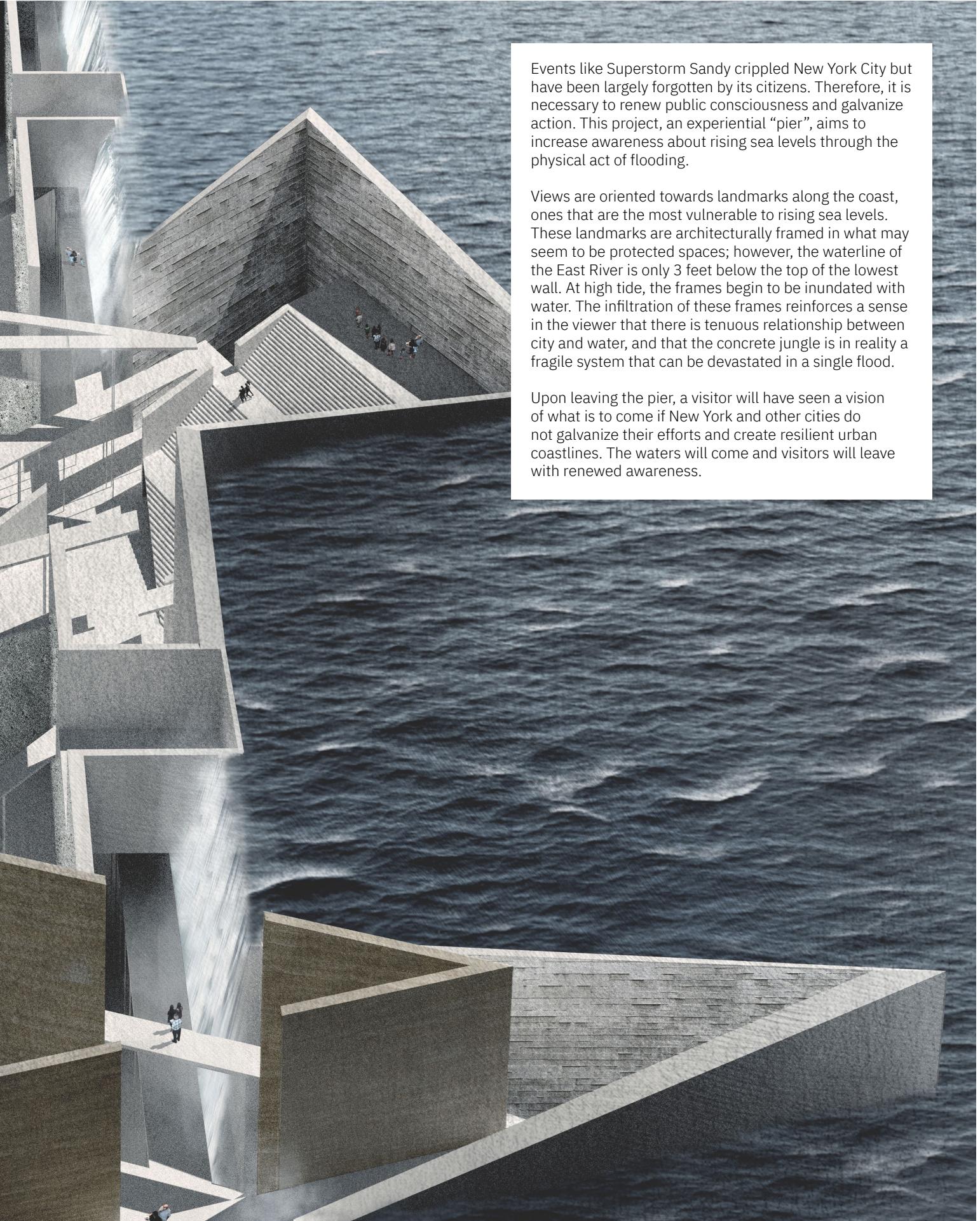
Duration: 3 Weeks

Critic: Christoph a. Kumpusch, Forward Slash (/)

Program: Cultural

Location: East River, New York City





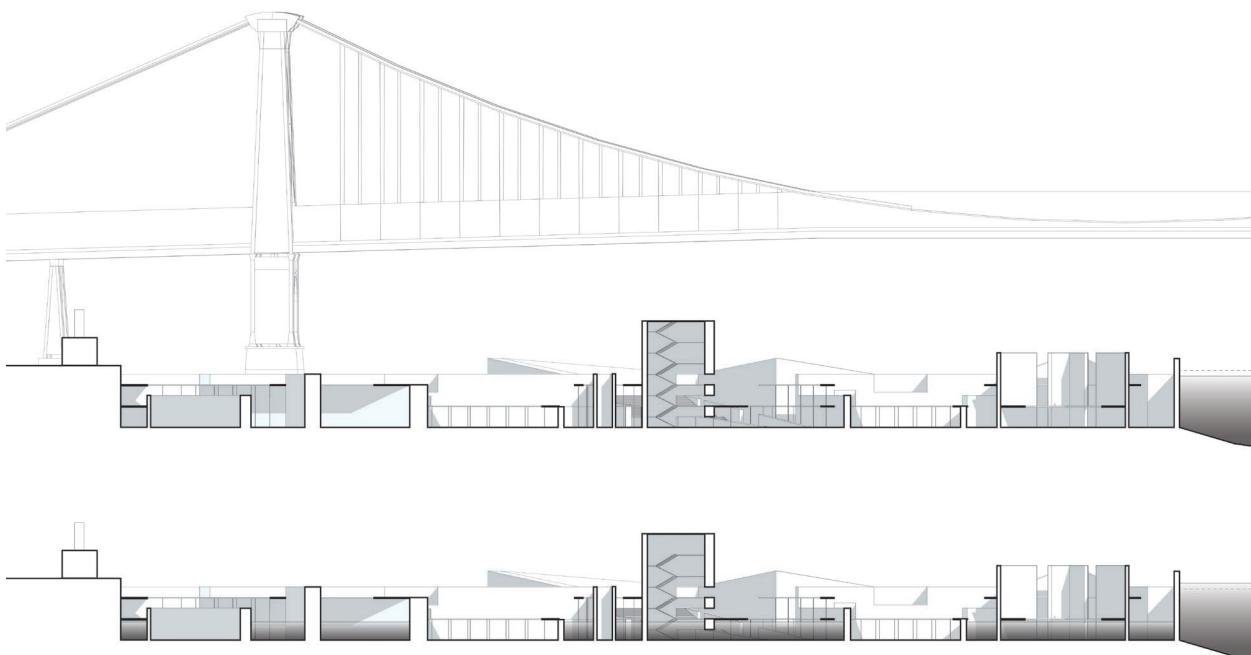
Events like Superstorm Sandy crippled New York City but have been largely forgotten by its citizens. Therefore, it is necessary to renew public consciousness and galvanize action. This project, an experiential “pier”, aims to increase awareness about rising sea levels through the physical act of flooding.

Views are oriented towards landmarks along the coast, ones that are the most vulnerable to rising sea levels. These landmarks are architecturally framed in what may seem to be protected spaces; however, the waterline of the East River is only 3 feet below the top of the lowest wall. At high tide, the frames begin to be inundated with water. The infiltration of these frames reinforces a sense in the viewer that there is tenuous relationship between city and water, and that the concrete jungle is in reality a fragile system that can be devastated in a single flood.

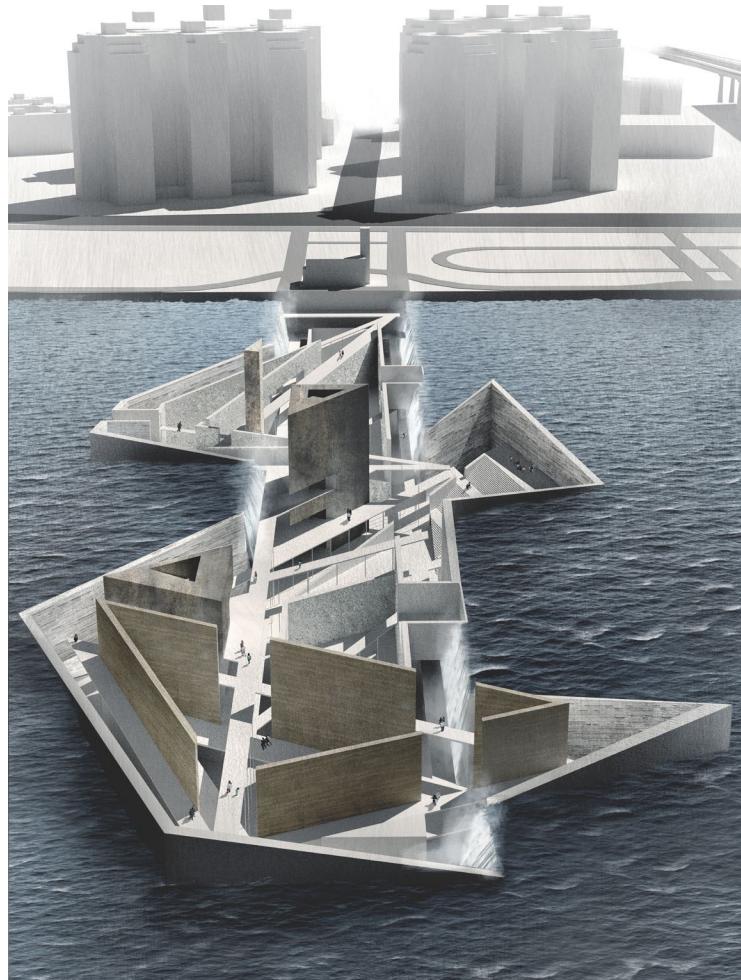
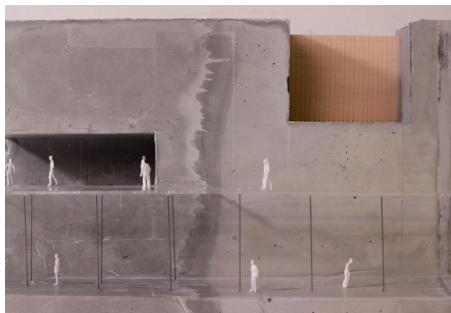
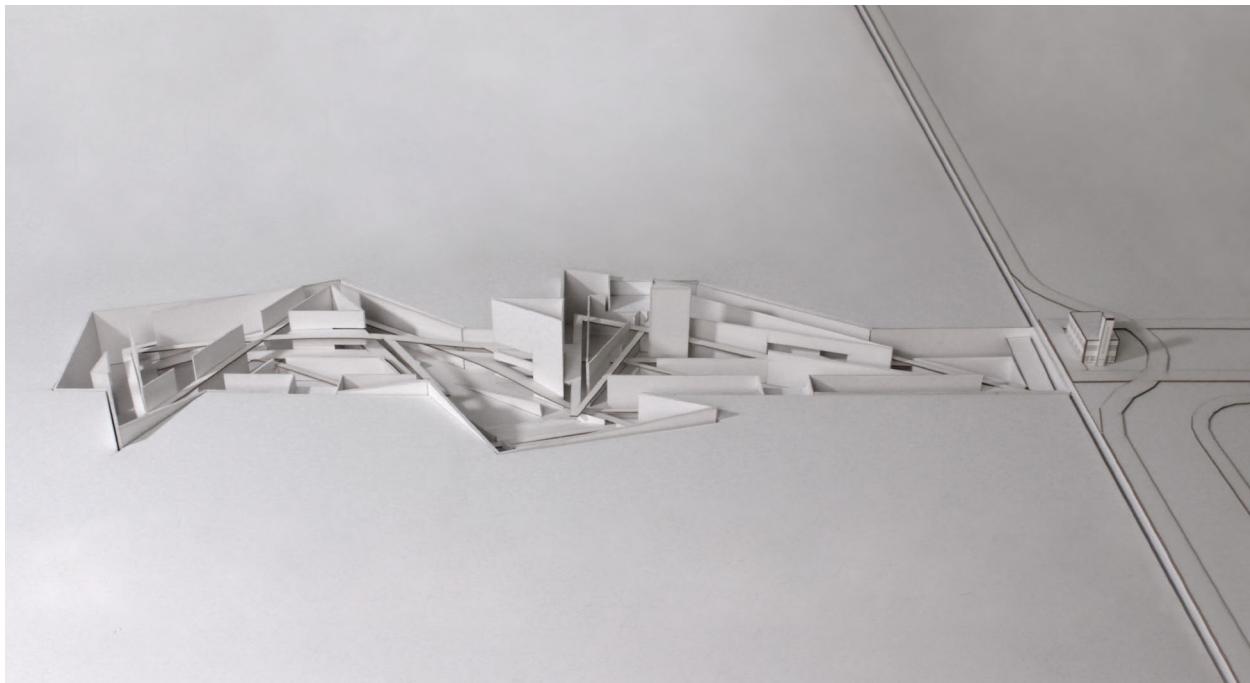
Upon leaving the pier, a visitor will have seen a vision of what is to come if New York and other cities do not galvanize their efforts and create resilient urban coastlines. The waters will come and visitors will leave with renewed awareness.



DELUGE PIER



Sited on an ever-changing coastline through the centuries, the pier is built on the site of land that once extended into the East River, a precarious threshold between land and water.



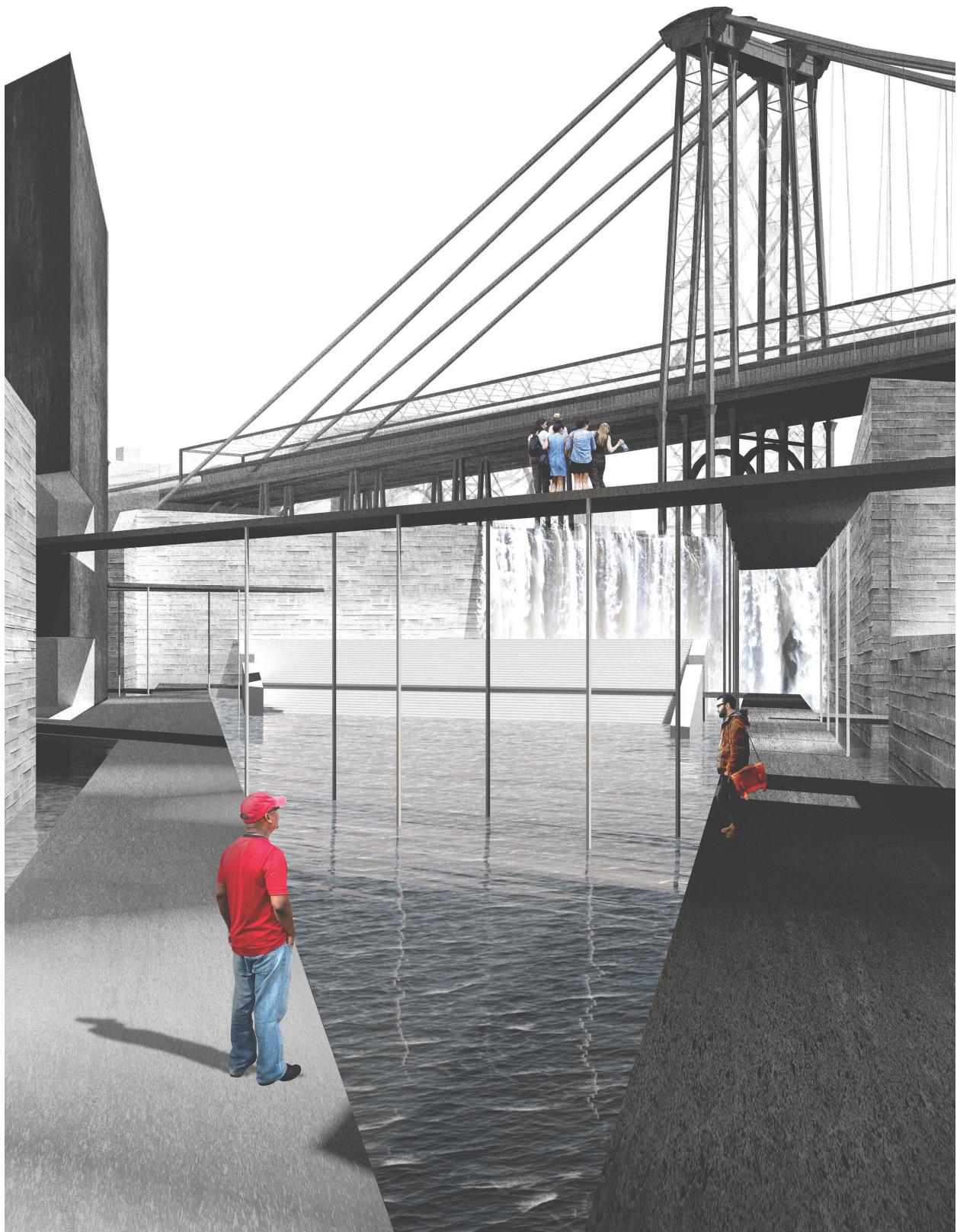
DELUGE PIER

The pier is strategically oriented to different sight lines of urban coastal landmarks, such as the nearby Williamsburg Bridge, the ConEdison power plant in Brooklyn, and the site of the former Domino Sugar Factory. These create **architectural framed views that become invaded by the river**. A visitor to the pier is able to access the entire site based on the flood conditions. They can witness the flood from within the wall, below it, or from above.

DELUGE PIER



The framed view of the Williamsburg Bridge becomes inundated by the East River as high tide approaches. Visitors have no option but to retreat upwards, just as they would have to do during the inevitable flooding of the city.



DELUGE PIER

The same view from a higher level. As more of the pier floods, space becomes more scarce and visitors are pushed into a smaller area. They begin to realize the seriousness of flooding as a threat to the welfare of New York and countless other coastal cities.

PROFESSIONAL WORK

JOHNSON NATHAN STROHE

PROFESSIONAL | February 2014 - July 2017

Position: Project Designer



Active in multiple roles in multifamily and hospitality projects, including position as a lead project designer for two multifamily projects in Oceanside, CA and for a multifamily project in Fort Collins, CO. Also engaged in the creation of Entitlements, Schematic Designs, Design Details, and Construction Documents for several multifamily and hospitality projects, and in Construction Administration for multifamily housing in Oceanside.



PIERSIDE SOUTH

ROLE: LEAD PROJECT DESIGNER
DATE: 2016-2018
PRINCIPAL-IN-CHARGE: Nicole Nathan, AIA

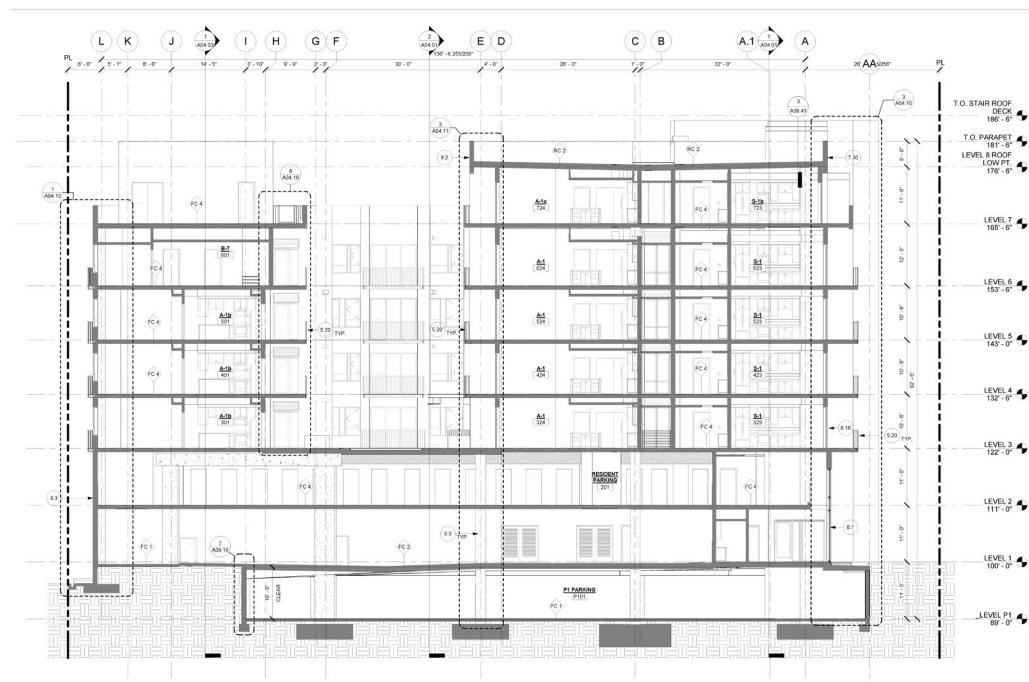
Location: Oceanside, CA

Program: 110 Unit (250,000 SF) Mixed-Use Market-Rate Multifamily

Summary: Responsible for feasibility studies; designing exterior massing and elevation in SketchUp; selecting materials; creating documents for city design review; weekly client and construction team meetings; assisting creating Revit model; assist in creating Design Development set; assist in creating Construction Document set; assisting in Construction Administration through responding to RFI's and submittals, conducting punch walks, coordination meetings, etc.

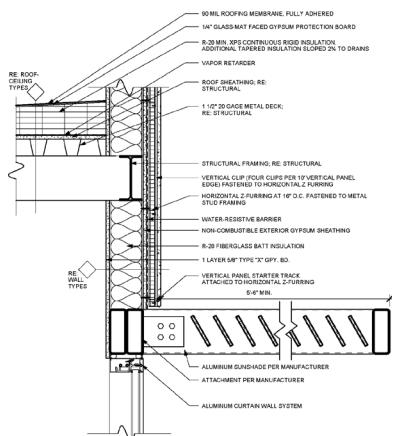
PROFESSIONAL WORK



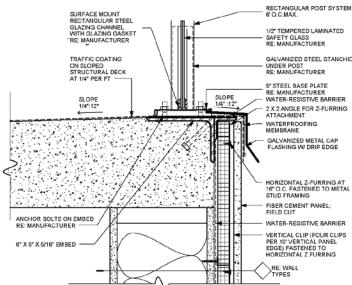


Plan of typical level and building section produced in Revit for Building Permit Documents. A third level courtyard is supplemented by rooftop outdoor spaces accessible to all residents, with views toward the Pacific Ocean only blocks away.

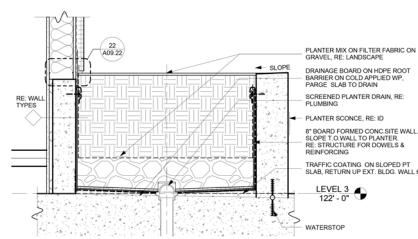
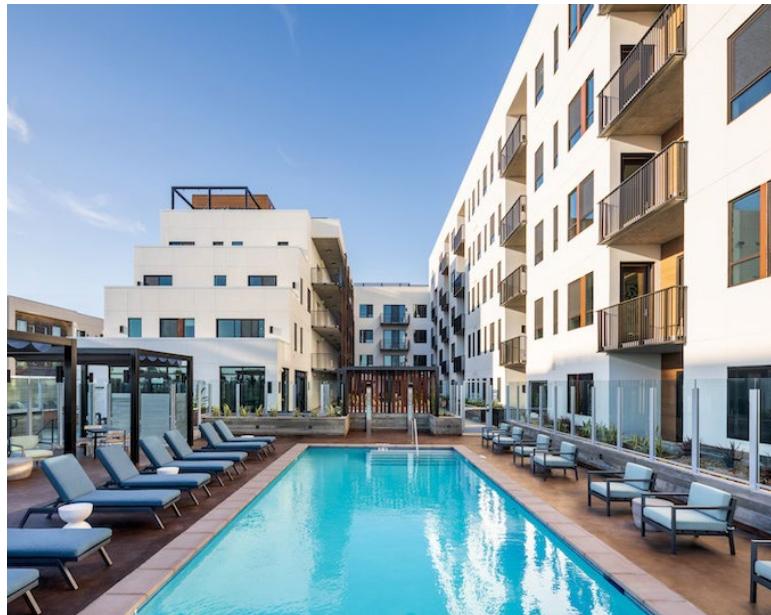
PROFESSIONAL WORK



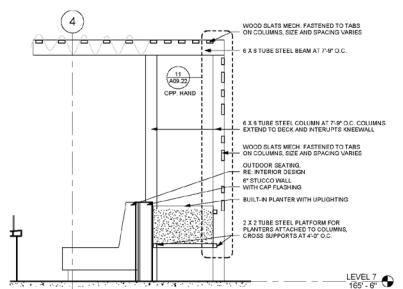
Sunshade



Glass windscreens connection



Planter integrated with exterior wall



Patio trellis



JOHNSON NATHAN STROHE

Other design elements include wood accents and earth-tone stucco that break up the massing and introduce warmth to the white facade. Residents participate in the public realm through porosity of views, such as the elevator lobbies (above) being visible from the street adjacent to the main entrance of the building.

PIERSIDE NORTH

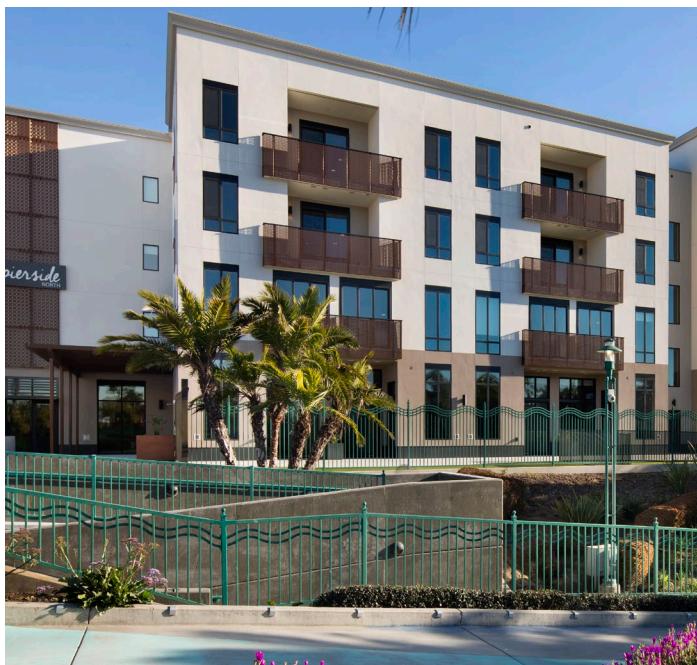
ROLE: LEAD PROJECT DESIGNER
DATE: 2014-2016
PRINCIPAL-IN-CHARGE: Nicole Nathan, AIA

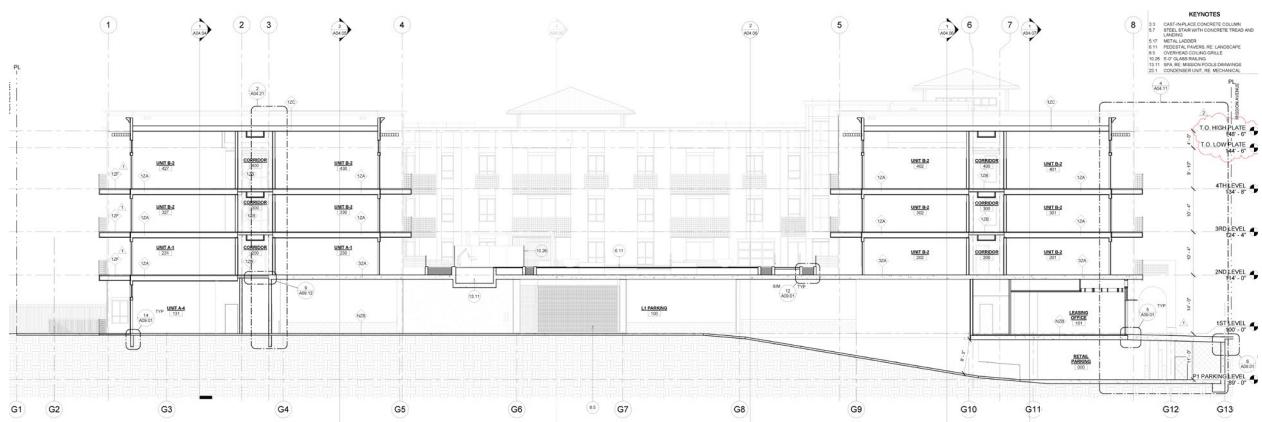
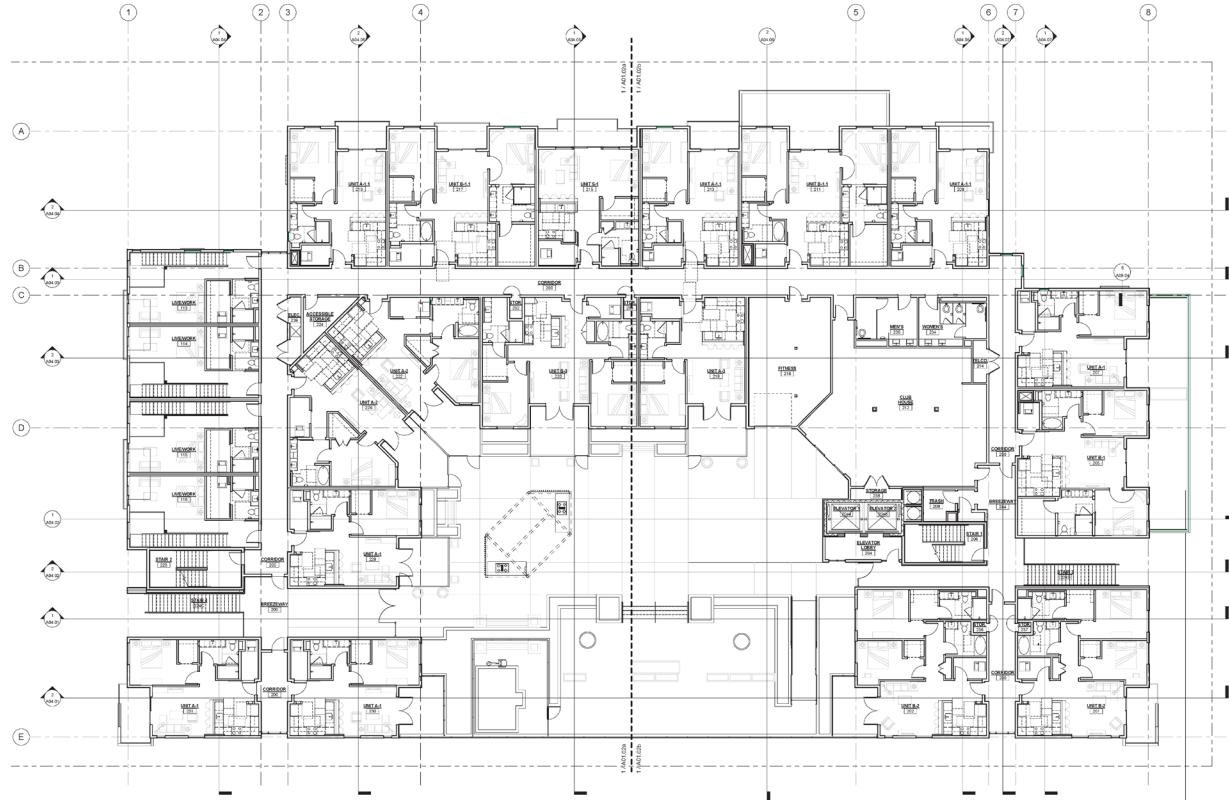
Location: Oceanside, CA

Program: 66 Unit (160,000 SF) Mixed-Use Market-Rate Multifamily

Summary: Responsible for feasibility studies; designing exterior massing and elevation in SketchUp; selecting materials; creating documents for city design review; weekly client and construction team meetings; assisting creating Revit model; assist in creating Design Development set; assist in creating Construction Document set; assisting in Construction Administration through responding to RFI's and submittals, conducting punch walks, coordination meetings, etc.

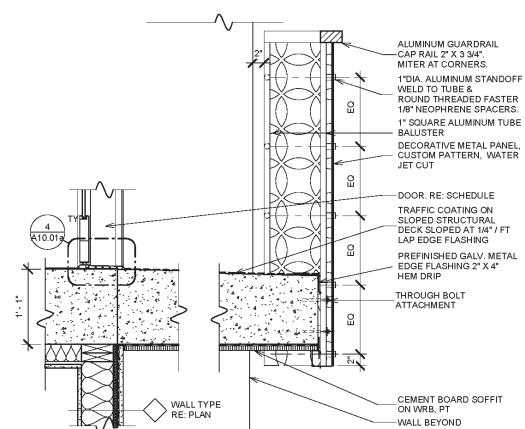
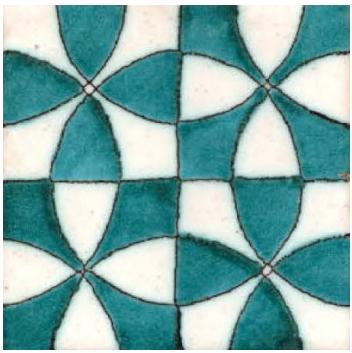
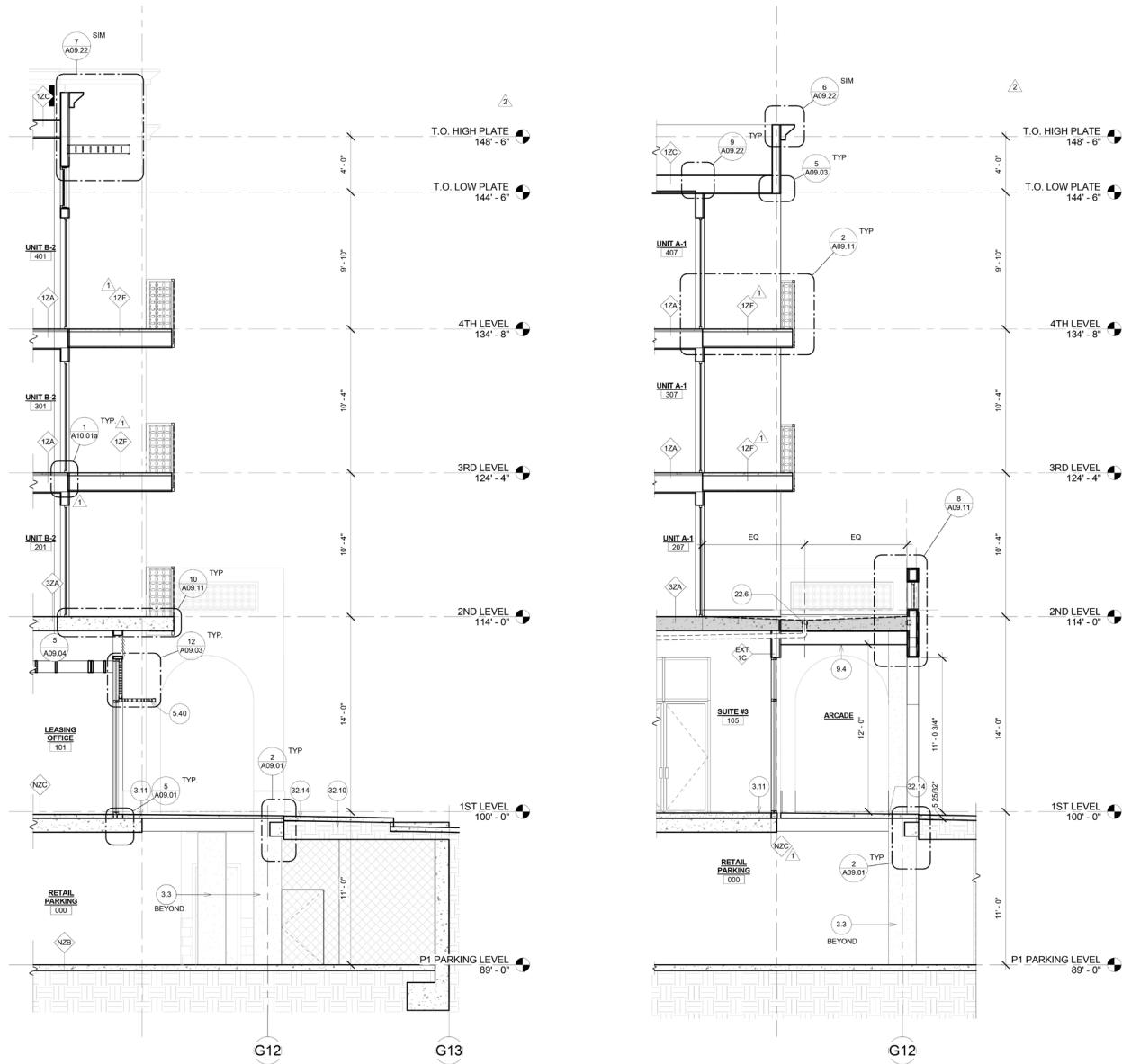
PROFESSIONAL WORK



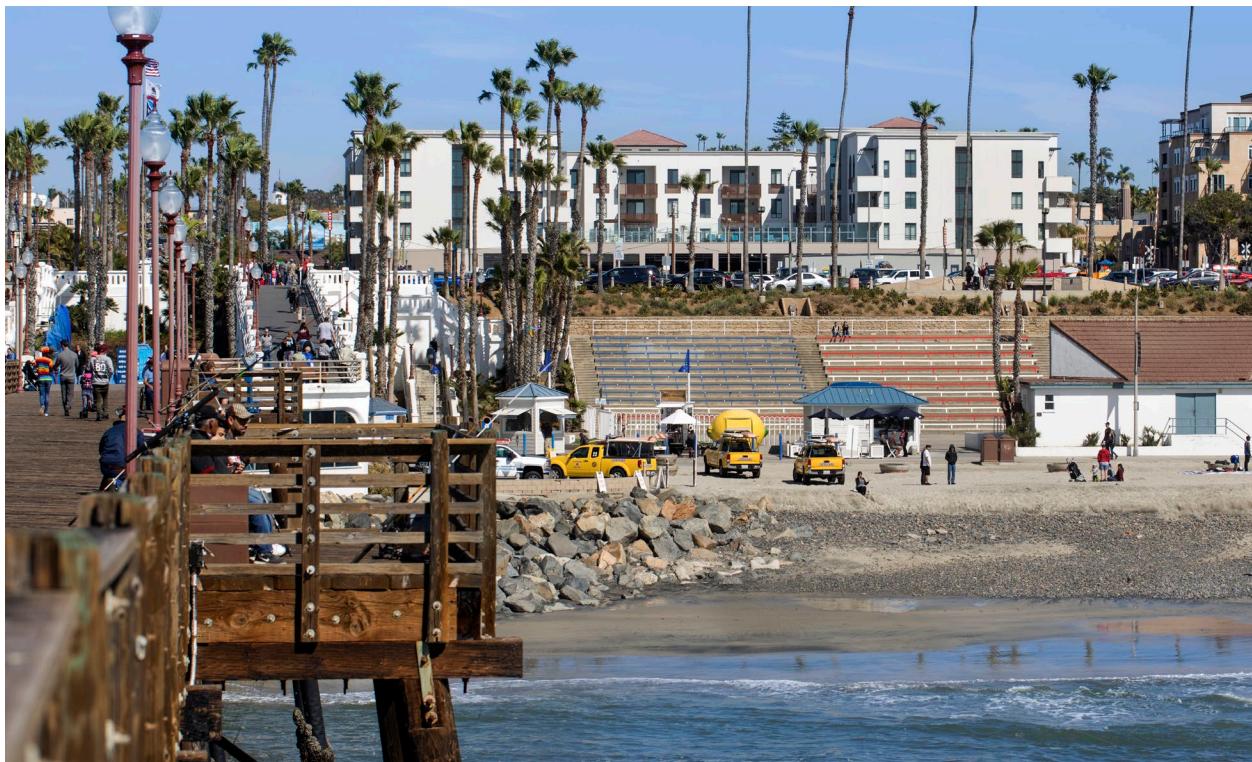


Courtyard Level Plan and building section produced in Revit for Construction Documents. One key goal for the project was to maximize the amount of amenity spaces for residents, resulting in a second level courtyard overlooking the Pacific Ocean.

PROFESSIONAL WORK



Inspired by recurring motifs in historic California missions, Pierside North incorporates these elements in water-jet-cut metal panels used in balcony railings and feature elements throughout the building.



JOHNSON NATHAN STROHE

ISAAC KIM

Columbia University Graduate School of
Architecture, Planning and Preservation

Master of Architecture, 2020