I invite you to enjoy a selection of designs completed while earning my Master of Architecture from Columbia University GSAPP.

Contents:

01 Vertical Gardens
Advanced Studio VI, Fall 2023

02 A Studio for Gathering
Advanced Studio V, Fall 2022

03 Last Resort
Advanced Studio IV, Spring 2021

04 Astral Water Works
Architectural Technology V, Spring 2021

05 Stoop City
Core Architecture Studio III, Fall 2020
This project addresses the diverse needs of a rapidly growing and densifying city, while prioritizing 2030 sustainability goals that have been set by the city. The existing structure is eroded to form a lush public park that cools down the neighborhood and shades a new office tower that slots in behind it. The dense mixed-use program also includes short-term conventillo style corporate housing, publicly accessible event space, a transit connection, light retail and a museum. The project has 2 main intentions - firstly to develop a program that attracts locals and tourists alike, and secondly to create a sustainable landmark that celebrates the 2030 goals set by the City of Buenos Aires. The city plans to plant 100,000 trees by 2030.
BUENOS AIRES

Existing Conditions
Environmental Considerations

Contextual Considerations

1. New Office Tower
2. Slab Erosion
3. Square off Floorplates
4. Street-to-Street Connection
5. Connection to Subway
6. Connections Between Programs

Vertical Gardens

Buenos Aires Overhang Typology
Trees in the Streets
Photovoltaic Panels Face North
Patagonia Verticality
Environmental & Contextual Considerations Combined in Existing Building

Proposed Plan

Proposed Section

Program

STREET LEVEL

TRANSPORT + RETAIL
MUSEUM
PARK
OFFICE
EVENTS
RESIDENTIAL
West Elevation with Garden as Shade
Strucural Approach

Column caps distribute tree loads directly down into the columns, minimizing the need for thick slabs below planters.
Vertical Garden Section
This project speculates on the future of architectural education and the studio. In a post-pandemic context where many educational activities are functioning well online, gathering generally still requires physical space. Studio is proposed as circulation that ramps up the building around a central atrium. In the center of the atrium, an elevator platform is used for critique spaces that can move from level to level as needed. The blending of students leads to the blending of ideas and an expansion of the architectural complexity as it responds to political, ecological and social forces.
Existing Decommissioned Power Station

Zone for Intervention
A Studio for Gathering

Studio as Circulation to Promote Gathering
The top floor slab of any new interior construction must take the estimated existing roof structure into consideration.
This proposal showcases what is possible with CLT construction now that CLT structures up to 18 stories are allowed in New York City.

Through livestock herd mimicry (a holistic farming practice), mixed with tree cultivation, visitors learn how to capture carbon while sustainably harvesting lumber for construction, since demand for natural materials is increasing with the allowance of CLT highrise buildings.

Situated in upstate New York, the site borders the heavily forested Adirondack Park and expansive plains where trees are plentiful and livestock can roam freely.
Last Resort

Arrival

Departure

4 Months

Reverse Desertification

Wood Timber vs. Concrete

Drawing Climate Displacement & Preventative Activities

-5% Global Emissions
+168,000 Lives

+5% Global Emissions
-168,000 Lives
Desertification is a Major Global Concern

Forest Site on Lake George, NY

A Site for Learning Carbon Capturing Methods
NATURAL HERD MOVEMENT PATTERNS
PATTERN TRANSLATES TO GEOMETRY
GEOMETRY BECOMES FACADE

Facade Developed From Livestock Movement Patterns

CIRCULATION / STRUCTURE
TOWER MASSING
CIRCULATION / STRUCTURE
Bridging Over Water
Nestled along the banks of New York’s East River, Lay Bushwick inlet, a small bay that once served as home to the Canarsie People of the Lenape Tribe and later on as the home base of the grand American Astral Water Works.

A small bay that now lies polluted and derelict, a relic of a bygone industrial era when New York was dominated by heavy manufacturing. Although also a relic on the edge of mass redevelopment and demographic change, 7th Round Proposes a reinvention rather than a blank slate.

A renewal and a nod to the past. In the former ground that housed Astral Oil Works we now propose Astral Water Works, an ecologically and economically resilient work-live community for the 21st century. Where the lines between the natural and manmade are blurred and infrastructure/amenity become one. Where the buildings become form and the water becomes park.
The goal of the site design is to purify the water in the inlet and make it a pleasant and safe place for recreation. Stream beds zigzag across the site and steer polluted storm runoff water into a series of tanks that purify the water as it flows through. Once through these tanks, the water is released into the inlet. Permeable pavers on the site are designed to handle storm floods and direct water to underground tanks that help minimize the impact of storms. The inlet is separated from the river by a filtration system that cleans water as it flows in. A pump located in the inlet helps bring in a steady flow of water.
<table>
<thead>
<tr>
<th>Buildings</th>
<th># of buildings</th>
<th>Gross Area</th>
<th>Efficiency (%)</th>
<th>Net Area</th>
<th>Occupancy</th>
<th>Total Occupancy</th>
<th>Max Allowance per Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light manufacturing</td>
<td>10</td>
<td>171,582</td>
<td>90%</td>
<td>154,424</td>
<td>1,029</td>
<td>150SF</td>
<td></td>
</tr>
<tr>
<td>Urban farm (greenhouses)</td>
<td>7</td>
<td>162,357</td>
<td>89%</td>
<td>156,813</td>
<td>920</td>
<td>150SF</td>
<td></td>
</tr>
<tr>
<td>Makerspace (with digital fab. equipment)</td>
<td>6</td>
<td>130,506</td>
<td>79%</td>
<td>107,870</td>
<td>728</td>
<td>100SF</td>
<td>150SF</td>
</tr>
<tr>
<td>Retail</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farmers/fishers/artisanal market</td>
<td>6</td>
<td>130,506</td>
<td>89%</td>
<td>114,750</td>
<td>728</td>
<td>150SF</td>
<td>150SF</td>
</tr>
<tr>
<td>Residential</td>
<td>10</td>
<td>345,056</td>
<td>89%</td>
<td>303,846</td>
<td>2,175</td>
<td>45SF</td>
<td></td>
</tr>
<tr>
<td>High-rise</td>
<td>3</td>
<td>345,056</td>
<td>89%</td>
<td>303,846</td>
<td>2,175</td>
<td>45SF</td>
<td></td>
</tr>
<tr>
<td>Low-rise</td>
<td>3</td>
<td>130,506</td>
<td>89%</td>
<td>114,750</td>
<td>728</td>
<td>150SF</td>
<td>150SF</td>
</tr>
<tr>
<td>Education/museum</td>
<td>1</td>
<td>90,000</td>
<td>79%</td>
<td>72,600</td>
<td>300</td>
<td>50SF</td>
<td></td>
</tr>
<tr>
<td>College satellite campus for research on urban aqua and agriculture</td>
<td>1</td>
<td>50,000</td>
<td>79%</td>
<td>39,500</td>
<td>1,580</td>
<td>300SF</td>
<td></td>
</tr>
<tr>
<td>Public swimming area, boardwalk, piers</td>
<td>1</td>
<td>2,500</td>
<td>99%</td>
<td>2,300</td>
<td>45</td>
<td>50SF</td>
<td></td>
</tr>
<tr>
<td>Public changerooms</td>
<td>1</td>
<td>20,400</td>
<td>89%</td>
<td>18,010</td>
<td>2,117</td>
<td>150SF</td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>20</td>
<td>260,000</td>
<td>90%</td>
<td>160,000</td>
<td>12,500</td>
<td>150SF</td>
<td></td>
</tr>
</tbody>
</table>

Programs Working in Unison
Human Experience

Typical Live Floor Plan

Proposal of Architecture Defined by Water Systems

Rooftop Greenhouse

Residential

Maker Space
The brief was to design a housing project in the Bronx up to as large as the entire city block between 151st and 152nd street. Our approach was to study the stoop then carve out stairs from an aggregate form to allow for forms and spaces that would have been difficult to design without this system. This arrangement creates stoop conditions on all 6 levels throughout the building while simultaneously eliminating the notion of the double loaded corridor. The complex system of stairs means that there are multiple paths residents can take from the street to their apartments.
Stoop Analysis

Carving of space

Spatial Experience

Translation to Architecture

MIXED GENERATIONS

ADULTS

TEENS / YOUNG ADULTS

YOUTH

MIXED GENERATIONS

ADULTS

TEENS / YOUNG ADULTS

YOUTH
CLT Shipping Logistics

1) Load onto trucks

2) Arrival on site

3) Assembly on site

4) Complete interiors

5) Apply finishes

Cross Laminated Timber (CLT) Wall Section

- ROOFTOP BEACH
- FIBER CEMENT SIDING
- PERMEABLE PAVERS
- VAPOR BARRIER
- GUTTER
- 0" - 8" CLT BLANK (X3)
- 0" - 0 1/4" METAL FLANGE

- WINDOW FRAMING
- 6" X 6" WINDOW

- VAPOR BARRIER
- 0" - 3" EXTRUDED INSULATION
- 0" - 0 3/4" PLYWOOD SHEATHING
- 0" - 8" CLT BLANK

Stoop City
Thank you.

Jonathan M. Chester