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Hunts Point 2080 is a story that explores uncertain climate risks for the future New York City. In the future, site-specific compound risks, like flooding and extreme heat, will reorient priorities of people, cities, and systems. In 2040, New York City takes drastic steps to secure the food supply chain which could survive in a city that is increasingly being violently flooded. The Hunts Point Produce Market, the current largest produce distribution center for the city, is the focal point of the story. The story follows activist characters in Brooklyn who set out on a quest to find vital food supplies in times of disasters, and who encounter the architectural and infrastructural impacts of a localized food supply chain. The project is envisioned through three phases: 2040, with the existing warehouses; 2060, with structural strengthening elevated bars; and 2080, with extra programs like hydroponic farm, algae pools, and housing grown off of the bars. The culmination of the story is a sense of vitality and survivability in times of disaster, in which architecture can be a triumphant tool for an uncertain future.

Spring 2022, Studio work with Ryan Hansen
Instructor: David Benjamin
ONE COMMUNITY
Housing Complex in Melrose, Bronx

ONE community responds to the demographic diversity, proposing various living conditions while maintaining a cohesive community. Melrose, south Bronx, is very diverse in household composition, language speaking, and age - both senior housings and public schools populate a lot here. But the neighborhood lacks safe street life for kids and senior citizens.

We tried to address the issue by varying living choices and outdoor space in different scales and levels, while maintaining community cohesiveness.

Our design approach started from two completely different living conditions - a tower and a plinth. But the differences are coordinated under the continuous surface from the tower's south facade to the plinth's roof. Under the consistency lies various unit choices, from town house to co-living cluster, from single studio to double height unite. Shared programs are subtracted from the mass to provide accessible outdoor space for all the units within its diameter. Despite the high density on site, a wide range of community life parallels domestic life.

Fall 2020, Studio work with Peicong Zhang
Instructor: Eric Bunge
Shared Programs
After coordinating the two masses under a continuous surface from southern facade to roof, we subtracted space for public programs based on their average service radius.

Tower & Plinth
We began with looking at two completely different housing typology which will provide various living experiences.

Interrelated Routes
An interweaving network of circulation connects between public programs, ground level, and roof terraces.

Housing Massing
A more articulated massing was developed based on the previous systems.

Screenshots from the original animation
Zooming in into the unit scale, we provide general unit ranging from studio to units holding up to 6 households family, from a single bed in a co-living cluster to townhouses that has individual street access and courtyards.
West Elevation

View from Courtyard in the Plinth
REBUILDING WATER AUTONOMY
Transforming micro-watershed in Islamberg, New York

This project looks at transforming the micro-watershed in Islamberg, a rural Muslim settlement, through incremental deconstruction and rebuilding of local housing. Around the town, the current use of water is contested, and New York city claims much of the available water, and plans to buy much more land to keep its holds secure. Inside the town, water threats are more acute: poor infrastructure leads to flooded roads, impassable valleys, and long, isolating winters.

The story is two-fold: building and ground inherited different logics from material reuse and watershed analysis. On the building side, existing mobile homes reach the end of their life and salvageable materials are stored at and circulated through "material bank". On the ground side, the proposed diamond shape ground collects rainwater and structures a new gradient of water use from clean to grey.

We are envisioning for Islamberg an incremental watershed transformation through a time span of 20 years or more. We want to propose a cohesive town ethos and architecture around the mosque and the creek through its rebuilding over time. By overlaying a new living water infrastructure over the existing religious structure in place, we enable the town to reinforce people's mystic relationship with the natural world.

Spring 2021, Studio work with Andrew Magnus
Instructor: Ziad Jamaleddine
Muslim-Americans get less investment in water and infrastructure than average Americans at any scale, though this is especially true in rural America. We also wanted to explore the material composition of the neighborhood around Islamberg in order to create a local material economy and build a stronger relationship to neighbors.
ANALYSIS - SOCIAL LIFE WITH WATER

1. Security
   After 2015 when expansion of town annex, a guide and workshops are considered.

2. Mobility
   An extensive network of 15 canals and 11 bridges must provide stopover assistance for new arrivals.

3. Resilience
   The capacity of canals to channel water into traditional basins, enable single and multiple water tokens.

4. Community
   Open spaces, public squares, and water arcades provide community identity.

5. Economy
   The economic focus is on trade, which yields a mix of economic and social benefits.

6. Spirituality
   In the center of the town, the gurdwara tradition is practiced with a small lake for congregations on feast.

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Summer camps and summer holidays make light of the flexible supply of water

Water is playful

"Have you considered? If your water drains away, who will bring you pure and running water?"

Water is essential

A mix of well-water and rain catchment supplies the town

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Rebuilding Water Autonomy / 36

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PROPOSAL - DECONSTRUCTION & REBUILDING OVER YEARS

1. Remove DUU blocks and prepare work zones
2. Step roof siding, trimming, and exterior fixtures
3. Remove water heater and closets in bath
4. Direct referee drained to crewed landscape
5. Plant saplings, pines, and 90 day decompression tank for future building
6. Build meditation observatory for memorial with mobile frame
Phase 1 Deconstruction
Phase 2 Material Bank
Phase 3 New Housing

SITE PLAN
Common Air Zone is a proposal on the contrary to Lutyens Bungalow Zone (LBZ) in New Delhi. It is an urban scale intervention for inequality to the exposure of polluted air. In New Delhi, one third of the year, outdoor air is rated as very unhealthy or even hazardous. The inequality dates back to colonial legacy from British India. In the early 1800s, the British military set up hill stations on mountains to separate themselves from the ground "miasma". Under the polluted air, kids in good economic condition live in an enclosed environment that's protected by the best air purifiers, from home to car to school. Meanwhile, poor kids have to endure the bad open air all the time. The open air school, which was used as a pedagogical tool in western context, now becomes detrimental.

The proposal contains intertwining programs across recreation, health, education, and circulation. The interventions serve as civic programs and infrastructure tackling air pollution at the same time.
In this project, architecture becomes part of the pedagogical experience and contributes to a collective cultural memory. Built beside the legacy of C. B. J. Synder, a hovering box is supported by gigantic infrastructure from its center, which touches the surface blurrily, indicating the other world space in this marble and stone neighbourhood.

The central tubes host circulation and programs inside. Starting from three ends of the site, they meet each other in the middle and form a larger communal space at the heart of the school. Collective programs like library, cafeteria and gallery inhabit in or orbit around the gigantic tubes, offering encouraging access from all floors. Ground floor is open to the general public, providing a shortcut from east 9th street to east 10th street. Programs are arranged around the tubes based on whether they are collective spaces. So artistic, social and sport programs have direct touching with the tubes while administration and services are at the further end.

Spring 2020, Individual studio work
Instructor: José Aragüez

KNOT OF TUBES
School Renovation in East Village, New York
Existing building
Keeping the envelope
New building

Program + Circulation
Tilted core
Offering encouraging access for all floors

Library tube
Cafe & lobby tube
Breakout space tube
DIAGRAMS - PROGRAM & NAVIGATION

Classroom
Art & Sport
Library
Cafeteria
Services
Exercise 1: Black and White
The first exercise was centered on the flatiron district in lower Manhattan. The drawings look at how visual trajectories of pedestrians and dwellers in the city are shaped by the solid boundaries of buildings. The limits of the visual sphere is not defined by the building’s planar projection on the ground. Instead, the lines you see on the plan have spatial depth. The differences in height and geometry form and influence the visual quality of city space.

Exercise 2: Color Blocks
The following color blocks drawings were centered on Union Square. The project offers a better relationship between Broadway and Union Square and constructs a new market landscape based on the existing farmer’s market on the plaza. Now Broadway is interrupted by the intersection. My research began from a close look at the thresholds in the surrounding area, followed by manipulation of dragging out these architectural elements as free-standing installations and assigning new meaning to them. Based on the research of how farmer’s markets run, the program consists of three kinds of installations: market interface, market landscape and directional spines.

Fall 2019, Individual studio work
Instructor: Amina Blacksher
“Flatiron” 1884 - A plane with slogan and ads

Flatiron 2020 - A ship dividing tides of views
SECTION & FACADE OBLIQUE
PLAN & THRESHOLD TAXONOMY
Hyperloop, the next generation transportation, selects one of its future research campus in Nevada desert. In an undefinable space where endless mountains, rocks and desert weave a natural vista, hyperloop campus becomes a statement and monument for celebrating common intelligence and unprecedented advancement.

We noticed the distinct and encompassing programs required by hyperloop campus's different user groups. The project aims at creating close but not interfering relationship between different user groups: the researchers, the visitors, and the students. Each group has a unique working and living pace and our project aims at being a speed blender, weaving different groups’ paths while keeping successive layout inside each path for convenience. Based on the user group, the project consists of three major living paths: the researcher path, the visitor path, and the training center student path.

Summer 2020. Collaborated with Chuqi Huang, Claire Chen
Young Architects Competitions, Honorable Mention
DIAGRAM - PROGRAM & SUSTAINABILITY

Unit 1 Welcoming Center
- Reception Hall
- Museum Tour
- Arena
- Restaurant

Unit 2 Headquarters
- Office
- Laboratory
- Apartments
- Gym and Pool

Unit 3 Training Center
- Laboratories

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Hydropanel Array
- Collects solar energy and gathers water in the air at the same time

Operable Windows
- Provide natural ventilation when outside conditions permit

Radiant Slab
- For heating and cooling

Displacement Diffusers
- Provides ventilation

Smoke Exhaust Fans
- Extract hot air and provide mechanical ventilation

Canopy
- External shading provided by overhang

High Performance Triple pane Glazing and Thermally Broken Frame

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Water Display
- Natural daylight

Electric Vehicle Charging
- Rainwater harvesting

Water Treatment
- Hot water storage

Water Storage
- Battery

Gym and Pool
- Arena

Restaurant
- Museum Tour
View from Office

View towards Swimming Pool
INTERTWINED
A Three Phases Development Proposal in Downtown Oakland

Segregated by the I-980 and I-880 freeways, downtown Oakland has long been isolated from other urban districts. INTERTWINED sits at the edge of the downtown area, serving as a junction point where diverse cultures of food and music overlap with diverse racial and ethnic communities, many overlooked by mainstream urban development. INTERTWINED celebrates the diversity of the communities in central Oakland, an untapped resource for social, cultural, and economic development. The project celebrates connectivity, equity, and resilience to create and share new ways of living, working, and recreation. INTERTWINED is developed in a public-private partnership with the City of Oakland government. This project provides 25% of its total units to be affordable housing, within which, 20% of the total units are targeted on people with 50% AMI income. INTERTWINED helps to provide just inclusion in downtown Oakland where everyone can participate, prosper and reach their full potential.

2022 ULI Competition. Collaborated with Chuqi Huang, Rae Lei, Zhifan Li, Mason Oh.
Instructors: Kate Ascher, Adam Lubinsky, David Smiley, Chok Lei
**PHASE I - CREATIVITY INCUBATOR**

- Total GSF: 620,726 SF
- Total Development Cost: $3,399,025,453
- Unlevered BRR: 10.9%
- Levered BRR: 21.4%
- Equity Multiplier: 5.7x
- Affordable Housing Units: 115 (25%)

**Multifamily Rental - market rate**
- Condo - market rate: 0 SF
- Condo - affordable: 0 SF
- Office: 0 SF
- Retail: 0 SF
- Community College Culinary Institute: 0 SF
- Structured Parking: 0 SF
- Underground Parking: 0 SF

**Multifamily Rental - affordable**
- Condo - market rate: 0 SF
- Condo - affordable: 0 SF
- Office: 0 SF
- Retail: 0 SF
- Community College Culinary Institute: 0 SF
- Structured Parking: 0 SF
- Underground Parking: 0 SF

**PHASE II - CONNECTIVE HUB**

- Total GSF: 1,294,708 SF
- Total Development Cost: $3,184,238,605
- Unlevered BRR: 7.2%
- Levered BRR: 8.9%
- Equity Multiplier: 1.9x
- Affordable Housing Units: 267 (25%)

**Multifamily Rental - market rate**
- Condo - market rate: 0 SF
- Condo - affordable: 0 SF
- Office: 0 SF
- Retail: 0 SF
- Community College Culinary Institute: 0 SF
- Structured Parking: 0 SF
- Underground Parking: 0 SF

**Multifamily Rental - affordable**
- Condo - market rate: 0 SF
- Condo - affordable: 0 SF
- Office: 0 SF
- Retail: 0 SF
- Community College Culinary Institute: 0 SF
- Structured Parking: 0 SF
- Underground Parking: 0 SF

**PHASE III - ARTISTIC BOOSTER**

- Total GSF: 757,404 SF
- Total Development Cost: $3,377,568,660
- Unlevered BRR: 11.8%
- Levered BRR: 20.6%
- Equity Multiplier: 2.7x
- Affordable Housing Units: 141 (25%)

**Multifamily Rental - market rate**
- Condo - market rate: 0 SF
- Condo - affordable: 0 SF
- Office: 0 SF
- Retail: 0 SF
- Community Music Center & Gym: 0 SF
- Structured Parking: 0 SF
- Underground Parking: 0 SF

**Multifamily Rental - affordable**
- Condo - market rate: 0 SF
- Condo - affordable: 0 SF
- Office: 0 SF
- Retail: 0 SF
- Community Music Center & Gym: 0 SF
- Structured Parking: 0 SF
- Underground Parking: 0 SF
WT-01 CURTAIN WALL DETAIL DRAWINGS

1. WT-01 section detail

2. WT-01 section detail

Technical Drawings / 92
WT-03 PRECAST CONCRETE PANEL WALL DETAIL DRAWINGS

1. WT-03 façade
   1/4" = 1'-0"

2. WT-03 PLAN
   1/4" = 1'-0"

3. WT-03 SECTION
   1/4" = 1'-0"

4. WT-03 AXO
RETHINKING BIM - CONCRETE PANEL WALL DETAIL DRAWINGS
OPTIMIZATION USING GALAPAGOS
INSTRUCTOR: JARED FRIEDMAN

Phase II - Finish
Phase I - Computed optimized surfaces
Phase III - Pre-fabricated parts

9 Panel division
10 Optimized surfaces
11 Pre-cut base
12 Bricks

1 Pre-cut all piece
2 Gypsum board
3 Vapor barrier
4 Insulation
5 Pre-cut concrete panel base
6 Brick
7 Floor finishing
8 Concrete slab
MODEL PHOTOS -
COURSE WORK FOR ARCHITECTURAL DRAWING AND PRESENTATION
REPRESENTATIONS
COURSE WORK FOR ARCHITECTURAL DRAWING AND PRESENTATION