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studio
tech & visuals
PROJECT OASIS
A Development Proposal for PS64 Site

SPRING 2022
Advanced V1 Studio
Professor Christoph Kumpusch & Fatirice Derrington
Site: PS64, East Village, Manhattan
Team: Jason Law

Project OASIS introduces a compelling development plan to convert an existing 5-stories Public School E4 building into a 125,700 SF 8-stories mixed-use building with 54 market-rate residential units, highlighted by its unique program assemblage. Project OASIS provides viable programmatic solutions to improving cultural and social issues to benefit the community while ensuring lucrative return metrics for our investors through thoughtful program curations to achieve value creation.

Project OASIS’ prime goal is to create a strong base for long-term establishment of communal identity. The key to long-term success, we believe, is the creation and implementation of socio-economically sustainable cyclus that incorporates various participants or end-users to be directly & indirectly involved in value creation and growth – a role of a Catalyst.
Challenge: Social Fragmentation

Solution: Program Curation
Neighborhood Community

Building Community: OASIS

- Transient Young Professionals
- Grocery Store & Marketplace Retail
- Tech-Incubator (Office)
- Unit Community (Residential)
- Flexible Event Space
- CHARAS Headquarters
- NYC Department for the Aging
- Multicultural Elderly

Socio-Economically Sustainable Cycle

- Direct relationship
- Indirect relationship

+=

Platform for Communal Identity & Measurable ($)

Unique Building Community

Program Curation

Architecture

Project Oasis
Program Breakdown:

**Anchor Programs**
- Basement: 17,500 SF
  - Grocery Store & Marketplace
  - Office: (Tech Incubator)
- Ground Floor: 10,800 SF
  - Retail
- 2nd Floor: 10,800 SF
  - CHAIRAS HQ & NYC DFTA
- 3rd-5th Floors: 32,400 SF
  - Office:
- 6th-8th Floors: 35,400 SF
  - Residential

**Supporting Programs**
- Basement: 6,500 SF
  - Public Corridor
- Ground Floor: 3,600 SF
  - Outdoor Plaza
- 2nd Floor: 7,000 SF
  - Open-Air Events Space
- 3rd-5th Floors: 4,000 SF
  - Rooftop Restaurant, Bar

Total: 121,700 SF

**Strategy**
- Existing Condition
- Top Floor: Existing Roof Demolition
- Public Corridor: Through Basement
- Stack of open-air Amenity Space
- 3-Stories Residential Addition
Highlight 1: Public Corridor Through Basement

Unique "Market Oasis" Experience

Public Plaza + Retail

Grocery Store + Marketplace

9th St. & 10th St. public corridor connection through basement

Section through open-air amenity space(s)

Market "Oasis"
Highlight 2: Open-Air Amenity Space

4th - 8th Floor:
- Residential

5th Floor:
- Office (inside the building)
- Rooftop Restaurant / Bar
- Outdoor Seating + Circulation

3rd + 4th Floor:
- Office (inside the building)
- Open-Air Meeting Space
- Public Lounge + Circulation

2nd Floor:
- CHARAS HQ + NYC DFTA (inside the bldg.)
- Open-Air Event Space
- Public Lounge + Circulation

Ground Floor:
- Retail (inside the building)
- Public Plaza(s)

Feature Stair connecting Ground Floor & Basement

Open-Air Event Space

9th st. & 10th st. public corridor connection through basement

Public Lounges & Vertical Circulation
## Annual Yield

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## Cashflow

- **Residential:**
  - Studio (3B): $2,800 /month
  - 1-Bed (6): $3,500 /month
  - 2-Bed (12): $4,500 /month
  - Office (NNP): $72 psf/annual
  - Retail (NNP): $46 psf/annual
  - CHARMS HQ (NNN): $12 psf/annual
  - NYC DFTA (NNN): $36 psf/annual

- **Annual 3:** 4% Rent Escalation

## Project Schedule

Year 1  | Year 2  | Year 3  | Year 4  | Year 14  | Year 7
-------|--------|--------|--------|---------|-------
Precon + Const | | | | | |
Hold Period | | | | | |
| | | | | |

## Sources & Uses

- **Construction Loan:** $54,908,526
- **Equity:** $28,642,322
- **Federal Historic Preservation Credit:** $4,362,790

### Total:

$90,350,448

## Uses

- **Property Acquisition Cost:** $29,241,518
- **Hard Cost:** $46,592,438
- **Soft Cost:** $30,722,300
- **Financing Cost:** $28,642,322
- **Interest:** $5,362,790

### Total:

$90,350,448

## Fed. Historic Preservation Credit

- **Rehab Cost:** $21,813,750
- **Credit:** 30.02%
- **Amount Awarded:** $4,362,790
UNBURNT FOREST
An island of the element fire

FALL 2021
Advanced V Studio
Professor Bernard Tschumi with Valeria Perez Cala
Site: Hudson River Manhattan
Team: Tony Zheng & Ryan Wu

Fire has always been perceived as a dangerous element, causing large-scale wildfires and catastrophes. However, the domestication of fire not only provided light and warmth to human beings, but it also became the central element around which architecture was first erected.

The project intertwines the use of fire in biomimicry with the experiential and exhibition spaces that allow visitors to understand the function and new purposes of fire interacting with the three other elements: earth, water, and air. Ultimately, fire is no longer seen as a danger but rather a catalyst for creation, allowing the coexistence of fire and forest.
OPEN DAIRY
Duck Futures of a Vaccination Center & Dairy Plant

Spring 2021
Advanced IV Studio
Professor Lu Hong
Site: Kingston NY
Team: Alice Zheng

Upper state New York is a major dairy region where milk production takes up half of total agricultural sales. Essential workers working on COVID frontline are put at high health risks for being exposed to unsafe workplaces and unable to receive appropriate vaccinations.

The project is first a set of prefabricated pods as a COVID vaccination station that later expands into a demonstrative co-op dairy plant. Siting in the topography, the plant takes advantage of the cooler subsolar temperature all year round. Simultaneously as a public amenity, the project not only supports local dairy farmers, but also gives essential workers access to wellness programs and healthier workplaces.
Thermal Section Perspective showing passive cooling through air circulation facilitated by vertical tubes.
Sitting in the topography, the plant takes advantage of the cooler subsoil temperatures all year-round. Simultaneously as a public amenity, the project not only supports local dairy farmers, but also gives essential workers access to wellness programs and healthier workplaces.

Hybrid Perspective showing near future vaccination programs in blue and distant future dairy plant programs in orange
INTERMEDIATE DWELLING
A Housing fostering in-between communities

FALL 2020
Core 8 Studio
Professor Mario Gooden
Site: Melrose, Bronx, NYC
Team: Shulan Liu

Intermediate Dwelling questions the common private and public relationship in modern housing designs that establishes a clear distinction between the individual units and the rest of the social spaces.

The project emphasizes the continuous flow of daily activities of sleeping, eating, working and entertaining that are often demarcated by the typological program naming of “rooms”. Designed with “domestic scenarios,” the project function with moveable walls and facades to adapt to transforming family sizes while also allowing multi-functionality of one space.
Follow zoning envelope to maximize units.

Central Courtyard & Terraces - A space for playing, drying & folding, and interacting.
IN & OUT
A Self-sustaining K-8 Public School

SPRING 2020
Core 1 Studio
Professor Gordon Kipping
Site: East Village, Manhattan
Indeukuk

An architectural response to the Baltimore Rebellion movement, the "IN & OUT" studio pushes toward school building designs as integral tools to teach young students lessons on tackling climate change.

Harnessing its own food, the IN & OUT School rethinks the indoor and outdoor space relationship in a school model that plays crucial role in defining students' school day experience. Breaking through the bully building model of New York City’s traditional public schools, the project aims to invite plantation indoor and introduce classroom teaching outdoor.
Outdoor planting terraces become a "community garden" for public use during off hours to maximize building efficiency, transforming the building into part of the green space network.

1. Existing massing
2. Terrace
3. Public access
4. Wall/wall wing connection
5. Plantation & circulation
6. Public library & green house

Structure Renovation

Existing masonry wall and column
Small truss supported by new columns
Large truss supported by new columns
Overall Structure
The community library and greenhouse tower transform the project into a public amenity during after hours, extending the accessibility of the building as a 24/7 resource for both students and the neighborhood.
On the inside, plantation are introduced as soft boundaries between learning space and "hallways" to replace physical walls of conventional classrooms.

On the outside, plantation areas become outdoor teaching spaces that engage students in learning through making and collaboration.
The project proposes an open-air public hub that slows down the walking experience through the chaotic traffic median in front of the Flatiron building. Eliminating the pedestrian walkway and freeing car traffic, the structure choreographs new circulations through interlaced ramps connecting neighboring sidewalks. The platforms provide space for meeting, working, studying, site-seeing and relaxing particularly for the mix of users including visitors, office people, and passersby at ground mezzanine and upper levels. Open to the public 24/7, the structure extends the availability of public space beyond closing hours and physical boundaries to better accommodate the extended hours of activities in modern lives in New York.
Flatiron Place Flow and Density Diagram

A stratification of the multi-use of the existing plaza
MELROSE COMMUNITY CENTER
An Integrated Building Systems Tech Project.

FALL 2020
Architectural Technology IV
Coordinator: Sarah Kim

Technical Instructors: Stephen Ruiz, Shrjikwe Paliwak, Oliver Msawe, Ryan Donaghy
Site: Melrose, Bronx, NYC
Team: Calvin Chen, Champ Wong, Sangwon Song, Yang Lu

This integrated building systems capstone project proposes a community center in a neighborhood with high concentrations of public housing. The project provides community programs for all age groups including art spaces, meeting centers, cafeteria, gym, and a basketball court. The design features a large cantilever supported by truss structures and a circulation core. This allows for a welcoming, semi-outdoor ground level that maximizes air flow and accessibility. The building also features a cross-terminating timber structure at the top to house the basketball courts and allow for its large, uninterrupted space. The facade consists of curtain walls on the lower levels, translucent envelope panels on upper levels, and tons of cutout cladding lines.
BUSHWICK RECREATION PARK & DEVELOPMENT
An Integrated Urban Scale Tech Project

SPRING 2021
Architectural Technology V
Coordinator: Luba Benn-Amei | Lead Member: Emily Bauer
Site: Bushwick, Brooklyn, NYC
Team: Shuhan Li, Qiao Xu, Qingshan Hou

This integrated urban scale project proposes a recreation park at the existing underdeveloped Bushwick Inlet Park. On the 31 acre land, the project features playgrounds, outdoor fitness areas, rain gardens, commercial areas and residential townhomes that would help financially sustain the park. To address key issues including resilience to NYC’s 100-year floodplain, optimizing waterfront access, and providing public space, the project incorporates bioremediation, rainwater collection and recycling systems and uses renewable energy sources such as solar radiations and human kinetic energy. The park aims to attract the large population of younger generations in the area while becoming a tourist site inviting visitors from all around the city.
Endless Tiles:
A free exploration of tiling and modular fabrication