

# PORTFOLIO

SELECTED WORKS GSAPP MSAAD 2023



Renwen(Annie) Yu

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spring 2023

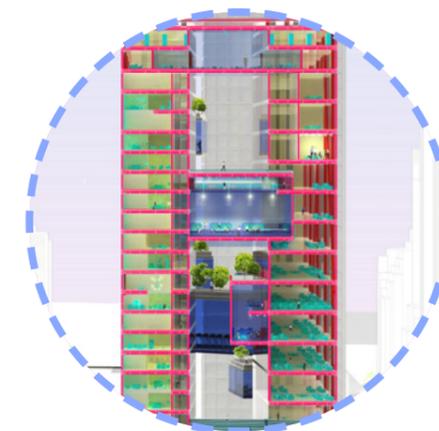
Studio Critic: Christoph Kumpusch & Patrice Derrington



### NET-CARBON RICE FACTORY

fall 2022

Studio Critic: David Benjamin



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summer 2022

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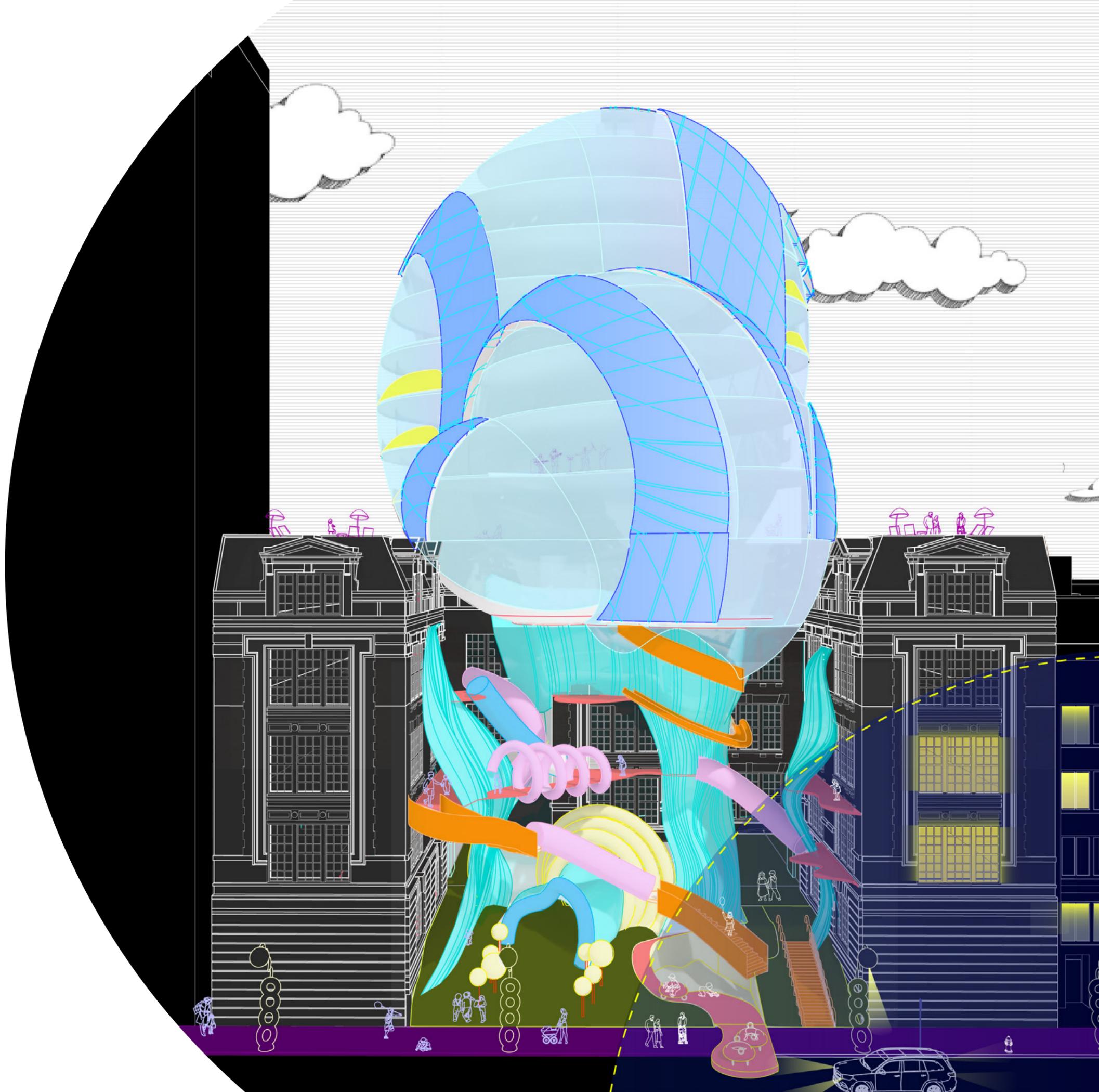
SELECTED WORKS Summer 2022 - Spring 2023



# THE BIRTH

POST NATAL CONFINEMENT CENTER  
+  
KIDS CLUB  
+  
RESIDENCE

GSAPP Advanced Studio VI  
(MARCH-MSRED JOINT STUDIO)  
Spring 2023  
Studio Critic: Christoph Kumpusch  
& Patrice Derrington  
Collaborator: Jin Han (MSRED 23')





THE BIRTH - 2023

# + POST NATAL CONFINEMENT CENTER

The project is to develop a LANDMARK building in East Village that has remained empty for 25 years due to conflicts with the local community. Through rezoning, a new nine-story building will be added on top of the existing five-story building. The goal is to revitalize the East Village while considering the needs and values of current residents and balancing those with the developer's interests.

## + RESIDENCE

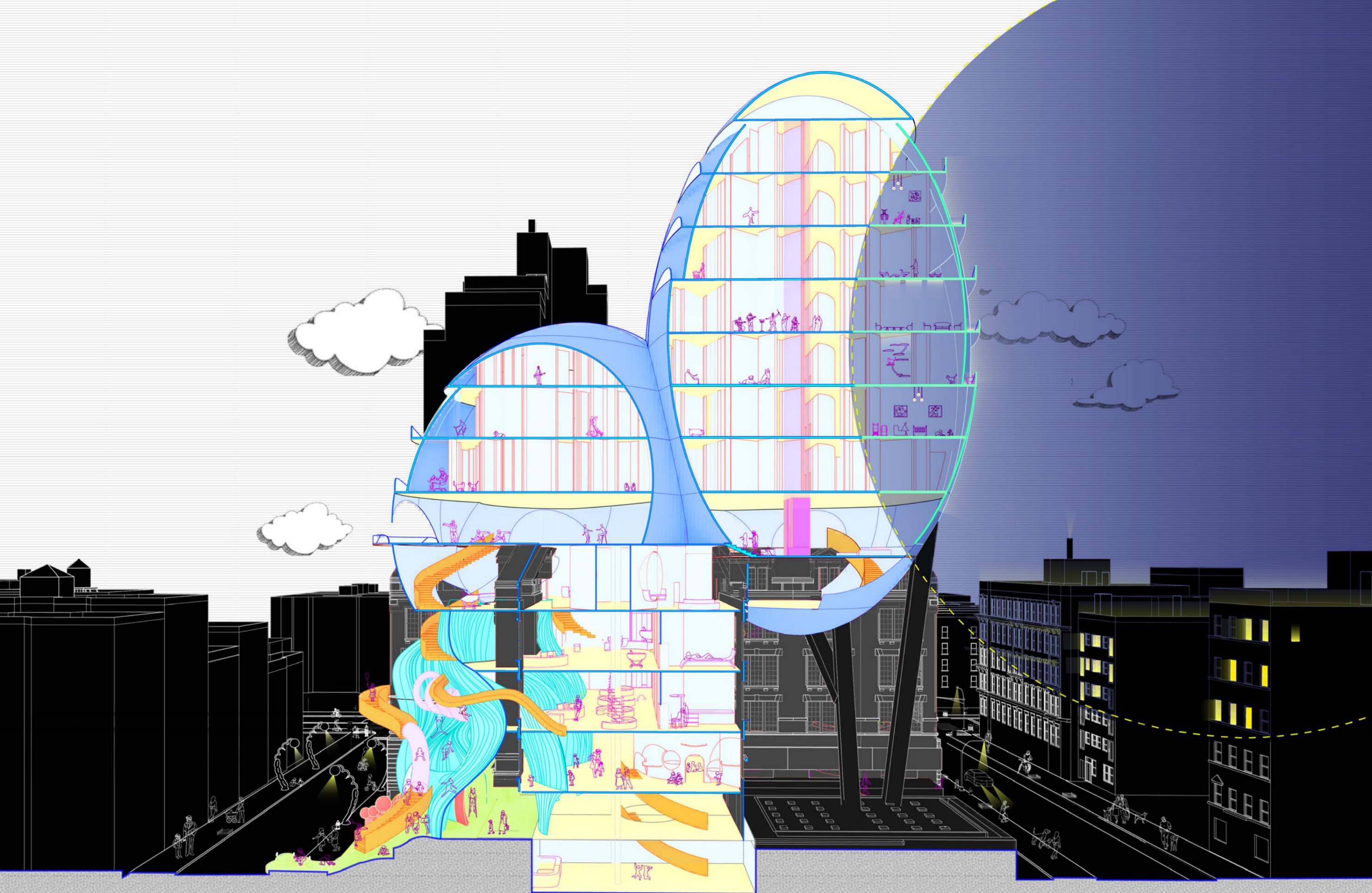
From an architectural standpoint, the design of the building will reflect the local community's values, particularly the importance of water as a source of life. From a real estate perspective, the project aims to create new demand and expand it to cater to business feasibility while also bringing in tenants that can help revitalize the area. The commercial facilities within the building will provide job opportunities and social activities for residents, creating positive synergy.

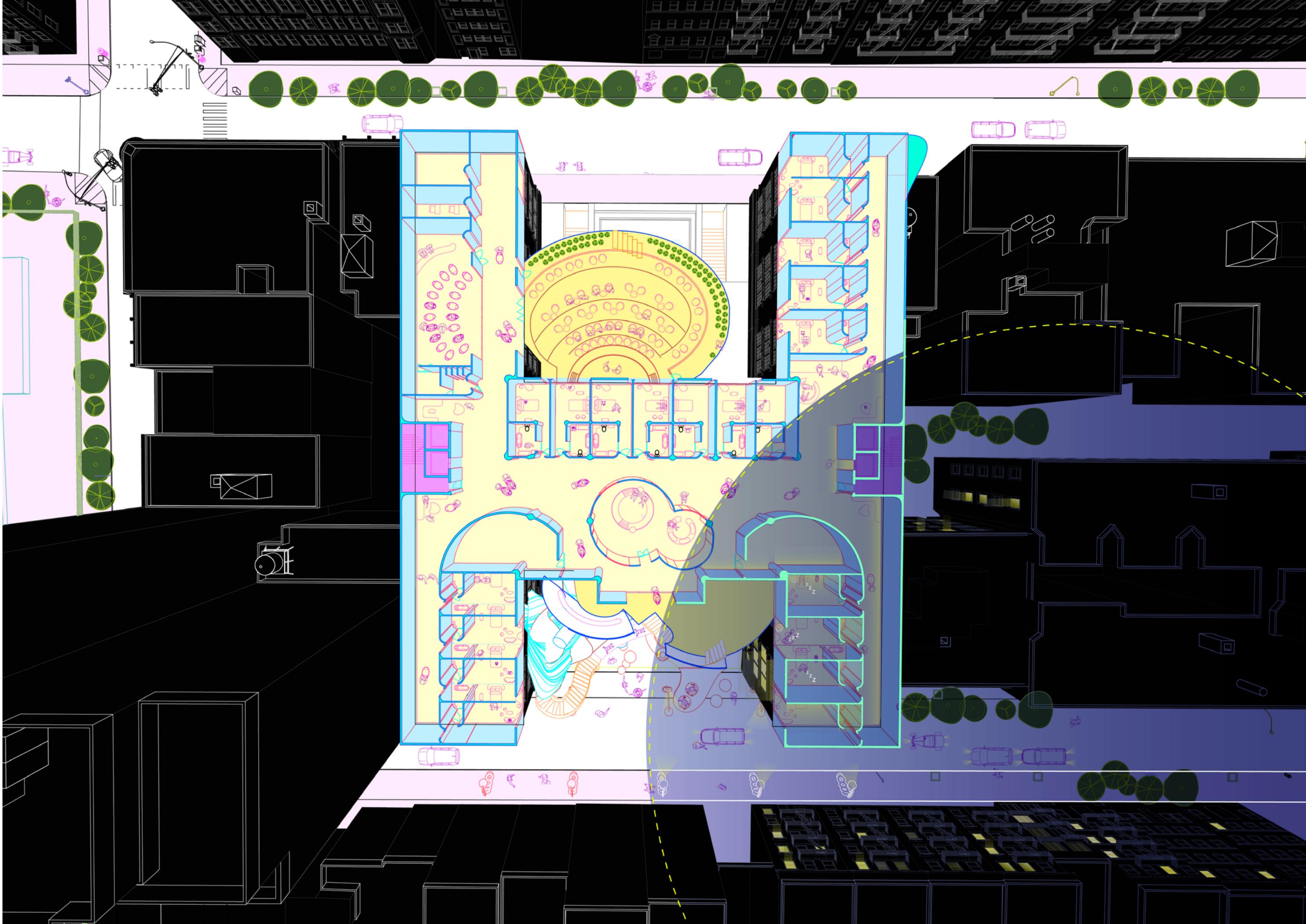
## + KIDS CLUB

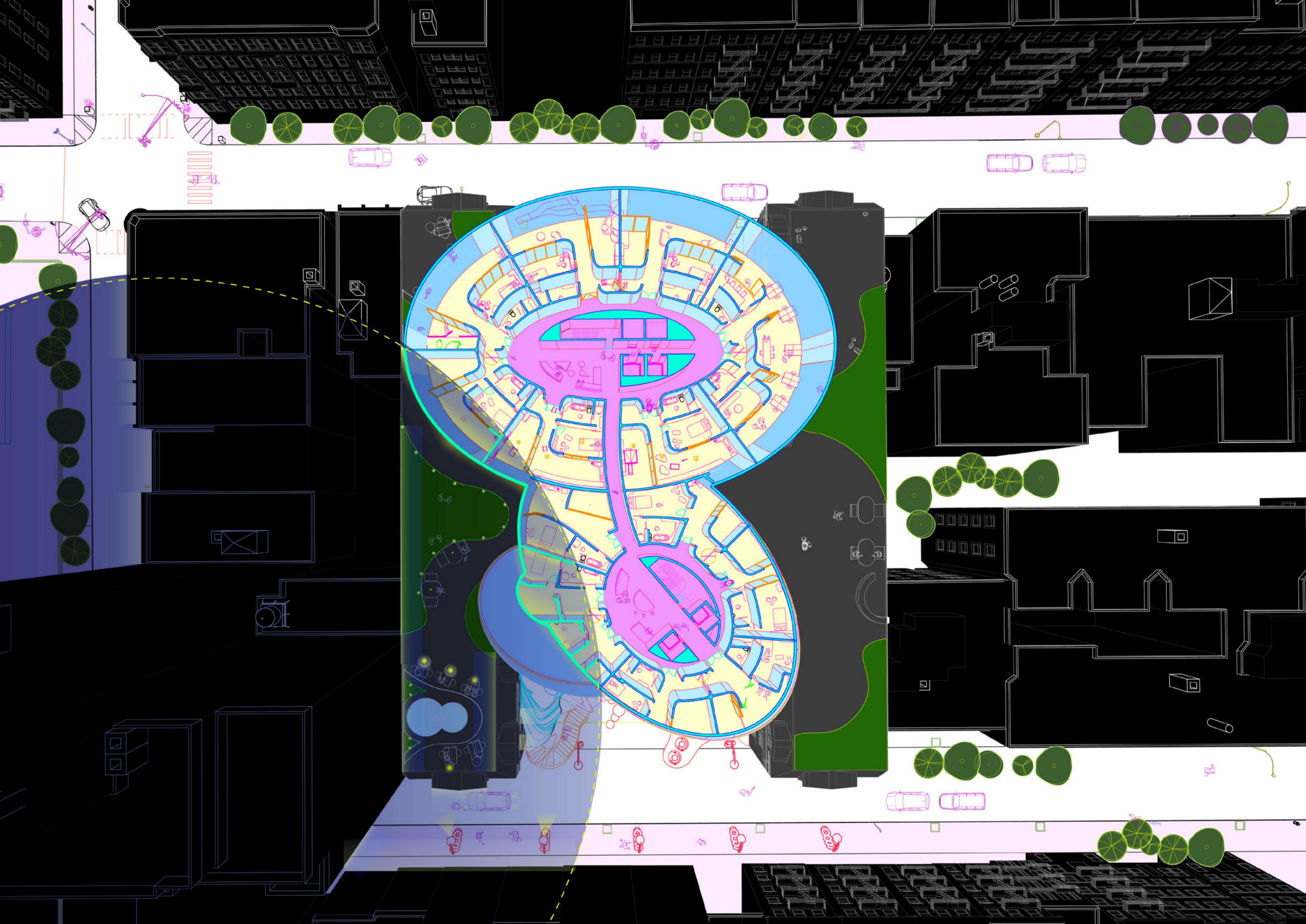
To achieve this, the commercial area located on the basement to the third floor will be operated by a brand specializing in children's entertainment and care. It will provide commercial spaces such as a kid's playground, a kid's cafe, and a kid's gym while also running a daycare center for the neighborhood's working parents and volunteers. The fourth and fifth floors will house a high-end Post Natural Care Center called THE BIRTH, creating new value and job opportunities while being commercially viable.

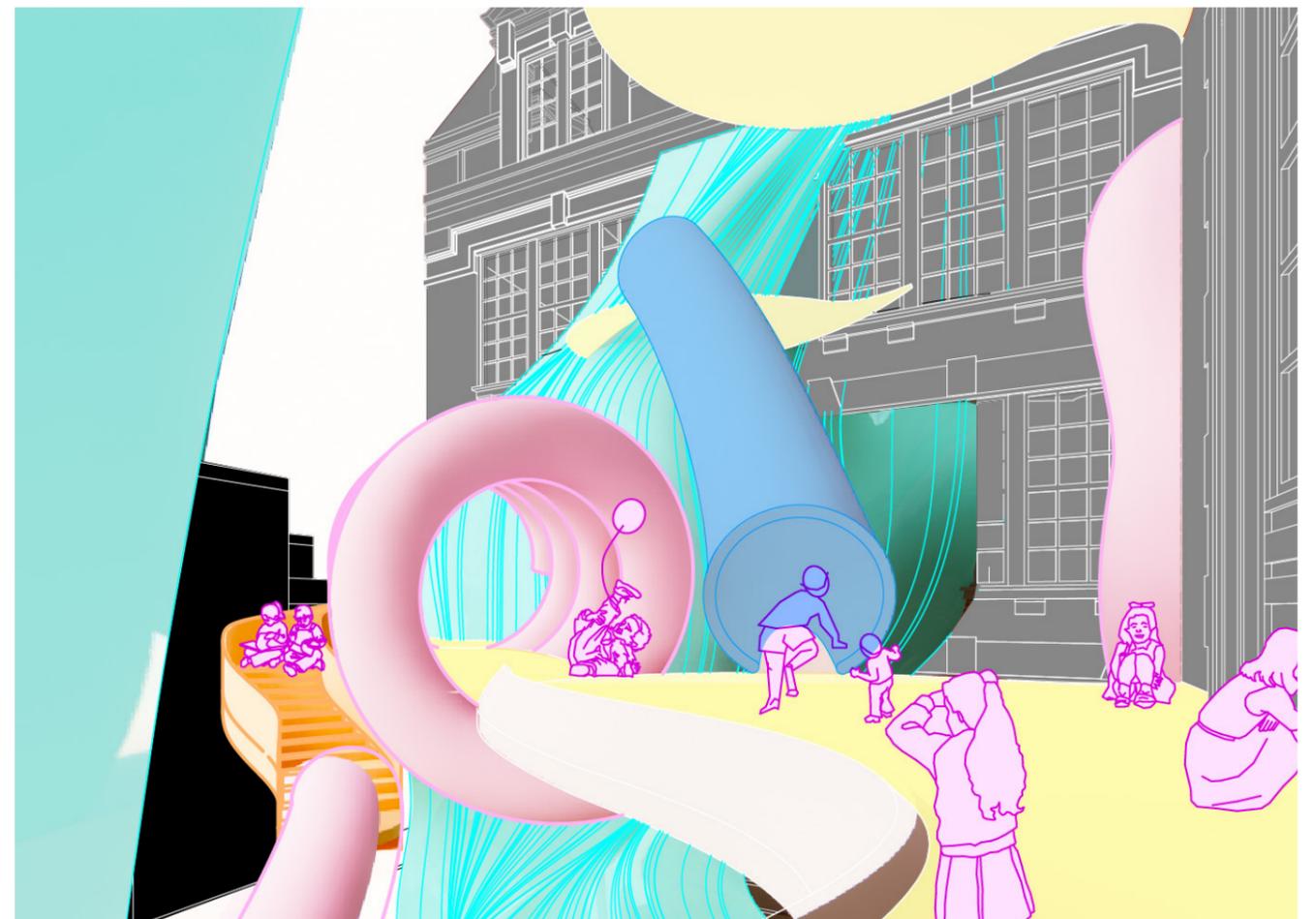
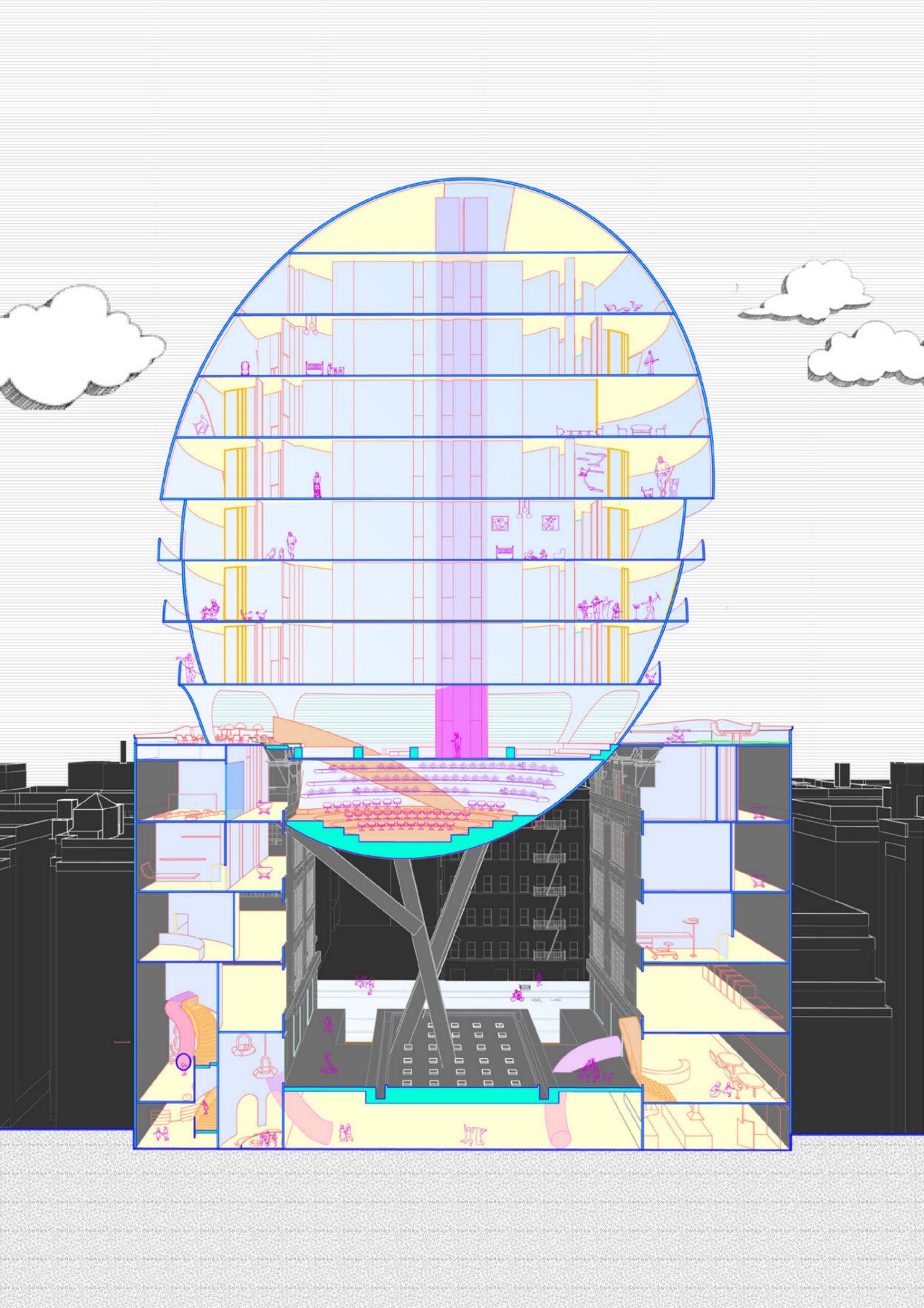
On the seventh to fourteenth floors, a new concept called RESICE will be developed to meet the changing needs of New York City in 2023. It will offer a space that caters to both living and working, appealing to residents seeking new lifestyles, startups in need of flexibility, and single parents raising children. Overall, the project aims to bring positive change to East Village and create a thriving community.

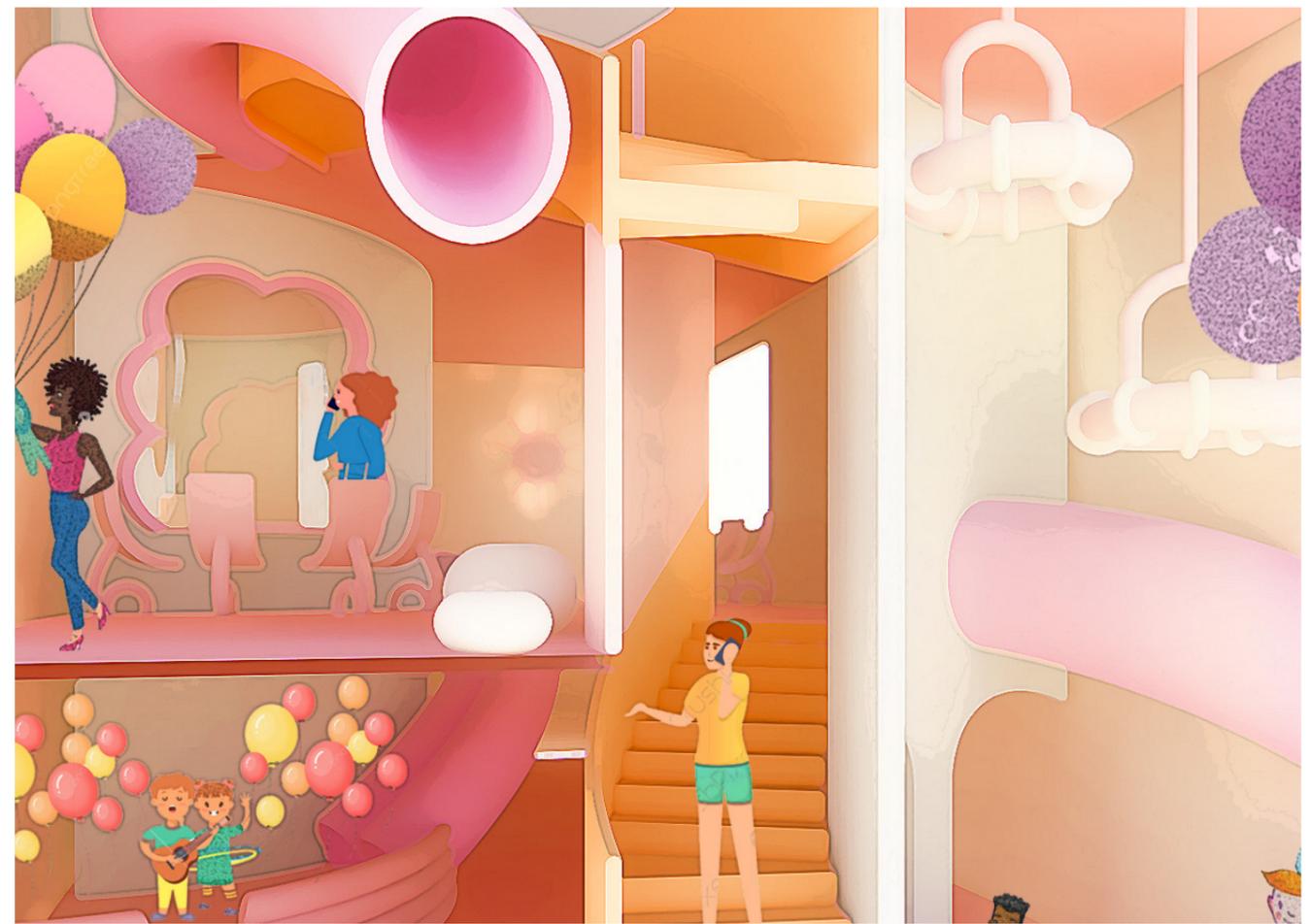
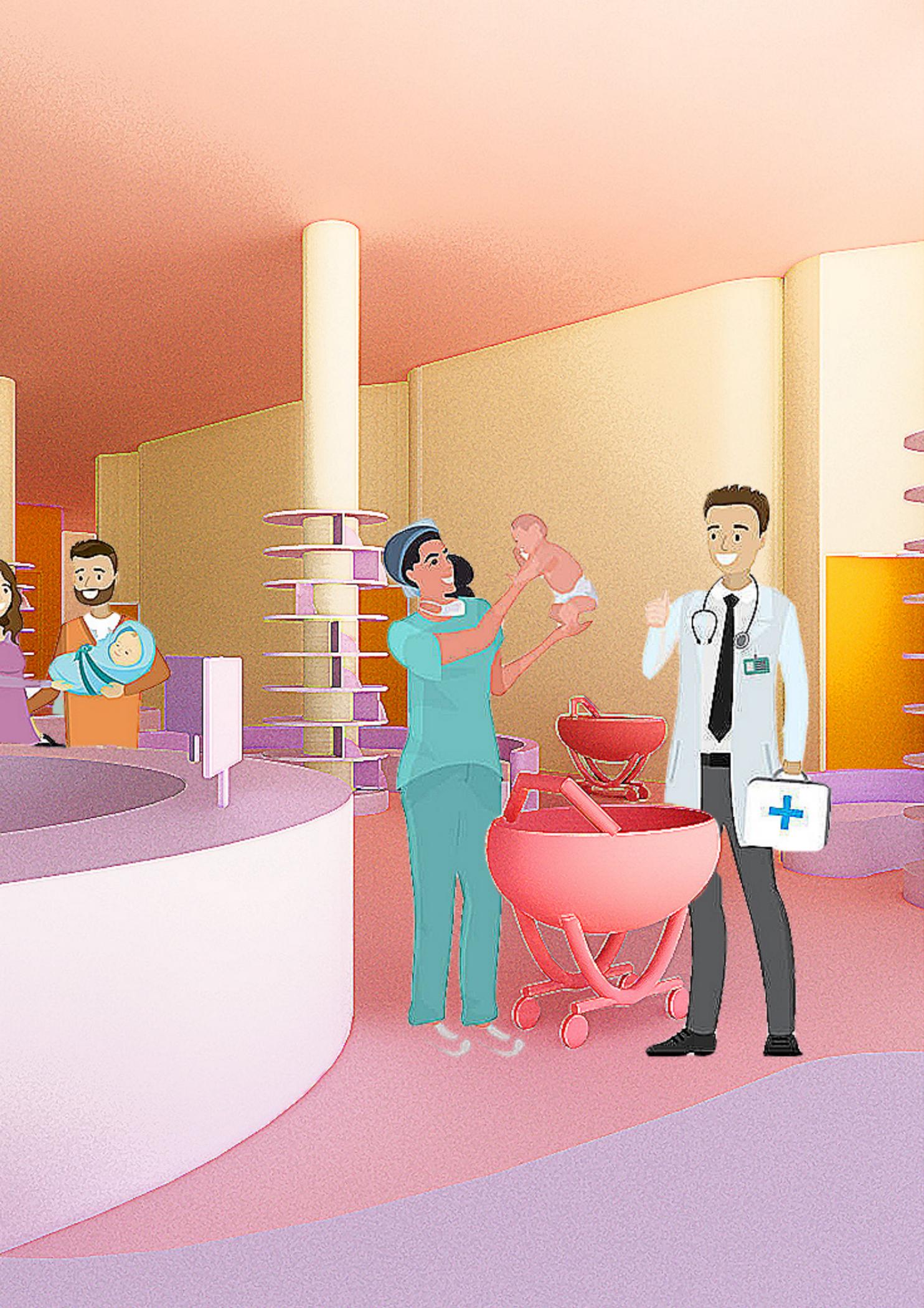
## IN EAST VILLAGE





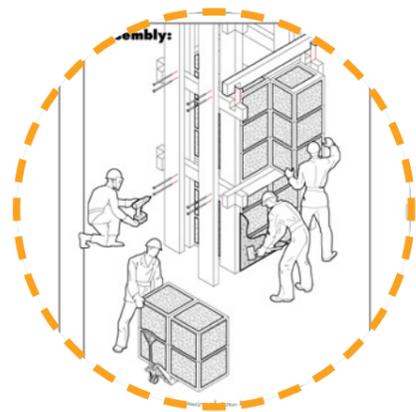








ARBOT  
#tag #1



# NET-ZERO

RICE STRAW FACTORY  
+  
LOGISTICS  
+  
CARBON SEQUESTER

GSAPP Advanced Studio V  
(MARCH-MSRED JOINT STUDIO)  
Fall 2022  
Studio Critic: David Benjamin  
Collaborator: Ze Meng (MSAAD 23')  
Ruizhan Huang (MSAAD 23')





THE BIRTH SPRING 2023

# + NET-ZERO CARBON

- Warehouse - storing rice, rice straw, and rice straw byproduct*
- Distribution - shipping rice and building materials*
- Factory - manufacturing rice straw to building materials*
- Biogas Power Plant - utilizing rice straw to generate electricity*
- Paper Mill - manufacturing rice straw to packaging boxes*

# + AGRICULTURAL WASTE

*RICE ECOLOGY 2023: Our project is a prototype that could be applied anywhere, not site-specific. We choose a rice field in Colusa County of California as a testing site.*

# + RICE STRAW PANEL

*The world is suffering a food crisis these days. Undoubtedly, rice is the most suitable role to end this disaster. But now we are facing two problems. Firstly, to relieve inventory pressure and increase the unit price, the food suppliers prefer to burn the rice into biofuel with no carbon-saving benefit. Secondly, rice production is always regarded as a high carbon emission process. Whoever started the trouble should end it. So how to solve this deal of trouble with rice ecology? We propose to build warehouses to store more rice. And more importantly, we think about how to make the carbon emission into the carbon sink with architectural methods in this proposal.*

# PROTOTYPE IN 22ND CENTURY

Floating

Biogas



**Prefabricated Panels**  
**Folding Panels**  
Packaging  
Loading

**Rice Products**  
Packaging  
Loading

**RICE FIELD**

**Recycle**

**Sale**

CARBON SINK:

CARBON SINK:

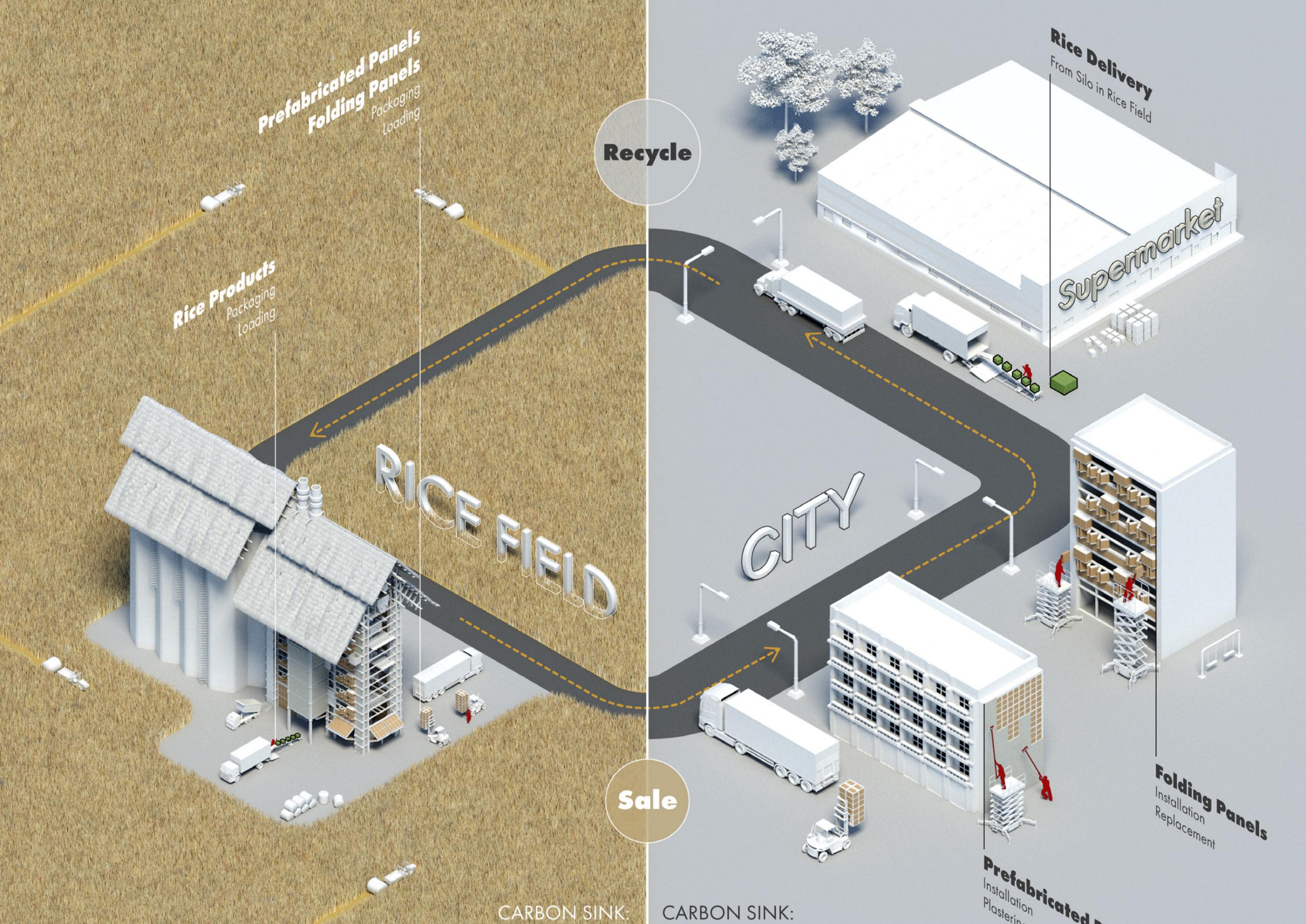
**Rice Delivery**  
From Silo in Rice Field

**Supermarket**

**CITY**

**Folding Panels**  
Installation  
Replacement

**Prefabricated Panels**  
Installation  
Plastering



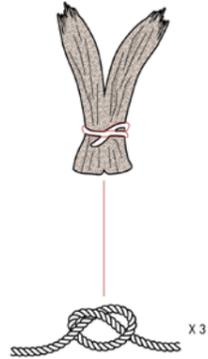
# Raw Straw (800 - 1000mm)

## Thatching Roof

DENSITY OF STRAW:  
50 kg/m<sup>3</sup>

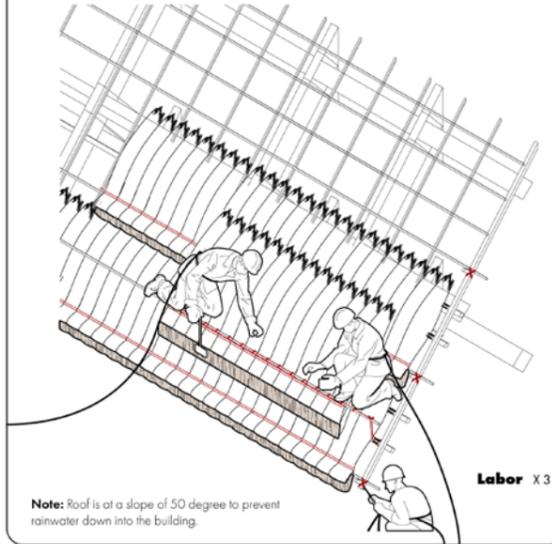
FIRE RESISTANCE:  
100 min

### Part:

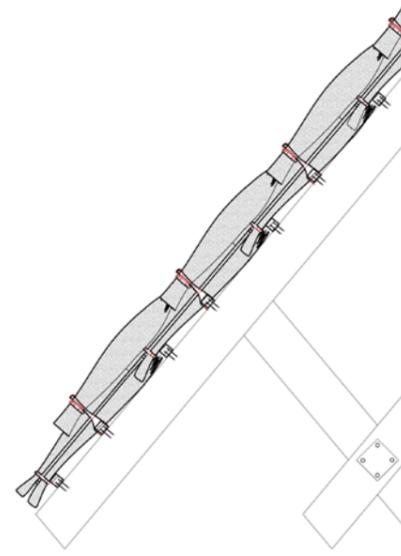


Note: Make sure the bundle have a thickness of 18 inches

### Assembly:



Note: Roof is at a slope of 50 degree to prevent rainwater down into the building.



CARBON SINK: **25,022 KG**  
PRODUCTIVITY: **Require 10 Acres of Rice Field**

# Cut Straw (300 - 500mm)

## Folding Panels

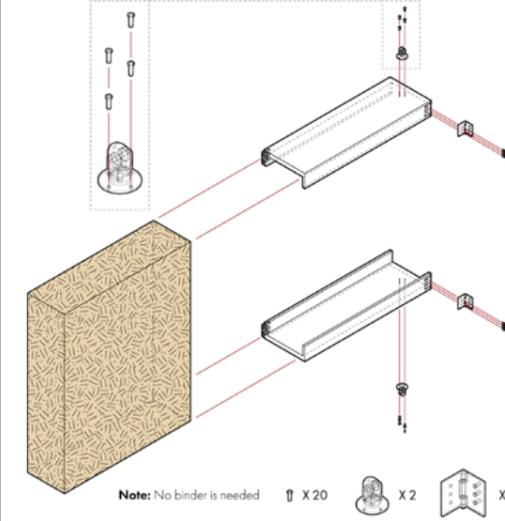
DENSITY OF STRAW:  
75 kg/m<sup>3</sup>

FIRE RESISTANCE:  
60 min

INSULATION COEFFICIENT:  
U = 0.12 W/m<sup>2</sup>K

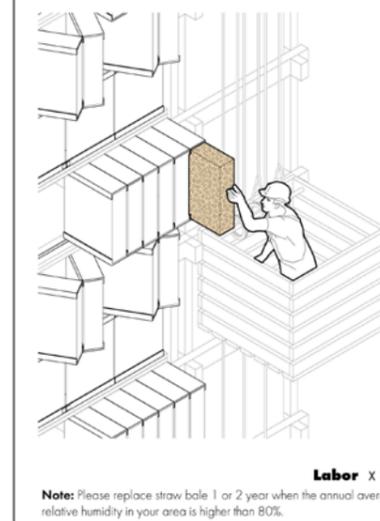
AIRBORNE SOUND INSULATION  
32 dB

### Part:



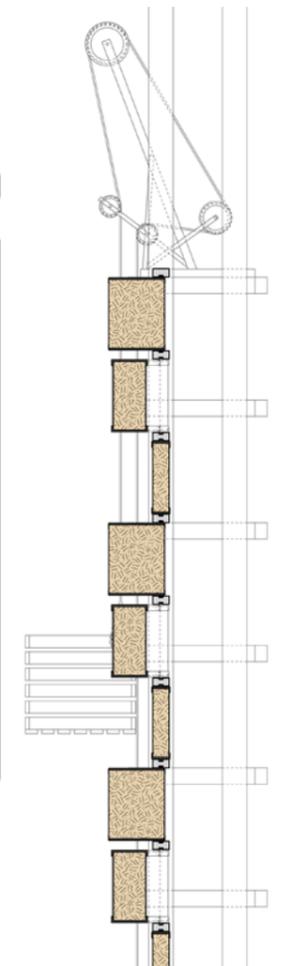
Note: No binder is needed

### Replacement:



Note: Please replace straw bale 1 or 2 year when the annual average relative humidity in your area is higher than 80%.

CARBON SINK: **15.8 KG/Panel**  
PRODUCTIVITY: **208 Panels/Acre of Rice Field**



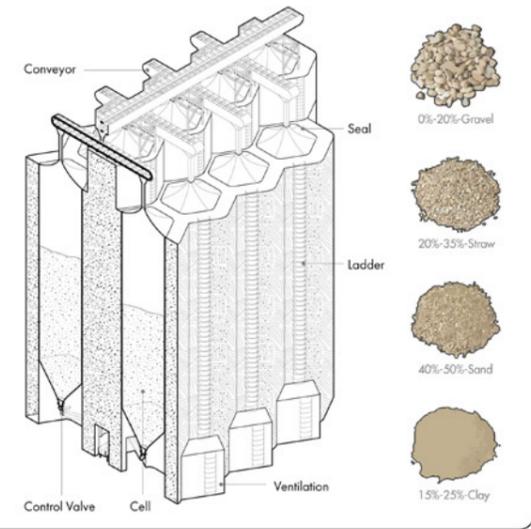
# Milled Straw (10 - 20mm)

## Silo

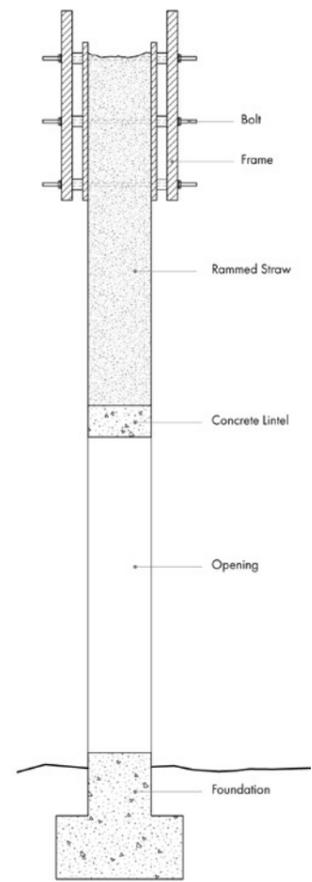
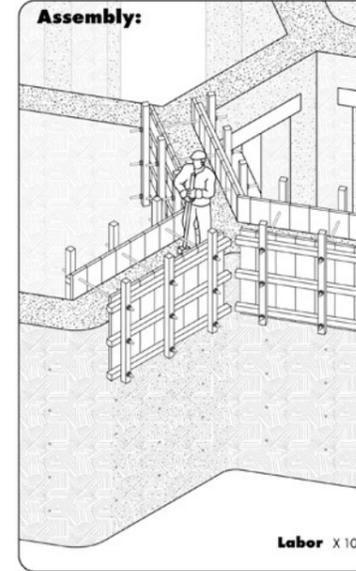
DENSITY OF STRAW:  
30 kg/m<sup>3</sup>

FIRE RESISTANCE:  
240 min

### Part:



### Assembly:



CARBON SINK: **157,059 KG**  
PRODUCTIVITY: **Require 65 Acres of Rice Field**

# Chopped Straw (50 - 150mm)

## Prefabricated Panels

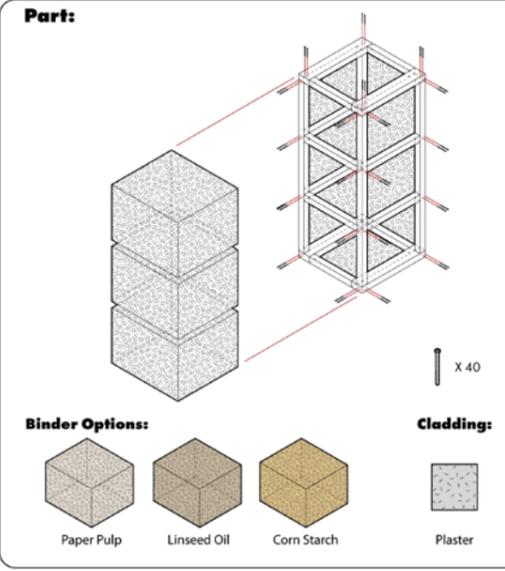
DENSITY OF STRAW:  
110 kg/m<sup>3</sup>

FIRE RESISTANCE:  
120 min

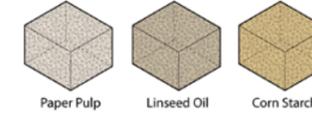
INSULATION COEFFICIENT:  
U = 0.12 W/m<sup>2</sup>K

AIRBORNE SOUND INSULATION  
54 dB

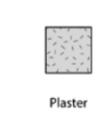
### Part:



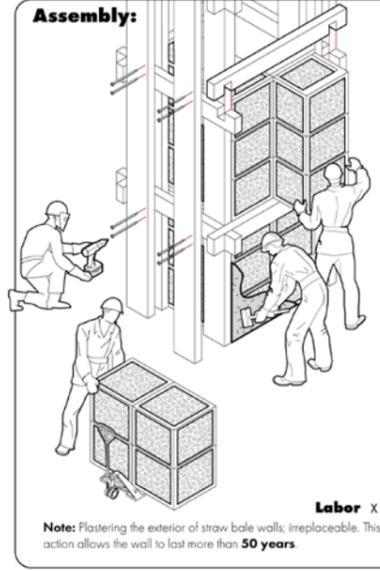
### Binder Options:



### Cladding:

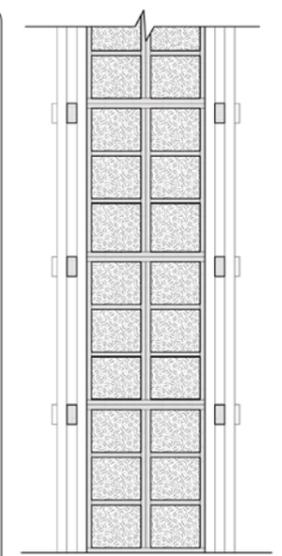


### Assembly:



Note: Plastering the exterior of straw bale walls; inreplaceable. This action allows the wall to last more than 50 years.

CARBON SINK: **15.3 KG/Panel**  
PRODUCTIVITY: **30 Panels/Acre of Rice Field**





# UN HOTEL

UNITED NATIONS  
+  
HOSPITALITY  
+  
CONFERENCE

GSAPP Advanced Studio IV  
Summer 2022  
Studio Critic: Eric Bunge  
Collaborator: Qiyang Xu (MSAAD 23')



THE BIRTH SPRING 2023

# + UNITED NATIONS

*Our proposal is a new hotel at the UNHQ, primarily for UN delegates. Instead of recreating the original abandoned idea of hotel in scheme no. 23B, the proposal rethinks the hotel program, taking into account contemporary challenges, while designing a gradient of living to accommodate various cultures. The design aims to subvert some of the modernist principles in the site while maintaining certain parallels to the current UN program, structural parameters, and form.*

# + HOSPITABILITY

*The building cantilevers dramatically over the East River, extending the hotel to the shore line and connecting it with a new proposed ferry system. This new way to arrive at United Nations Headquarters, will allow delegates to reach the UNHQ quickly from the airport, avoiding traffic in New York City. With our intervention, we provide one building that could help bring nations together in one place providing additional informal opportunities for exchange.*

# + CONFERENCE

*The project demonstrated a great opportunity for exchanging relationships between “governance” and “temporary stay” spaces. The building complex is separated into two towers but connected at particular moments. The South tower provides various types of hotel rooms for delegates to stay during sessions; the North tower provides office spaces for general operations. Hotel rooms are designed to different security levels and configurations, providing a variety of opportunities for domestic life, and accounting for various forms of living, family structure, non-nuclear families, different modes of cooking, sleeping, and reaction. Moreover, formal and informal spaces exist in between two towers offering various opportunities for cultural exchanges. An underground level connects the hotel directly to the General Assembly hall and other UNHQ spaces. With parallel workspaces and conference programs, the UN Hotel is more like a complex community, focusing not only on the work of its users at UNHQ, but also on living and communicating with each other in various ways.*

# NEW HOTEL FOR UNHQ

