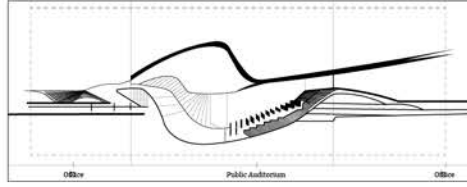


# portfolio





**01** p01 Neuro Node  
Tech Incubator



**02** p09 dis(PLACE)ment  
Refugee Housing



**03** p15 Healing Trail  
Health Ceter



**04** p23 Bloom  
Residential Apartments



**05** p33 Learning Field  
K-8th Grade School



**06** p41 Circulation for Public  
Transit Space



**07** p49 Additional Works

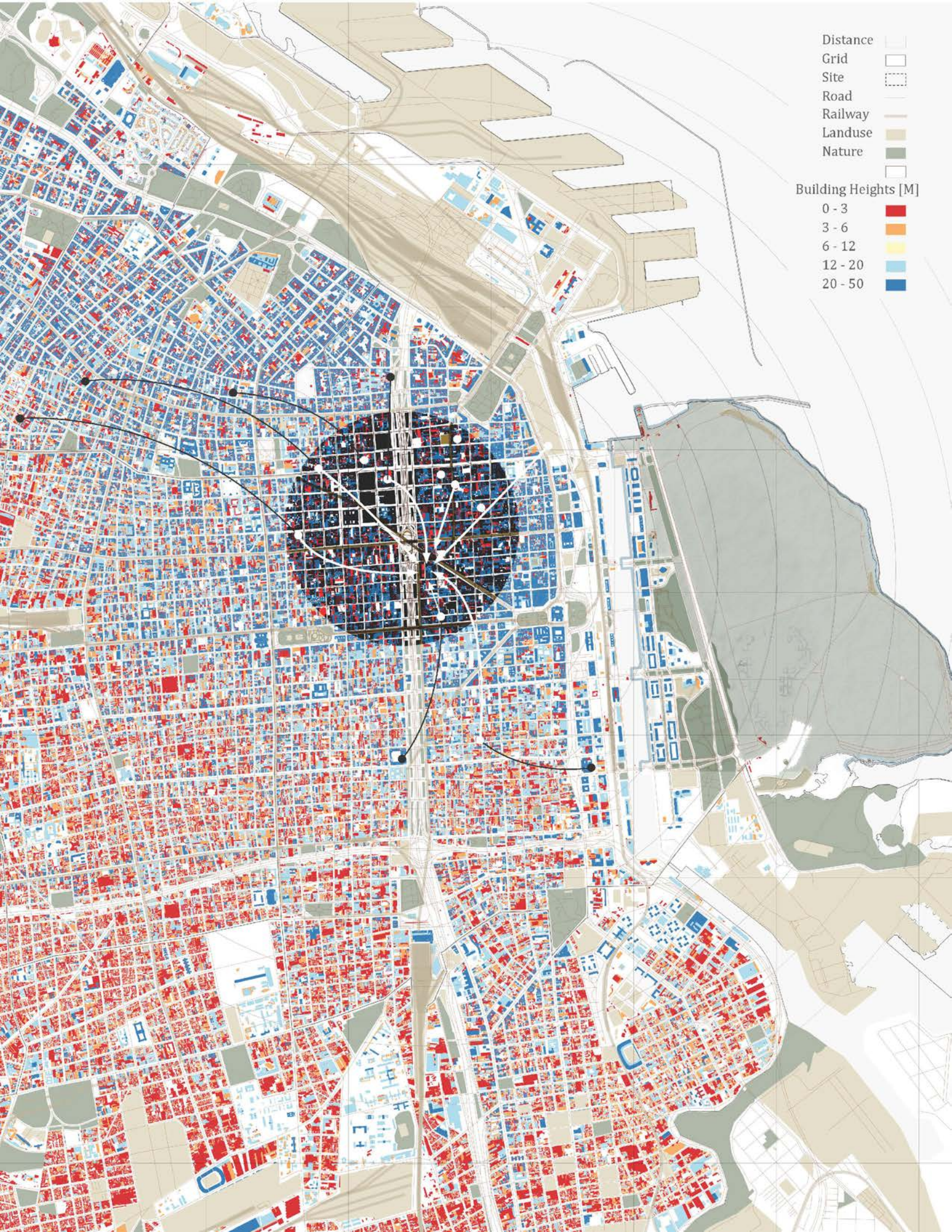
---

## neuro node | technology start up incubator

Located in the center of Buenos Aires, Argentina, this 500,000 SF building has the potential to play a significant role in supporting the economy of Buenos Aires. Currently abandoned, the new design will support the community and growth of the city at an urban scale. The project looks at transforming the existing building in to a start up technology incubator that will support the growing technology industry in Buenos Aires. Neuro Node questions the traditional organization and use of an office building. It provides a space for both community and worker to engage with one another as well as a means for the building to financially support itself through the inclusion of retail, exhibition and competition spaces amongst the start up companies.

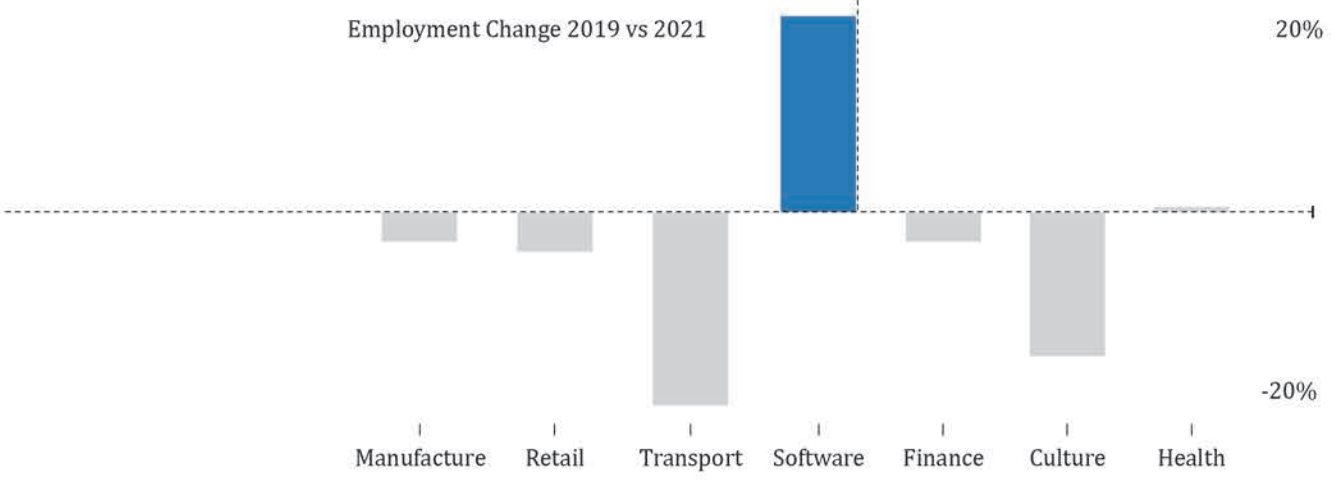
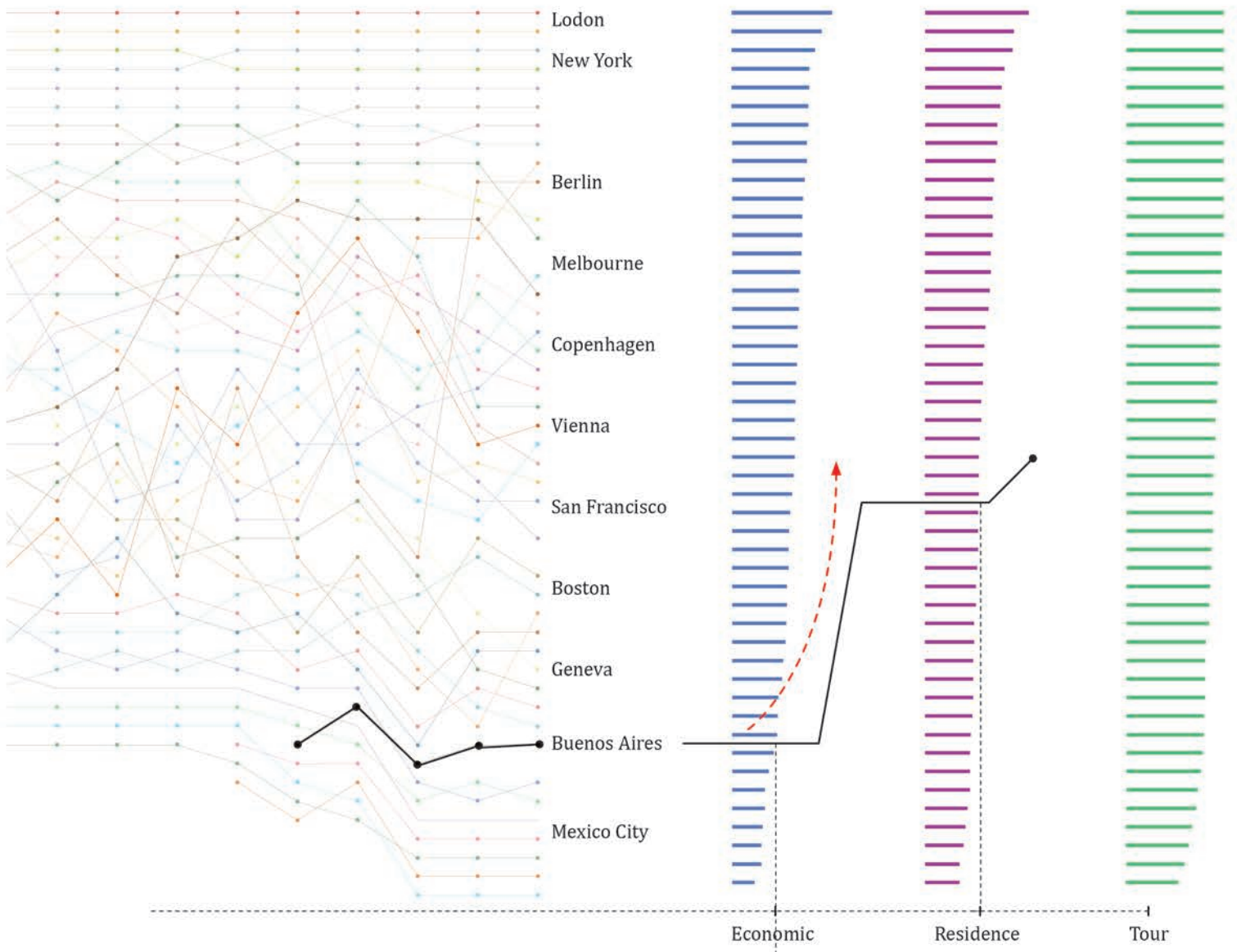
In order to preserve as much of the existing building as possible, Neuro Node formally consists of one large scale central public auditorium in the center of the U-shaped existing building and four smaller scale support nodes that are located on the exterior north, south and west facade. The public auditorium connects these four nodes by a bridge that punctures through the existing building.



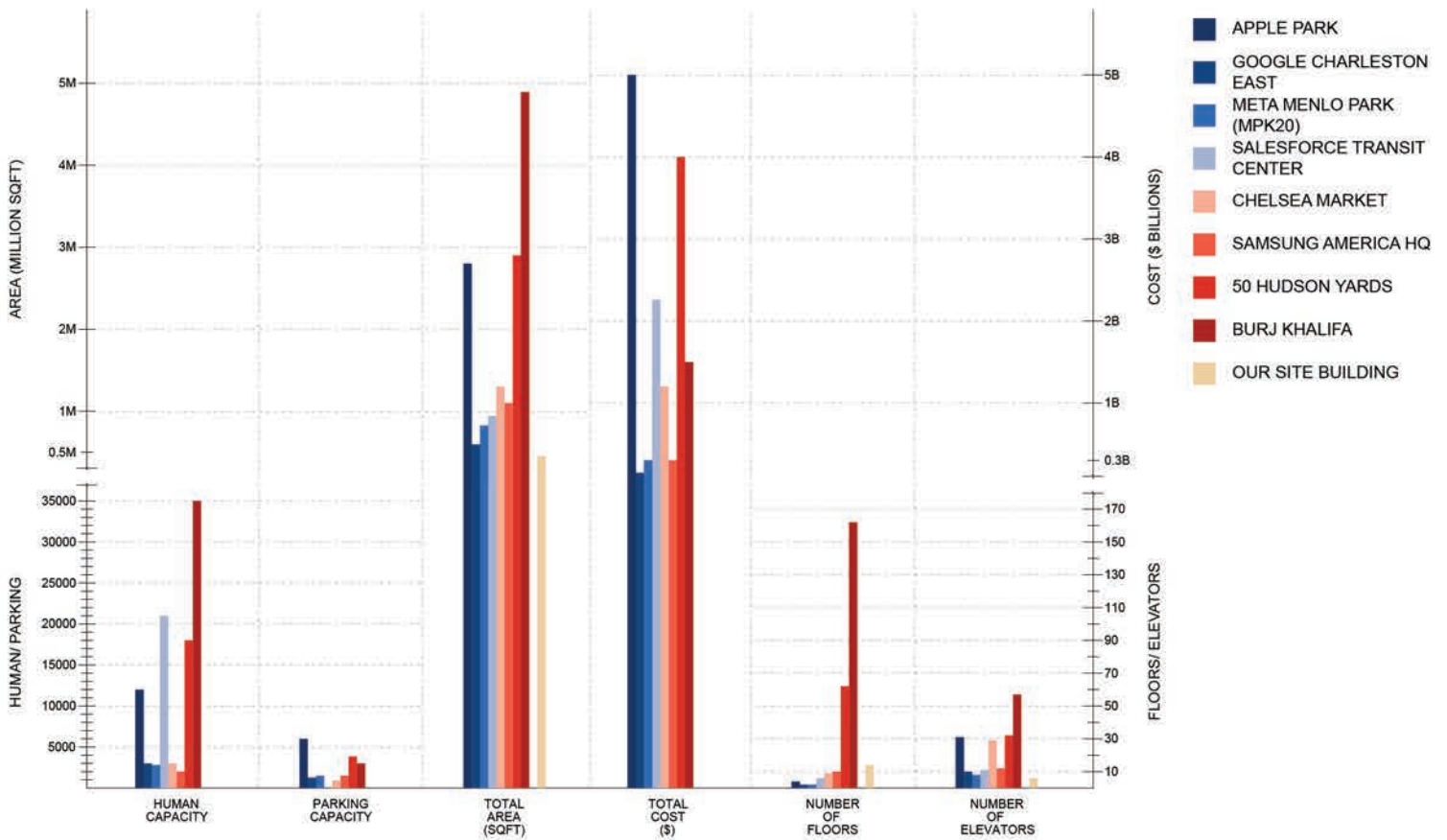
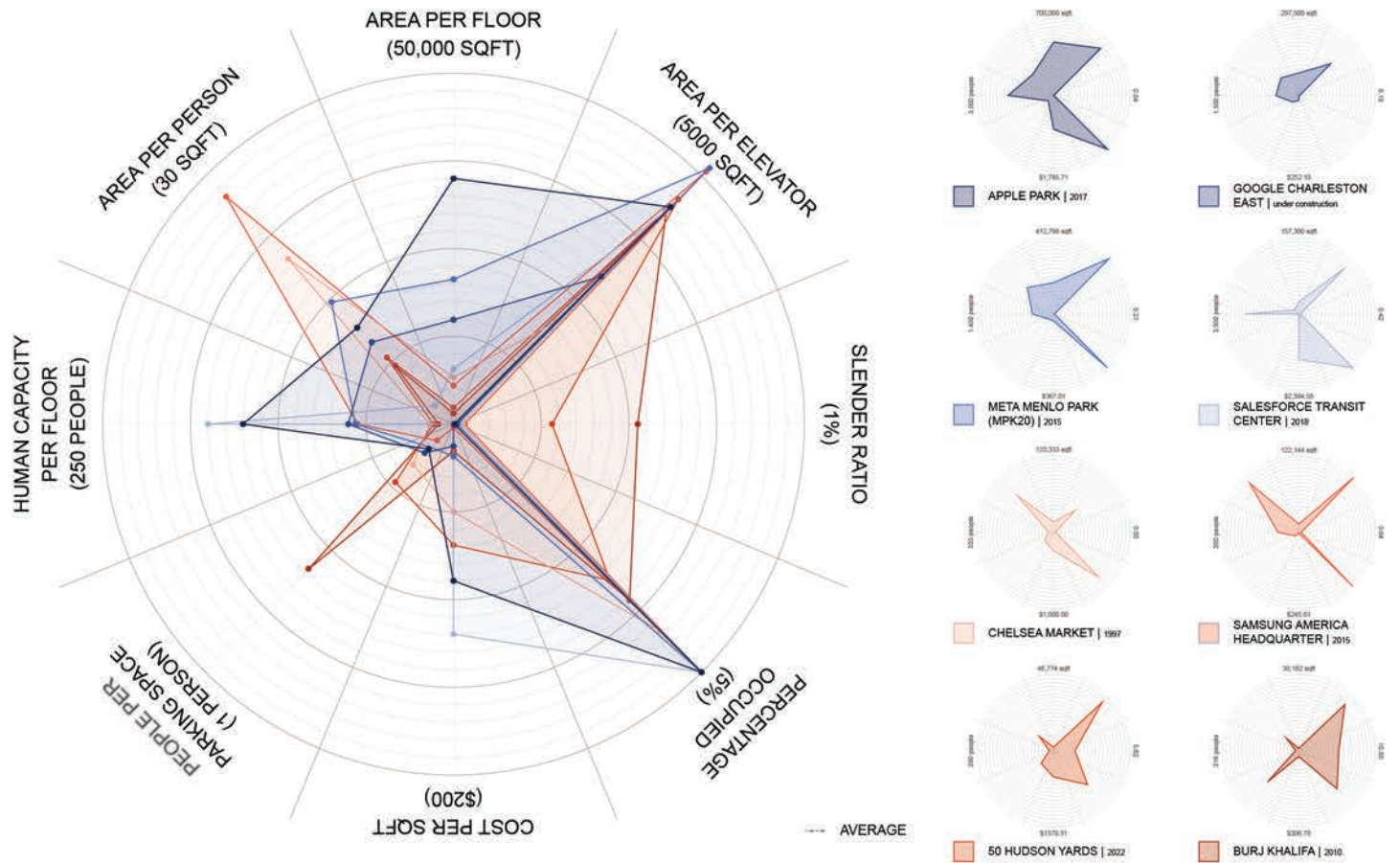




global power city index - the mori foundation

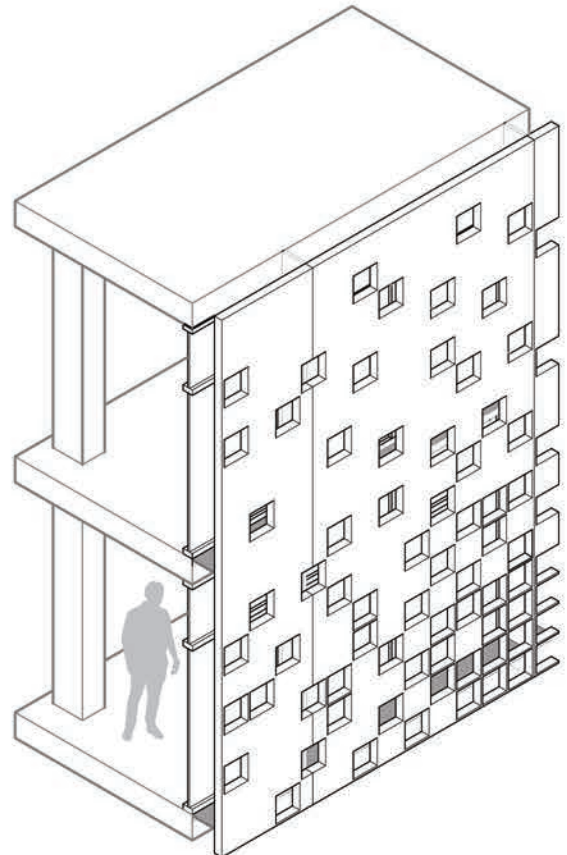
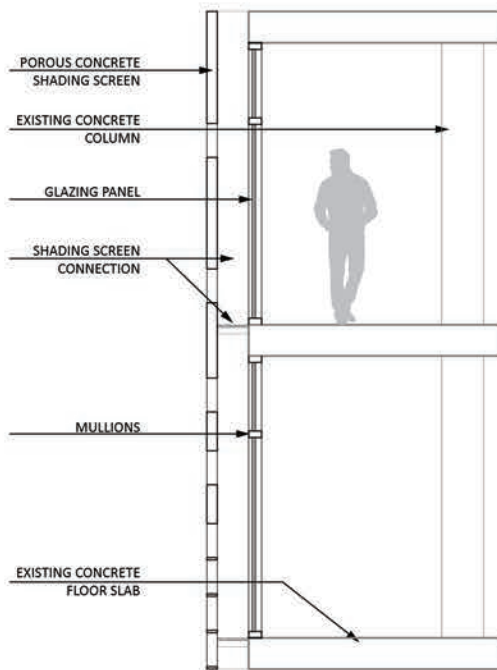
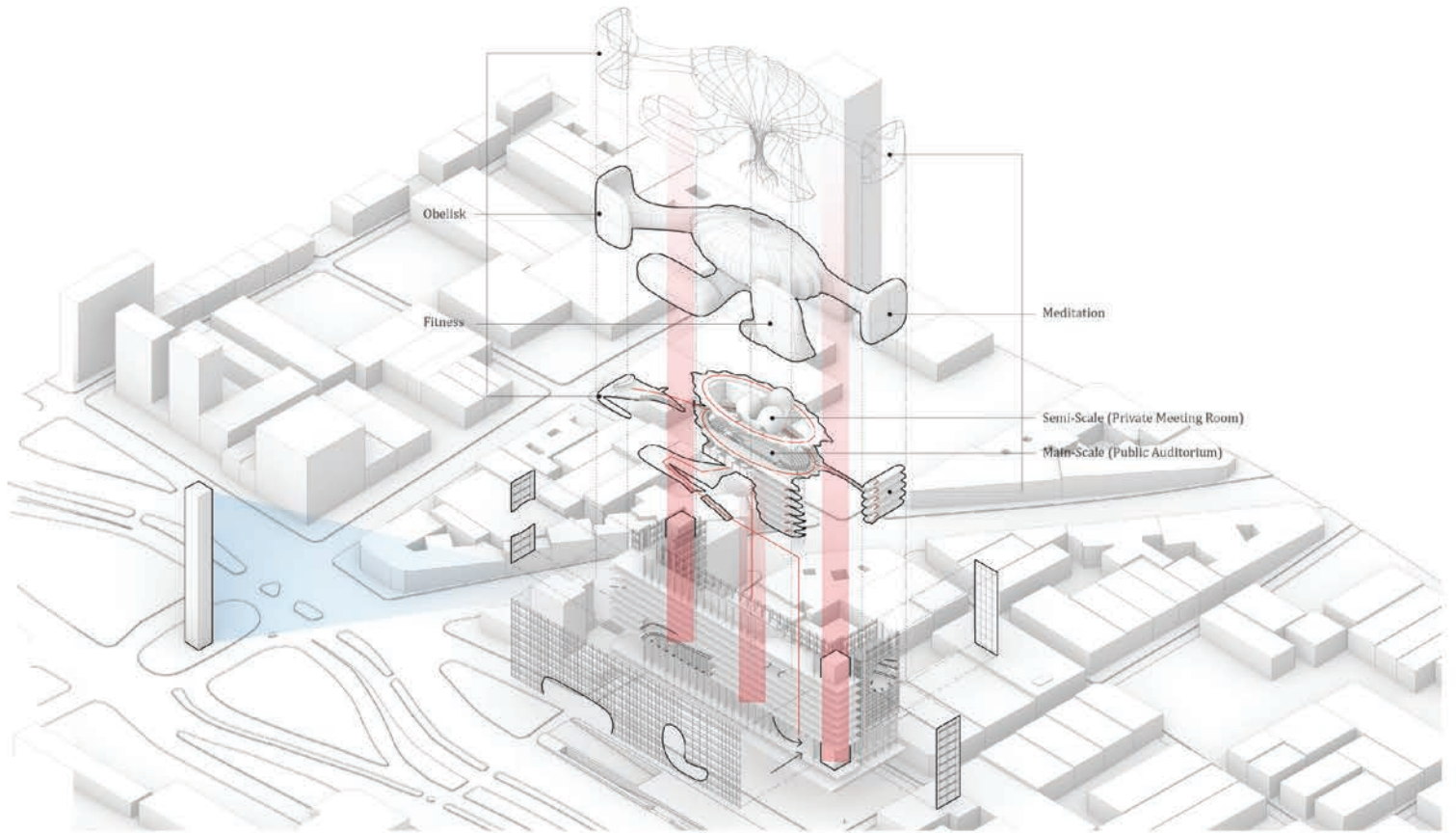


vertical vs horizontal building space usage



vertical vs horizontal building components data

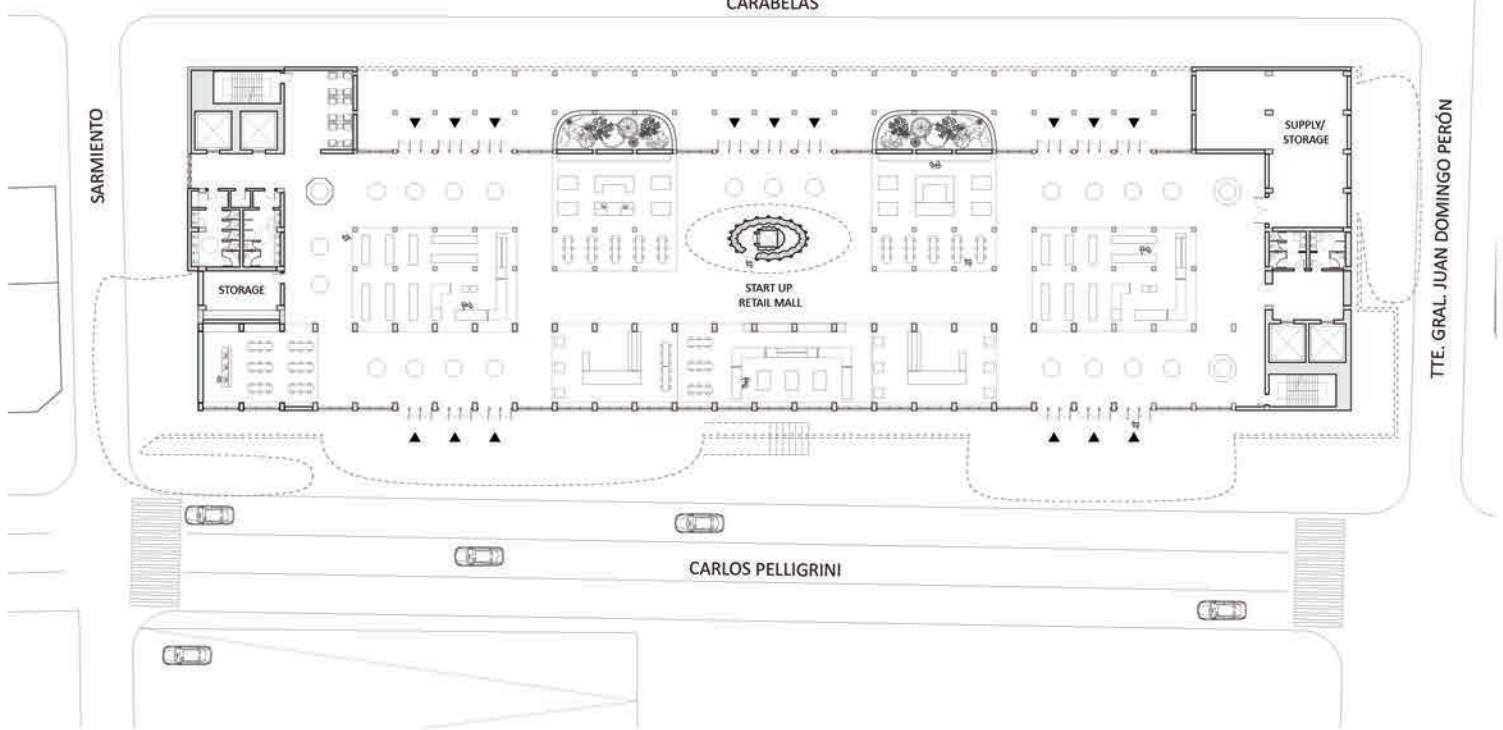
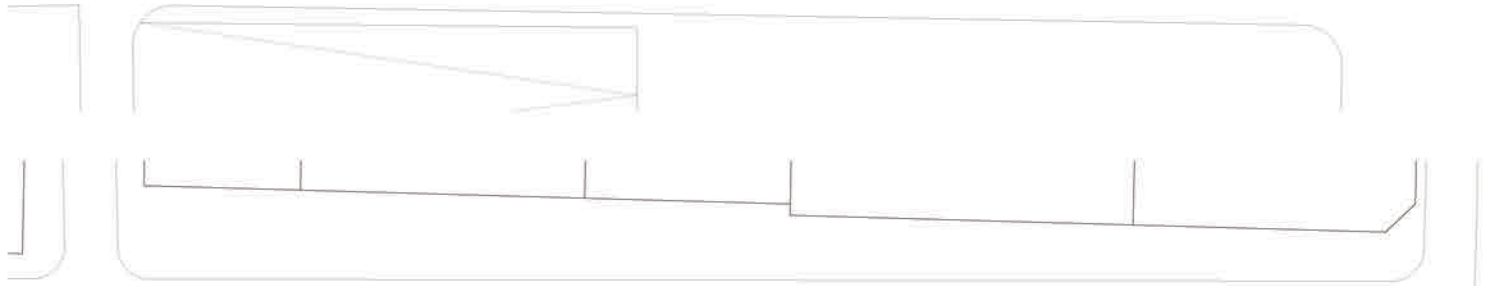
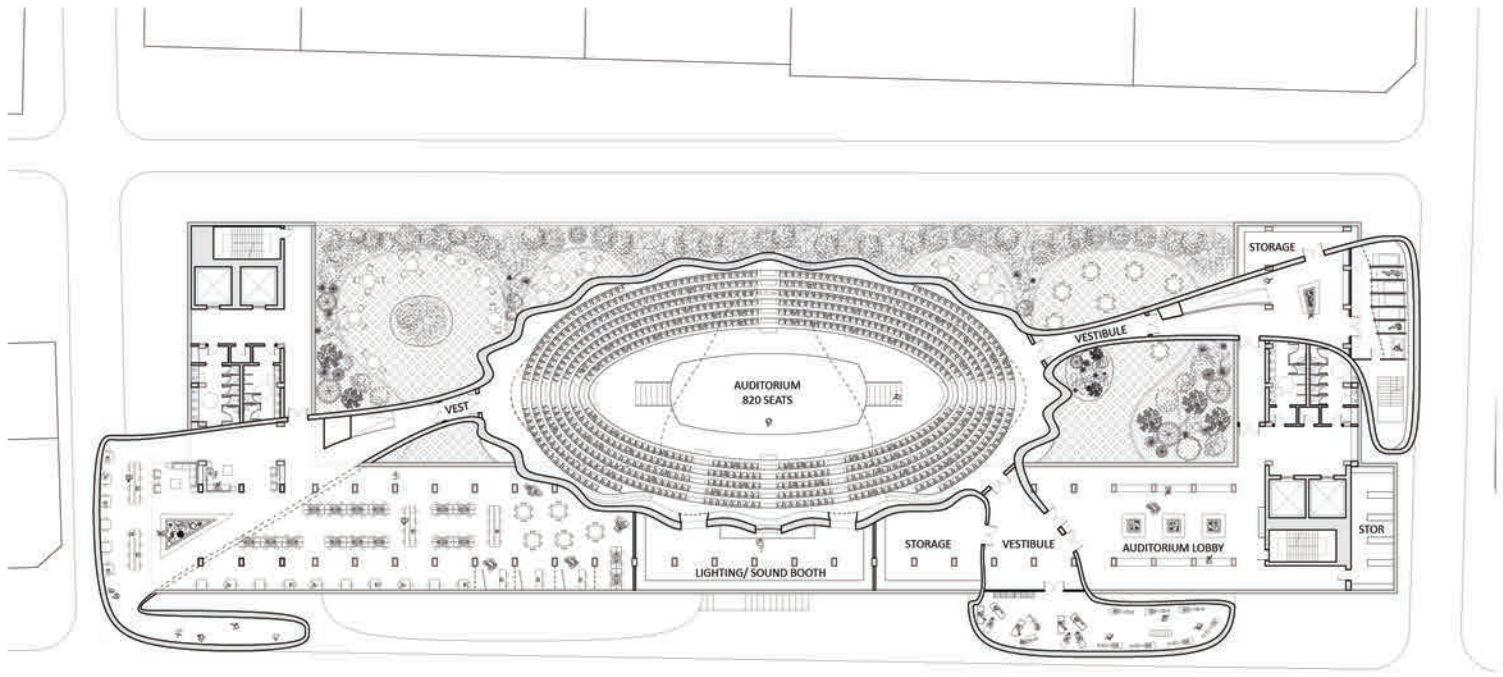
circulation + program



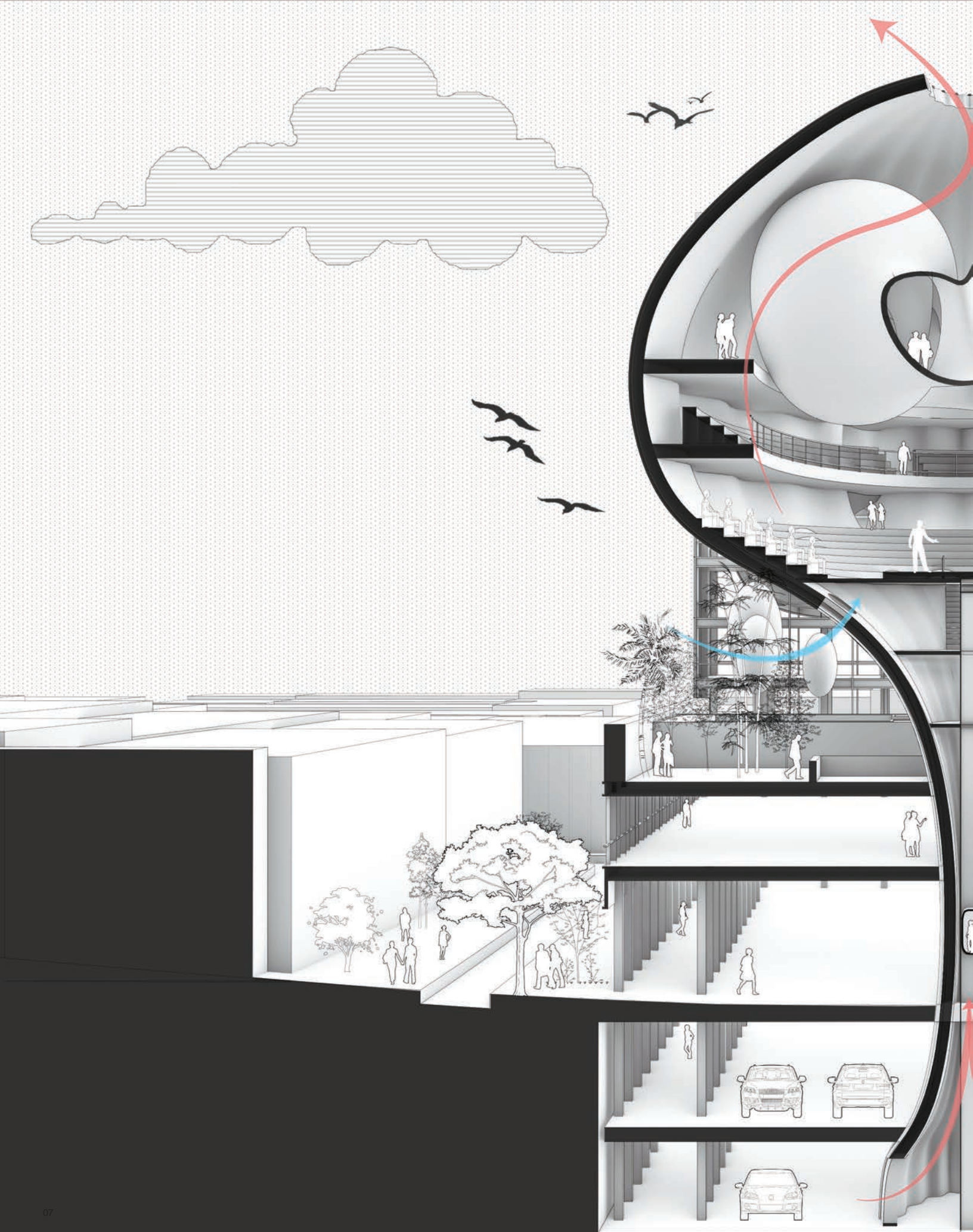
facade detail



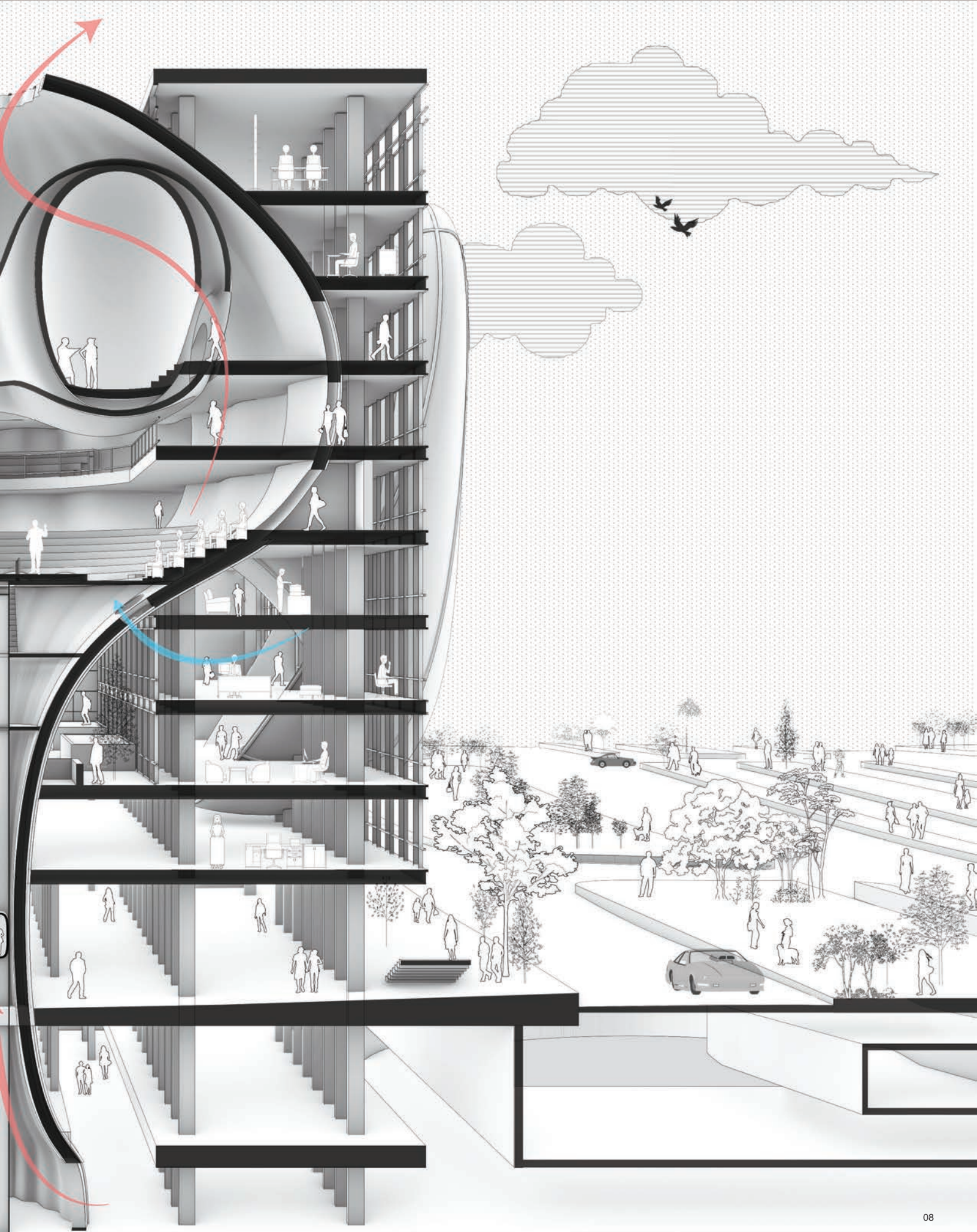
auditorium level floor plan



ground plan







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## dis(PLACE)ment | refugee housing

In light of the current refugee situation in 2022, dis(PLACE)ment seeks to provide a solution to this crisis while also addressing the issues of community, security, and isolationist attitude typically apparent. This project will function as a prototype for temporary emergency housing. This temporary housing structure can be broken down into multiple layers of thickness, the thickness of the site, the conical massing, and the wall and facade.

Keeping in mind the state of emergency, a modular system of units was designed that can house four to six people. The beds are built into the thickness of the module, which is then carved into the thickness of the cone. In addition to the modular units, the facade can also be broken down into modules

Formally this structure can be broken down into 4 cones that intersect with each other. This shape informed the placement of the units, community and support spaces, as well as the interior atrium.





8th Ave





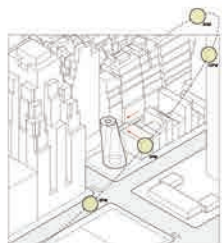
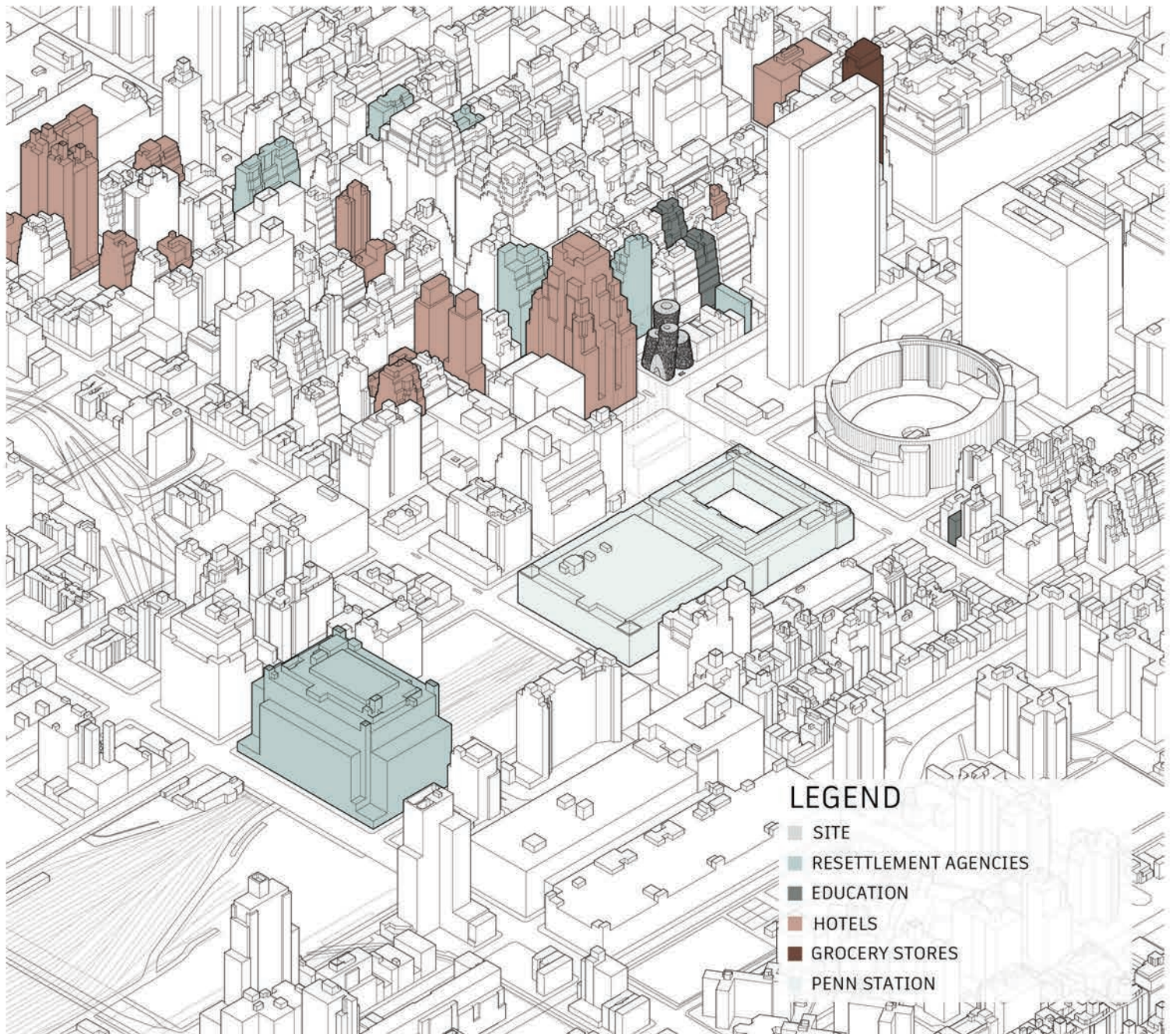
Highest official refugee count entering into New York (2015-2022)  
 Ukraine > 17,000  
 Afghanistan > 2,000  
 Democratic Republic of the Congo > 3,000  
 Syria > 2,000  
 Burma > 2,000

- tent - living quarters
- varying sizes for varying size families
- single persons section
- just arrived temporary section
- food voucher distribution center
- basic supplies and tent distribution center
- sports field/ playground area
- outhouse (restrooms and showers)
- medical center
- hospital
- nurses station
- schools
- cultural center
- small shops
- administrative offices/ buildings
- check-in point
- water tanks
- telephone mast - electricity
- religious buildings
- community space/ pavilions
- security/ fence/ boundary wall

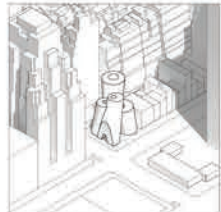




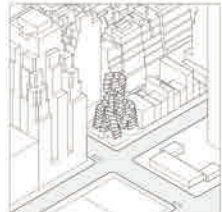
site analysis



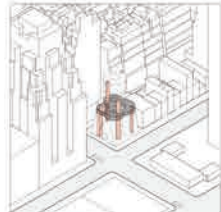
TOWER ORIENTATION  
OPTIMIZATION OF DAYLIGHT



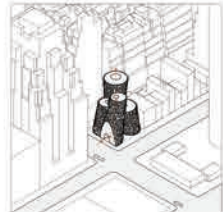
TOWER CONFIGURATION  
INTERSECTION OF COMMUNITIES



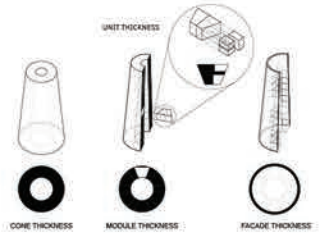
MODULAR UNITS (6 PERSON DWELLING)  
MULTI-LAYERS OF THICKNESS  
EDGES, UNITS, WALLS



CIRCULATION + COMMUNITY GATHERINGS

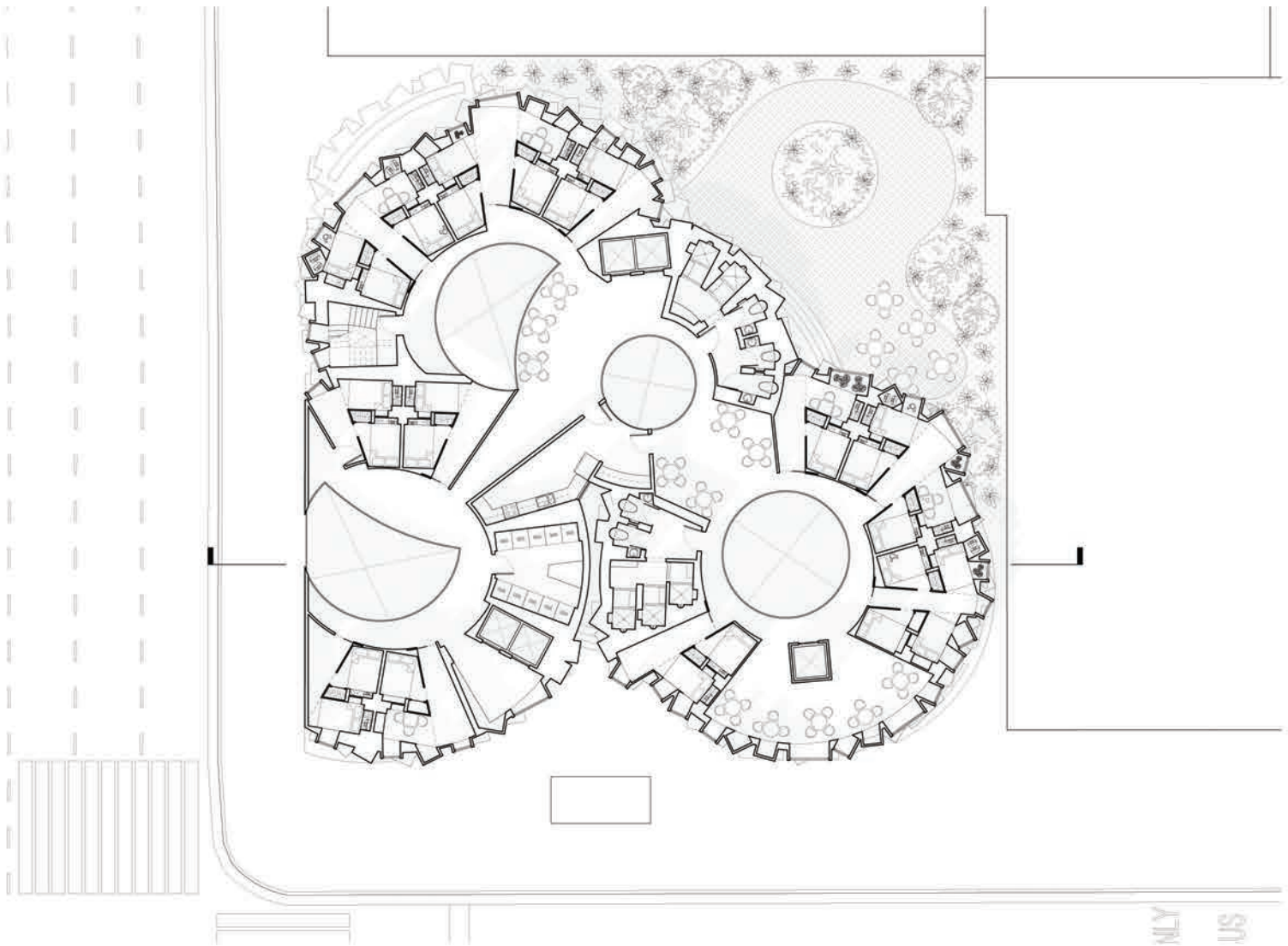


CHIMNEY EFFECT + AIR FLOW + VENTILATION

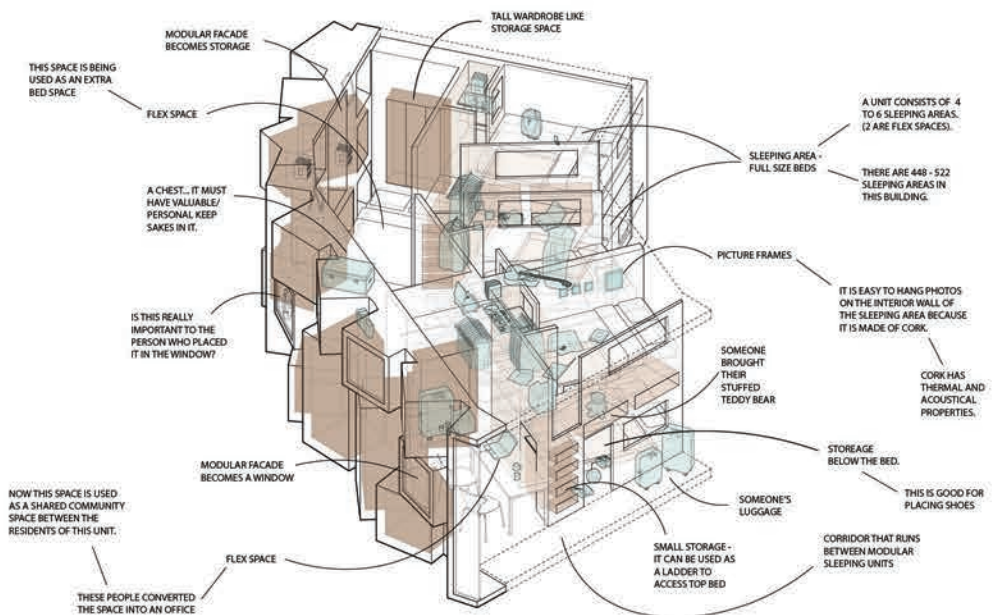




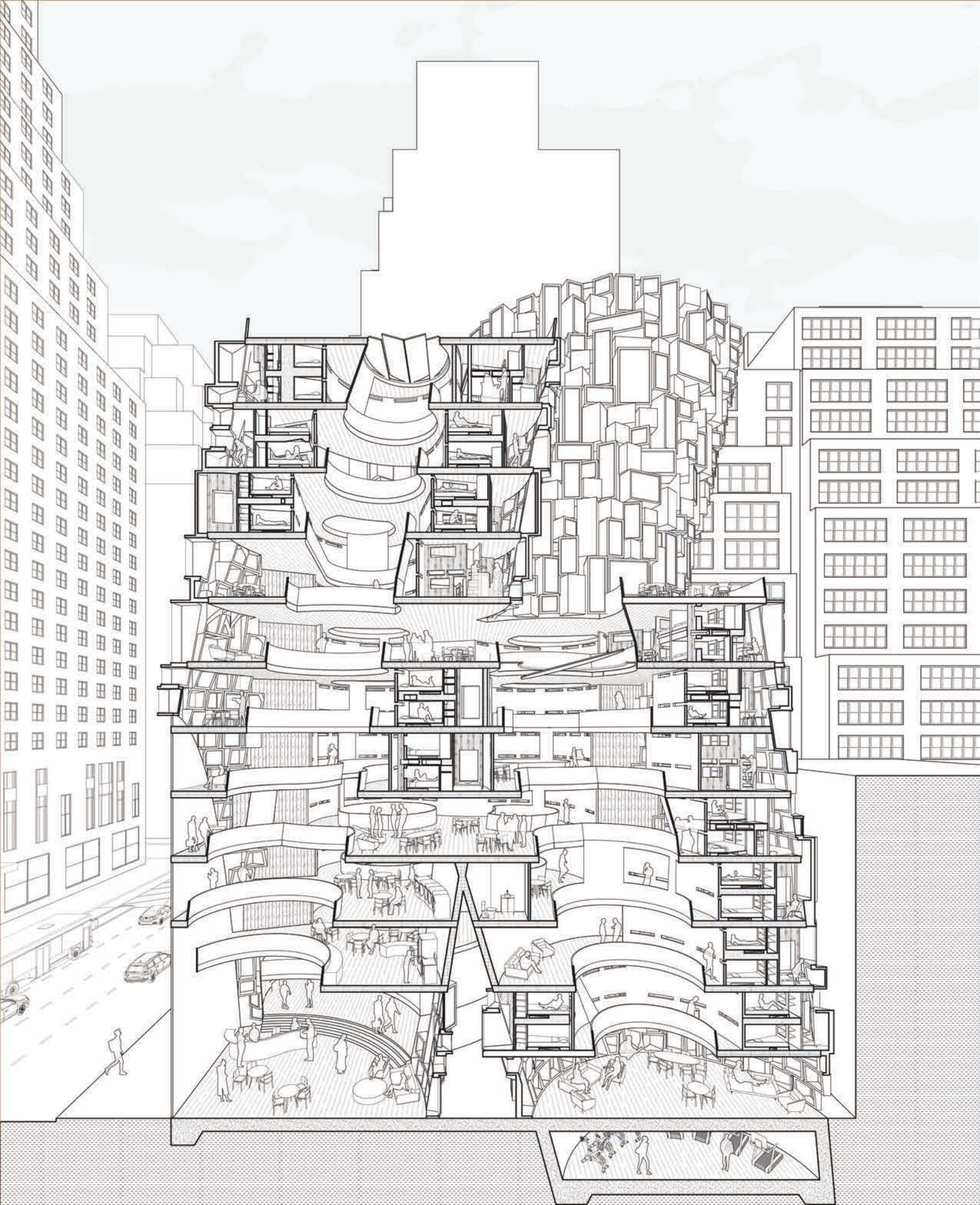
unit plan



unit diagram







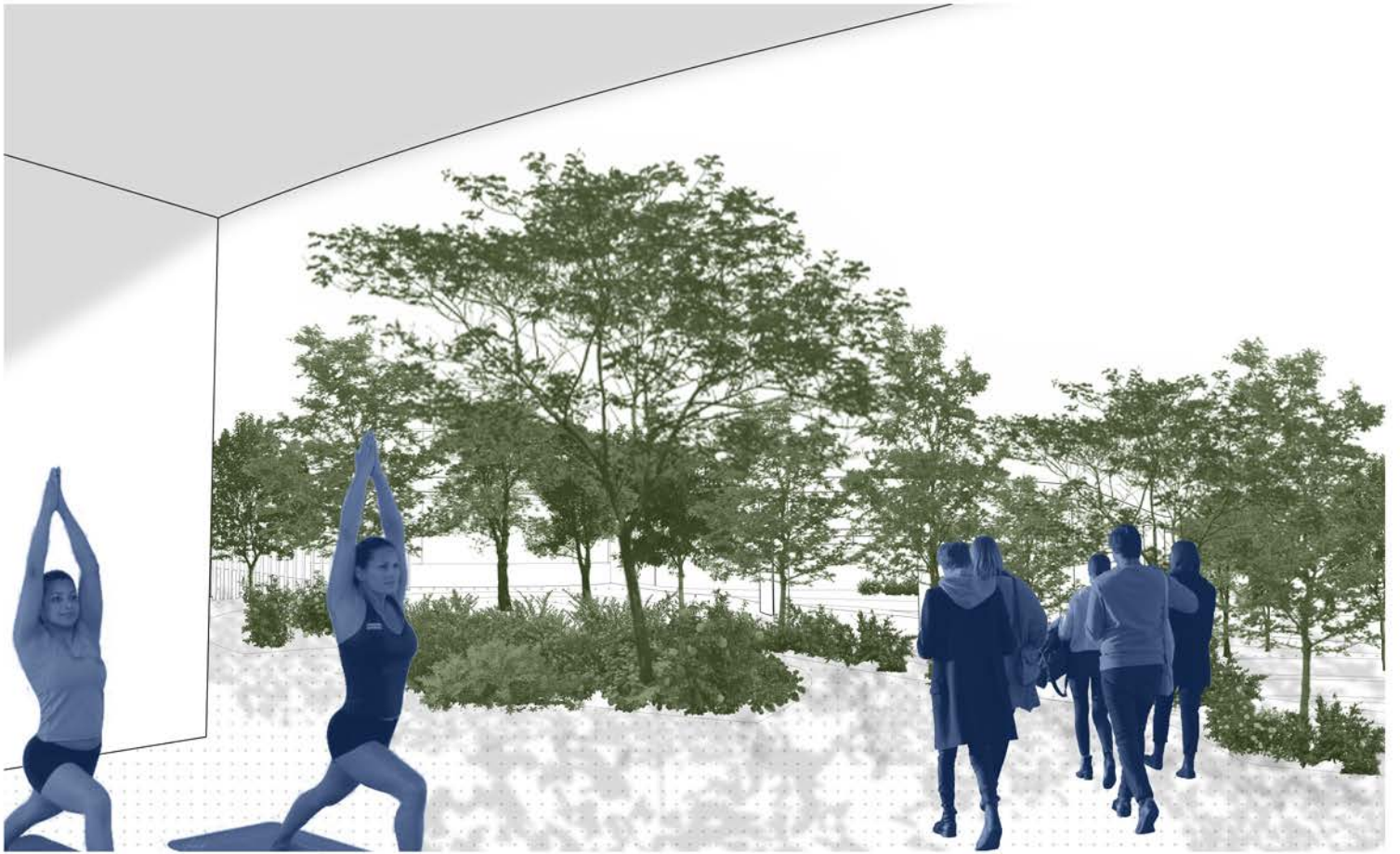
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## healing trail | health center

The Healing Trail seeks to provide a safe, comfortable space where those looking to overcome health challenges can learn and grow as a community. Poughkeepsie, a town that has a lot of gang and addiction related activity, lacks the permanent space and programs necessary for addressing these topics. With a focus on the 12 Steps Program for recovering addicts, this health center will incorporate healing through a peer-to-peer support and learning system, challenging the current health care model.

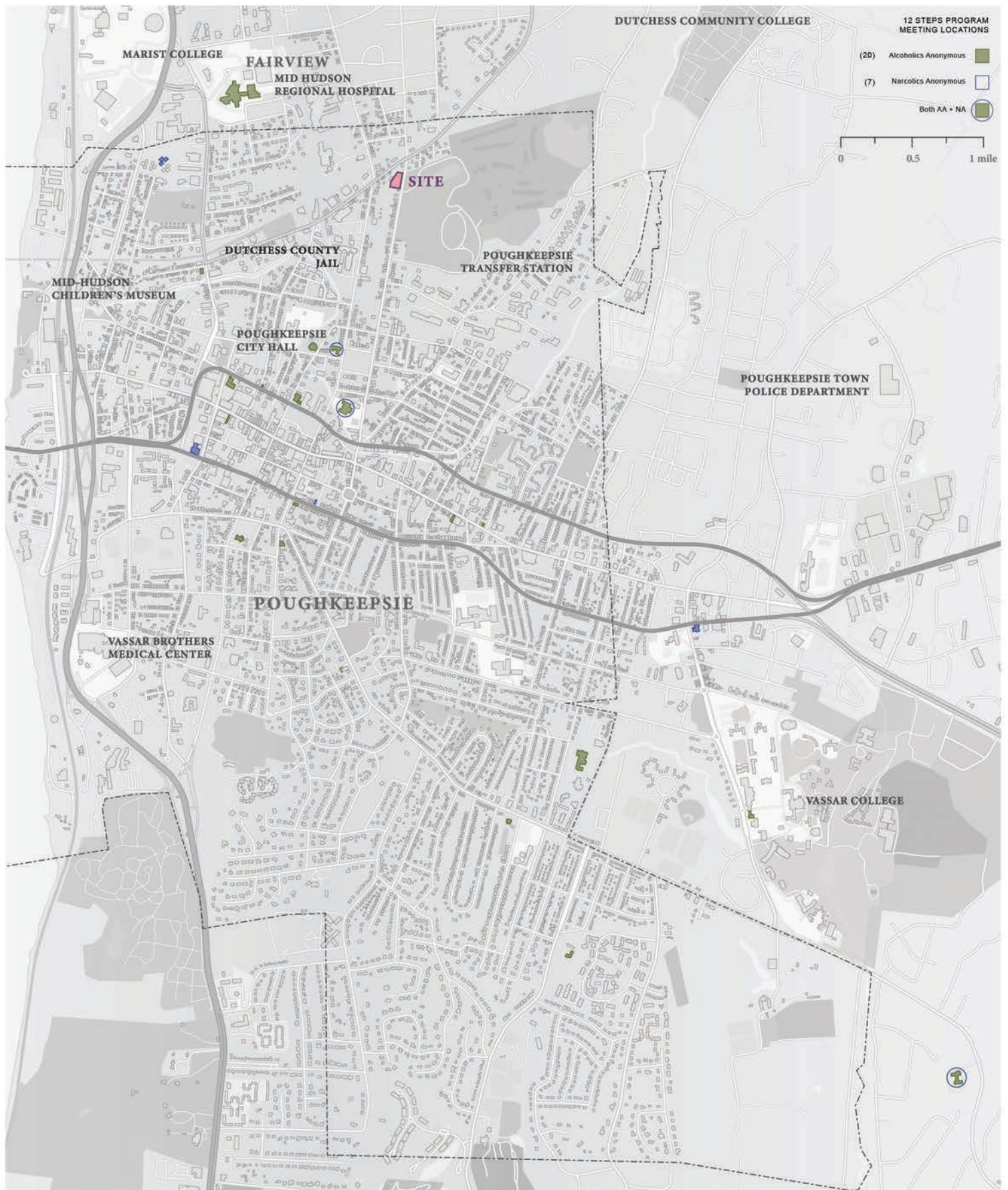
Architecturally, the building seeks to use the healing properties of nature through the use of interior gardens that also function as light wells bringing natural lighting into the interior. Formally, the building slopes with the topography, blending with the natural landscape. The roof of the building functions as a roof garden and pathway that connect the existing and heavily used Dutchess Rail Trail to the new Meditation Labyrinth and Ancestral Garden Celebrating the African Spirit is planning to create, drawing the community to this space.







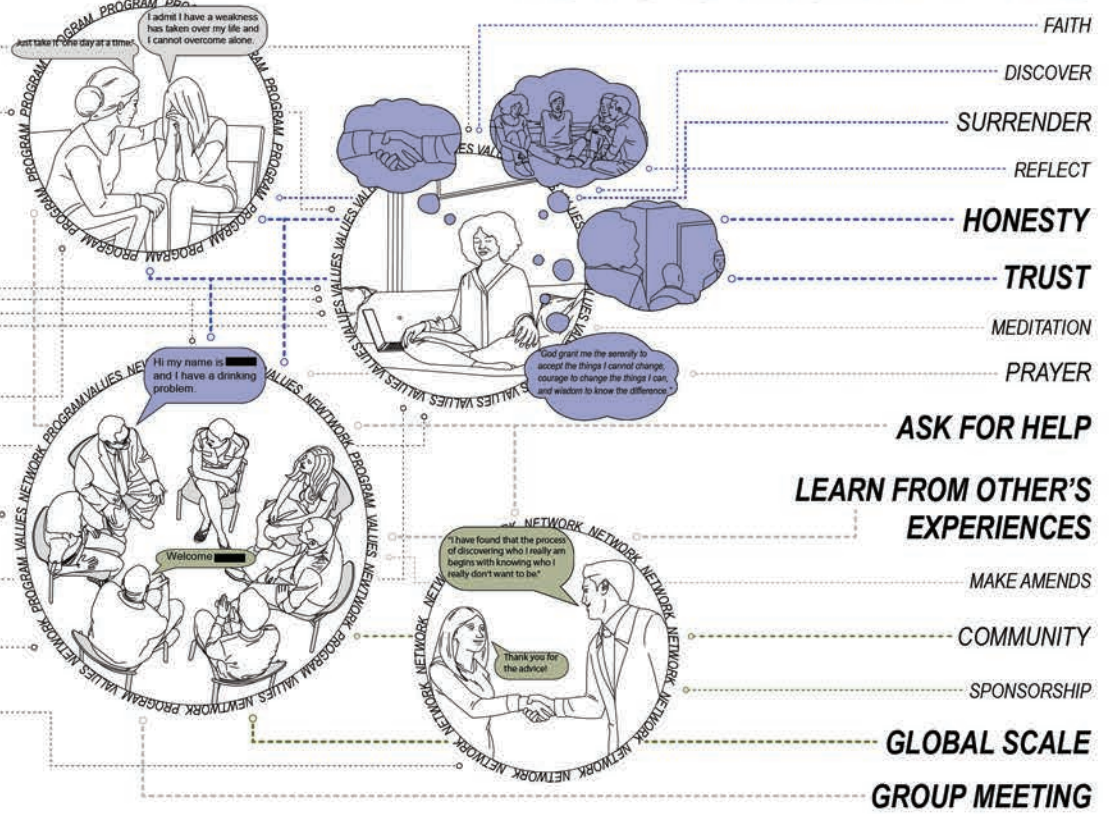
existing meeting locations



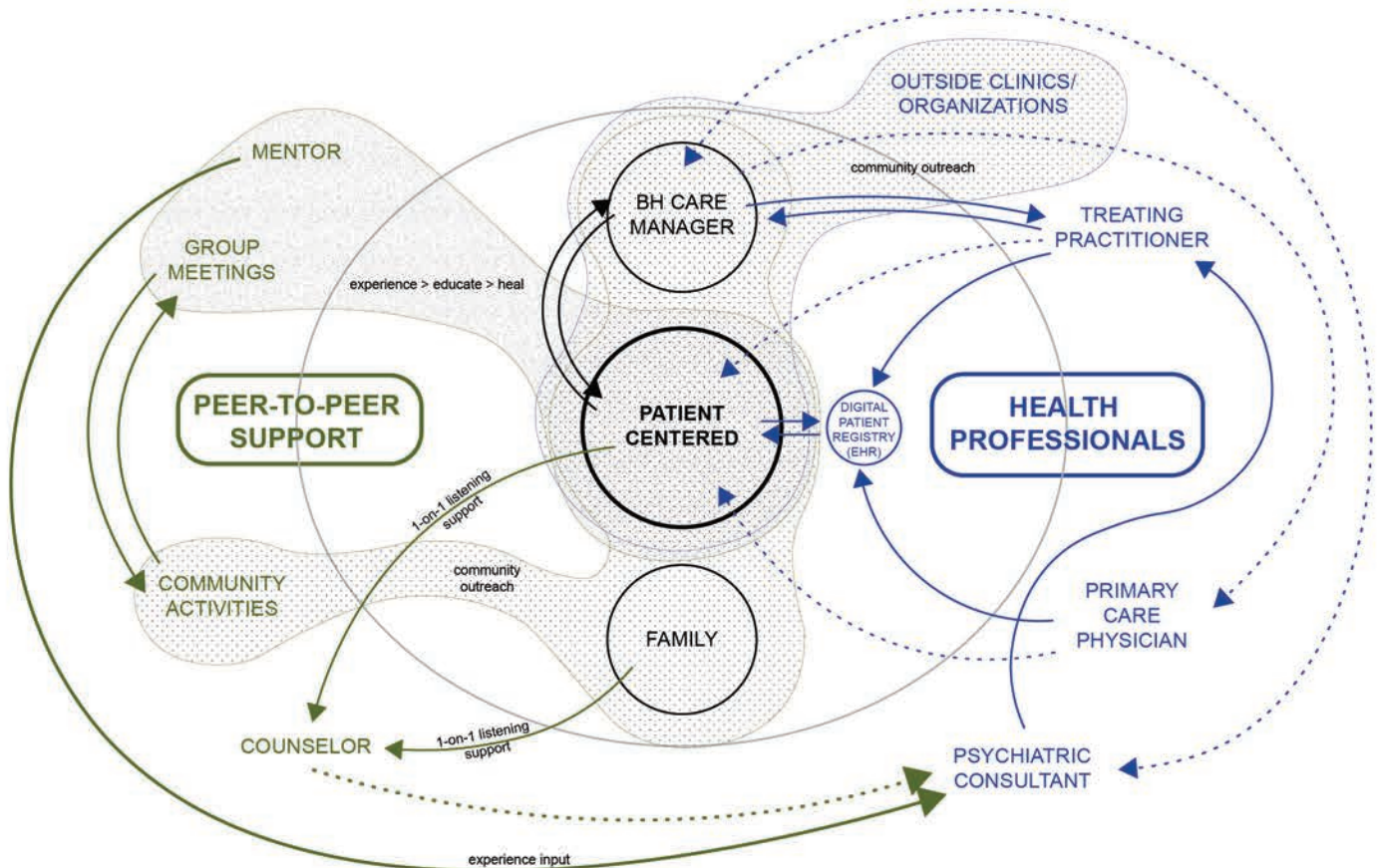


1. Admit we are powerless over our weakness
2. Believe in a Higher Power
3. Be willing to surrender yourself into the hand of the Higher Power
4. Discover the what, when, where, and how this weakness has affected us
5. Reflect, admit, and confide our defects to others
6. Be completely ready to have God remove all these defects
7. Humbly ask Him to remove our shortcomings
8. Make a list of all the people we have harmed
9. Make amends, where possible, with the people we have harmed
10. Continue to take personal inventory
11. Remember to keep asking for help
12. Carry the 12 Steps message to others

## A SET OF SPIRITUAL PRINCIPLES



## 12 STEPS





site plan

DUTCHESS RAIL TRAIL

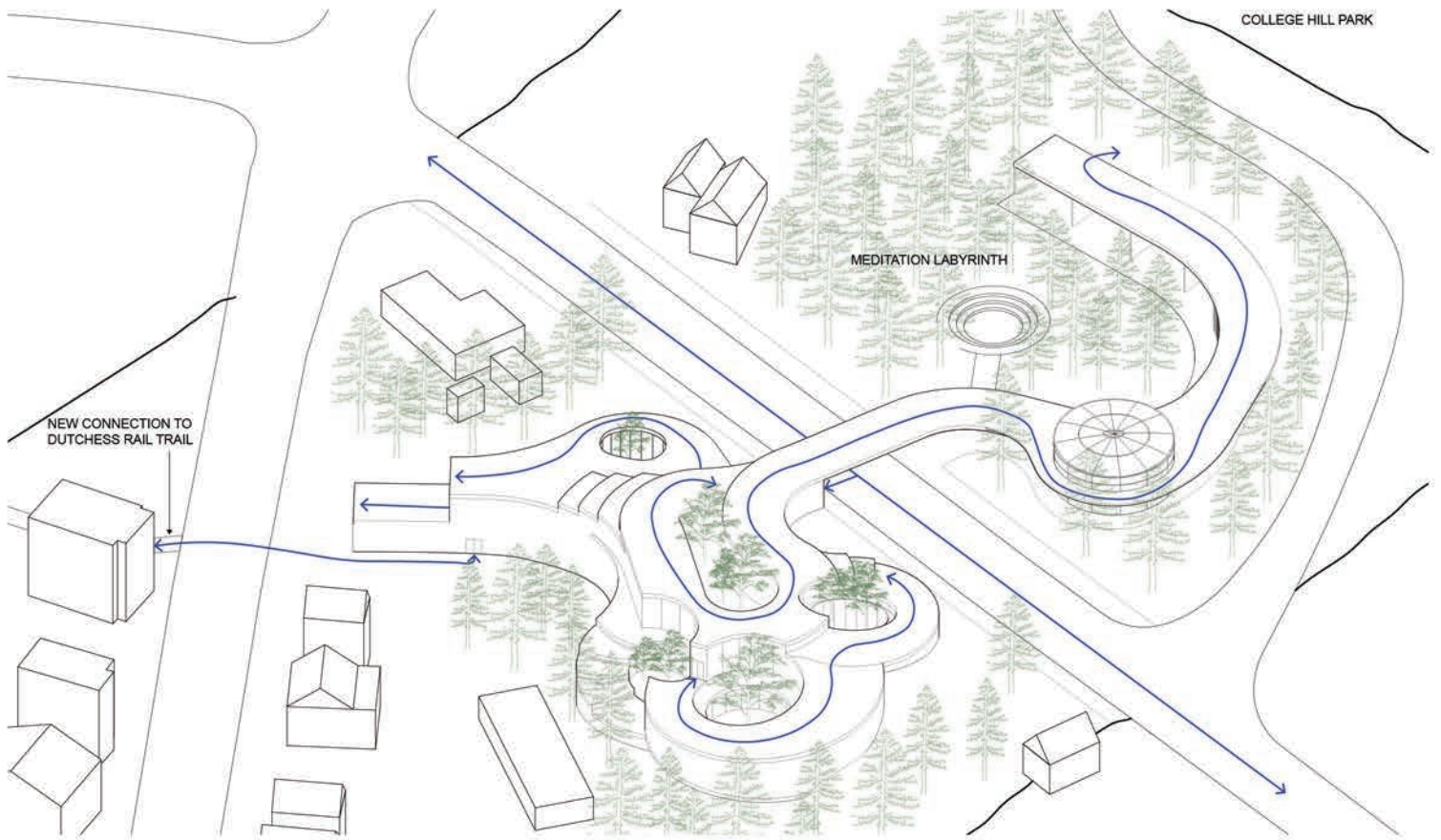
DUTCHESS RAIL TRAIL EXTENSION

COLLEGE HILL PARK



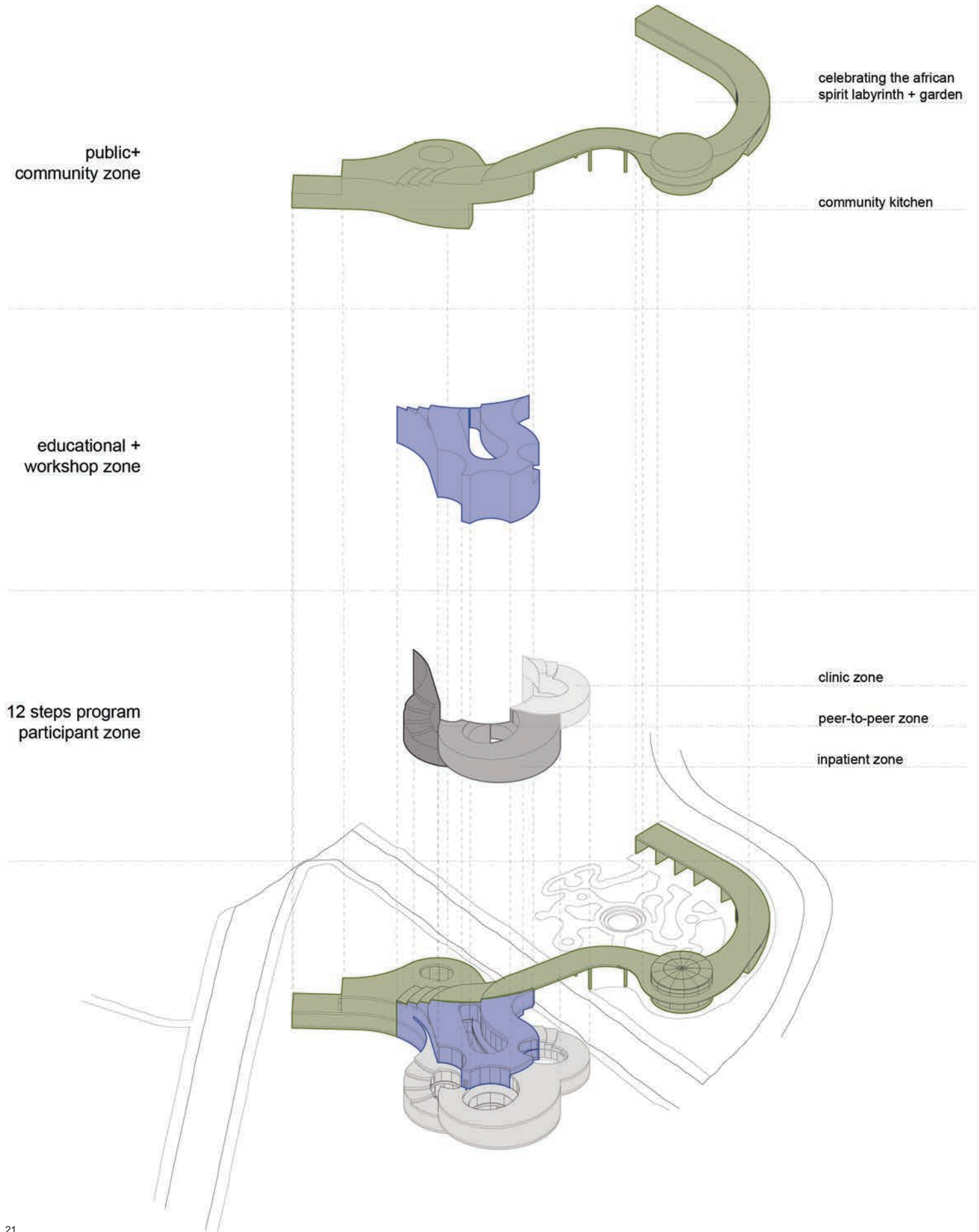


axonometric view



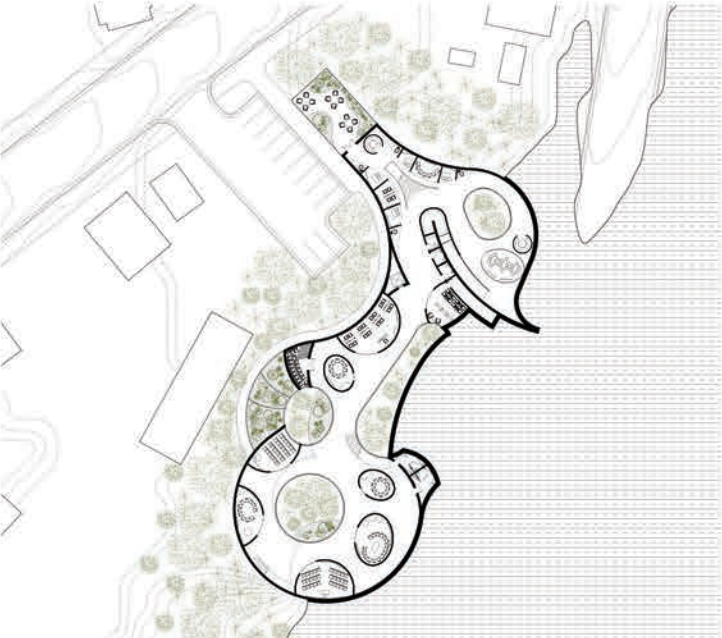
meditation labyrinth entrance view

program zoning

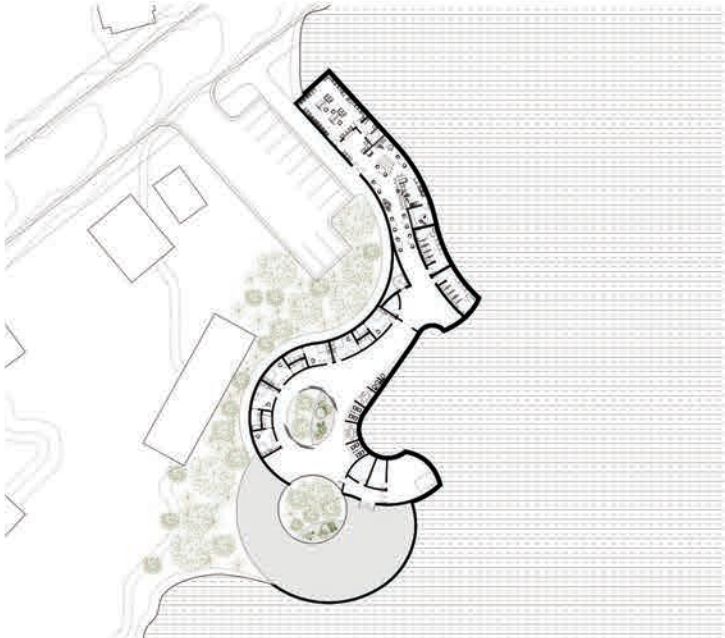




ground plan



floor plan - b2



floor plan - b3

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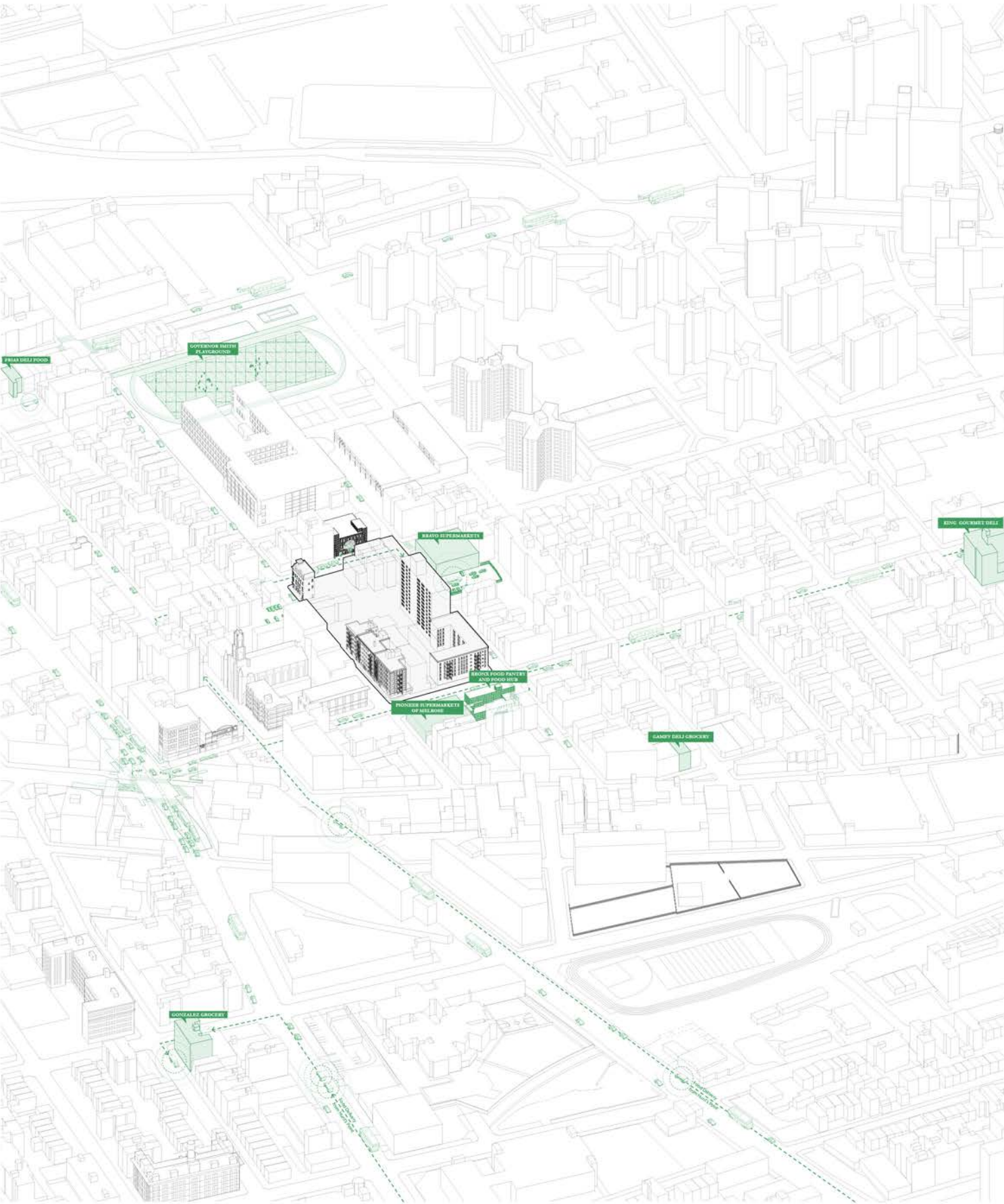
## bloom | residential apartments

With Bloom, we are challenging the standards of living in New York. We redefine these standards to emphasize the need to be able to commune with nature, have ownership, and appreciate community. This project aims to nourish the community with nature, food, community relationships and autonomy of space. We push on the idea of boundaries to create a flexible and adaptable space that promotes the versatility of way of living. Through a system of terraces we create an artificial landscape that connects the site as a whole, the individual to the community, and the inside to outside, and encourages healthful living through interactions and relationships with nature, food, the community, and one's self.



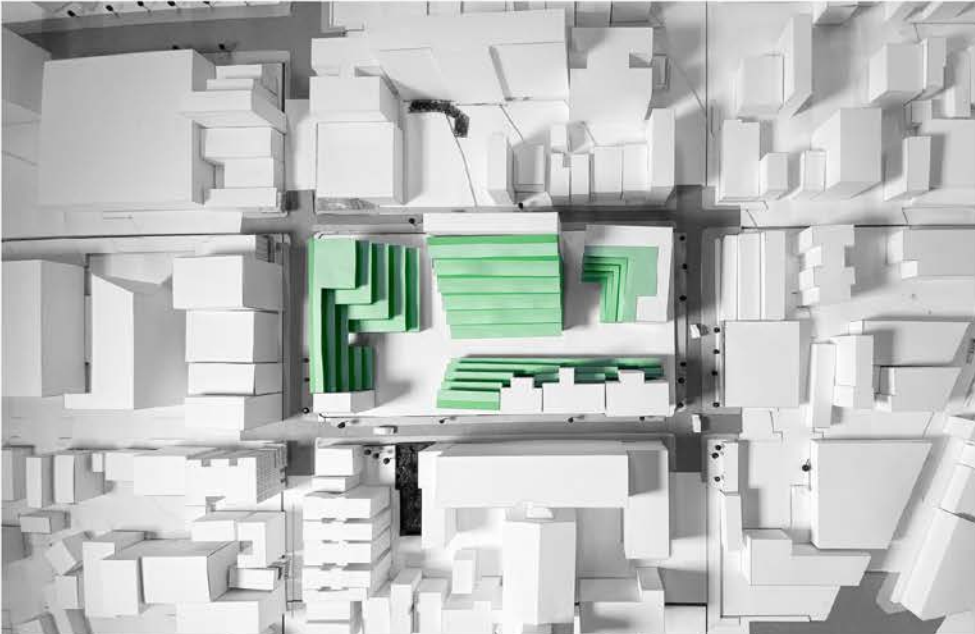
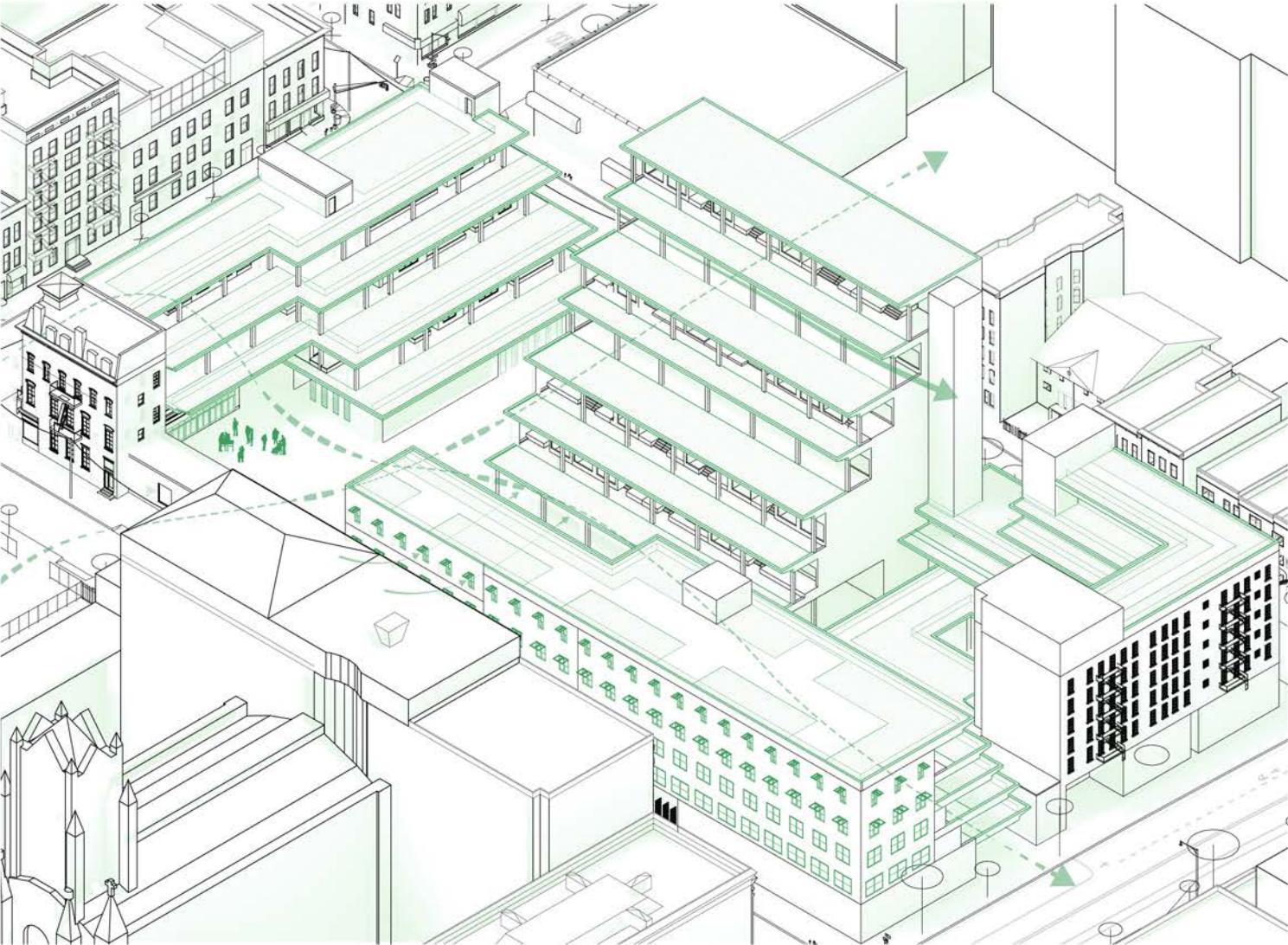


the bronx - food and transportation



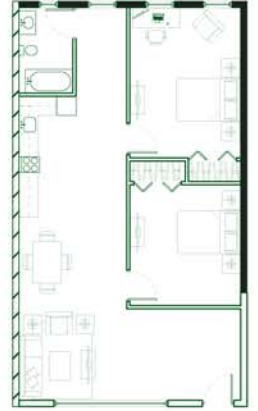
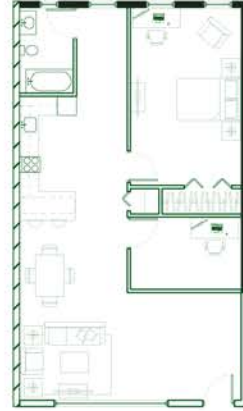
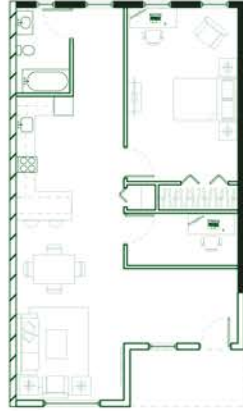
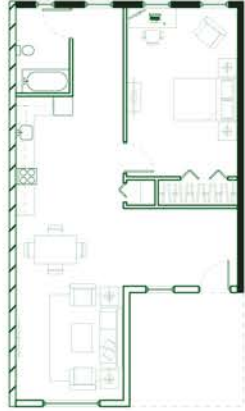
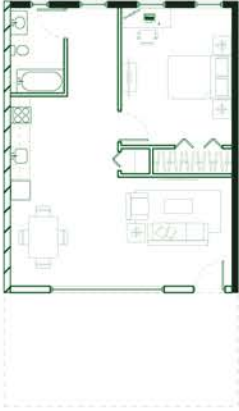


artificial landscape



new addition

flexible + adaptable boundary



surface areas

starting 1 br  
720 sq ft

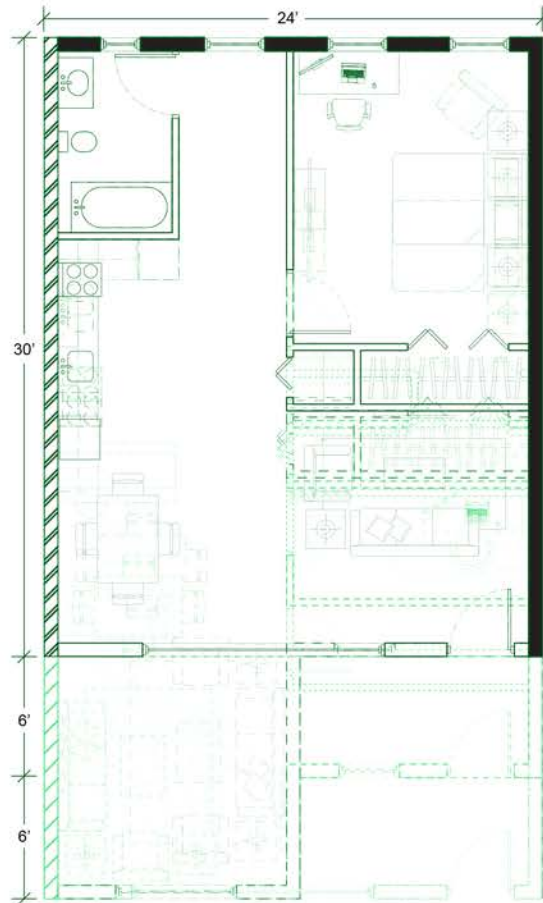
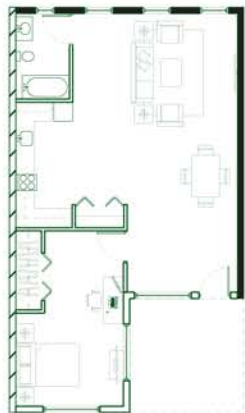
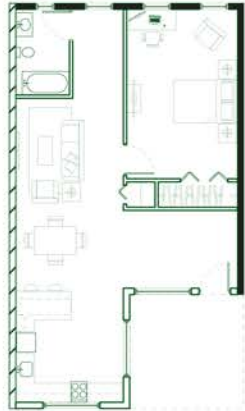
864 sq ft

900 sq ft

936 sq ft

starting 2 br

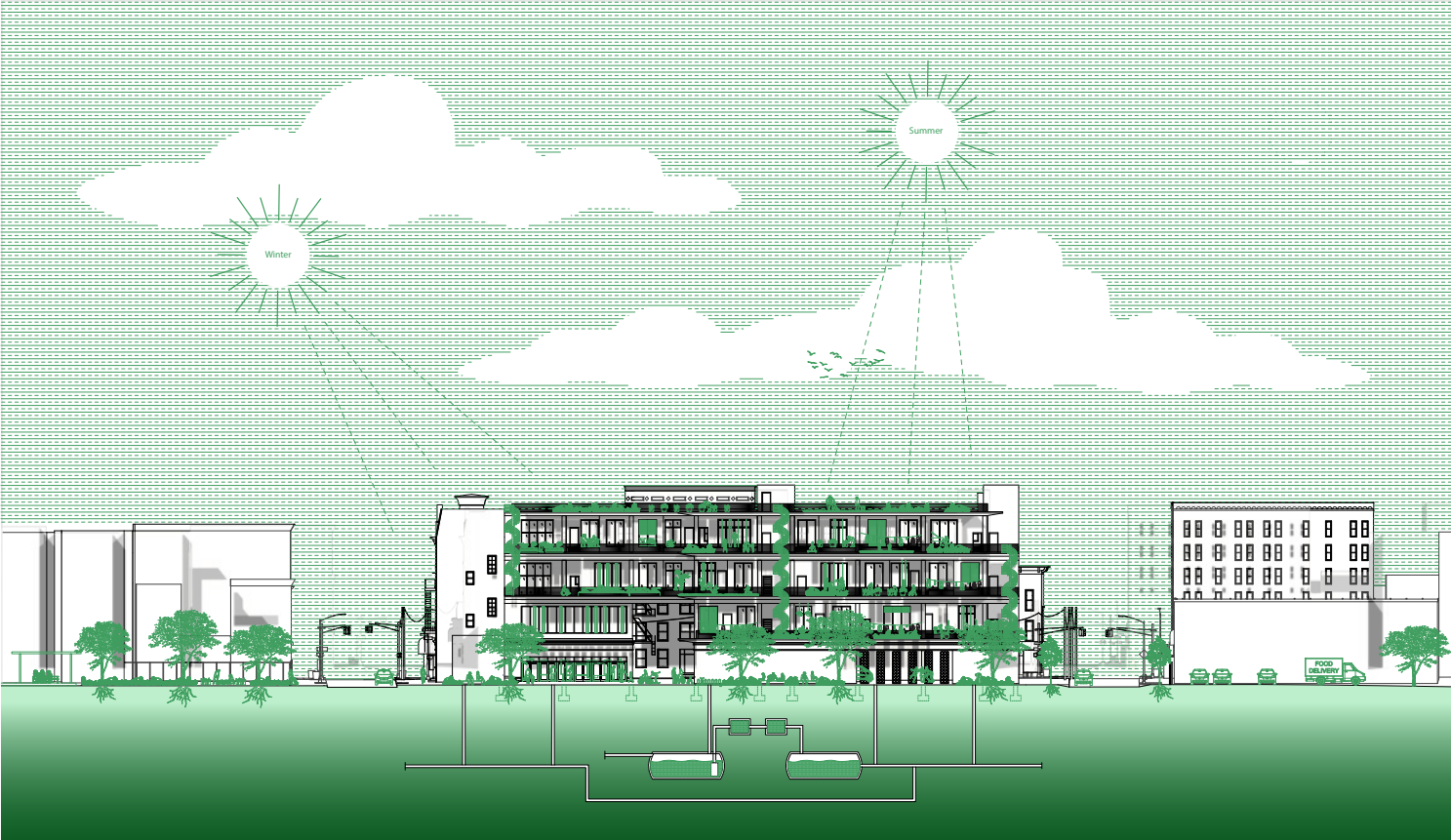
936 sq ft







groud floor



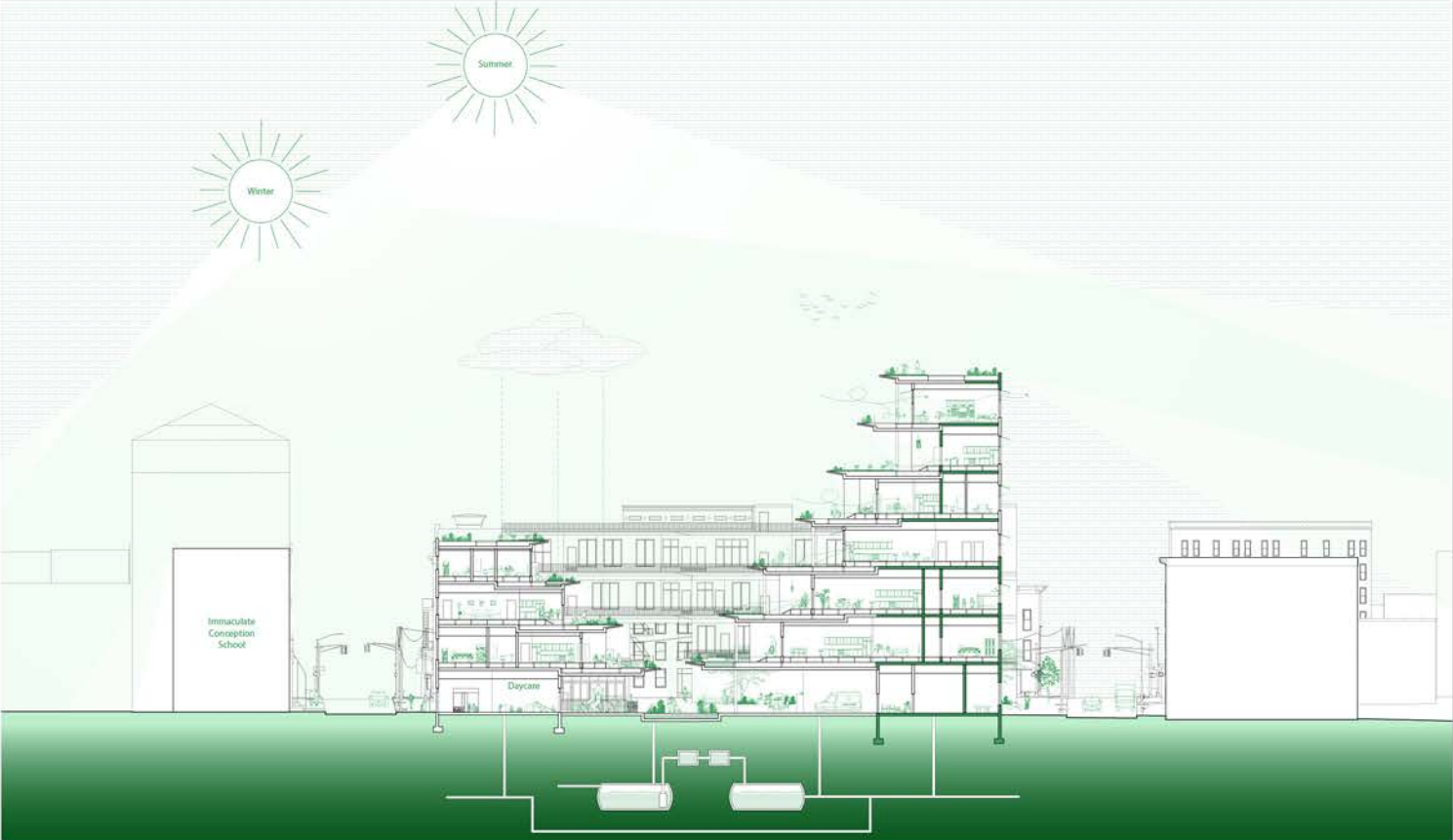
elevation







residential level



section



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## learning field | k - 8th grade school

The Learning Field seeks to create a fluidity between the different learning spaces to allow for a passing back and forth of knowledge between the different classes. The analysis of the impact point of a soccer ball and the effect it has on the arc of the ball's path informed the carving of the arched and lofted learning spaces. These spaces are visually connected horizontally across the two end bars of the building, and onto the central, multifunctional soccer field, and vertically within the end bars, to allow for students to be inspired to learn and experiment through observing the movements and actions occurring around them.





AVENUE B

EAST

EAST 9TH ST

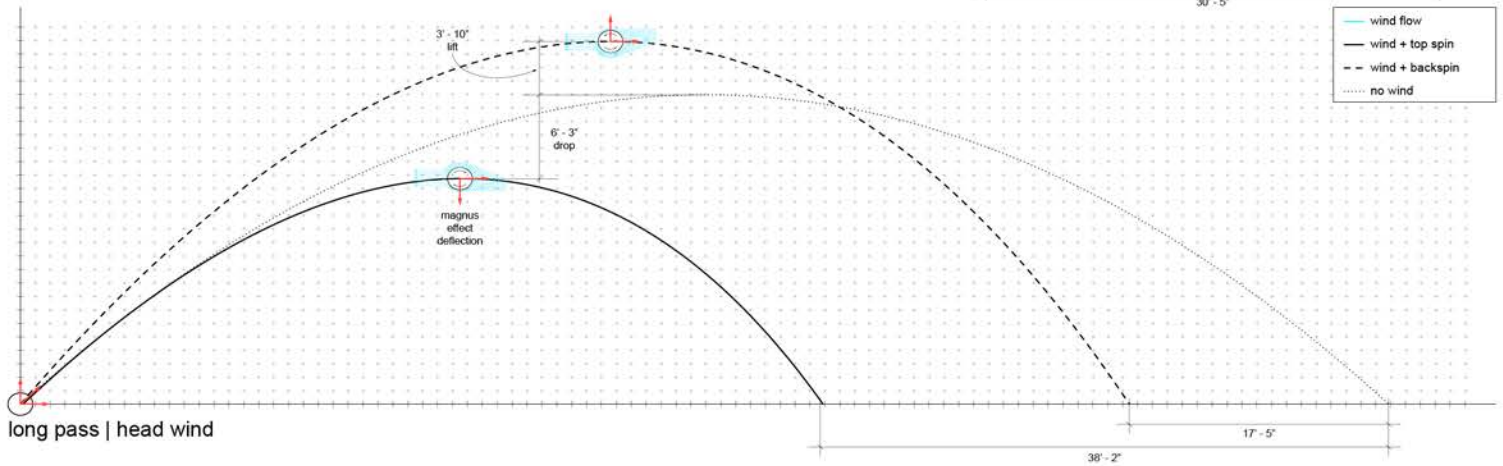
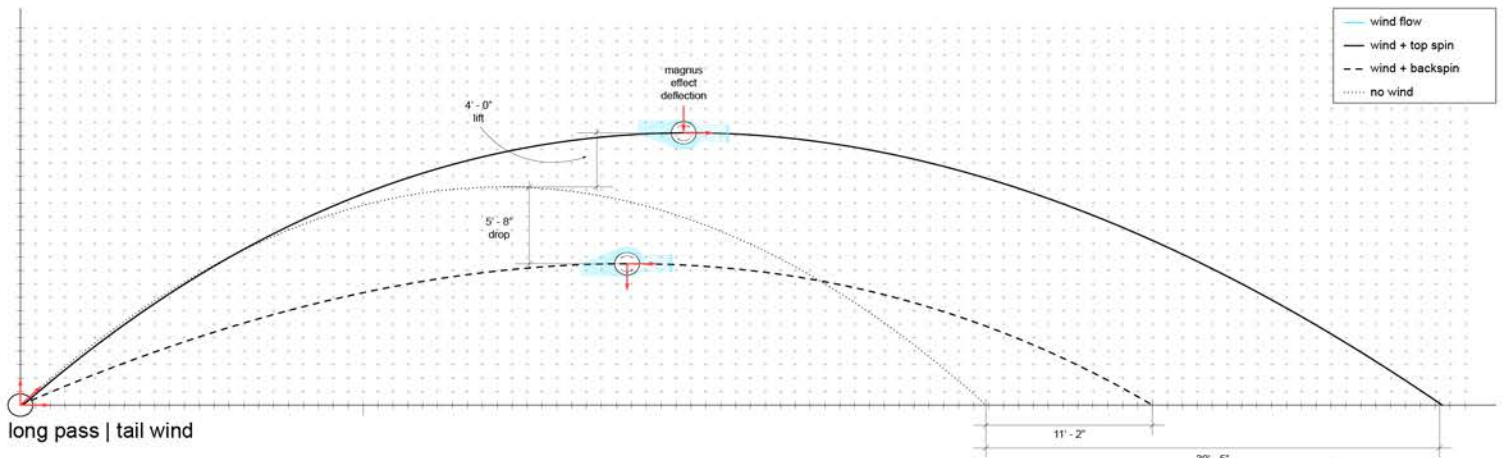
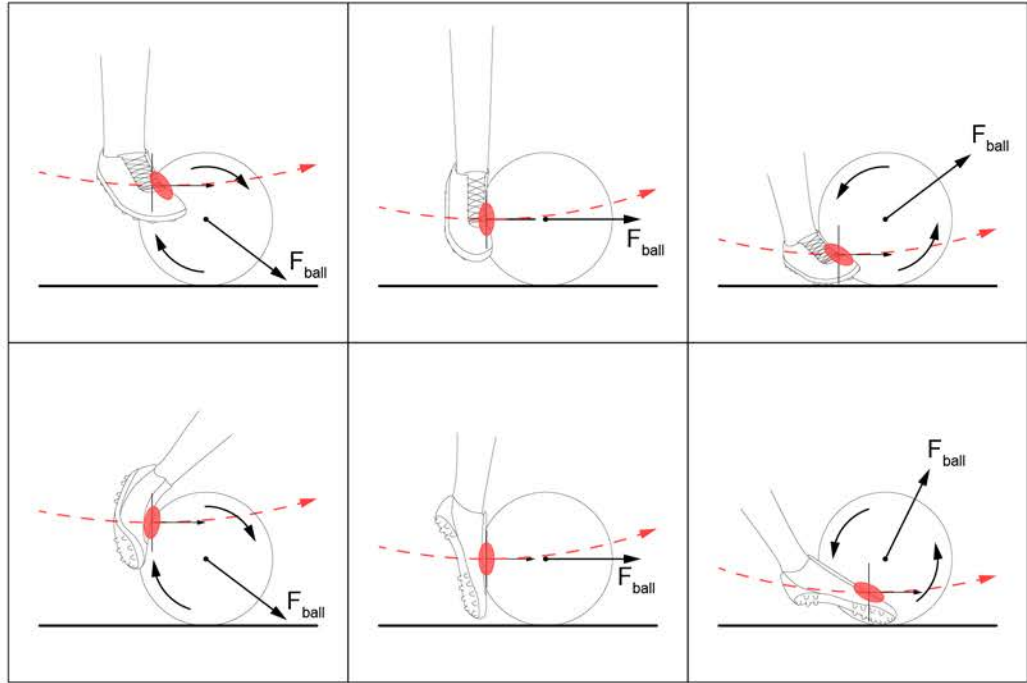


site analysis

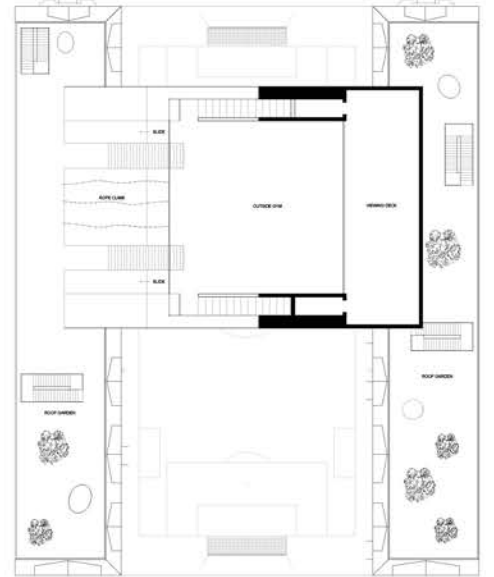
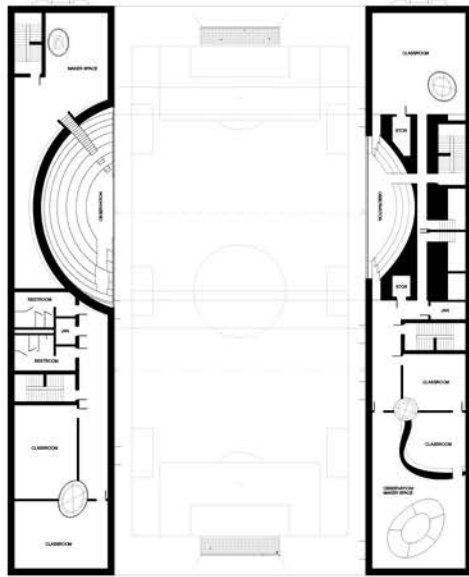
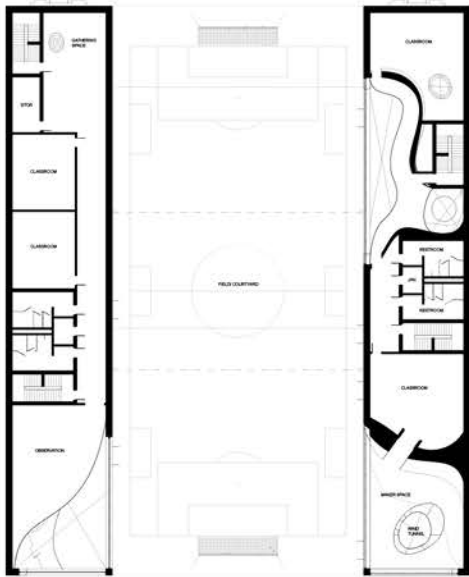




kinetic analysis



site plan



plan - level 3

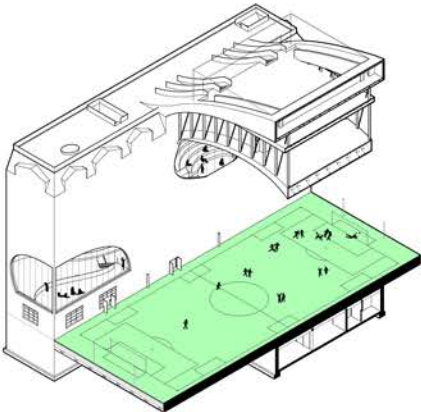
plan - level 5

plan - roof

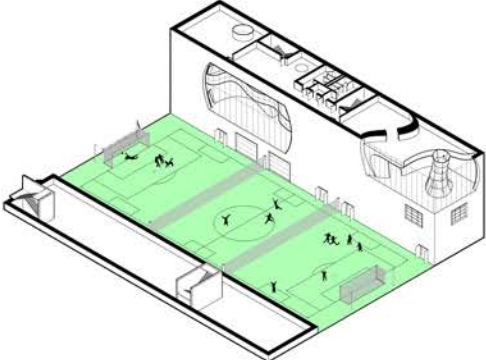


programm diagram

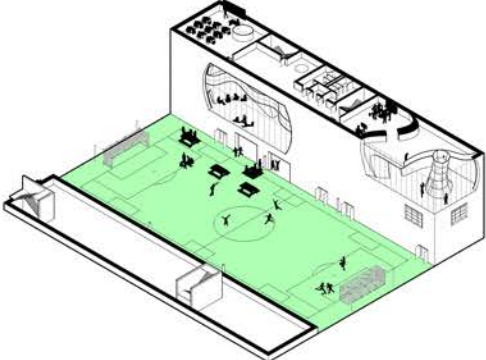
observation + soccer field



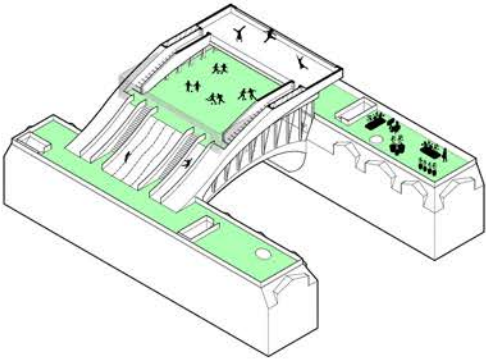
3 small fields

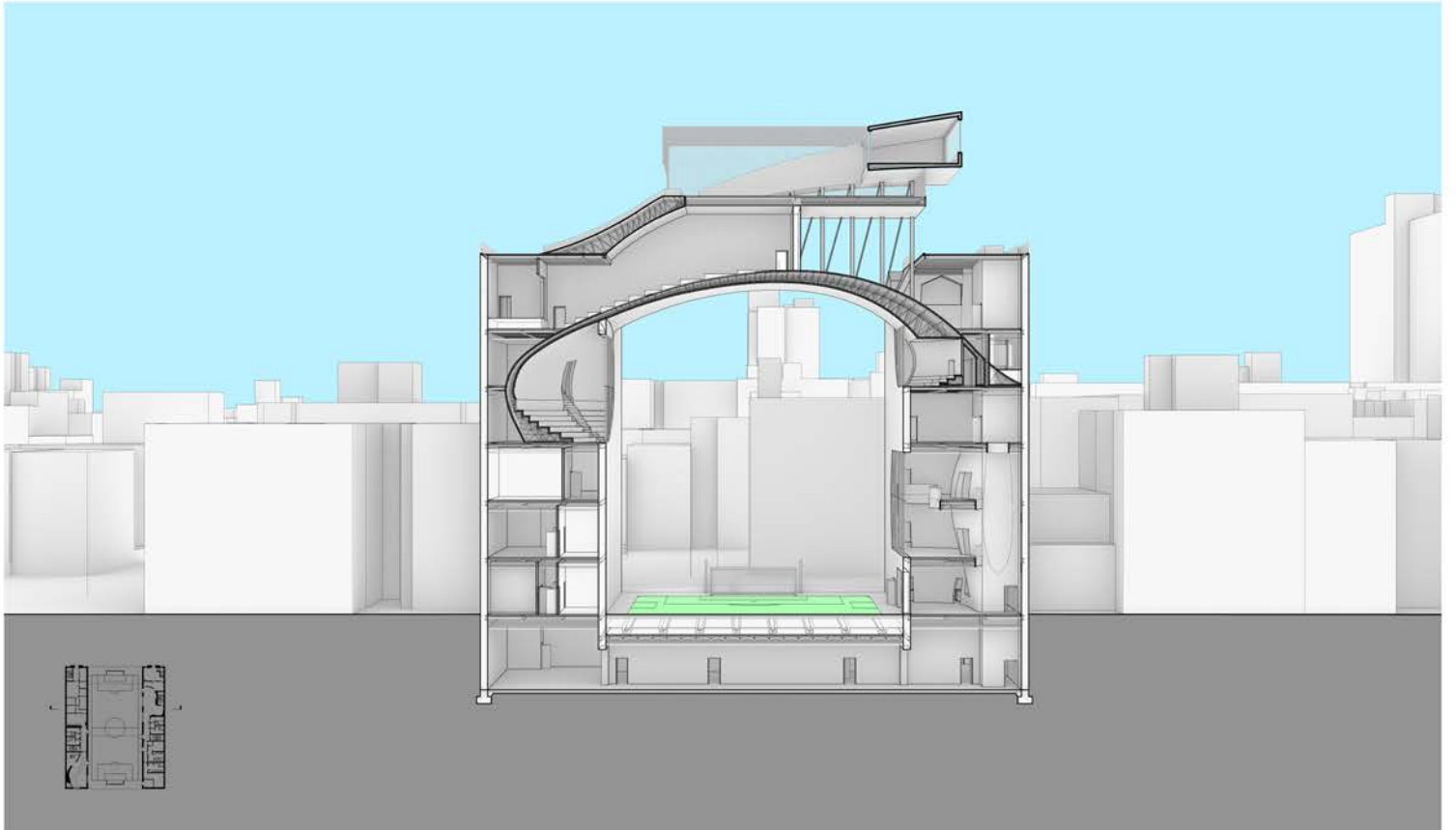
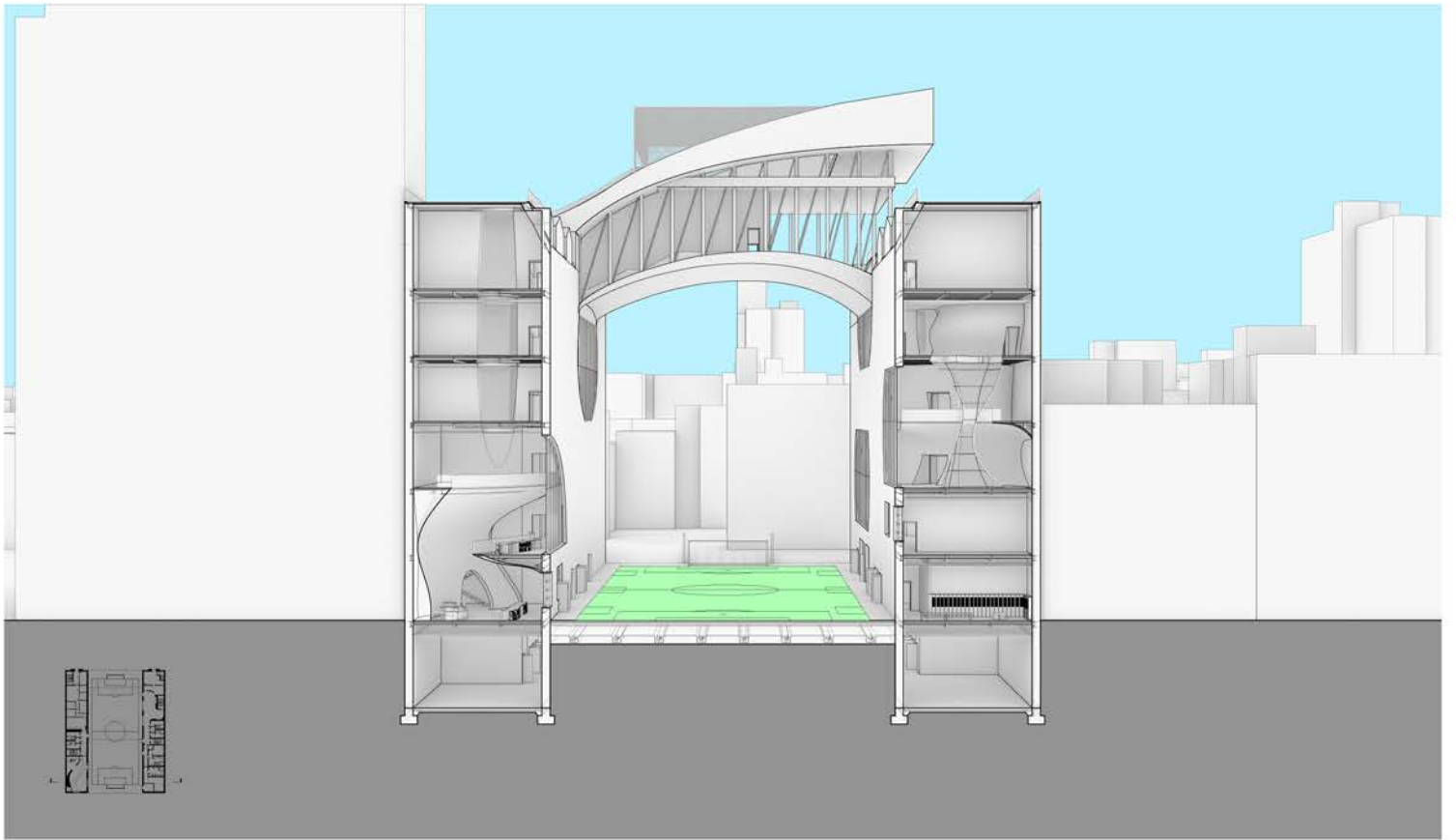


classroom + maker spaces

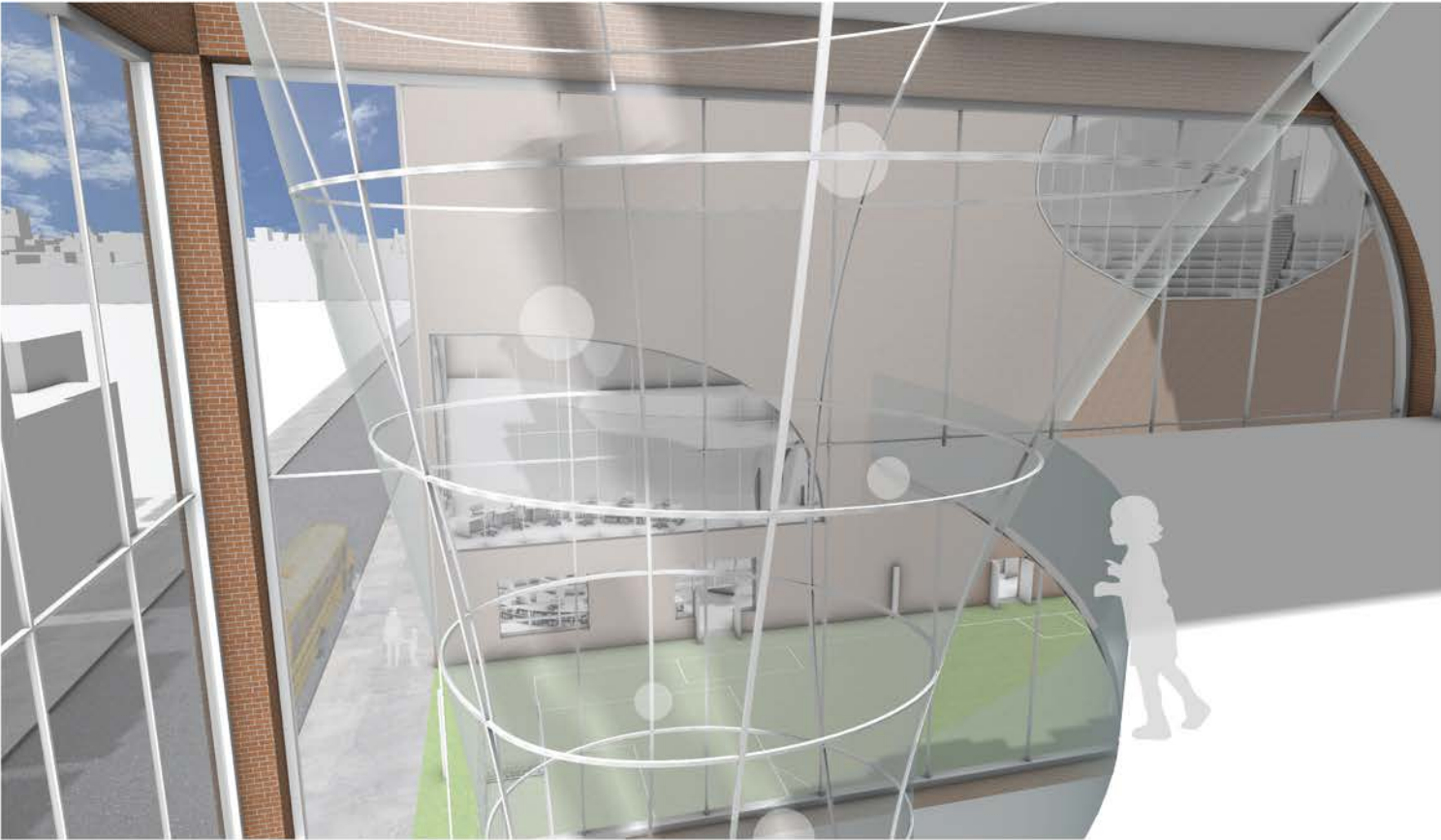


roof + cantilever







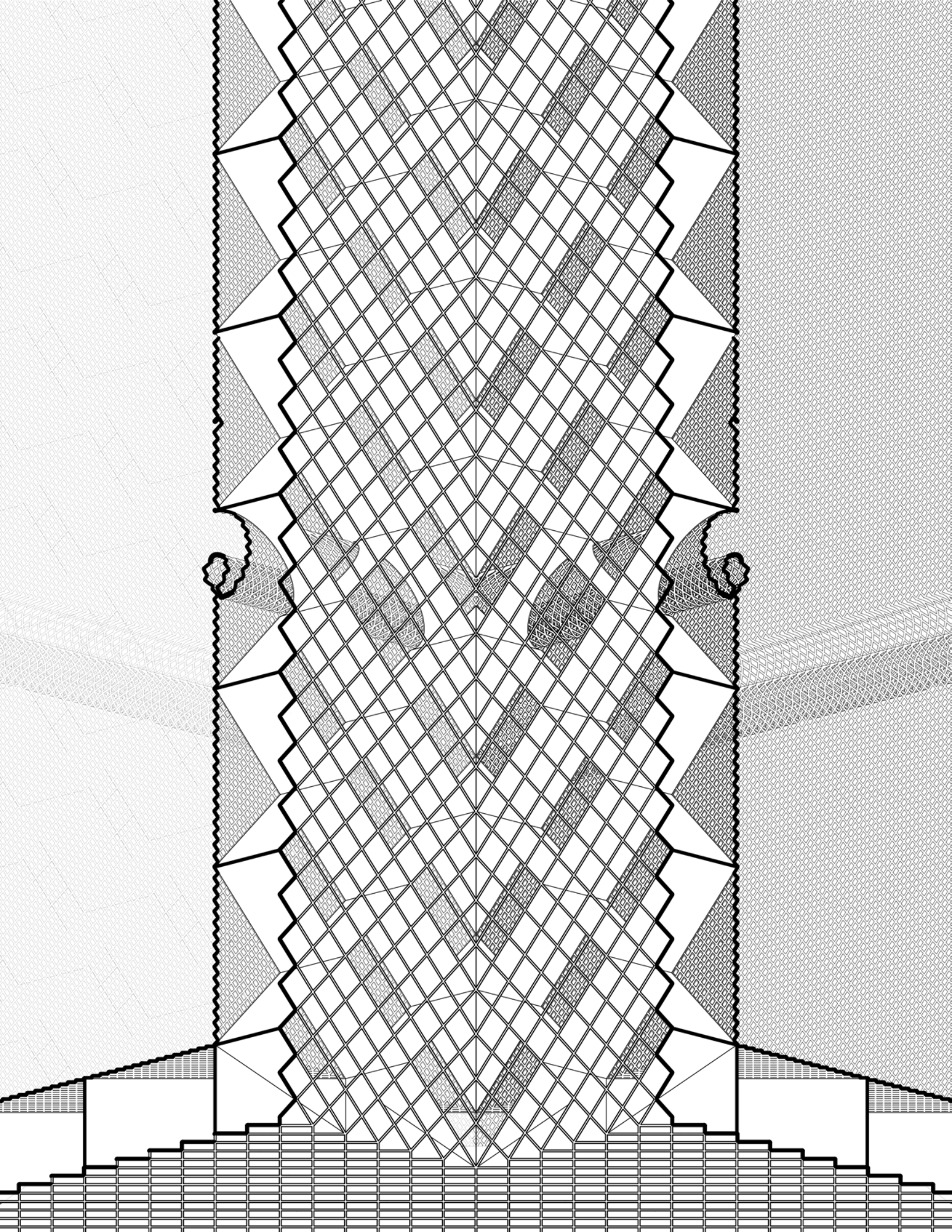


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## circulation for public transit space

Through surveying the NYC Port Authority Bus Terminal, this project seeks to address the poor circulation, programming, and dark ambiance of public transit spaces. A new circulation system is proposed that defines void and programming spaces to create a relaxing, brightened, and less stressful experience through the terminal.



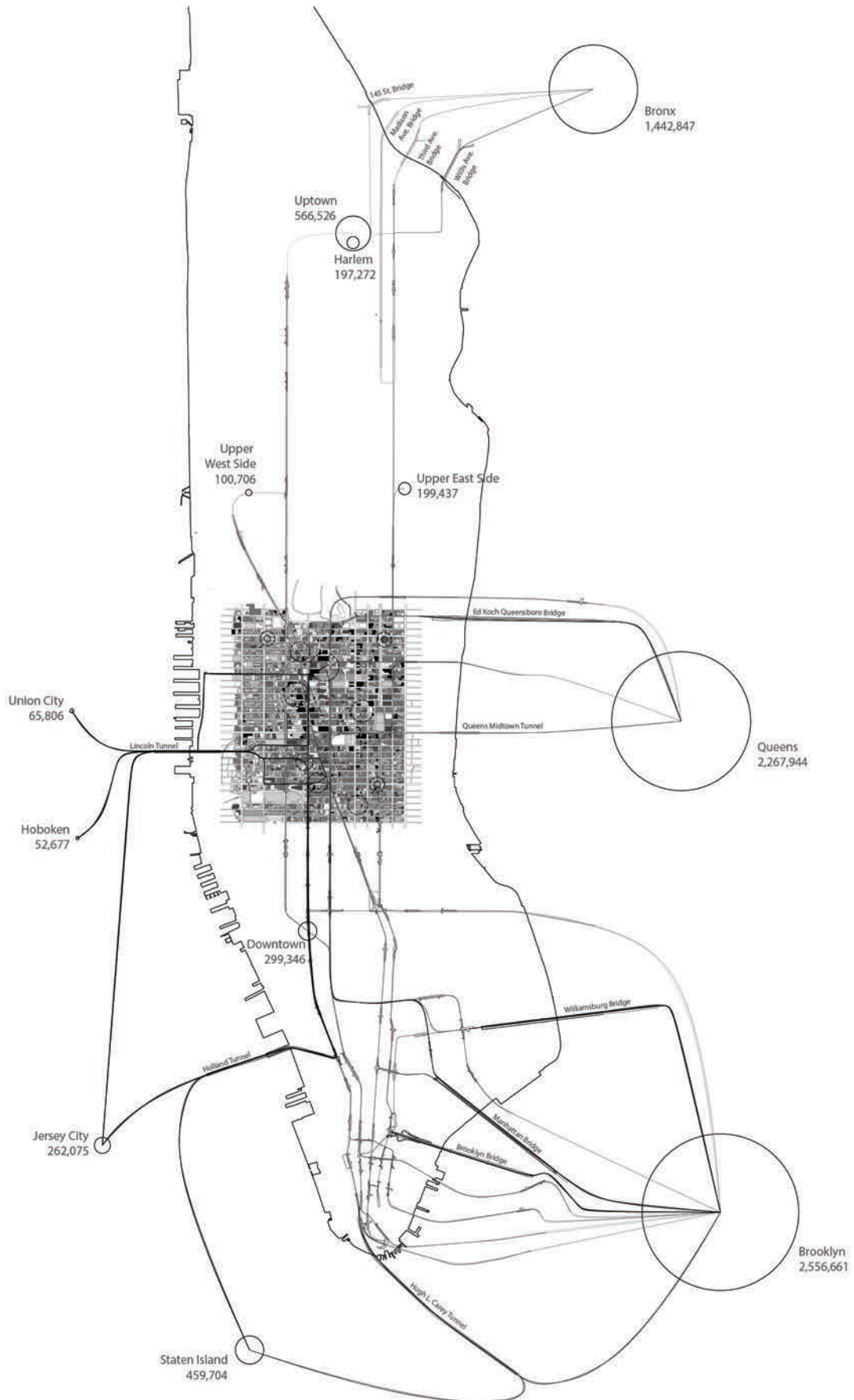


# transportation + energy consumption

## ENERGY USAGE

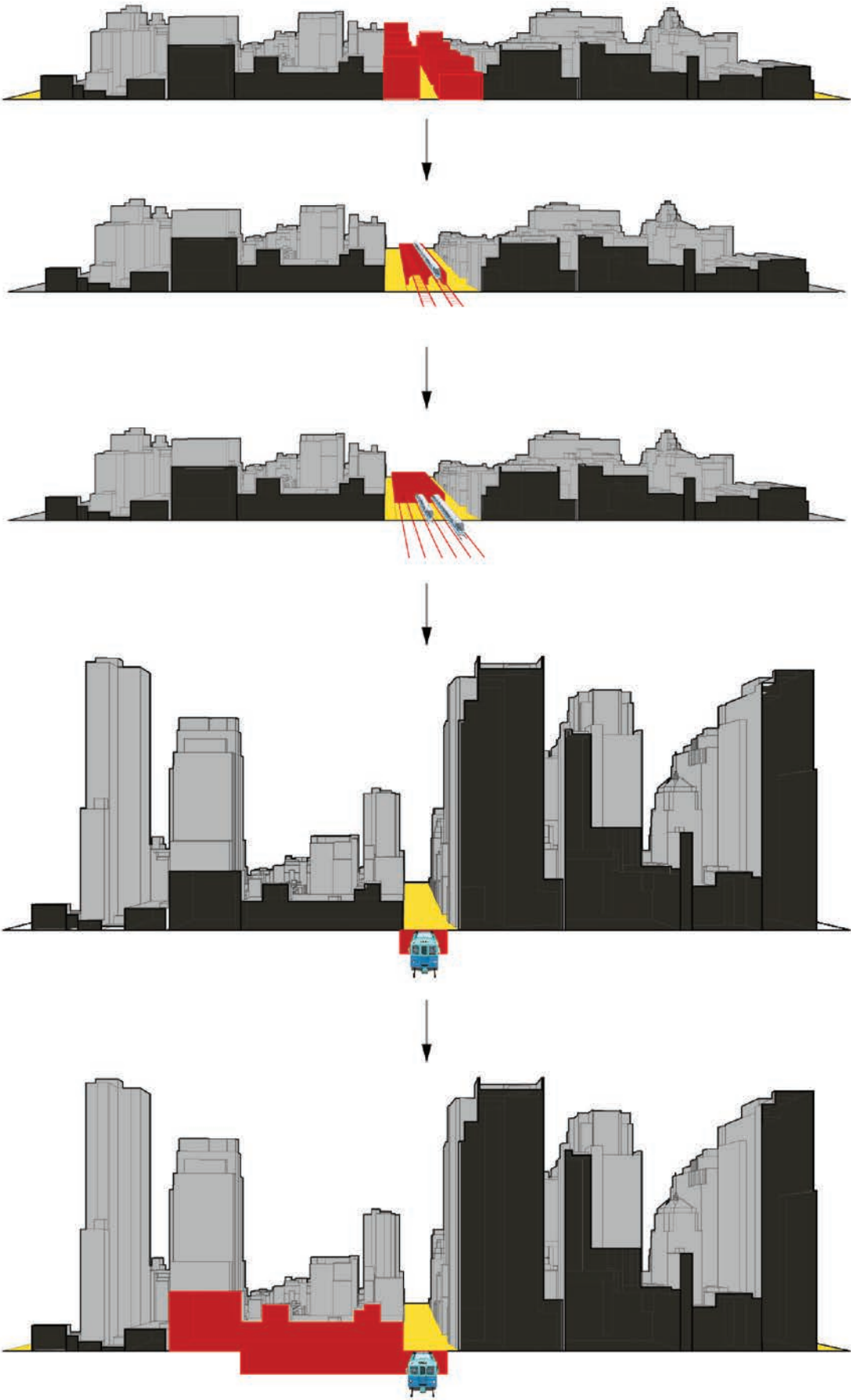


\* DATA ONLY FOR BUILDING WITH > 10,000 SQ FT

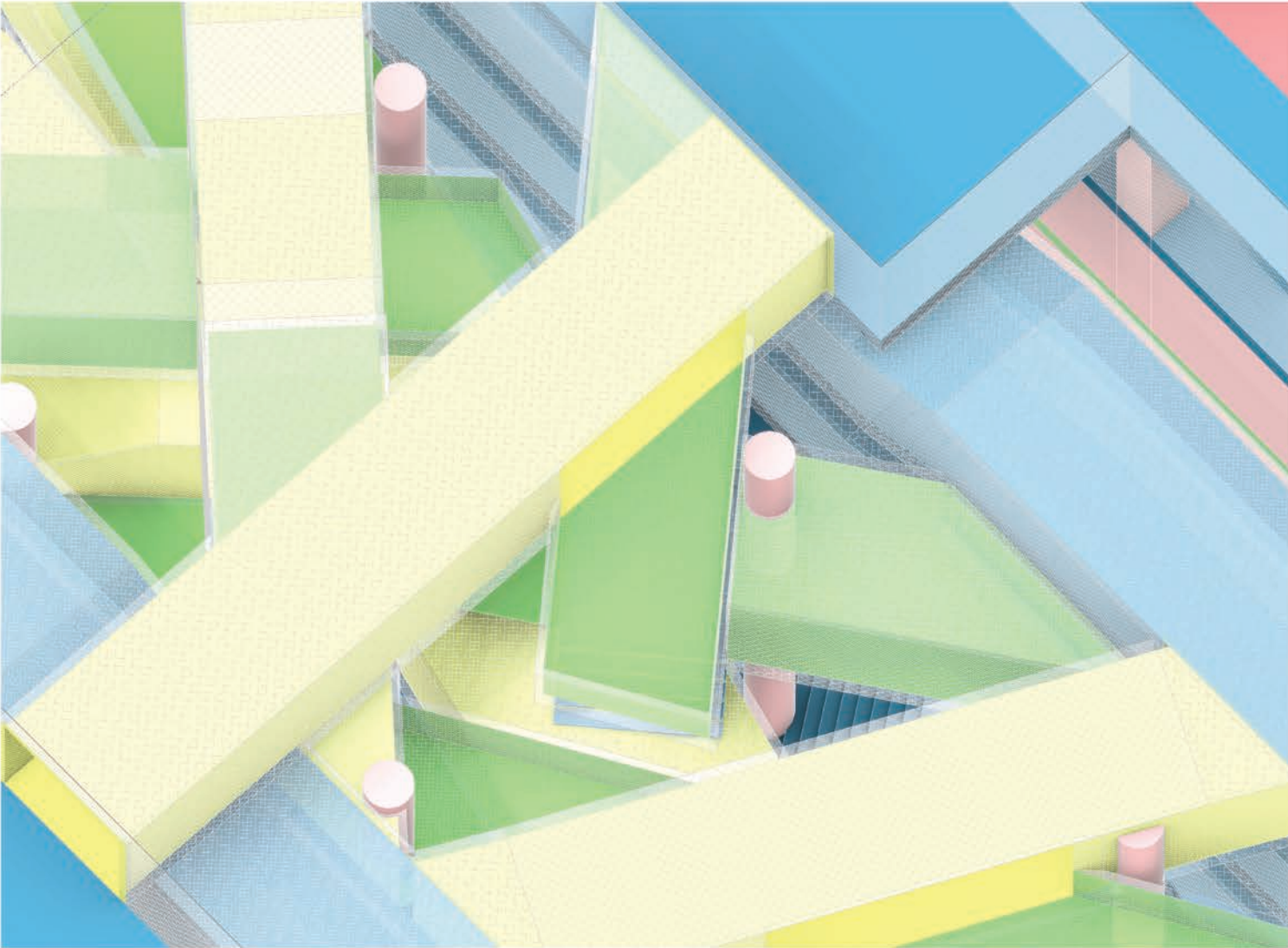




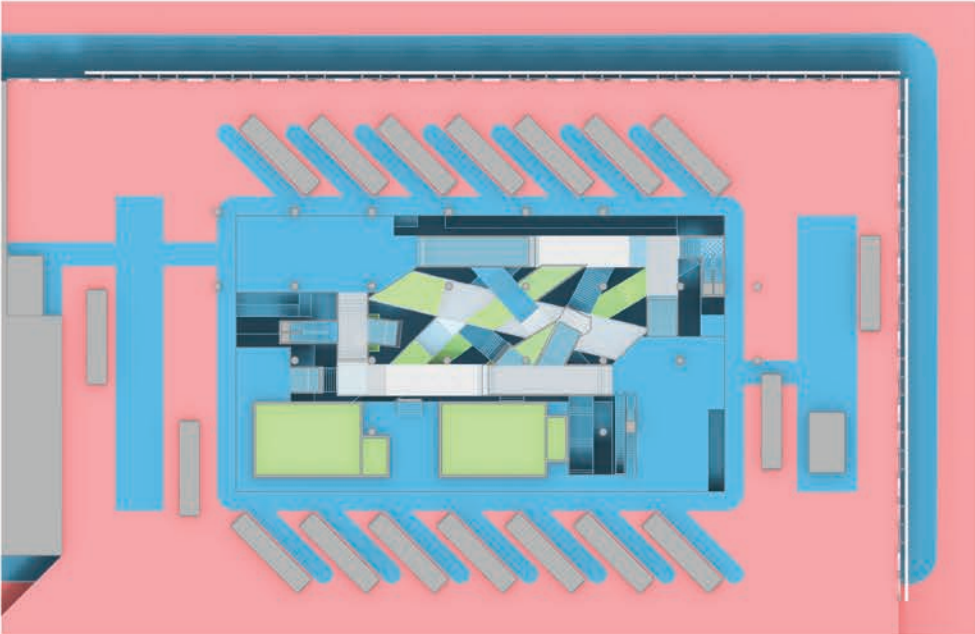
public transit development



axonometric view



floor plan















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## appendix

### Visual Studies

- A Ultra Real | Rift
- B Re-Thinking BIM | 130 Williams
- C Speculative City | A Guide for Refugees in NYC

### Architectural Technology

- D ATII | The Markthal
- E ATIII | Wall Details
- F ATIV | P.S. 64
- G ATV | Core and Egress Stair

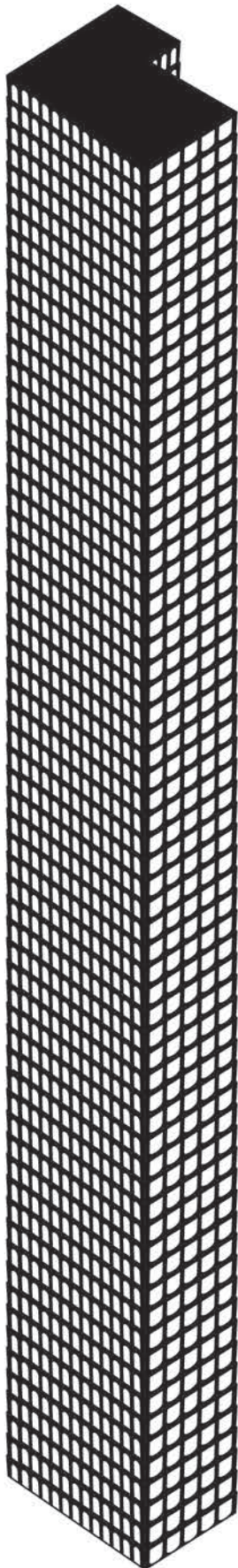
### Architectural Drawing

- H ADRI | Diamond Princess Cruise Ship
- I ADRII | Representation of Time









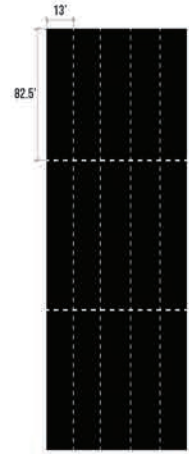
existing facade



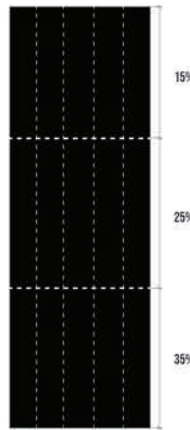
1. MODEL A SURFACE IN RHINO



2. MODEL CHEAPEST ARCH WINDOW TYPE IN RHINO



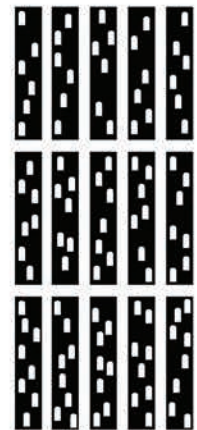
3. DIVIDE SURFACE INTO CONSTRUCTABLE PANEL DIMENSIONS IN RHINO



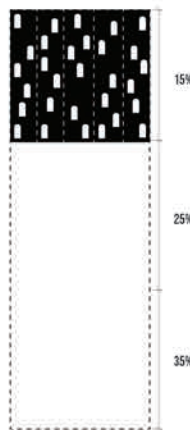
4. ASSIGN EACH ZONE WITH A LIMIT FOR THE AMOUNT OF GLAZING



5. RUN POPULATE 3D ON EACH MEGAPANEL IN GRASSHOPPER



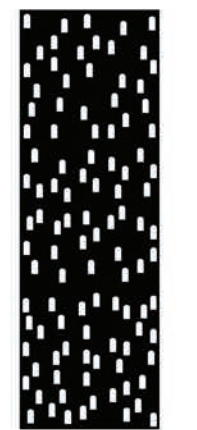
6. TEST PANELS ON LADYBUG/HONEYBEE FOR ENERGY EFFICIENCY



7. AGGREGATE MOST SUCCESSFUL PANELS INTO THEIR ZONES



8. AGGREGATE SUCCESSFUL PANELS TO ENTIRE BUILDING



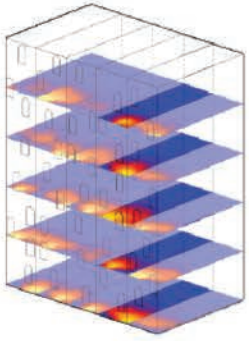
9. DRAWING DOCUMENTATION



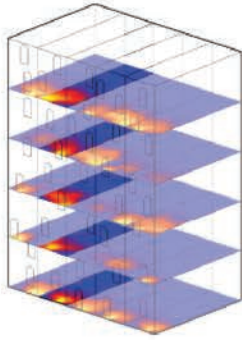
work flow



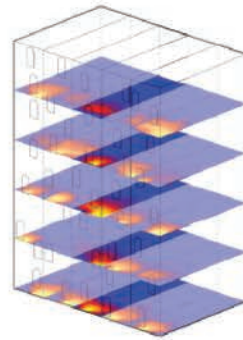
programm diagram



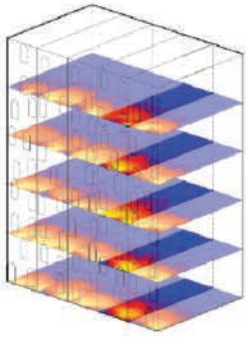
Face 1 | 15% Opening



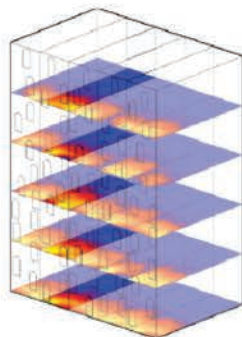
Face 2 | 15% Opening



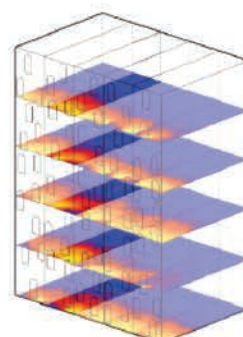
Face 3 | 15% Opening



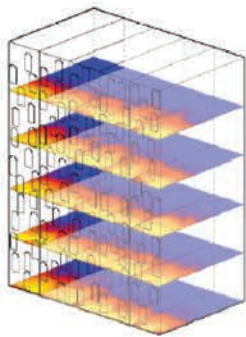
Face 1 | 25% Opening



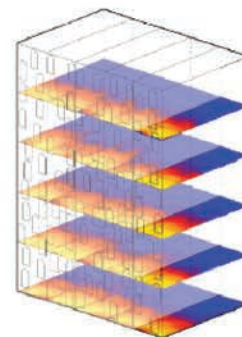
Face 2 | 25% Opening



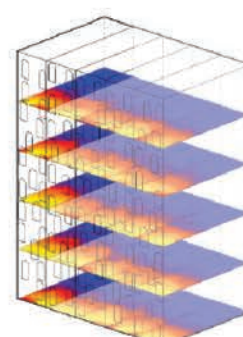
Face 3 | 25% Opening



Face 1 | 35% Opening



Face 2 | 35% Opening



Face 3 | 35% Opening

Percentage of occupied hours where illuminance is at least 28 footcandles



daylight study



optimized facade

legend

- ✕ community based organization
- community center + schools
- hospitals
- farmers markets
- grocery stores
- ▲ thrift shops

Zone 1:

You will find a large number of Grocery stores off of Broadway as well as East 14th Street.

Zone 2:

You will find a large number of community center and educational facilities in this area. East 14th Street connects this zone with the public transportation system.

Zone 3:

You will find a large number of community center based organizations along Broadway, specifically around Penn Station transit hub in Midtown New York City and towards the lower end of Downtown New York City.

Zone 4:

You will find a hospital here. Highlighted is within 10 blocks of the hospital. In terms of proximity to other programs, the overlap is a clear indication of being within a 15 to 20 minute walk to the other programs

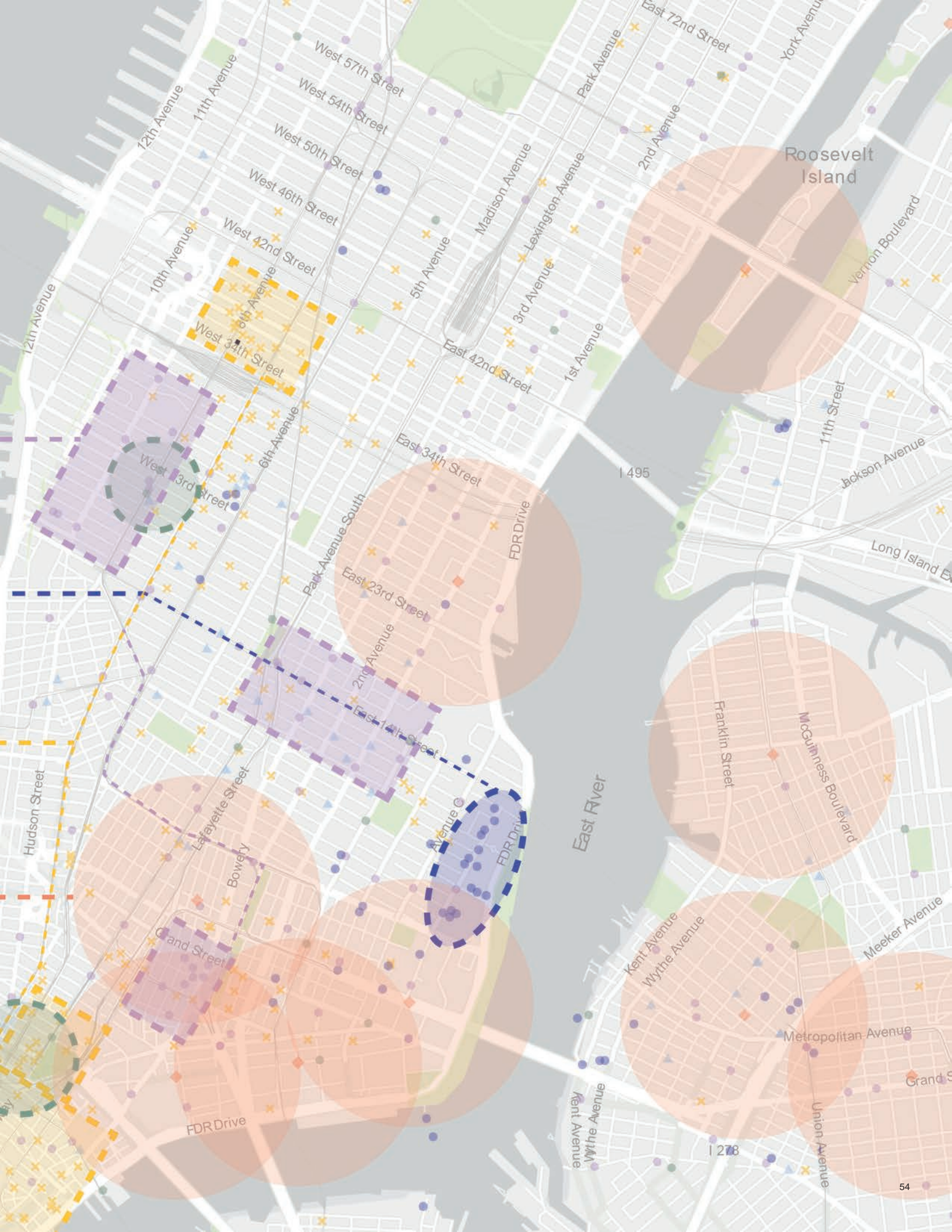
Zone 5:

You will find your Farmer's Markets located off of Broadway as well. There is easy access to these markets through the use of the public transit along Broadway.

Refugee / Asylum Seekers will be able to find almost all the necessities and support programs around the Downtown New York City area.





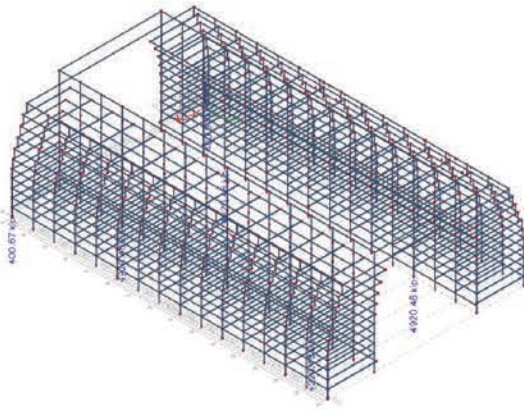




supports

**Reactions**

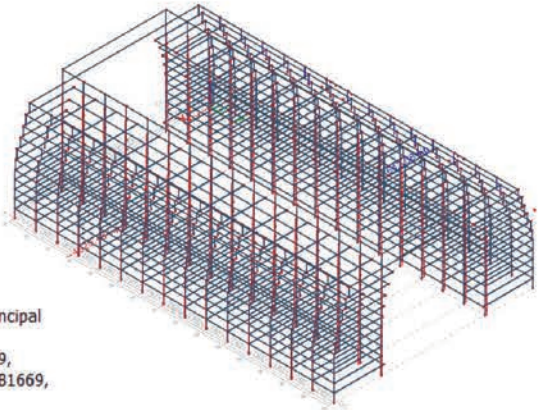
Values:  $R_z$   
 Linear calculation  
 Load case: LC1  
 System: Global  
 Extreme: Global  
 Selection: S<sub>n1</sub>..S<sub>n64</sub>,  
 B1509..B1620, B1653,  
 B1671..B2181, S50, S



beams

**1D internal forces**

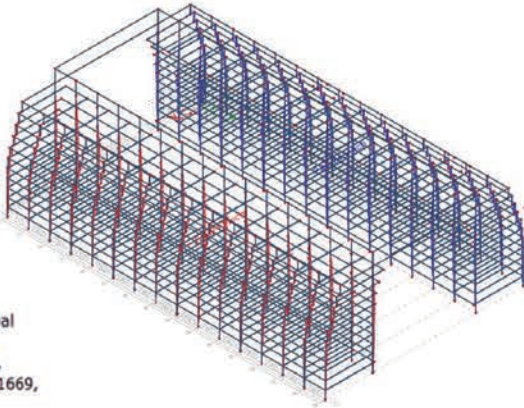
Values:  $N$   
 Linear calculation  
 Load case: LC1  
 Coordinate system: Principal  
 Extreme 1D: Global  
 Selection: B1078..B1429,  
 B1509..B1620, B1653..B1669,  
 B1671..B2181



beams

**1D deformations**

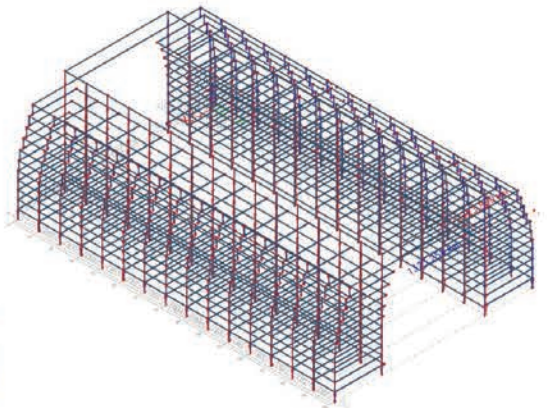
Values:  $u_x$   
 Linear calculation  
 Load case: LC1  
 Coordinate system: Global  
 Extreme 1D: Global  
 Selection: B1078..B1429,  
 B1509..B1620, B1653..B1669,  
 B1671..B2181



beams

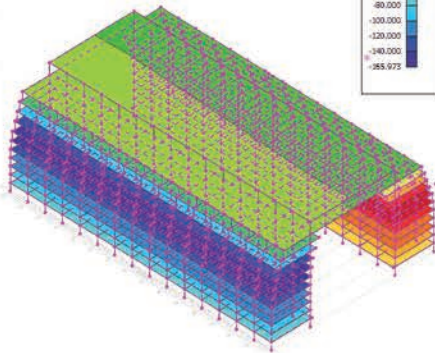
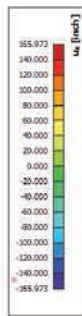
**1D stresses**

Values:  $\sigma_x$   
 Linear calculation  
 Load case: LC1  
 Coordinate system: P  
 Extreme 1D: Global  
 Selection: B1078..B14  
 B1509..B1620, B1653  
 B1671..B2181



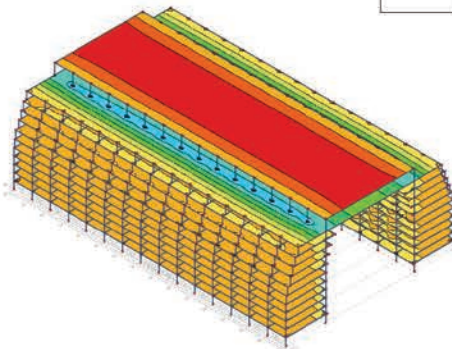
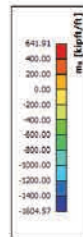
**2D displacement**

Values:  $u_x$   
 Linear calculation  
 Load case: LC1  
 Extreme: Global  
 Selection: S50, S311..S317, S320,  
 S322..S334  
 Location: In nodes avg. on macro.  
 System: LCS mesh element



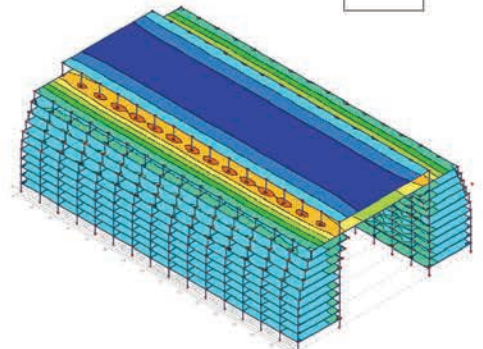
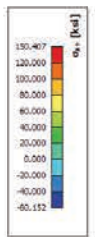
**2D internal forces**

Values:  $m_x$   
 Linear calculation  
 Load case: LC1  
 Extreme: Global  
 Selection: S50, S311..S317, S320,  
 S322..S334  
 Location: In nodes avg. on macro.  
 System: LCS mesh element



**2D stress/strain**

Values:  $\sigma_x$   
 Linear calculation  
 Load case: LC1  
 Extreme: Global  
 Selection: All  
 Location: In nodes avg. on macro.  
 System: LCS mesh element

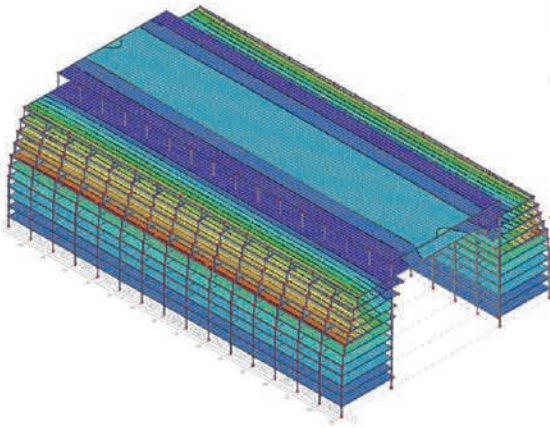
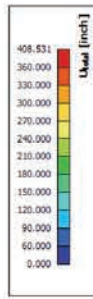




### 3d structure analysis

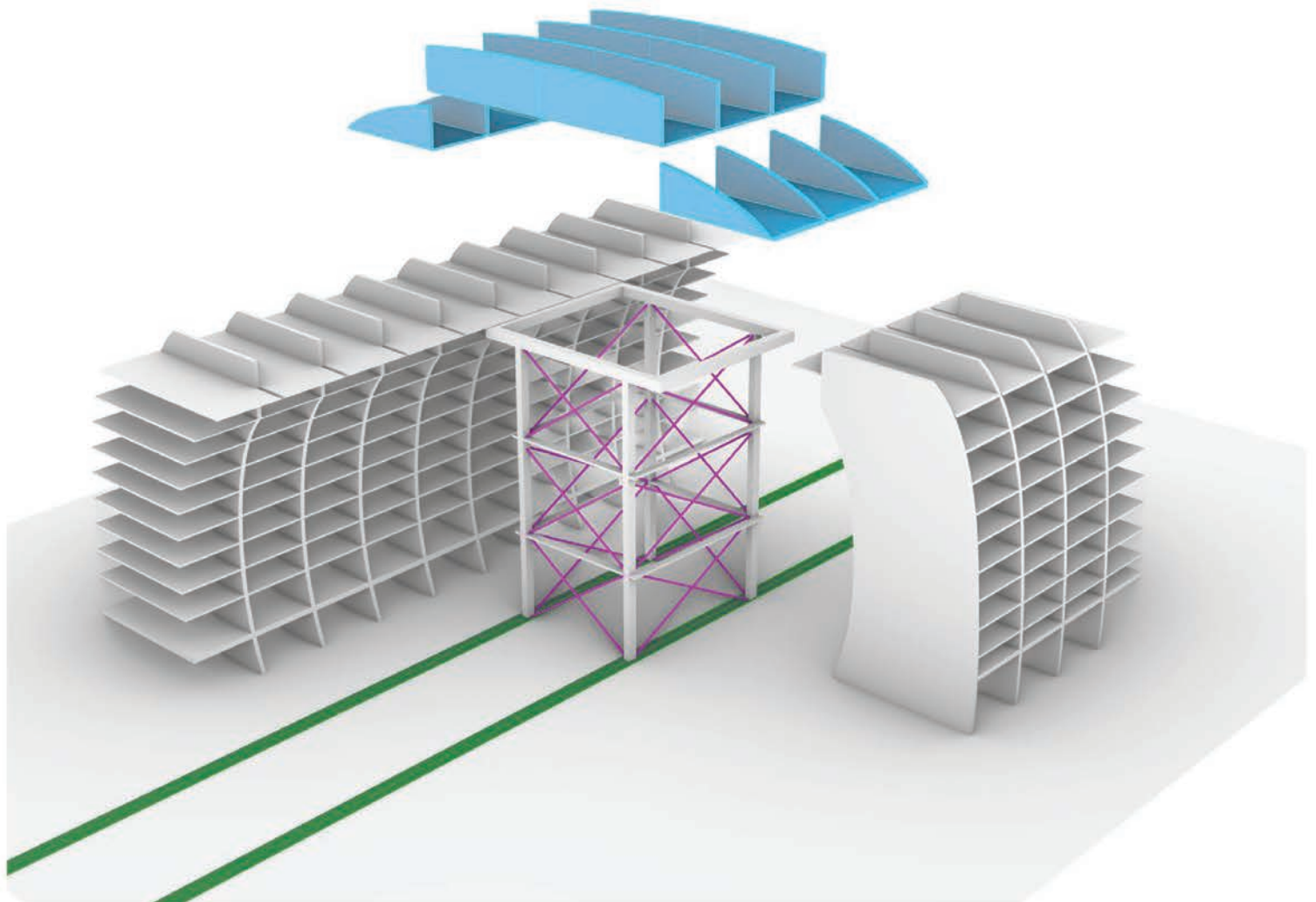
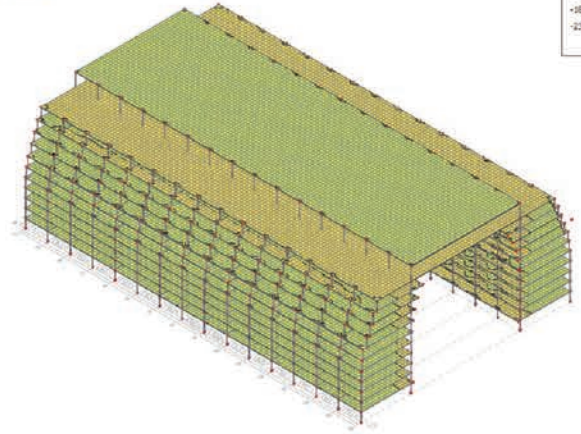
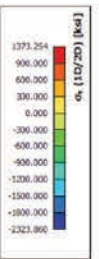
#### 3D displacement

Values:  $U_{total}$   
Linear calculation  
Load case: LC1  
Selection: B1078..B1429,  
B1509..B1620, B1653..B1669,  
B1671..B2181, S50, S311..S317, S320,  
S322..S334  
Location: In nodes avg. on macro.  
System: LCS mesh element

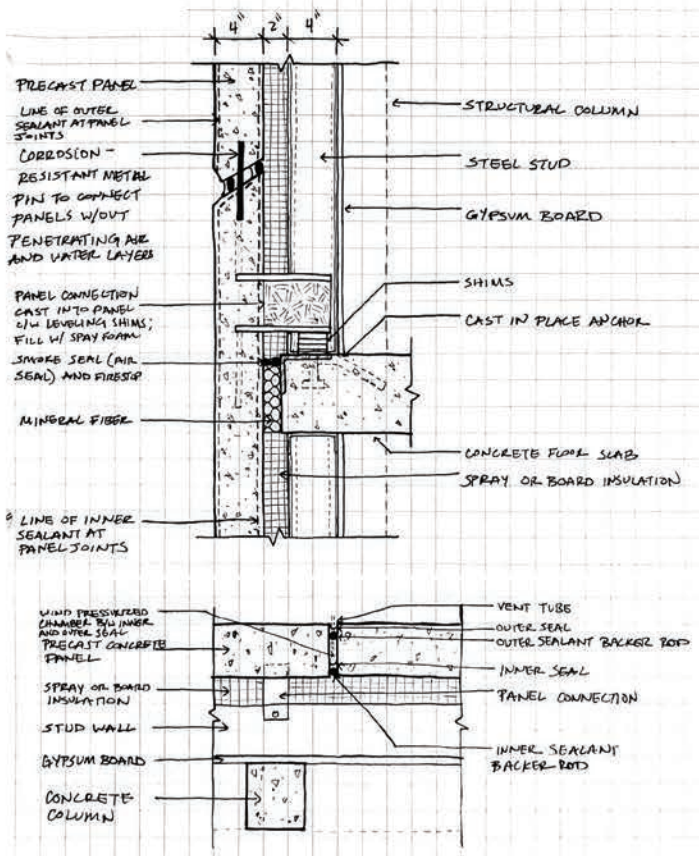


#### 3D stress

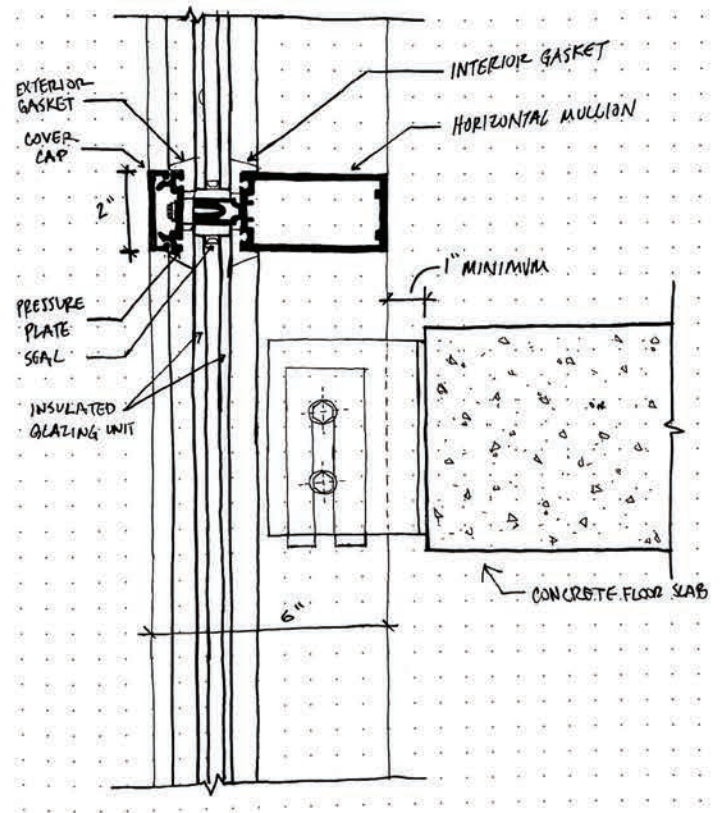
Values:  $\sigma_x$  (1D/2D)  
Linear calculation  
Load case: LC1  
Selection: B1078..B1429,  
B1509..B1620, B1653..B1669,  
B1671..B2181, S50, S311..S317, S320,  
S322..S334  
Location: In nodes avg. on macro.  
System: LCS mesh element  
Basic magnitudes



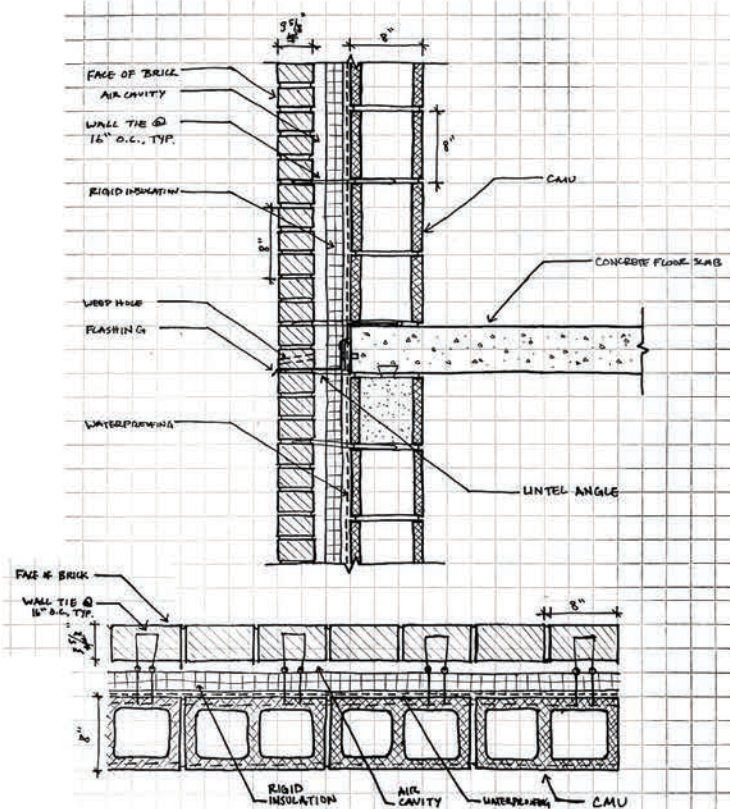




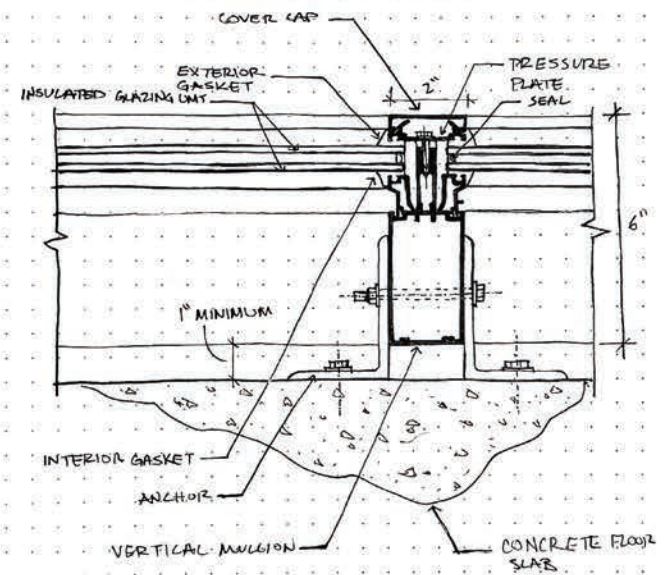
precast concrete wall detail



stick built curtainwall section detail



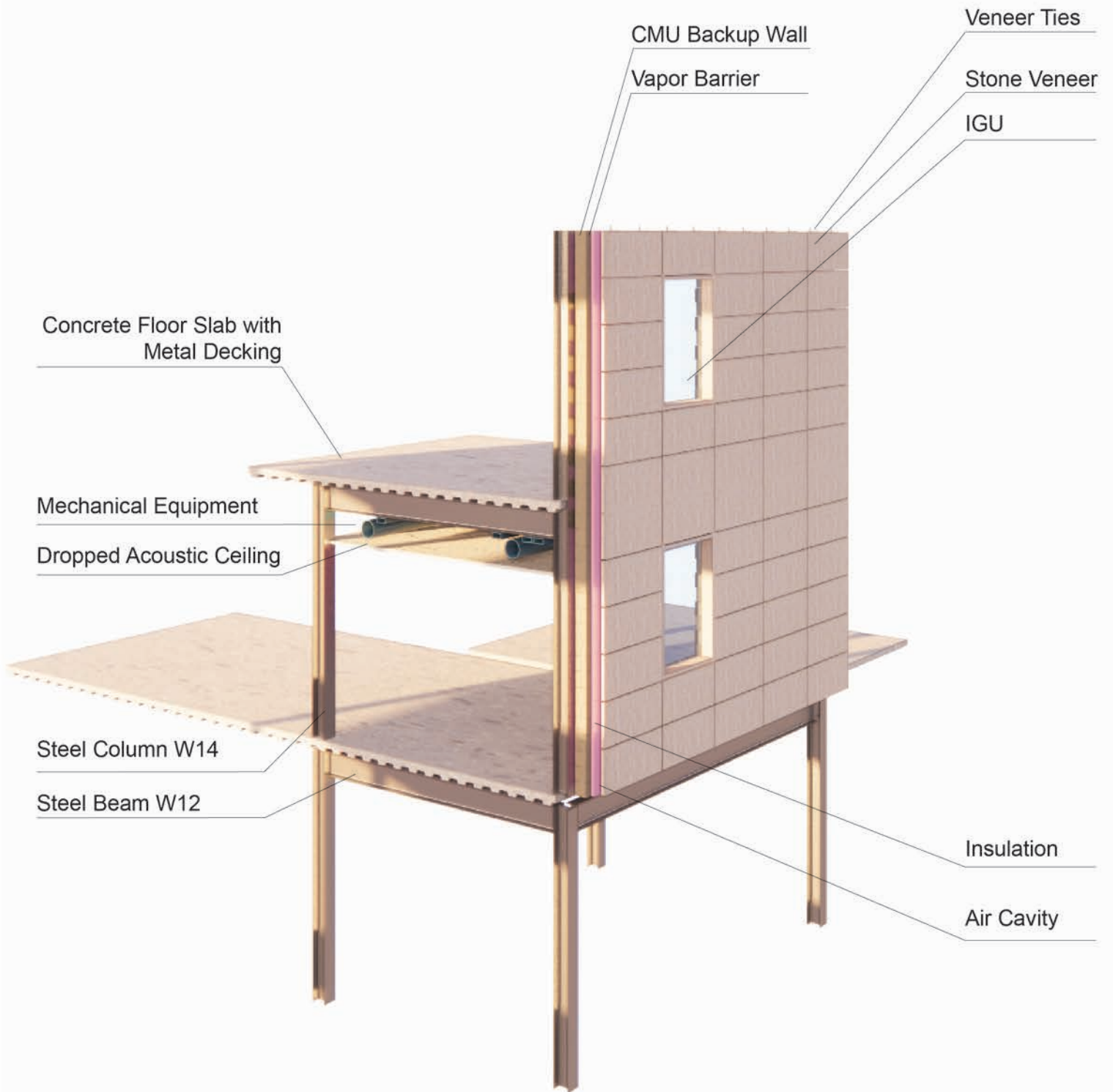
brick veneer wall detail



stick built curtainwall plan detail



stone veneer wall detail



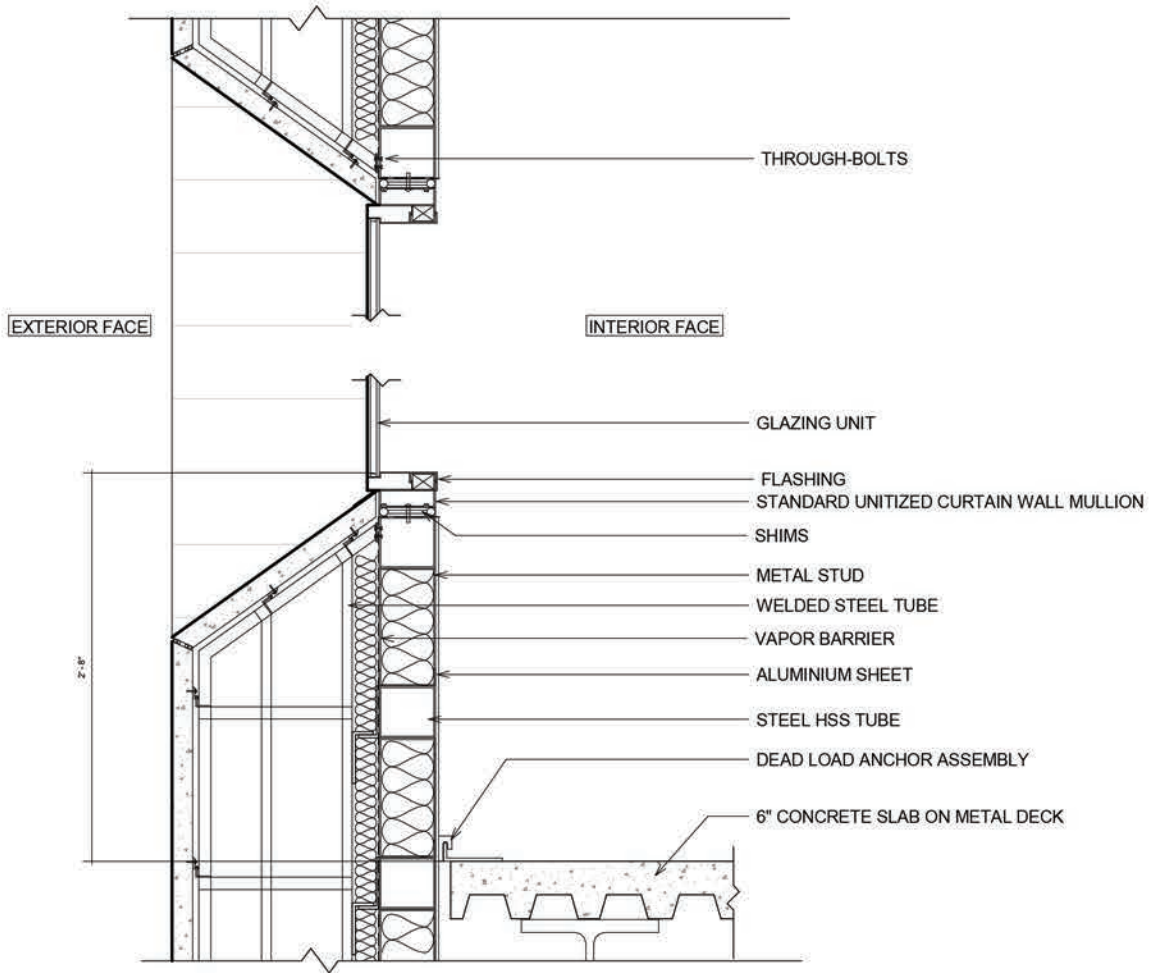
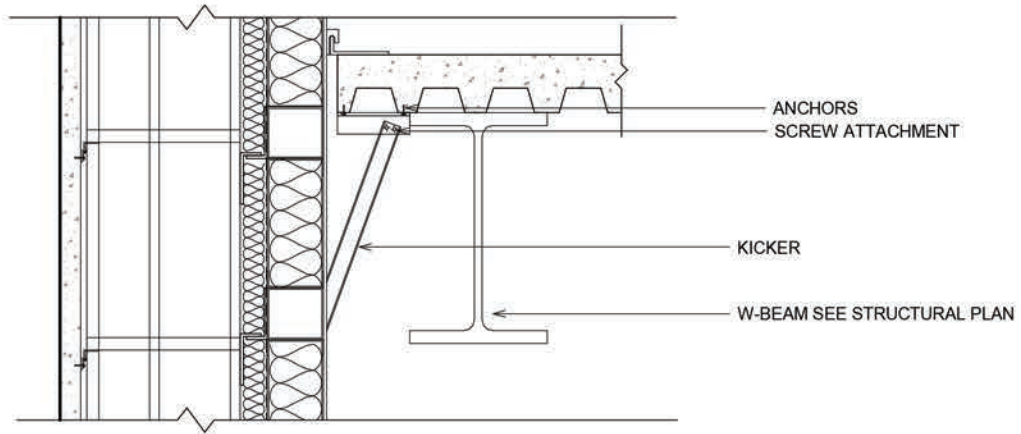


① Egress Plan - Level 2  
3/32" = 1'-0"

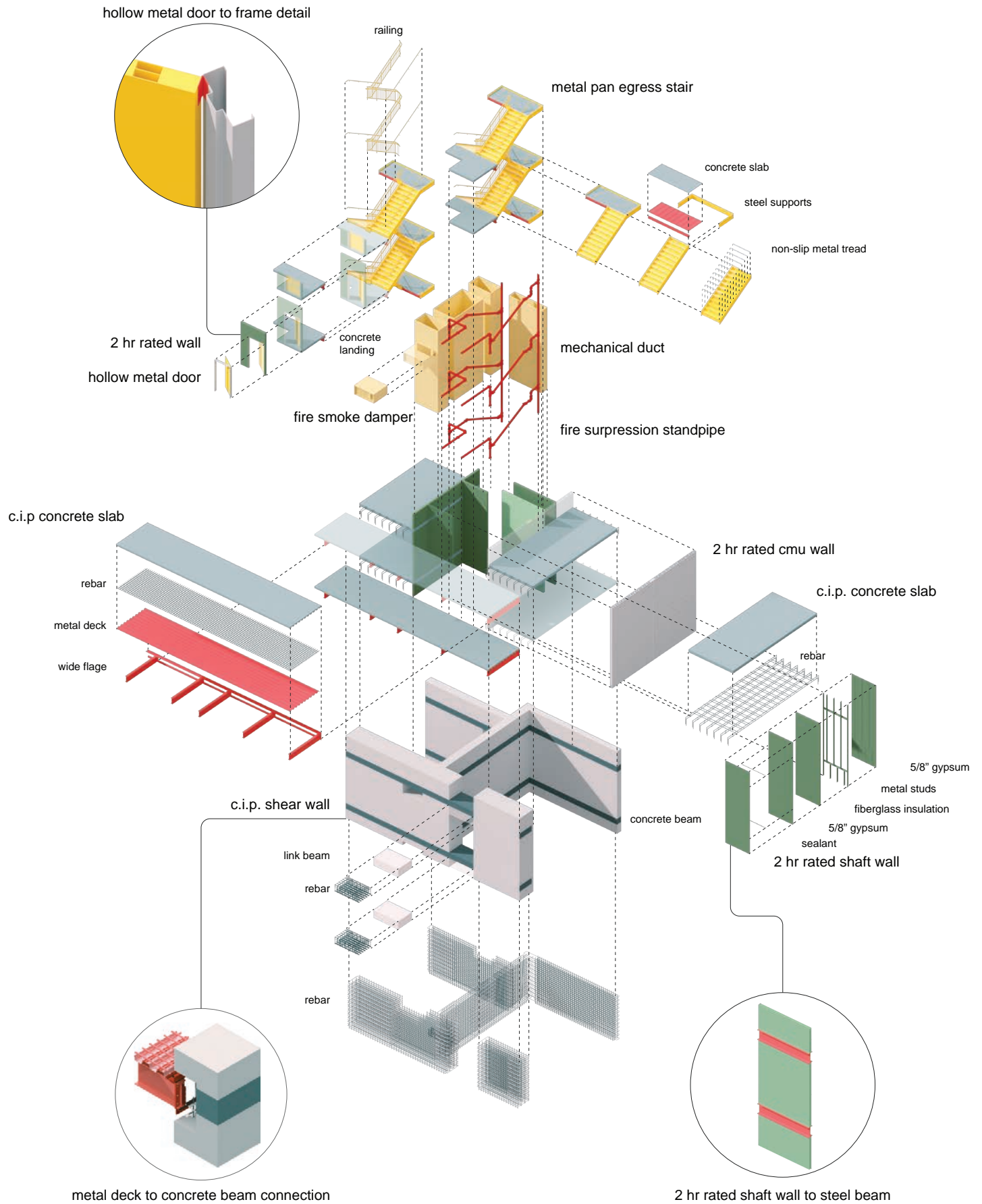
Room Number	Room Name	Use of Space	Area	Area Per Occupant	Total Occupant Load
75	CLASSROOM Educational	Classroom	1497 SF	20 SF	75
37	CLASSROOM Educational	Classroom	736 SF	20 SF	37
35	CLASSROOM Educational	Classroom	687 SF	20 SF	35
48	CLASSROOM Educational	Classroom	941 SF	20 SF	48
73	CLASSROOM Educational	Classroom	1453 SF	20 SF	73
31	STUDY Educational	Study	614 SF	20 SF	31
22	STUDY Educational	Study	437 SF	20 SF	22
4	MEDICAL SUITE Business Area	Medical Suite	375 SF	20 SF	4
5	KITCHEN COMPLEX Kitchen	Kitchen	963 SF	20 SF	5
283	CAFETERIA Assembly (Unconc)	Cafeteria	4232 SF	20 SF	283
1	STORAGE Mercantile (Storage)	Storage	199 SF	20 SF	1
1	ELEC. Mechanical Equipment	Mechanical Equipment	130 SF	20 SF	1
1	RR Business Area	RR Business Area	77 SF	20 SF	1
1	RR Business Area	RR Business Area	78 SF	20 SF	1
1	ELEC. Mechanical Equipment	Mechanical Equipment	169 SF	20 SF	1
1	RR Business Area	RR Business Area	76 SF	20 SF	1
1	RR Business Area	RR Business Area	75 SF	20 SF	1
1	CUSTODIAL Mercantile (Storage)	Custodial	85 SF	20 SF	1

THIS DRAWING IS UNLESS OTHERWISE SPECIFIED TO BE IN ACCORDANCE WITH THE 2018 IBC AND 2018 IBC CODES. ALL DIMENSIONS ARE IN FEET AND INCHES. DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE NOTED. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE NOTED. ALL DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE NOTED.



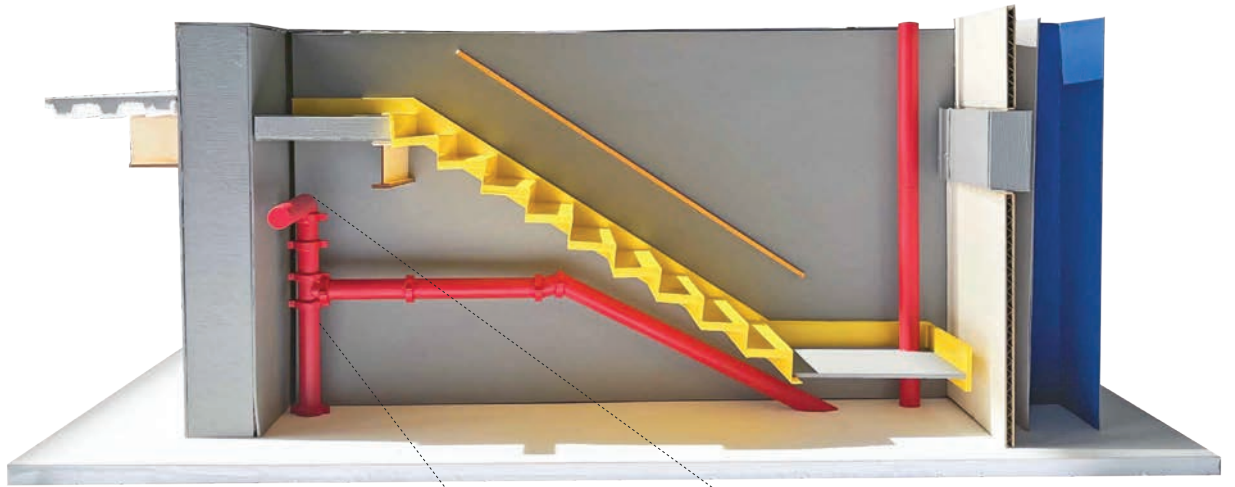


③ STONE AND PUNCH WINDOW DETAIL  
 1 1/2" = 1'-0"

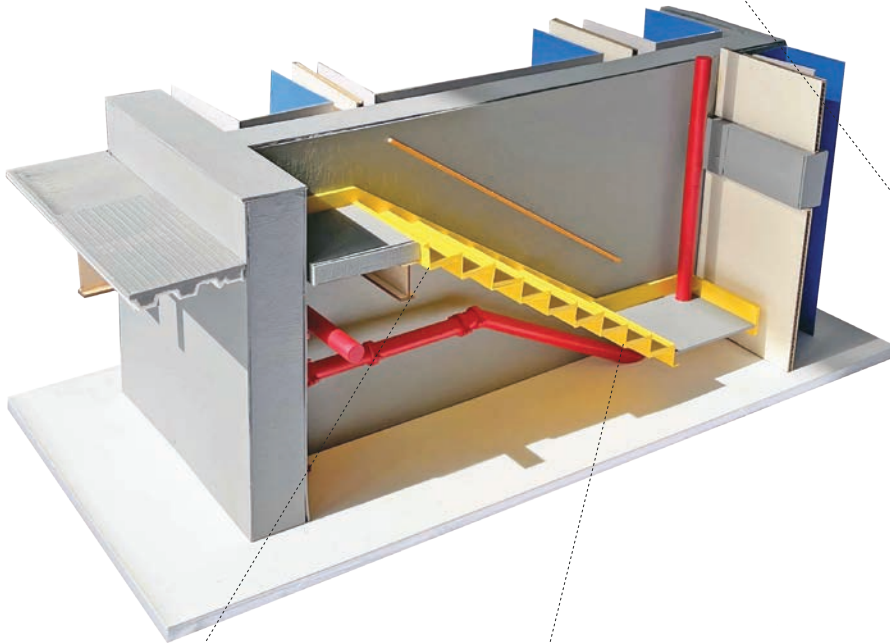




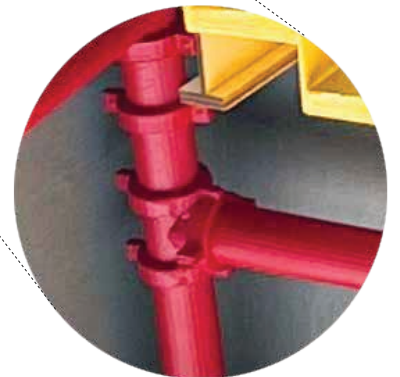
physical mode



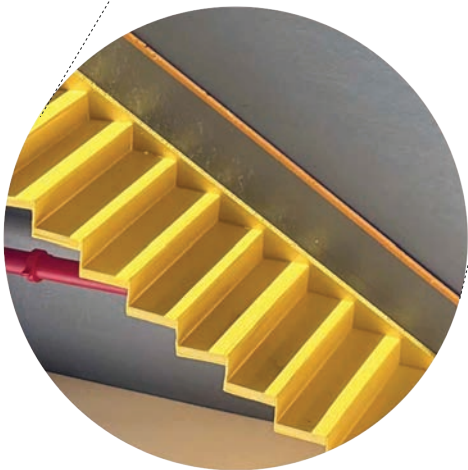
perspective view



sectional view



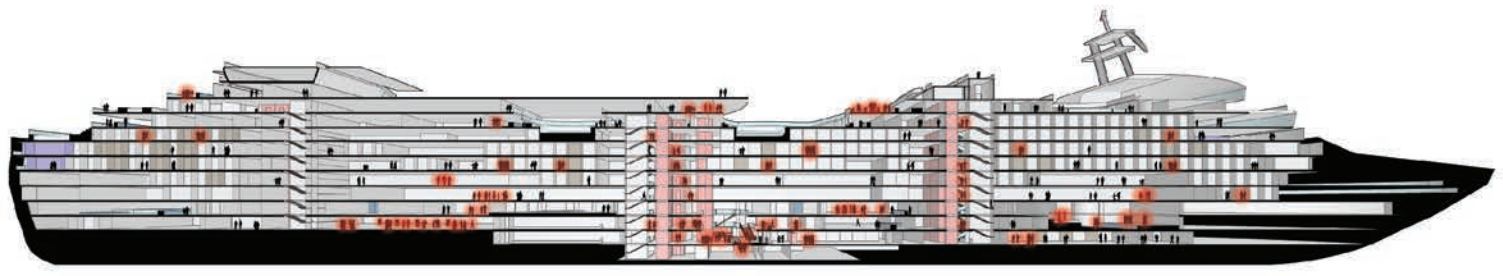
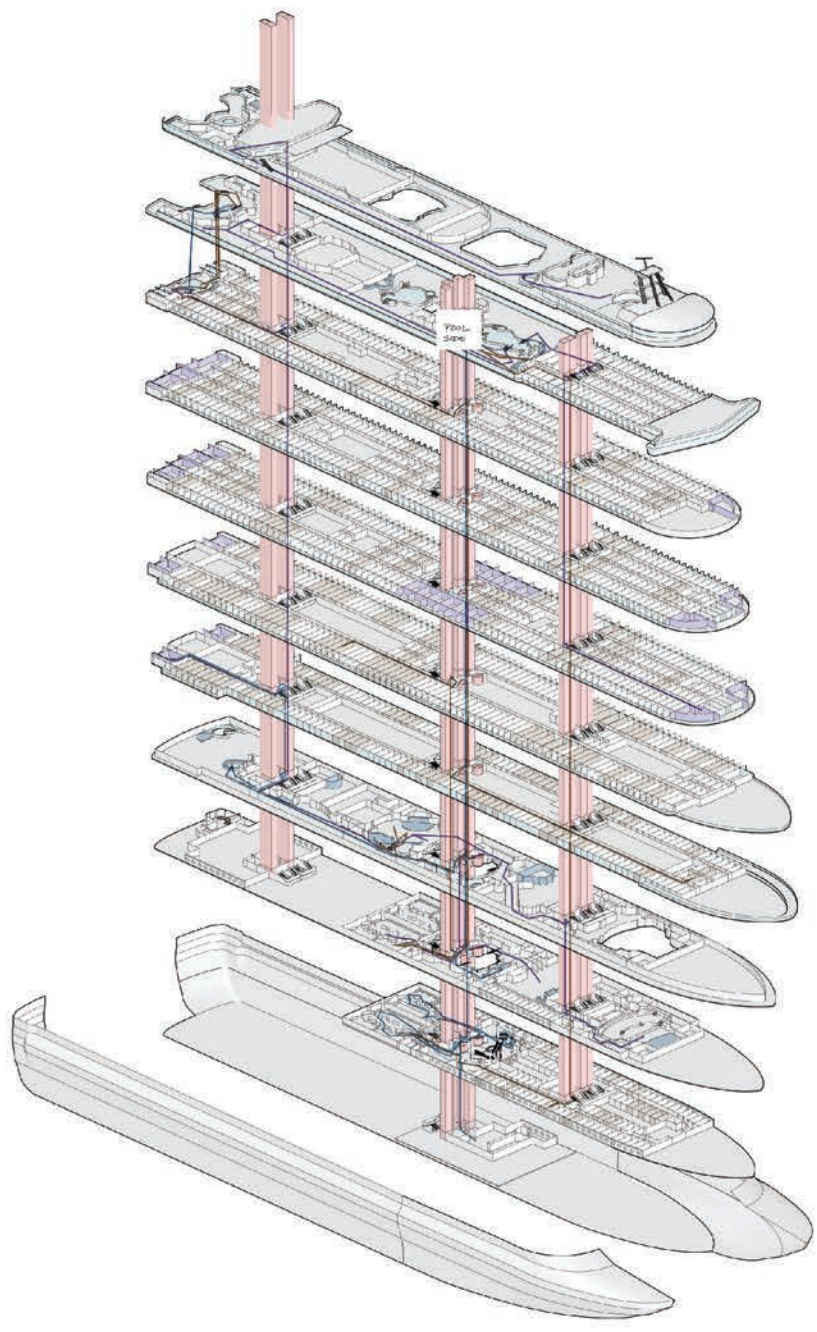
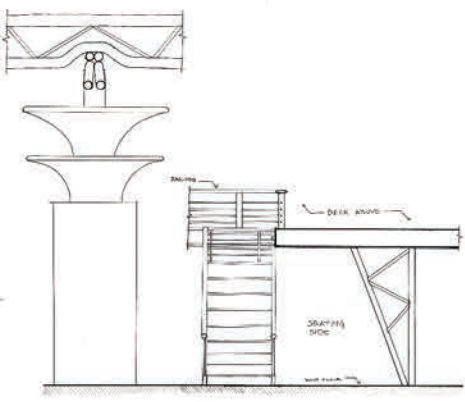
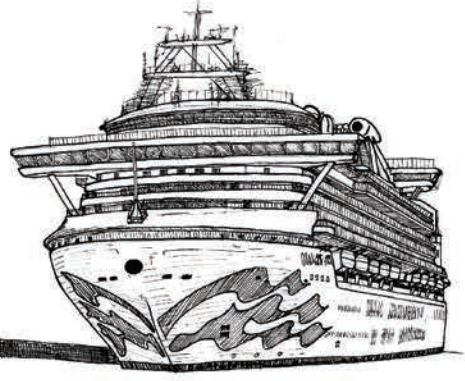
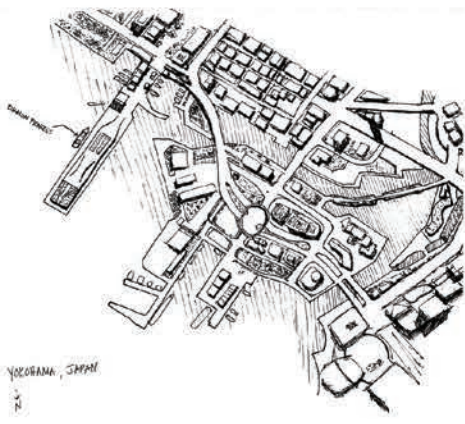
fire standpipe detail



egress stair detail



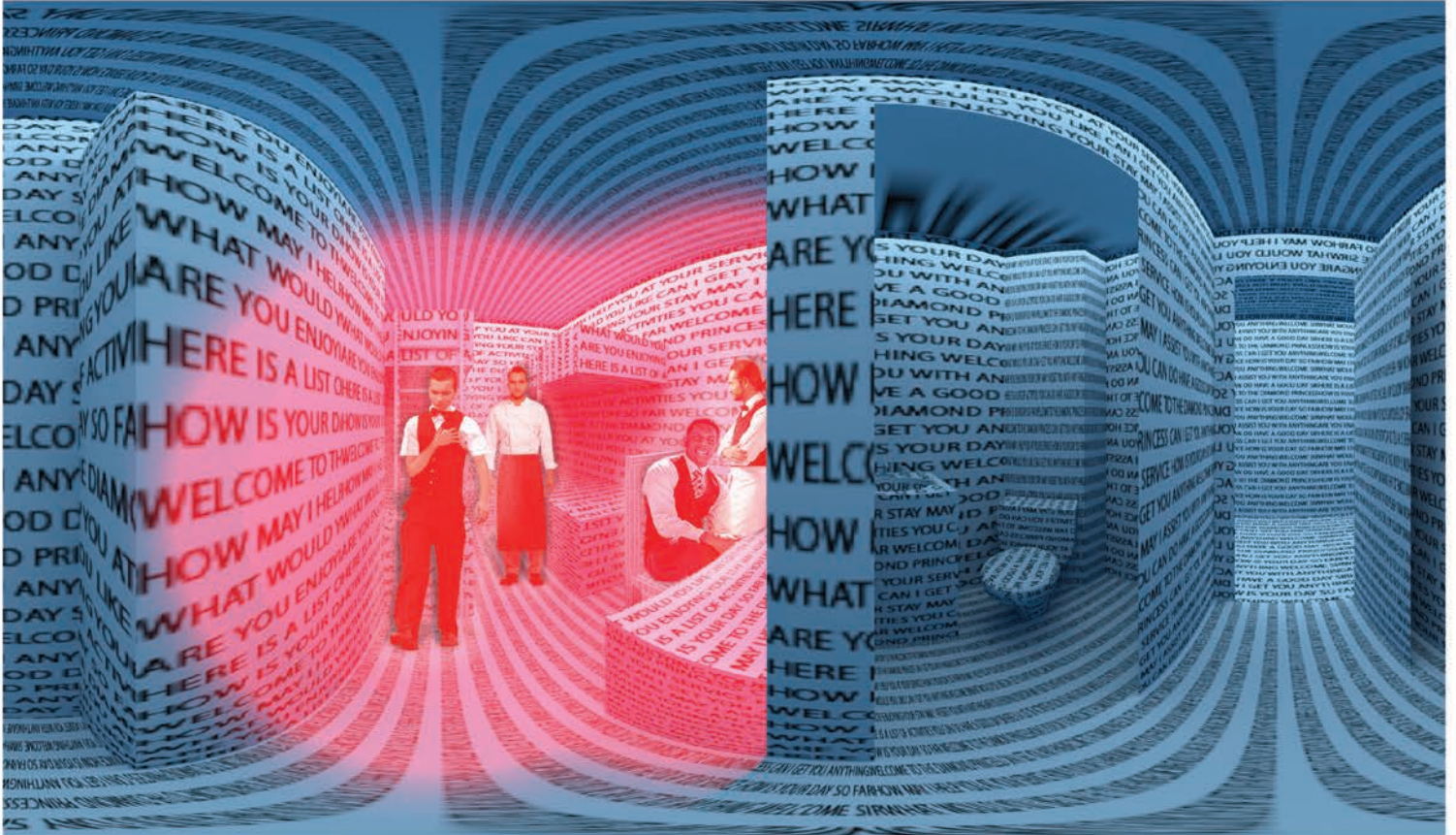
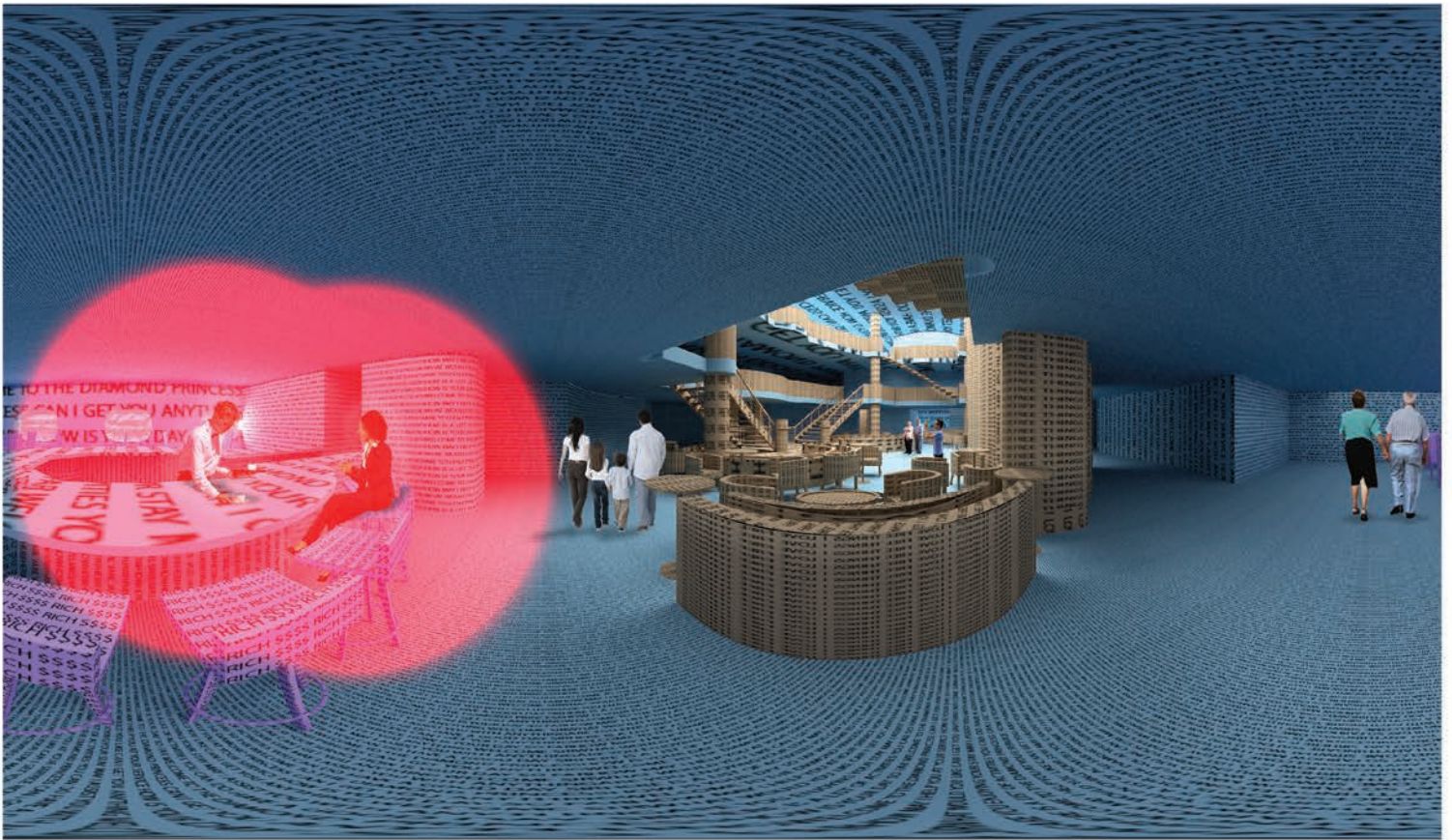
perspective view



unique built environment for studying covid-19 spread



grand plaza

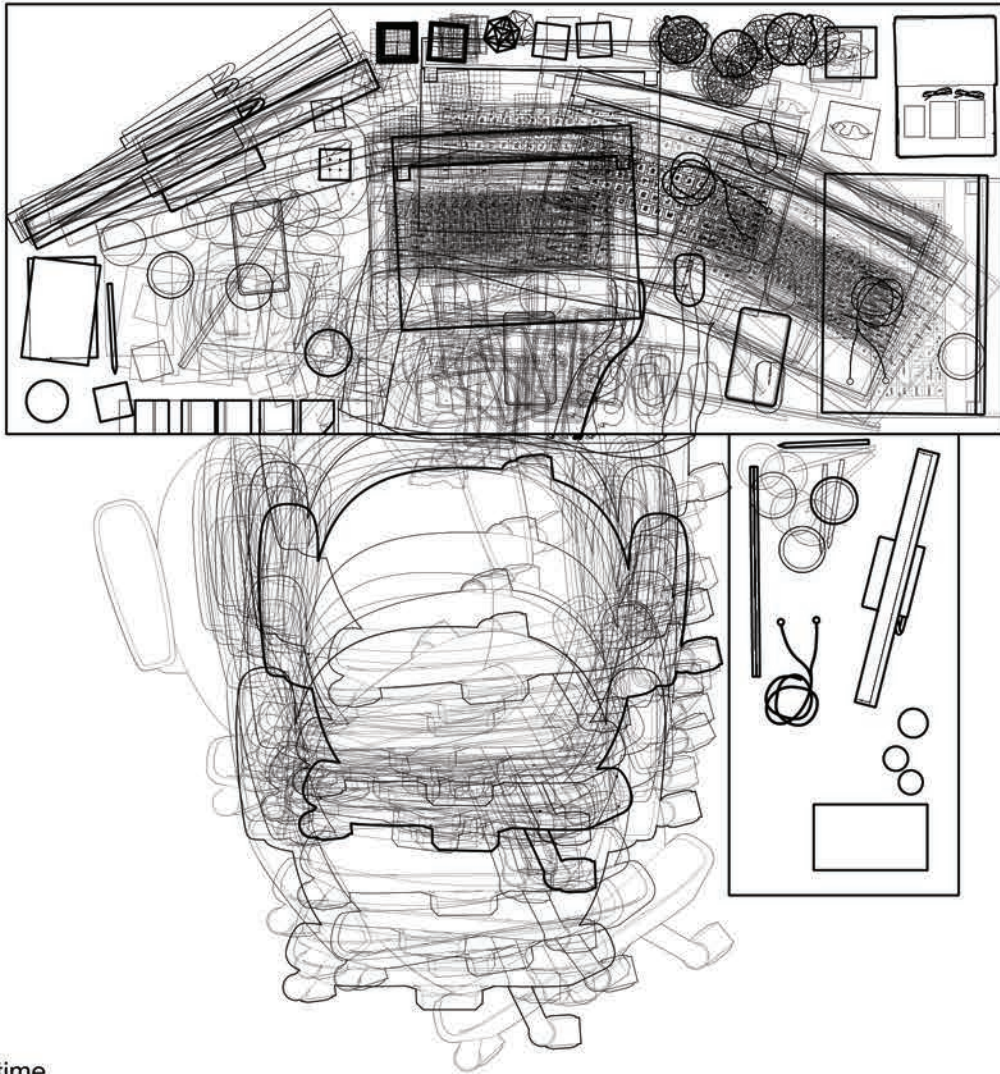


crew cabin

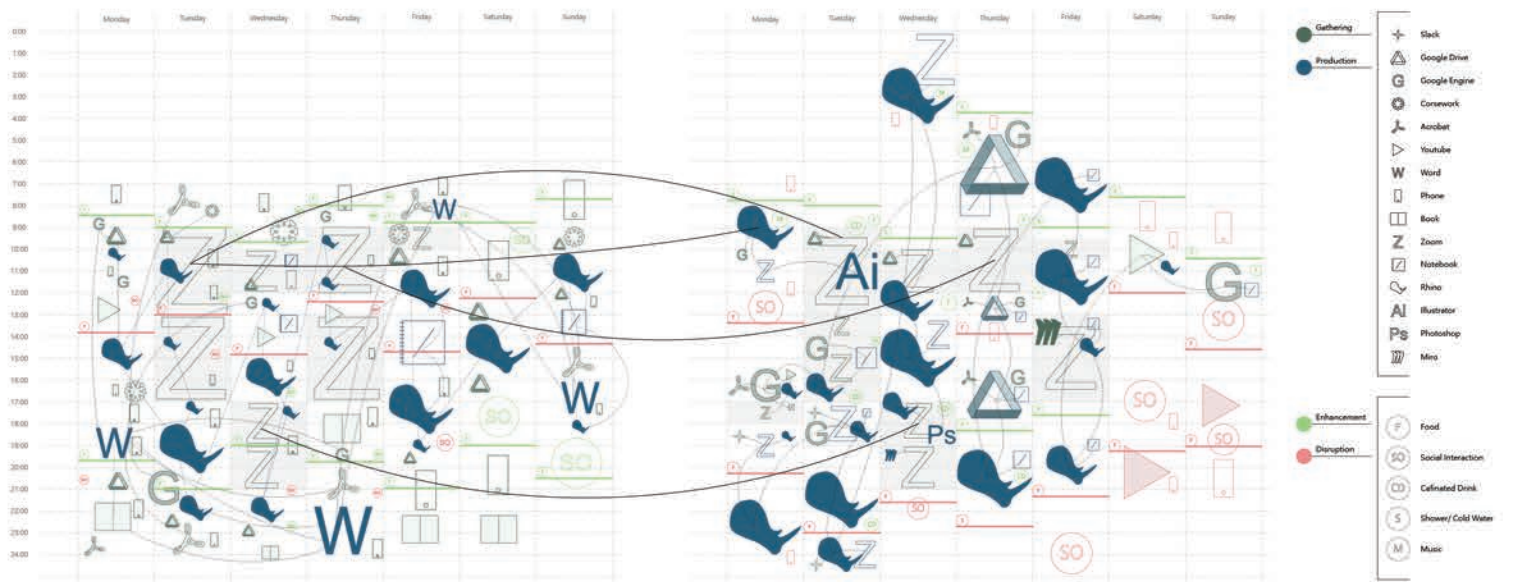
● covid-19 6 ft distancing has been encroached



adr ii | representation of time



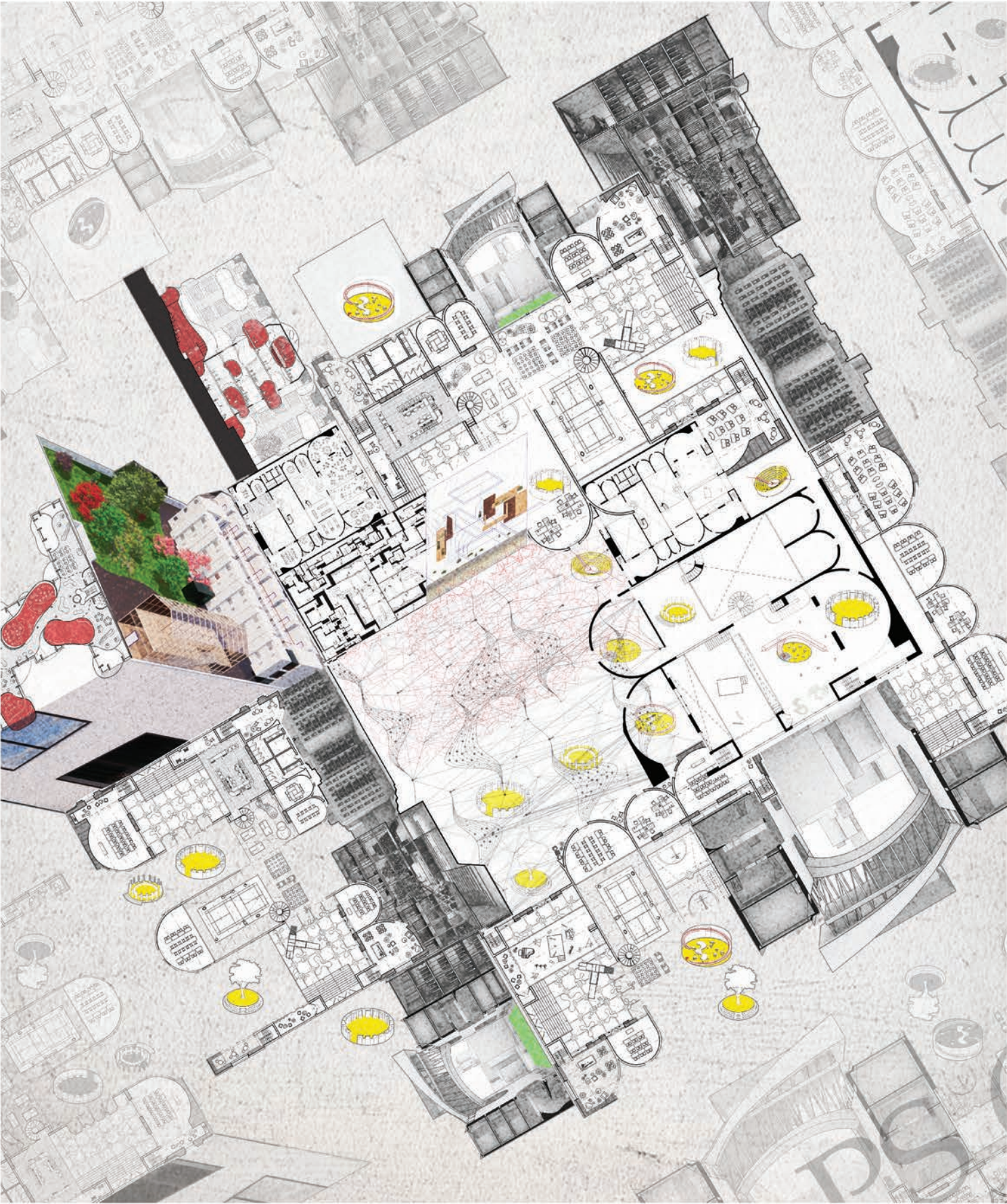
movement through time



information gathering + producing over time



sequential build up



In collaboration with Rebecca Faris, Min Soo Jeon, Lucas Pereira, Nararya Prasadha Radinal, Christopher Scheu, Seung Ho Shin, Maddy Sung, Joyce Jinghan Wang, and Yifei Yuan