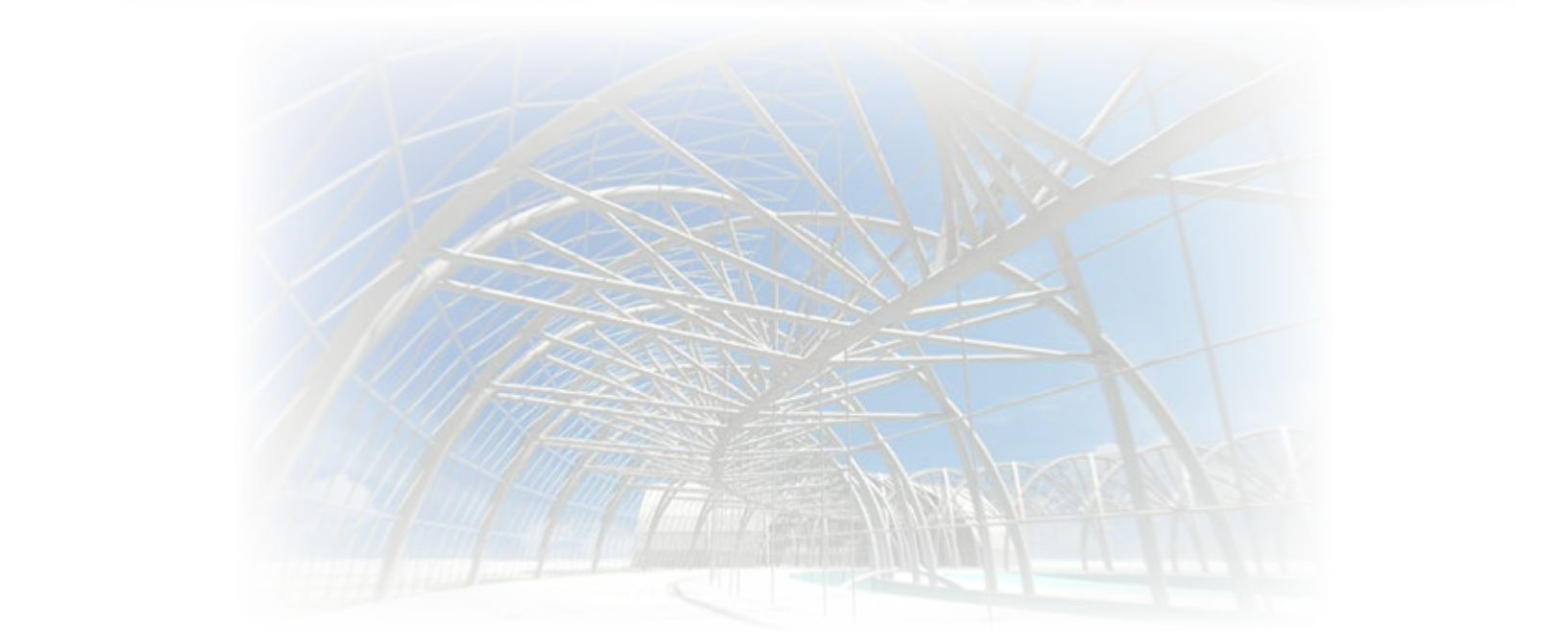


# ALEXANDER LLANTADA

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alexgabby15@gmail.com



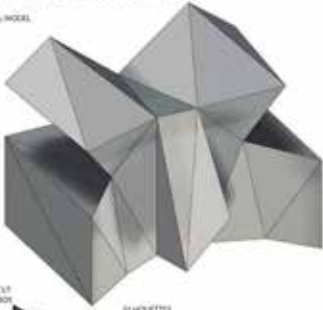
# FIRST YEAR STUDIO

## FALL 2015

### EX02: SILHOUETTE TO VOLUME

ASSIGNMENT: DEVELOP A THREE DIMENSIONAL OBJECT THROUGH THE USE OF TWO DIMENSIONAL SILHOUETTES. DESIGN INTENT: JUDGE A THREE DIMENSIONAL OBJECT THAT WOULD FIT ALL THREE SILHOUETTES AT ONCE, THEN, I REDUCED THE NUMBER OF POLYGONS TO MAKE THE MODEL EASIER TO BUILD.

TRIAL MODEL



MODEL WAS CUT OUT OF THIS BOX

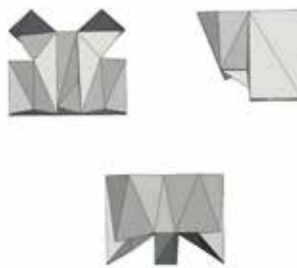
SILHOUETTES



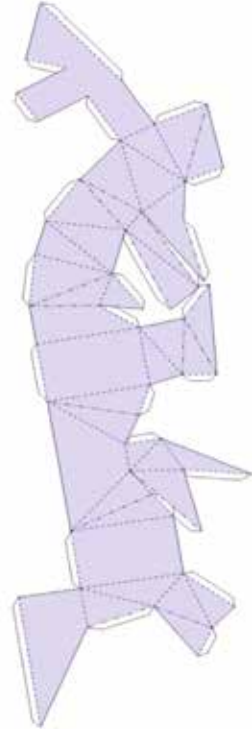
SECTION



VIEW



TEMPLATE



### EX03: APERTURE

ASSIGNMENT: DEVELOP TWO FRAMES OF APERTURES WITHIN A SURFACE OF A VOLUME. DESIGN INTENT: EXPLORE HARMONY AND CONTRAST BY DESIGNING DIFFERENT TYPES OF APERTURES. I DID THIS BY ANALYZING THE DIFFERENT LOCATIONS OF THE SUN DURING DIFFERENT TIMES AND SEASONS. THE TWO APERTURES ON THE SIDES OF THE MODEL ARE INTENT TO ONLY BE LIGHT ONLY DURING SUMMER AND WINTER.

CLOSEUP OF APERTURE



SECTION VIEW



### EX04: VOLUME WITHIN A VOLUME

ASSIGNMENT: DEVELOP TWO VOLUMES NESTED WITHIN EACH OTHER. DESIGN INTENT: EXPLORE THE SECTIONAL SPACE BETWEEN TWO VOLUMES (POOLED) AND HOW IT CAN BE USED AS A SPACE FOR HUMAN OCCUPATION. I USED A DINING EXPERIENCE TO DEVELOP THE SPACE BETWEEN THE TWO VOLUMES. MY MODEL IS MEANT TO ACCOMMODATE LOUD DANCE PARTIES ON THE LOWER LEVEL, AND QUIETER DINING SITUATIONS ON THE UPPER LEVELS.

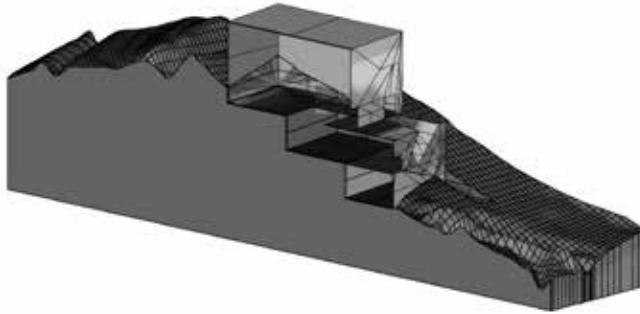
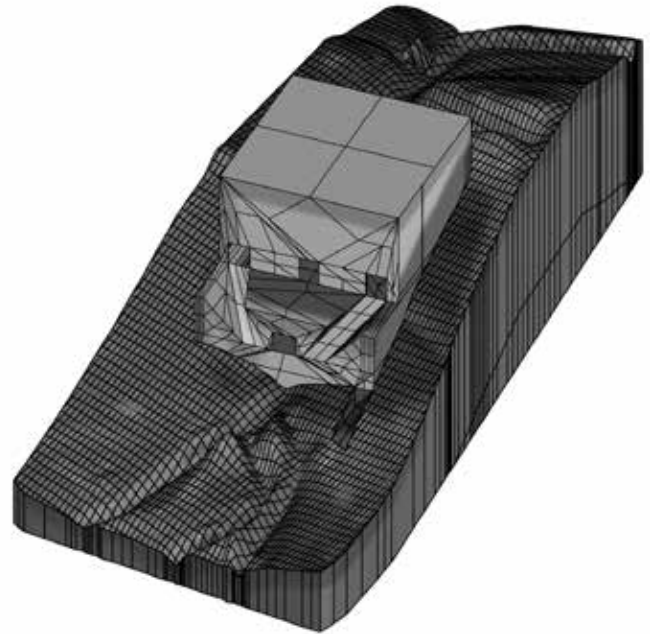
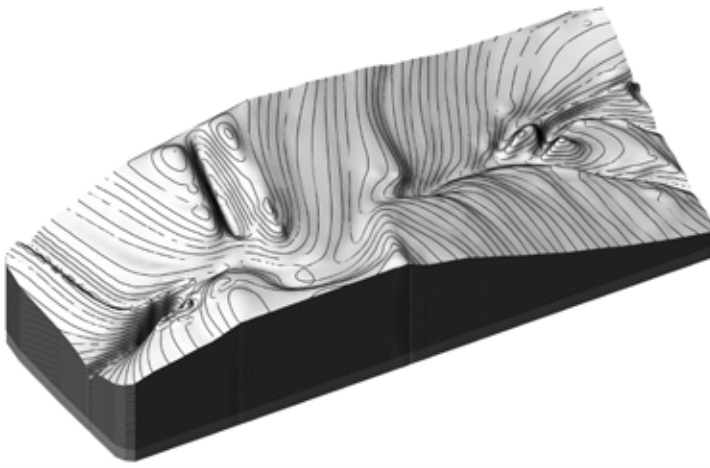
WORKFLOW: RHINO, MESHLAB, PERMULAB, PHYSICAL MODELS, Adobe ILLUSTRATOR

FRONT SECTION



RIGHT SECTION





## Exercise 7: Sticks and Panels

Design Intent: To be able to experience the flow of water from inside the building without being restricted to standing on a platform. The grid on the second floor allows water to spread out and is narrow enough for the people to step over. The structure of the building is based on this grid.

Paneling



Framing



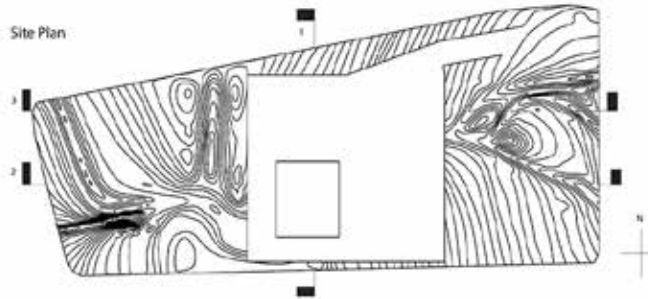
Site



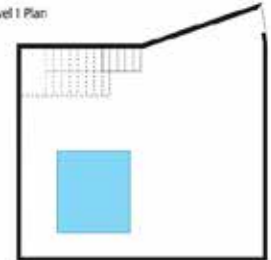
Building



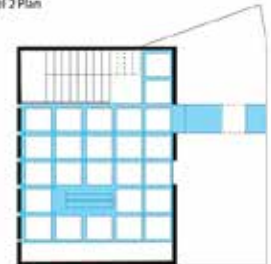
Site Plan



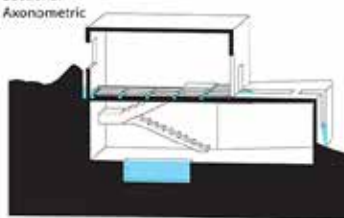
Level 1 Plan



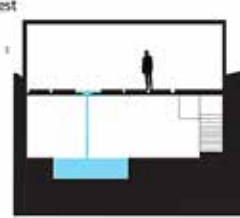
Level 2 Plan



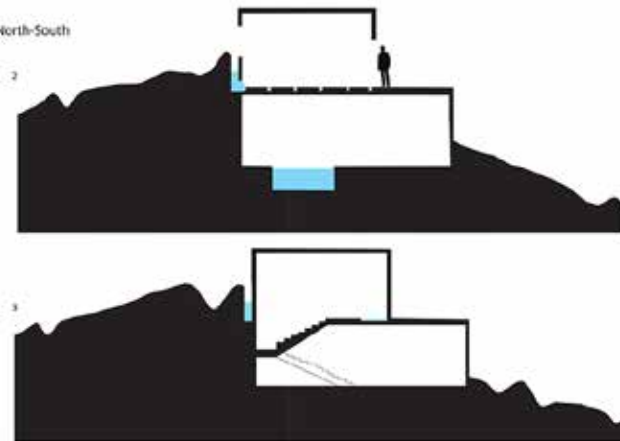
Sectional Axonometric



East-West



North-South



Perspective



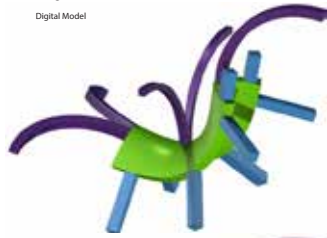
# FIRST YEAR STUDIO SPRING 2016

## EX 1: MATERIALS

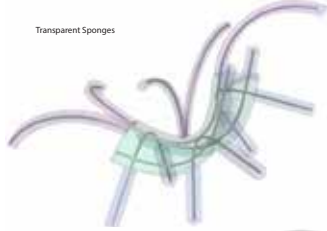
Design Intent: To explore the strength of a sponge when reinforced by paperclips. The sponges are given a "skeleton" by sticking the paperclips in when dry. Wetting the sponge allows for more flexibility when bending the paperclips. When the sponge dries again, it regains its rigidity.

Workflow: Hand-modeling, Rhino

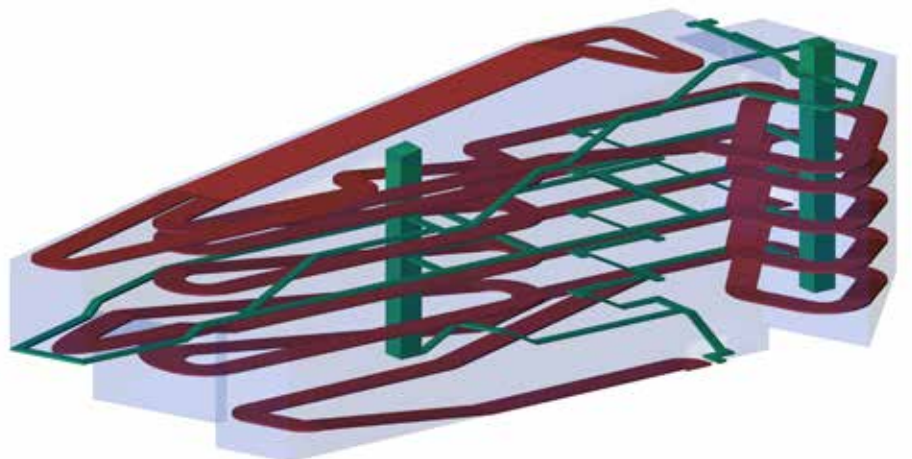
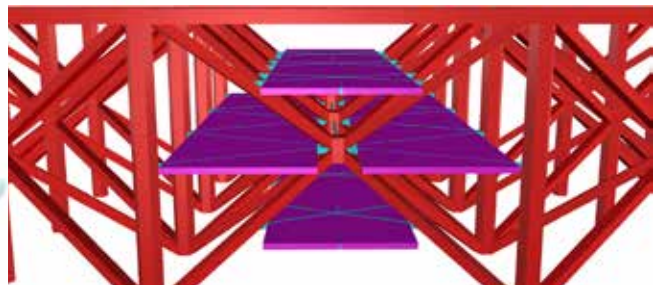
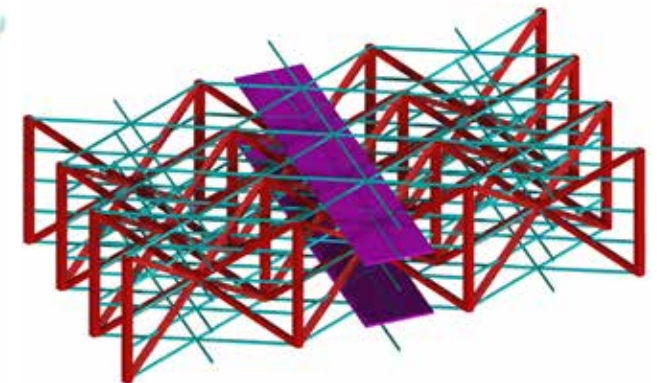
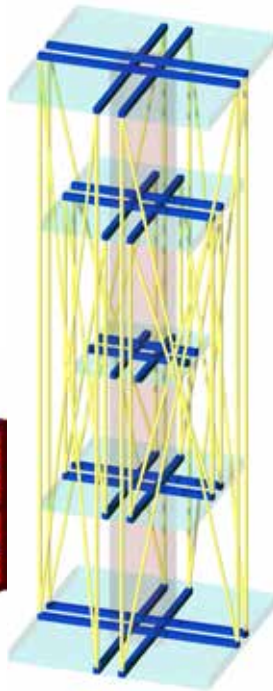
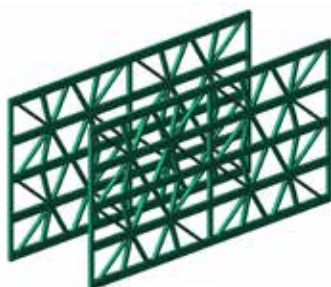
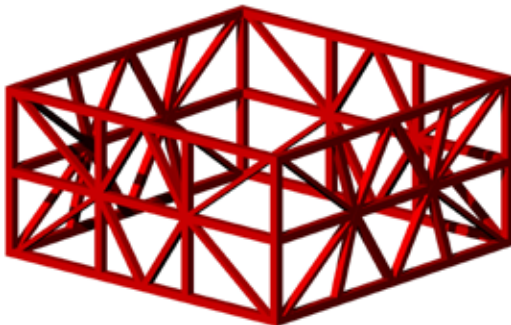
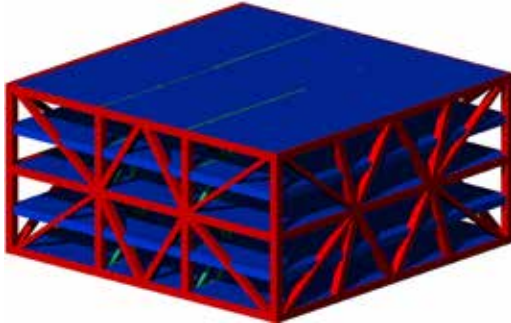
Digital Model



Transparent Sponges



Paperclip Skeleton

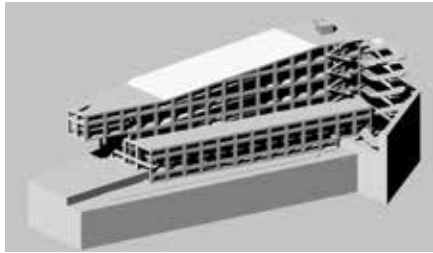


# EX 7: PARK+ BY: ALEXANDER LLANTADA CRITIC: GONZALO LOPEZ GARRIDO

Today's world is being a crisis due to global warming and overpopulation. I decided to propose a building that can solve both of these problems. The building's structural walls will make a grid. Each square inside the grid will include a metal fence that will have plants growing through it. The outside will contain both deciduous flowers that only bloom in warm weather and evergreens that will stay the same year round. As a result, the building will appear green in the fall and winter, and change into a variety of colors during the spring and summer. The plants outside the building will reduce the amount of carbon dioxide in the air surrounding the area. The long ones of the building will be a vertical farming center. Vertical farms can produce just as much food as regular farms, but they can fit in the most crowded cities. Because of this, more can be placed without destroying wildlife. The narrow end of the building contains a supermarket and a cafe for the visitors. These facilities will only serve food grown in the vertical farm. This demonstrates the convenience of having a vertical farm in a crowded area, since very little transportation of the crops will be necessary. The building contains parking lots and a path for cars. On levels alternating with the parking lots, a path for people circles around the core, which is guarded by the same kind of wall that is on the outside. This allows visitors to walk between two walls covered in exotic plants that are protected from the elements, while still enjoying fresh air from the outside, which flows in through the fence. Before reaching the top level, the visitors must walk through the vertical farming section. This allows them to see how their food is grown and how the workers keep them healthy. All of the flat roofs contain gardens for the people to use. This building will be both aesthetically pleasing and functional.



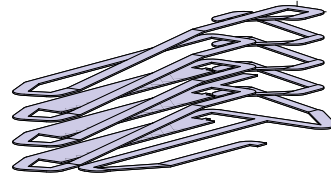
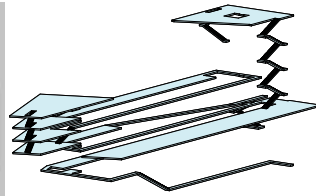
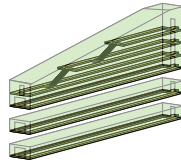
Site



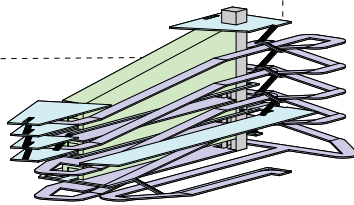
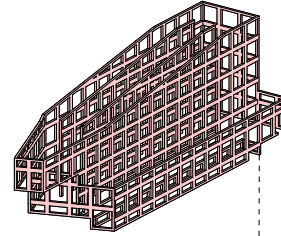
Interior Views



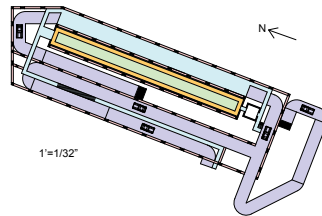
Exploded Axonometric



- Structure
- Cars
- People
- Program
- Path Inside Program
- Elevator

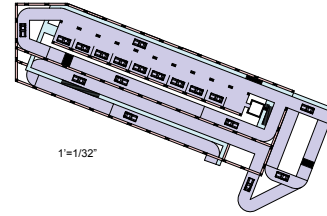


Plan Views



1"=1/32"

Spring

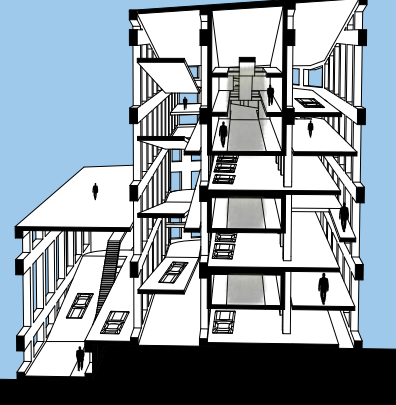


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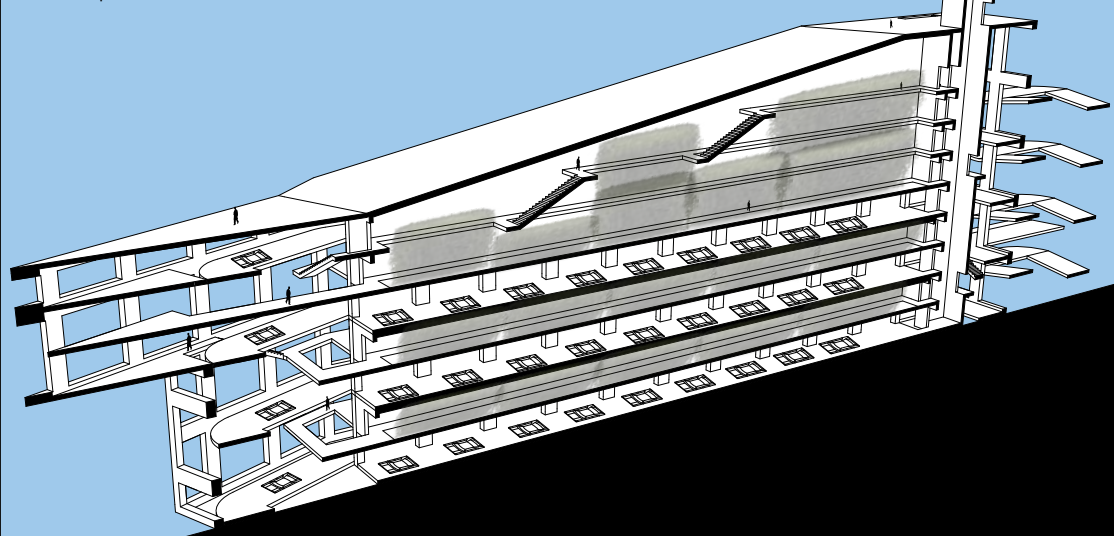
Winter



Section Perspective 1

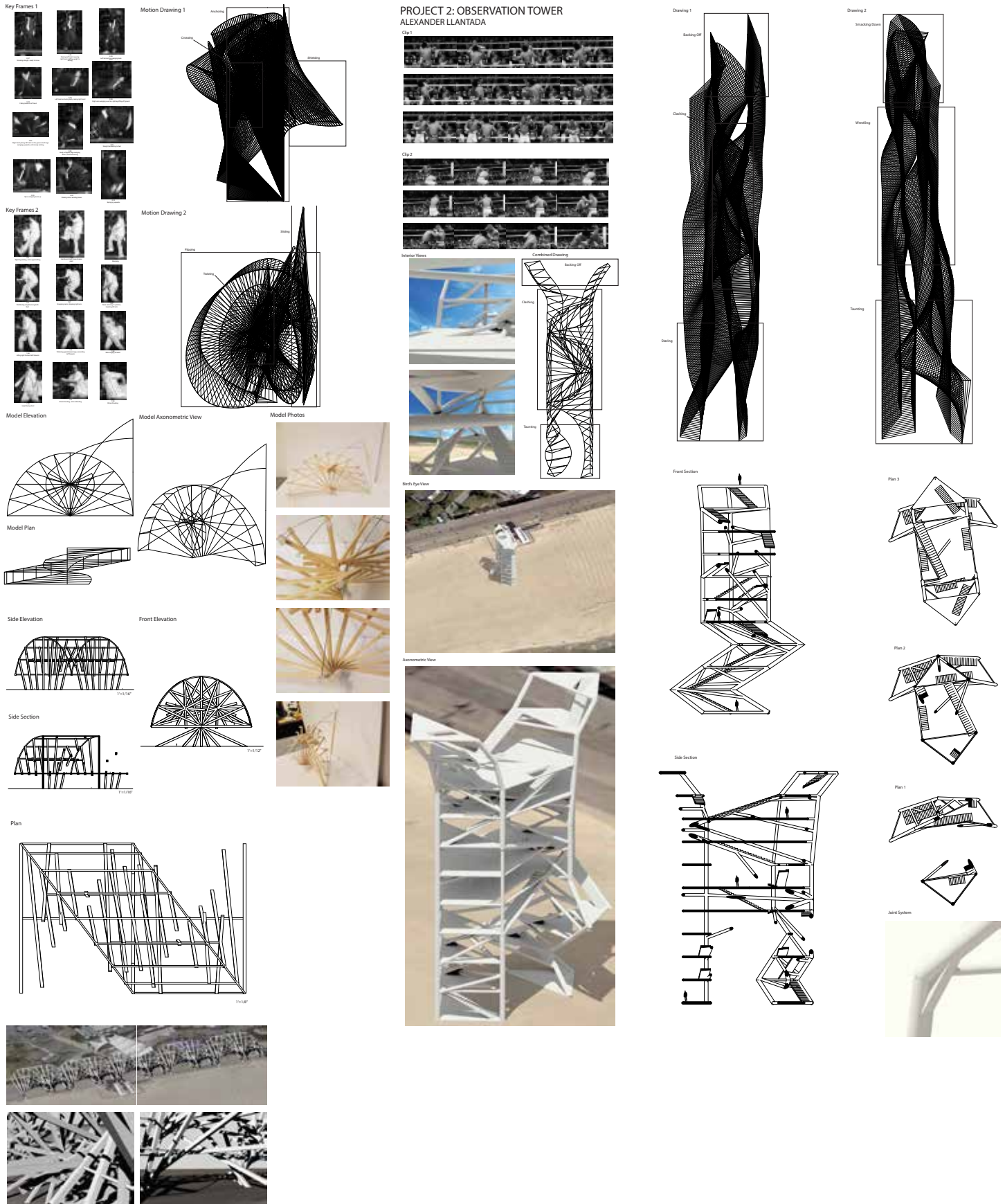


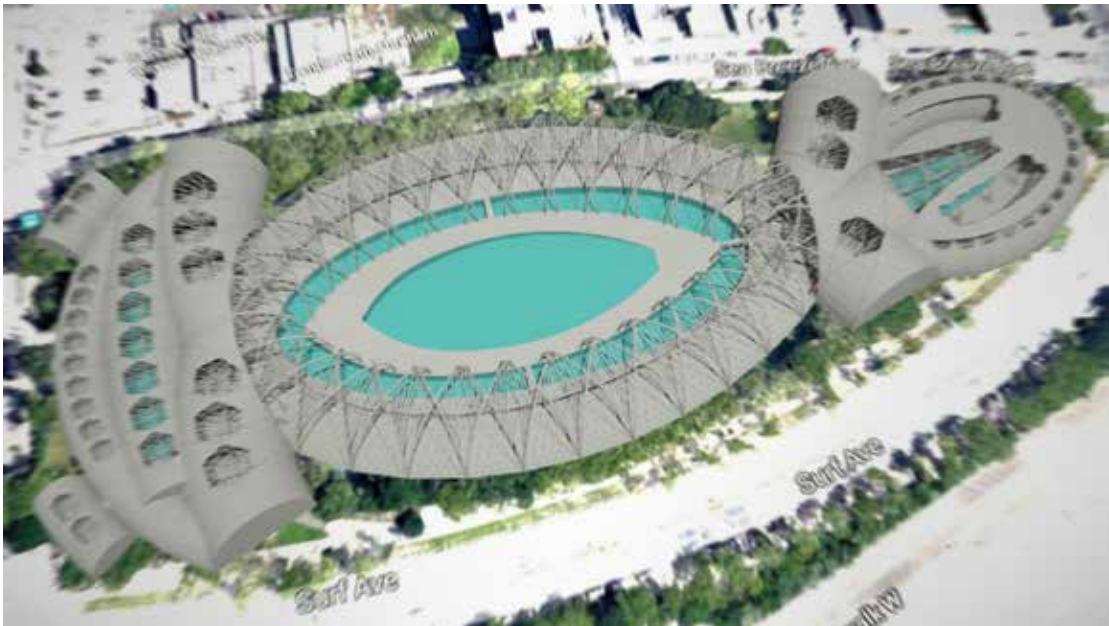
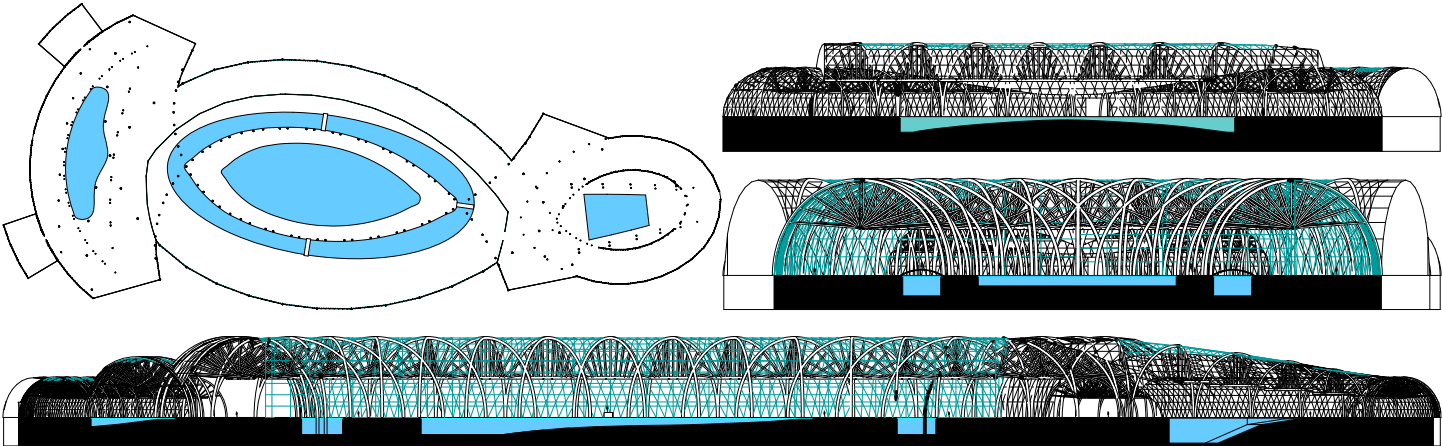
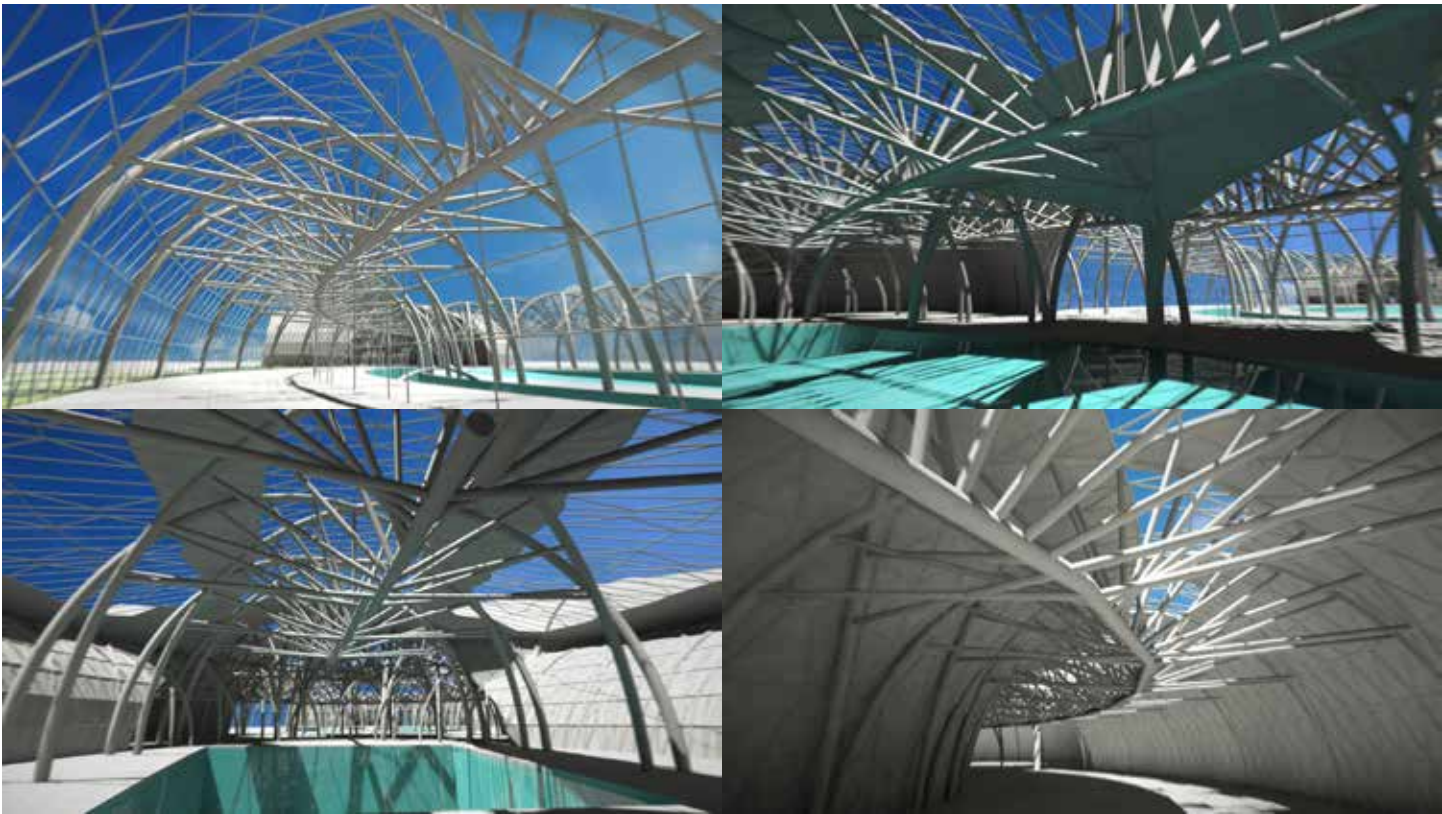
Section Perspective 2



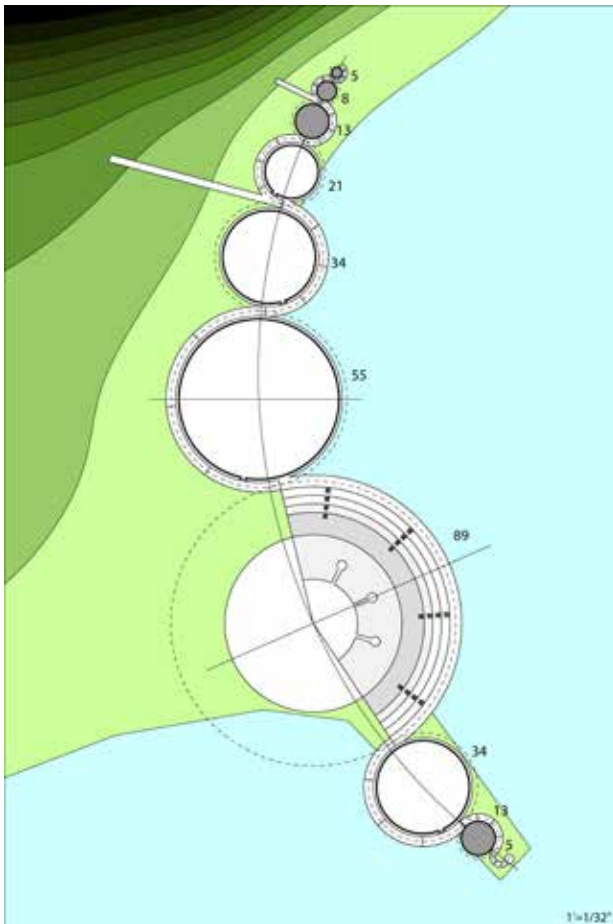
# SECOND YEAR STUDIO

## FALL 2016



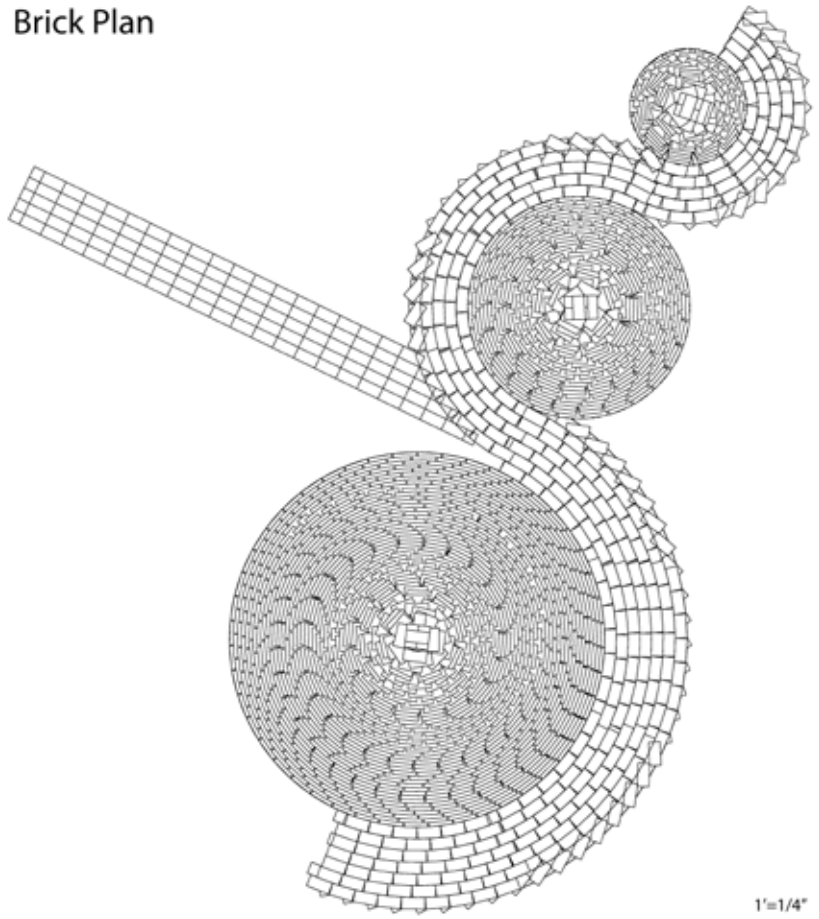


# SECOND YEAR STUDIO SPRING 2017

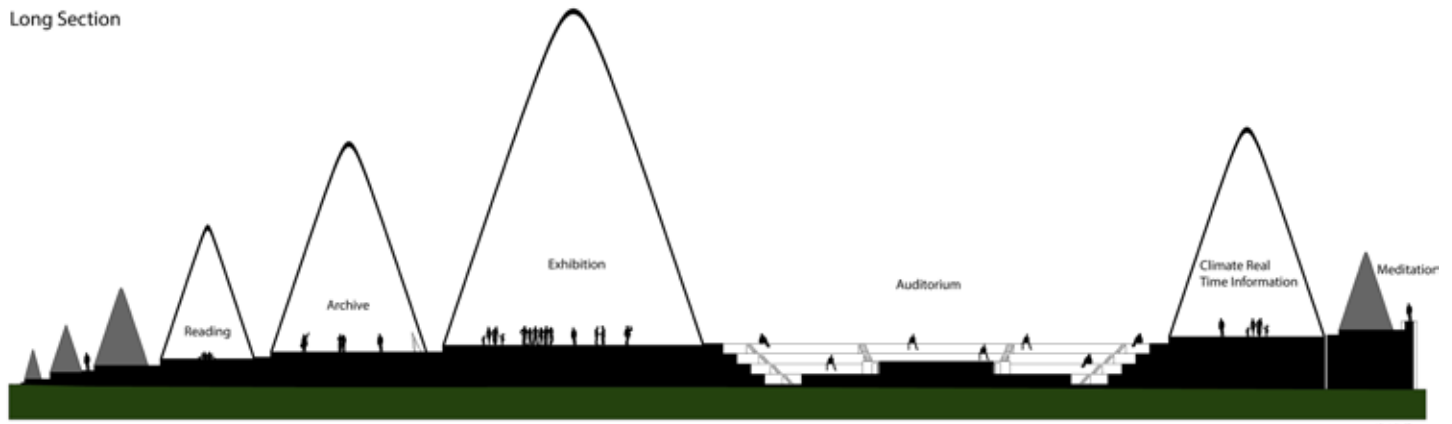


Long Section

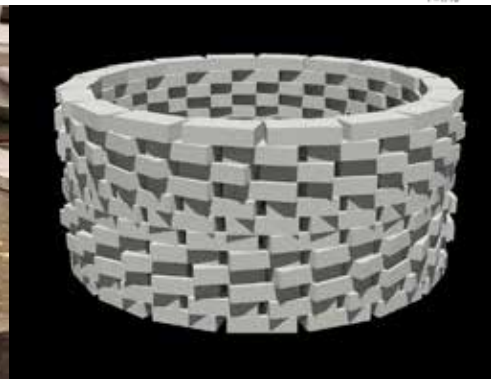
Brick Plan

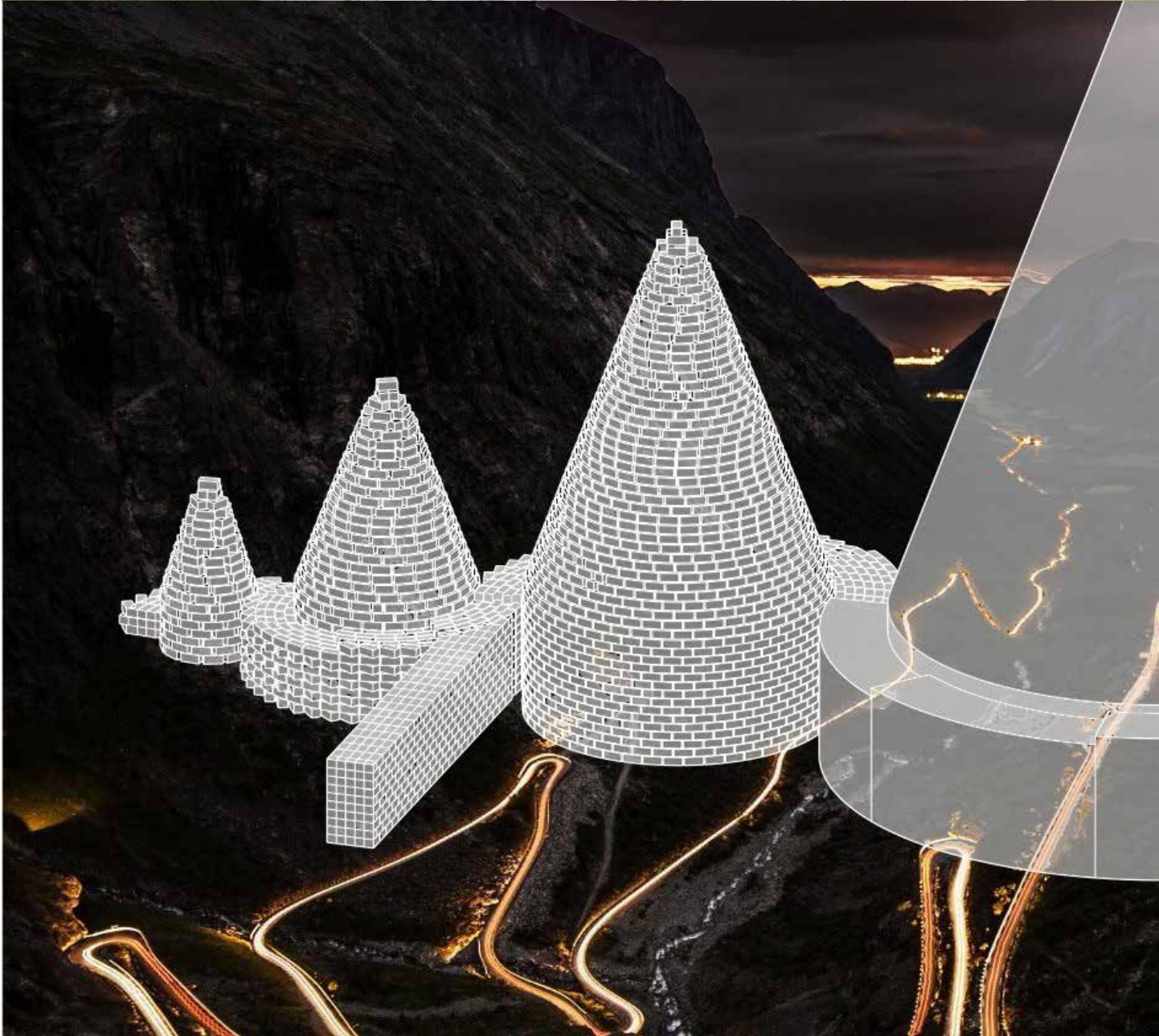
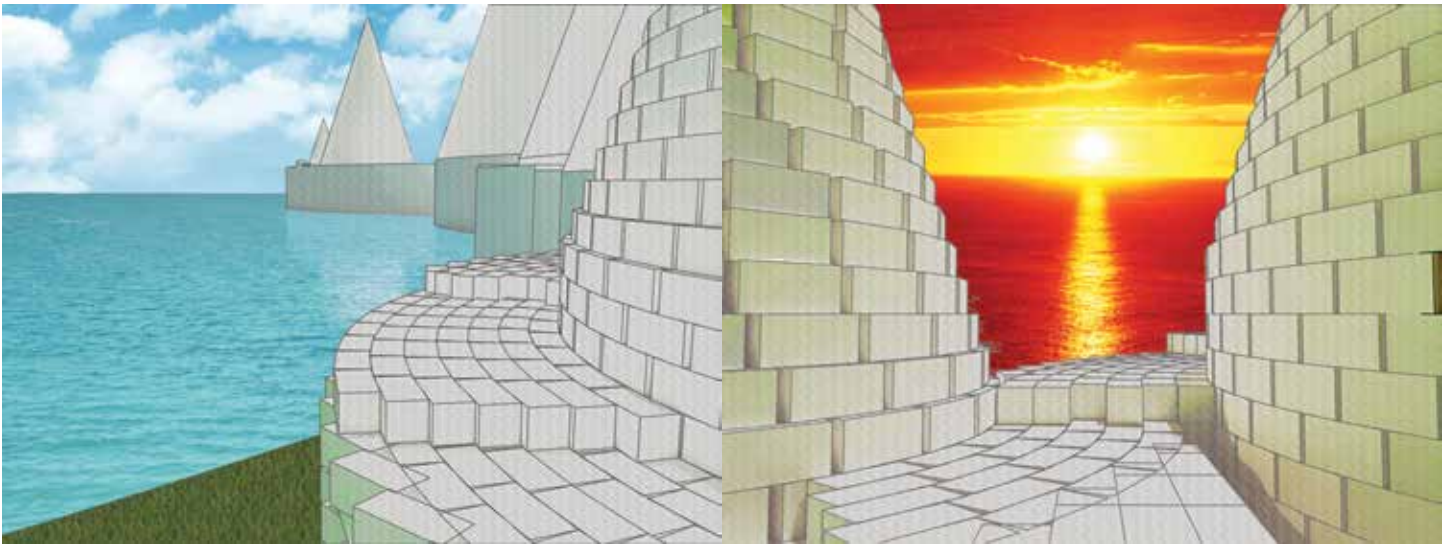


1"=1/4"



1"=1/32"





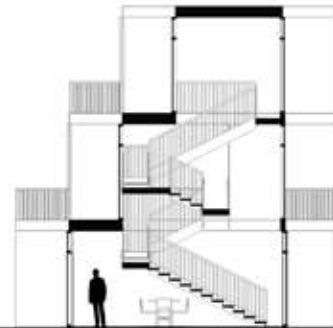
# THIRD YEAR STUDIO FALL 2017



Axonometric

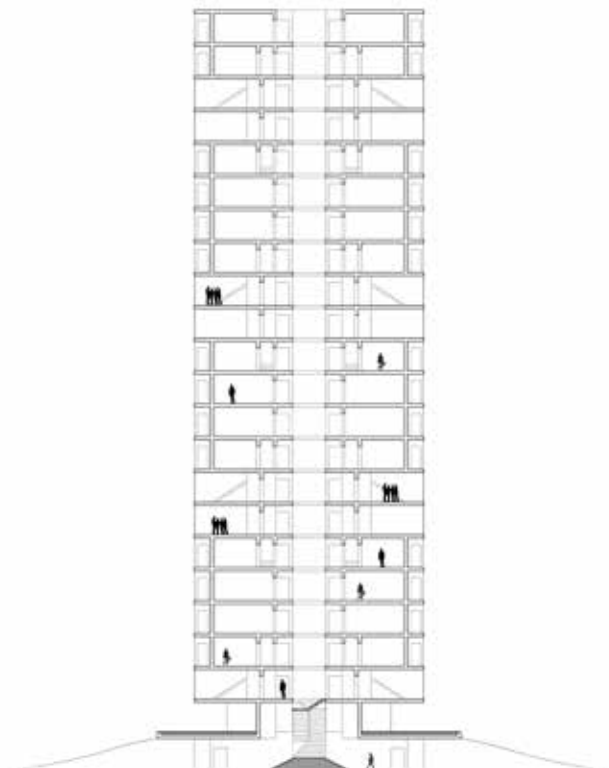
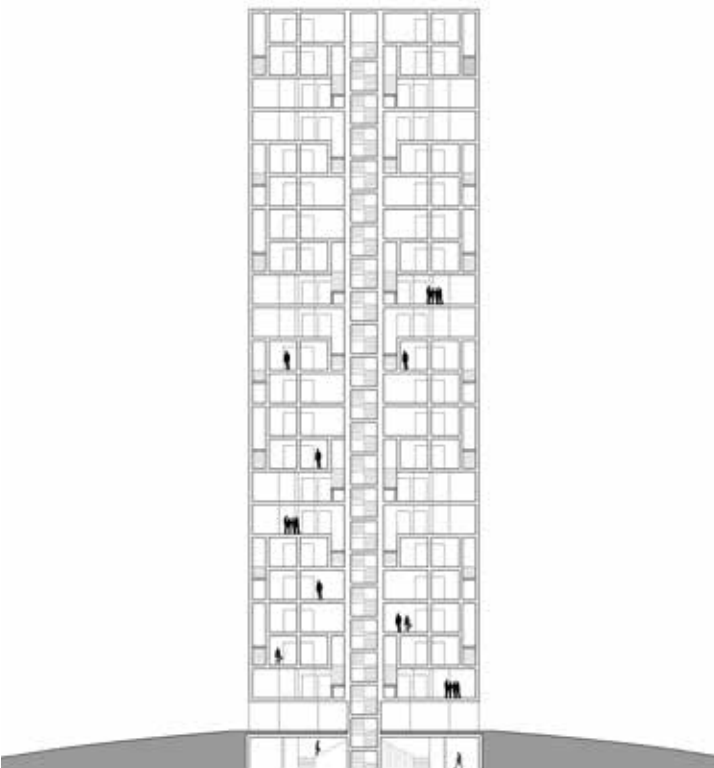


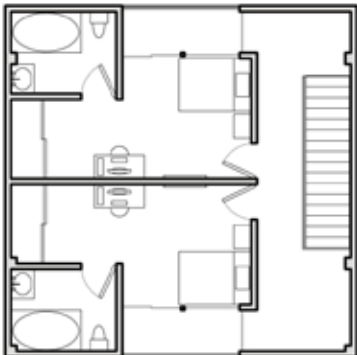
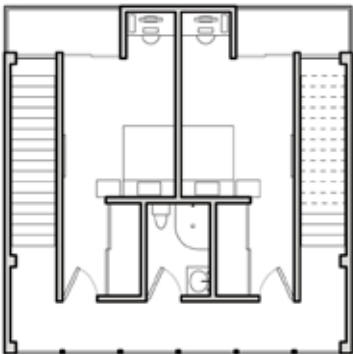
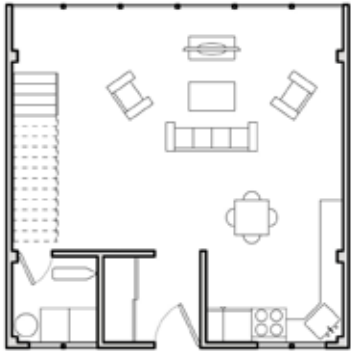
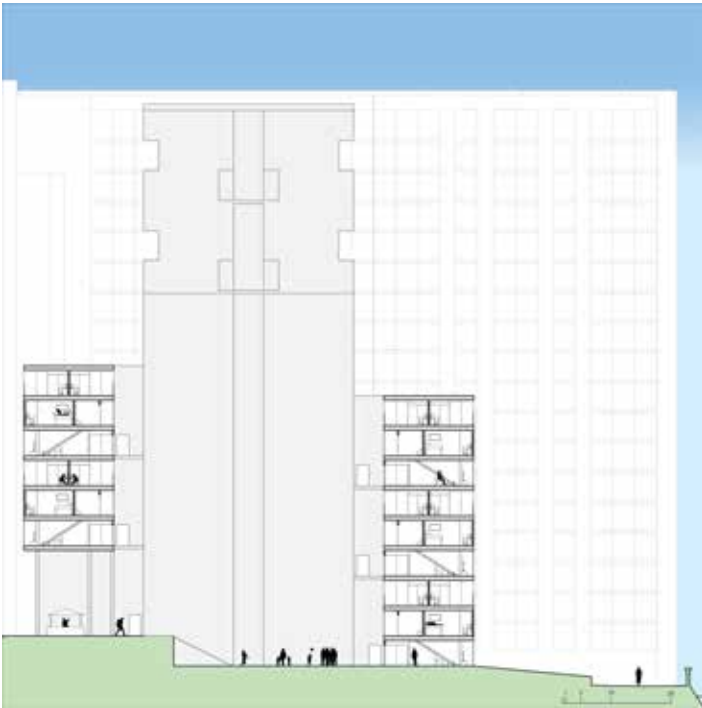
Section 2



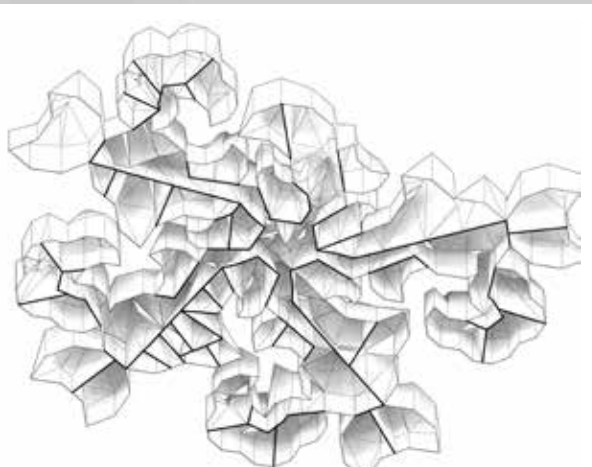
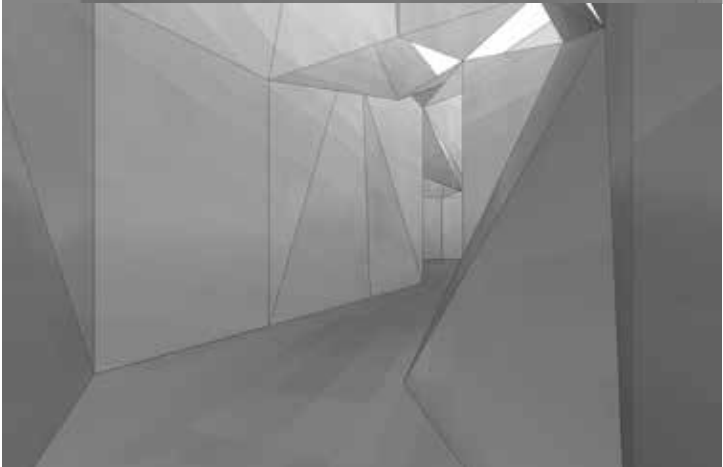
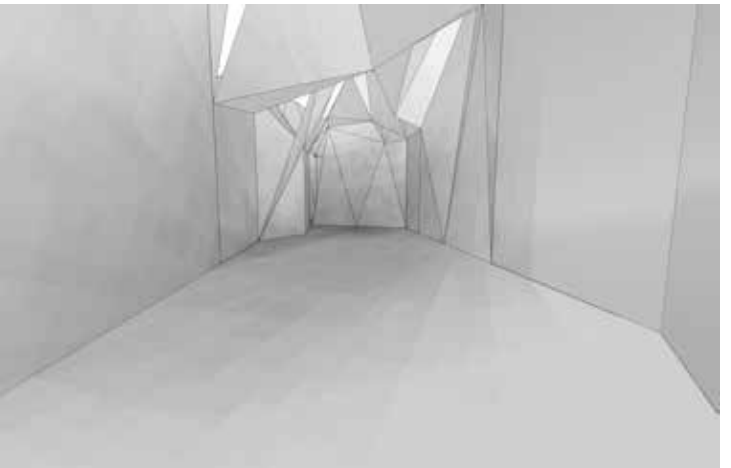
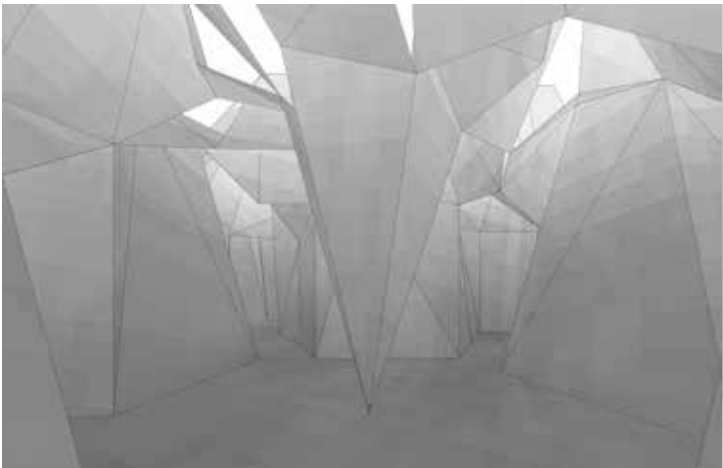
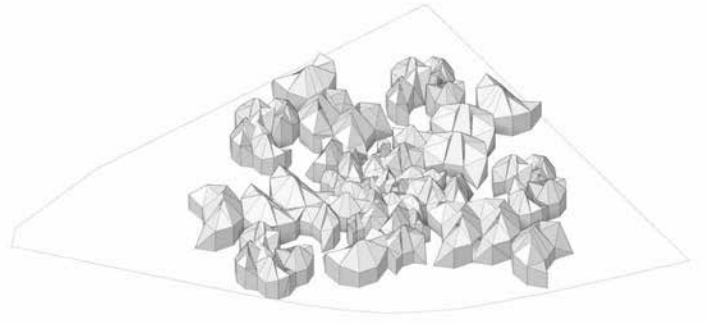
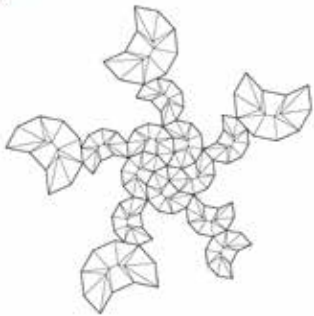
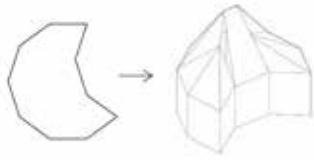
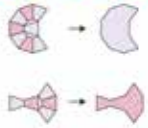
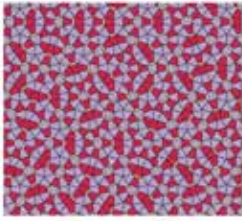
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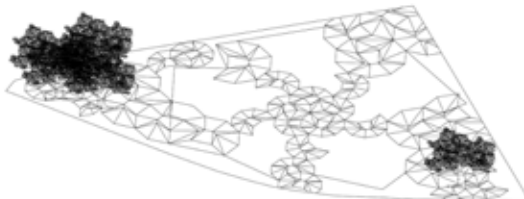
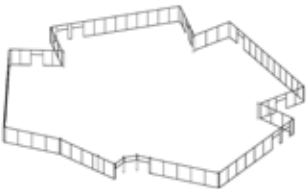
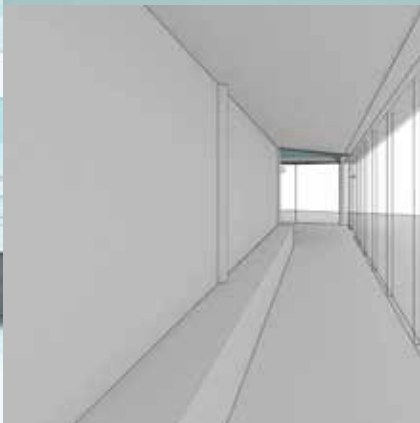
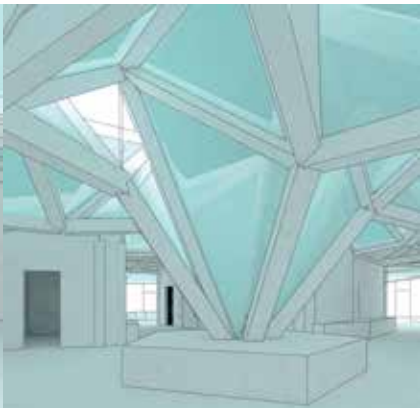
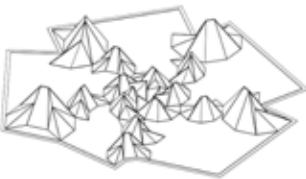
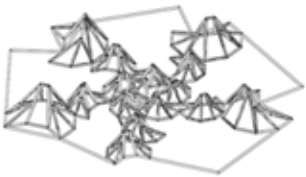
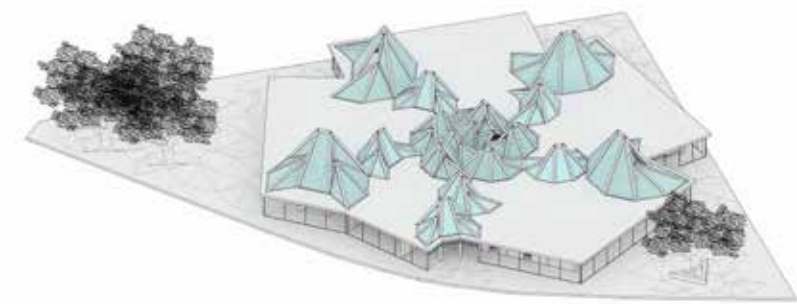
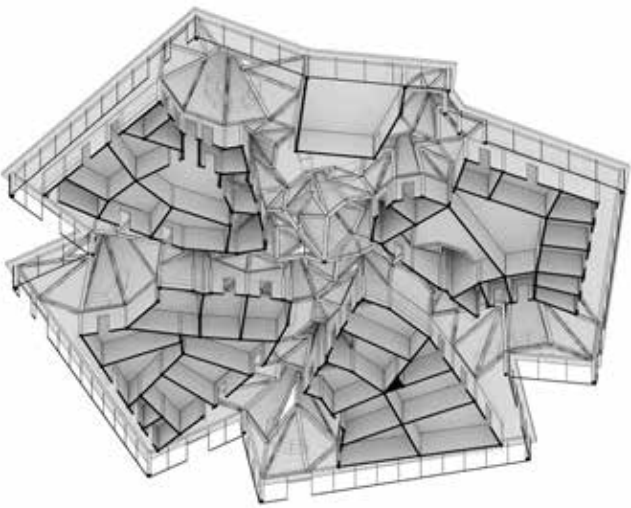
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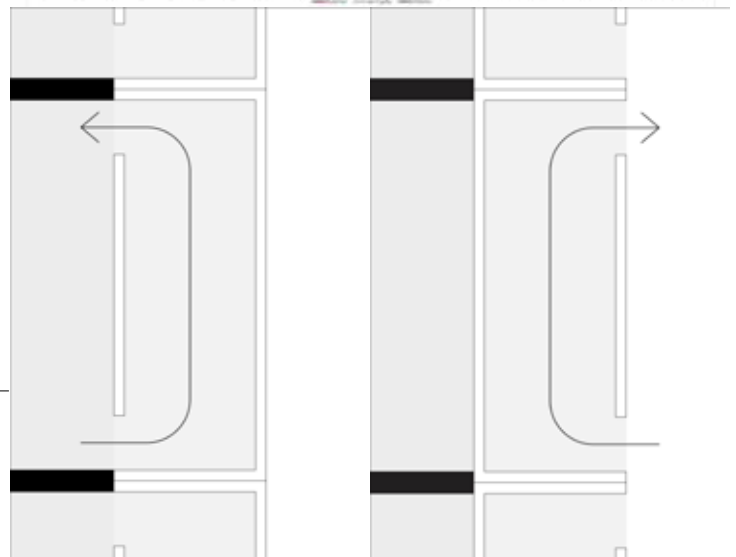
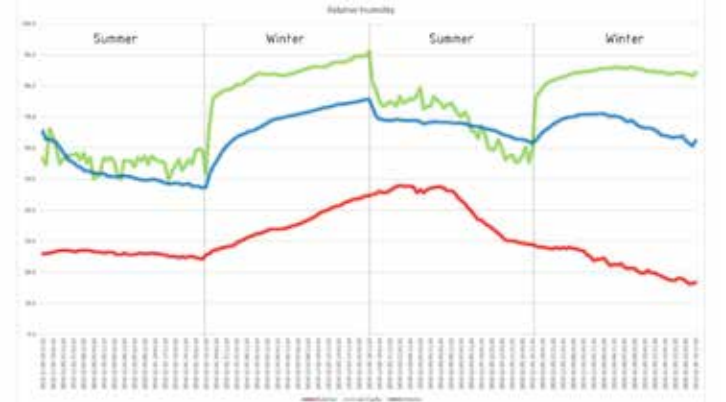
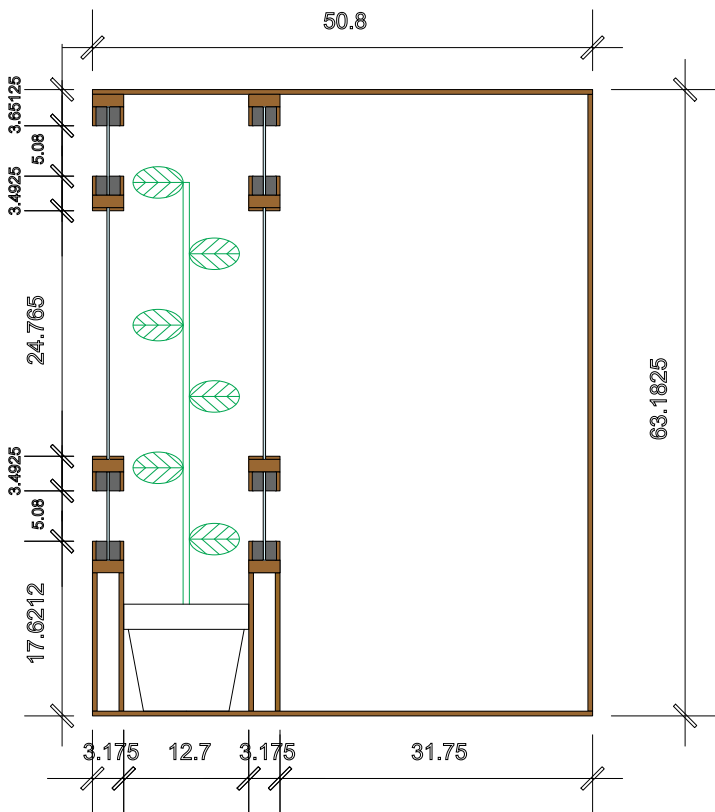
# THIRD YEAR STUDIO SPRING 2018

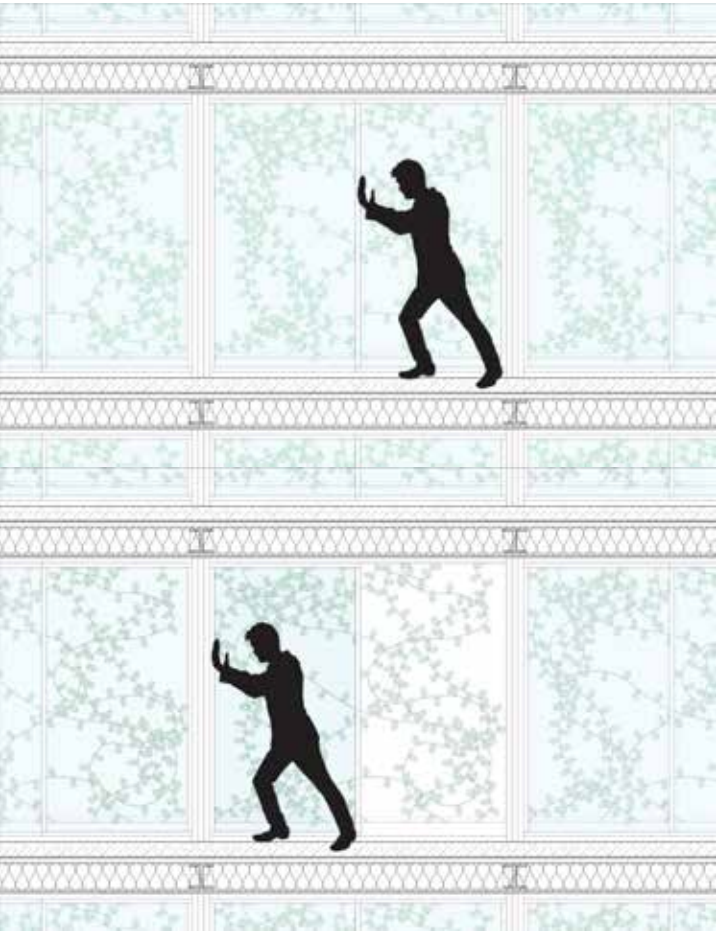
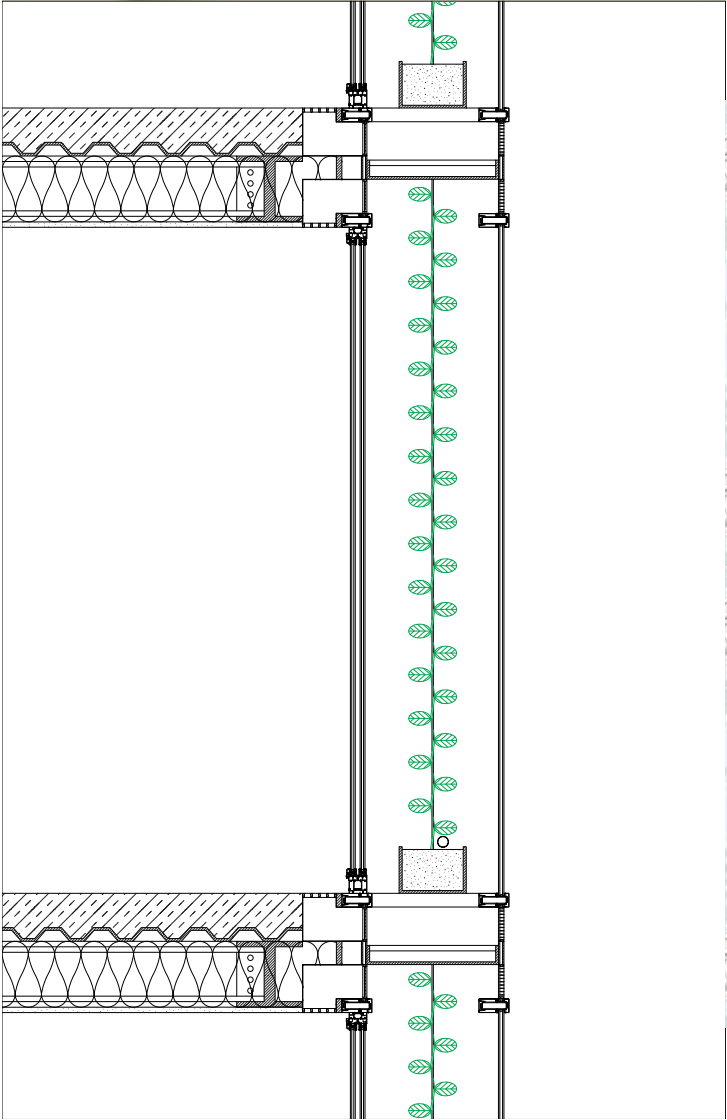




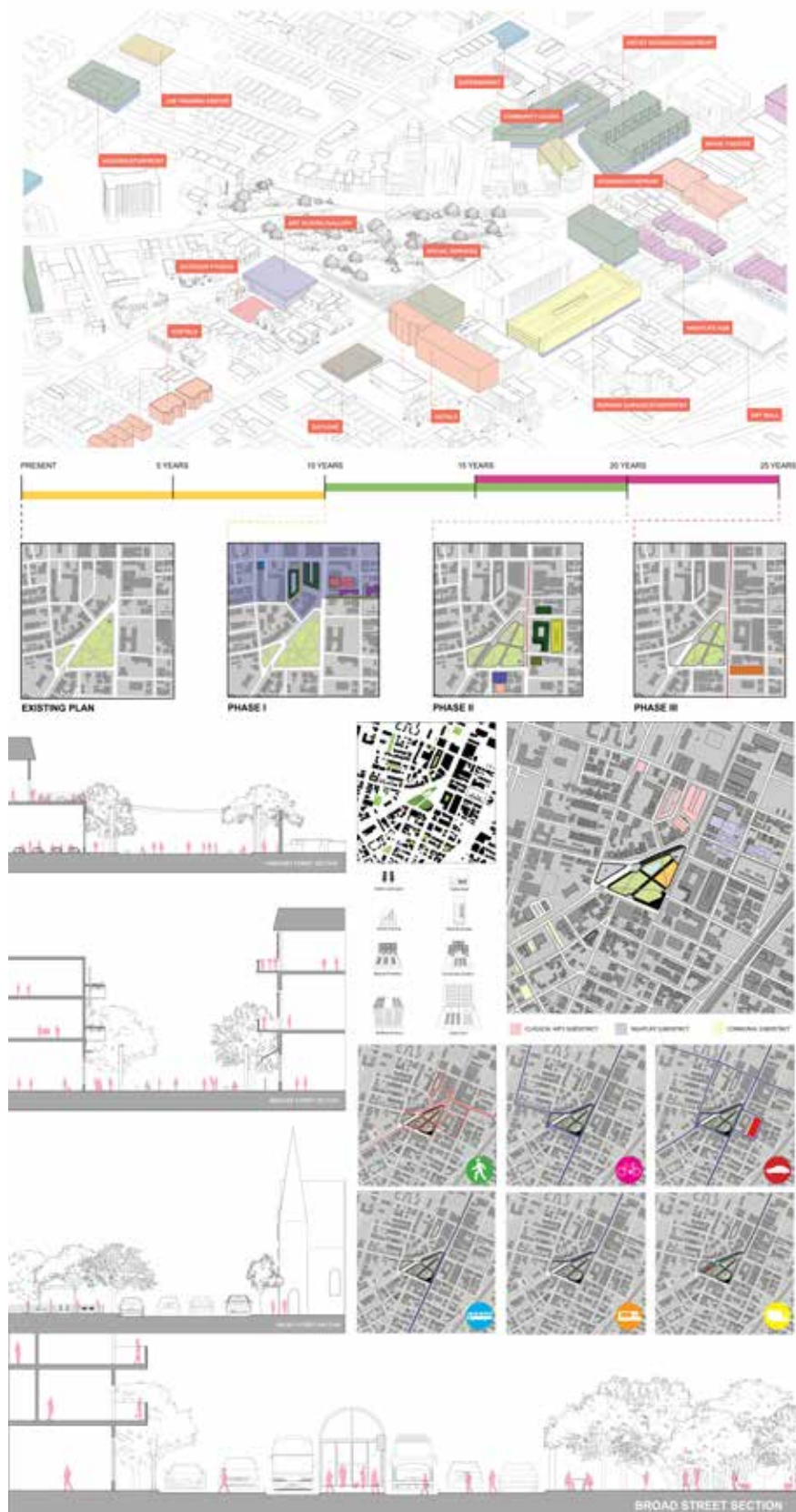
# FOURTH YEAR STUDIO

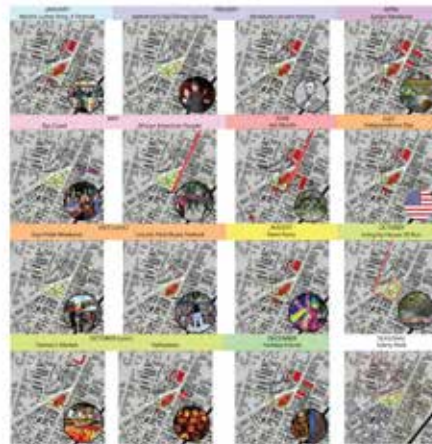
## FALL 2018





TO EMBRACE AND ENHANCE THE EXISTING COMMUNITY AND BRING OWNERSHIP OF THE STREETS BACK TO THE PEOPLE





PROPOSED NEIGHBORHOOD PLAN



PROPOSED LAND USE PLAN



EXISTING LAND USE PLAN



PROPOSED LAND USE PLAN

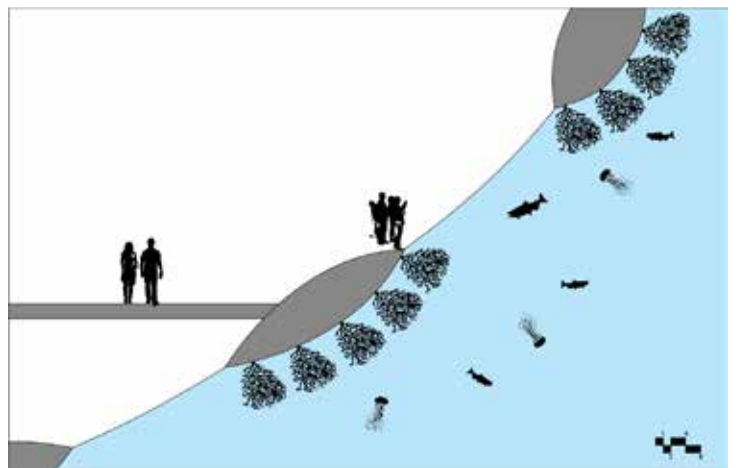
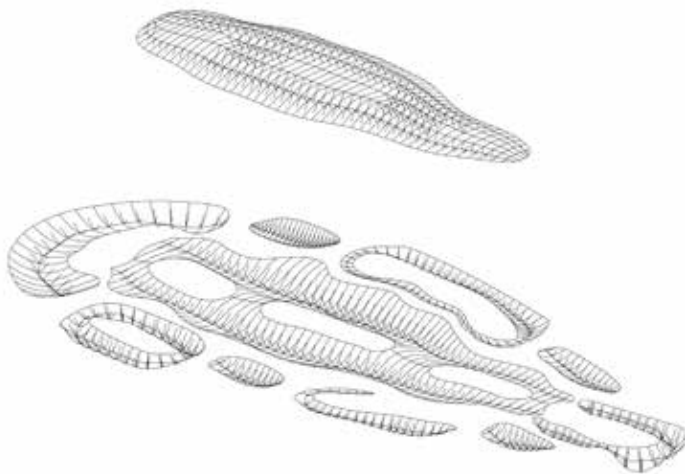
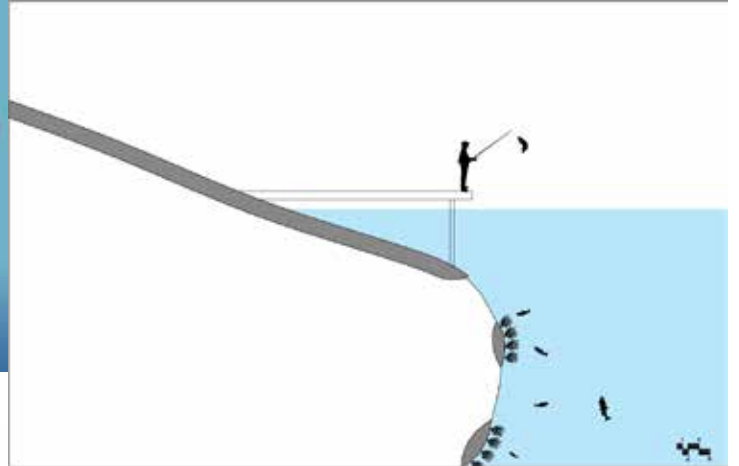
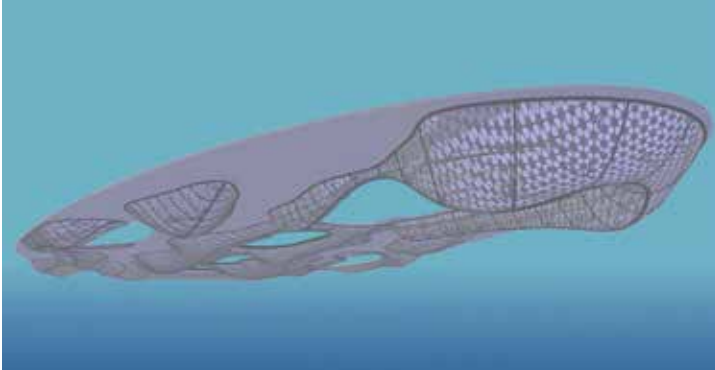


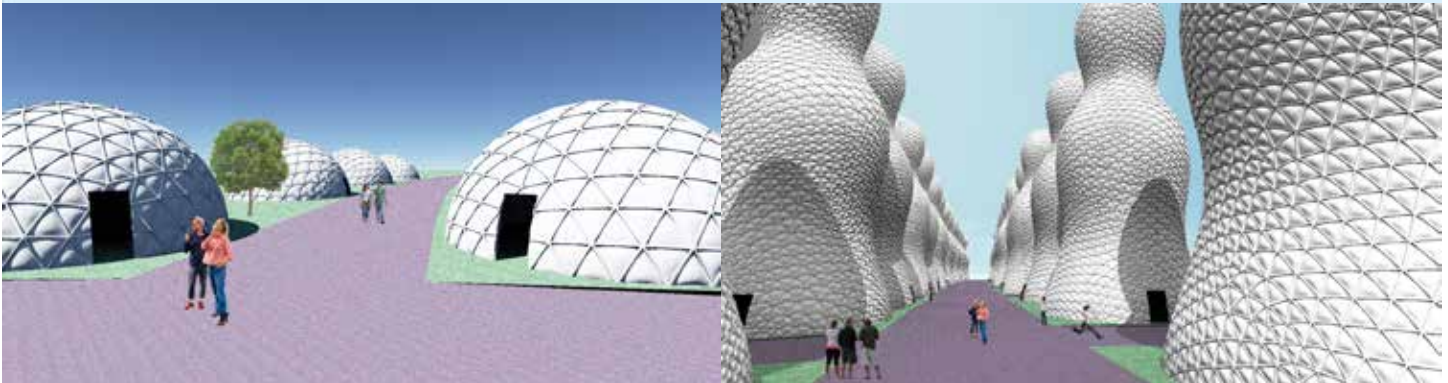
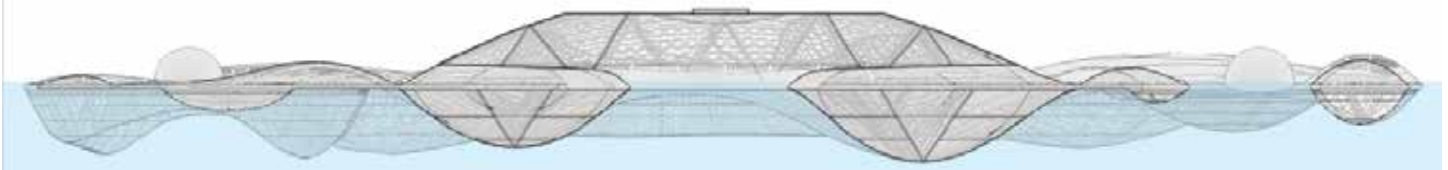
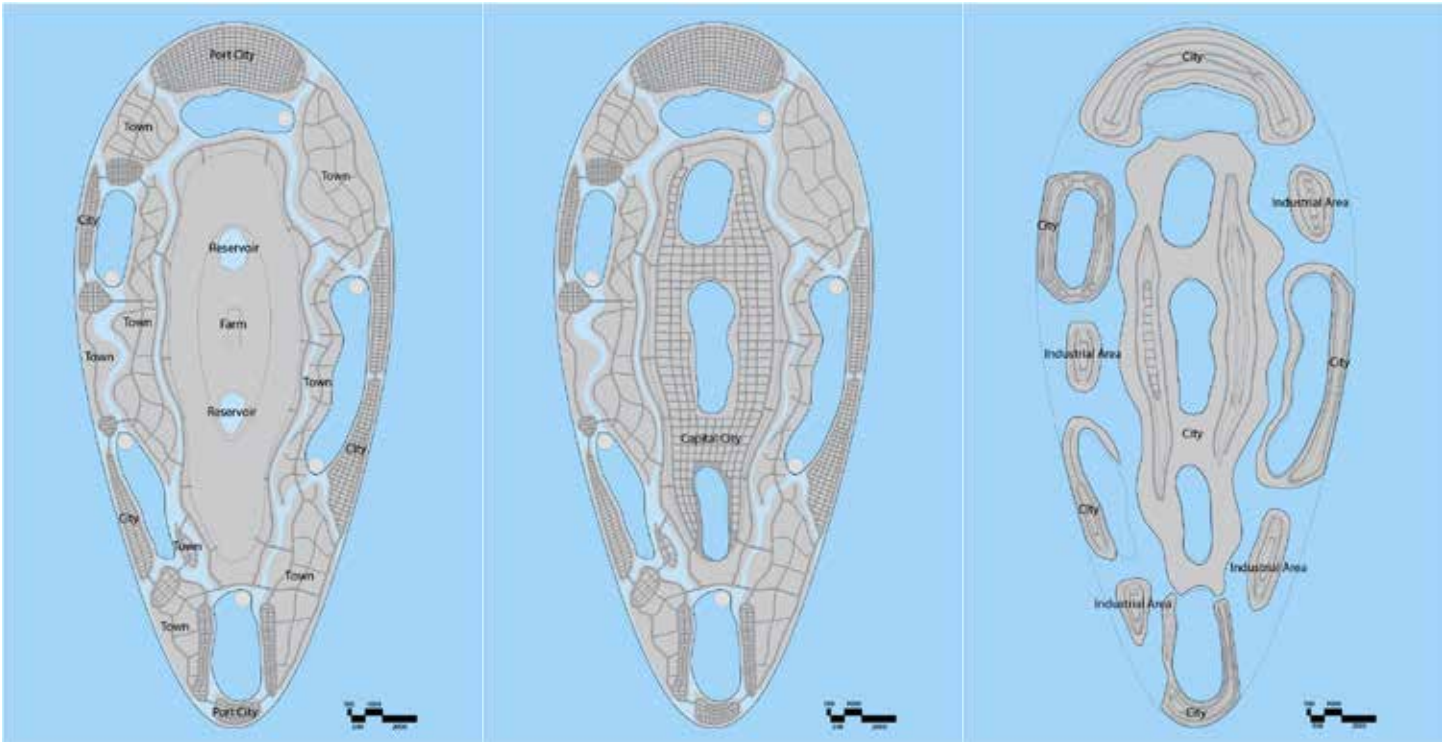
PARK PHASING PLAN



# FIFTH YEAR STUDIO

## FALL 2019





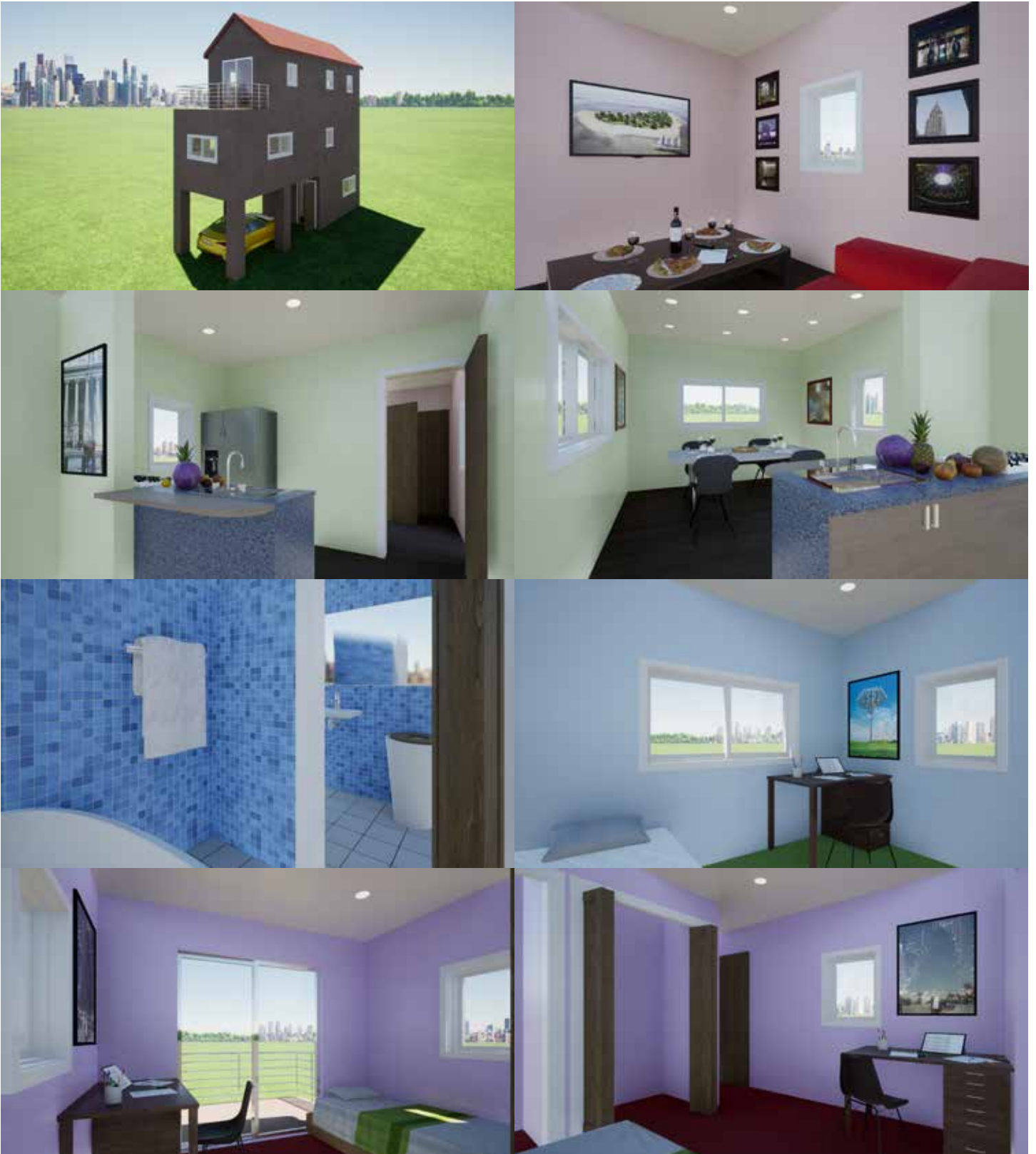
# TWINMOTION PROJECT 1

## SPRING 2020



# TWINMOTION PROJECT 2

## SPRING 2020

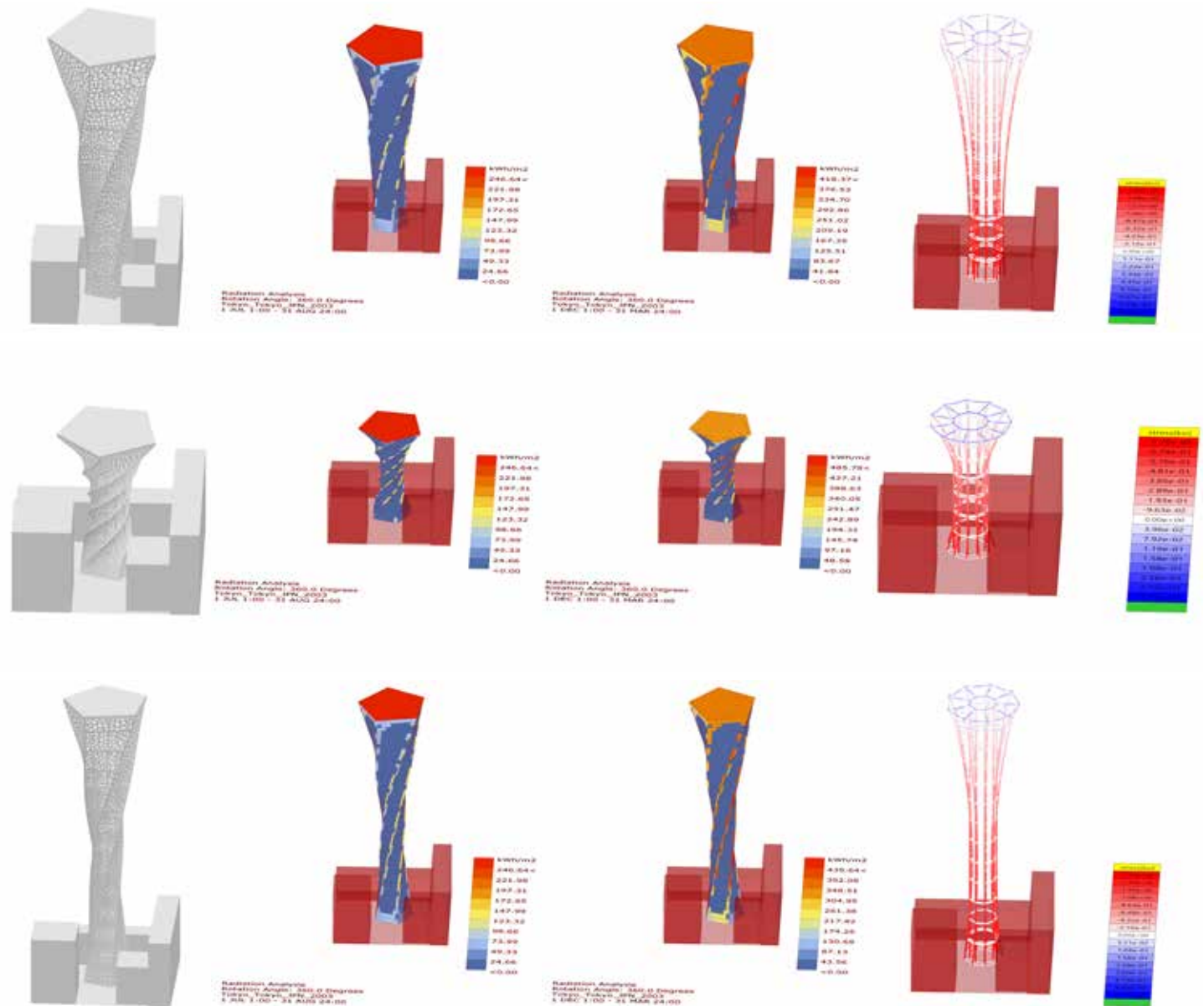


# TWINMOTION PROJECT 3

## SPRING 2020



# GRASSHOPPER PROJECT SPRING 2020



# FIFTH YEAR STUDIO (INTEGRATED) SPRING 2020

## FOUR FREEDOMS CENTER

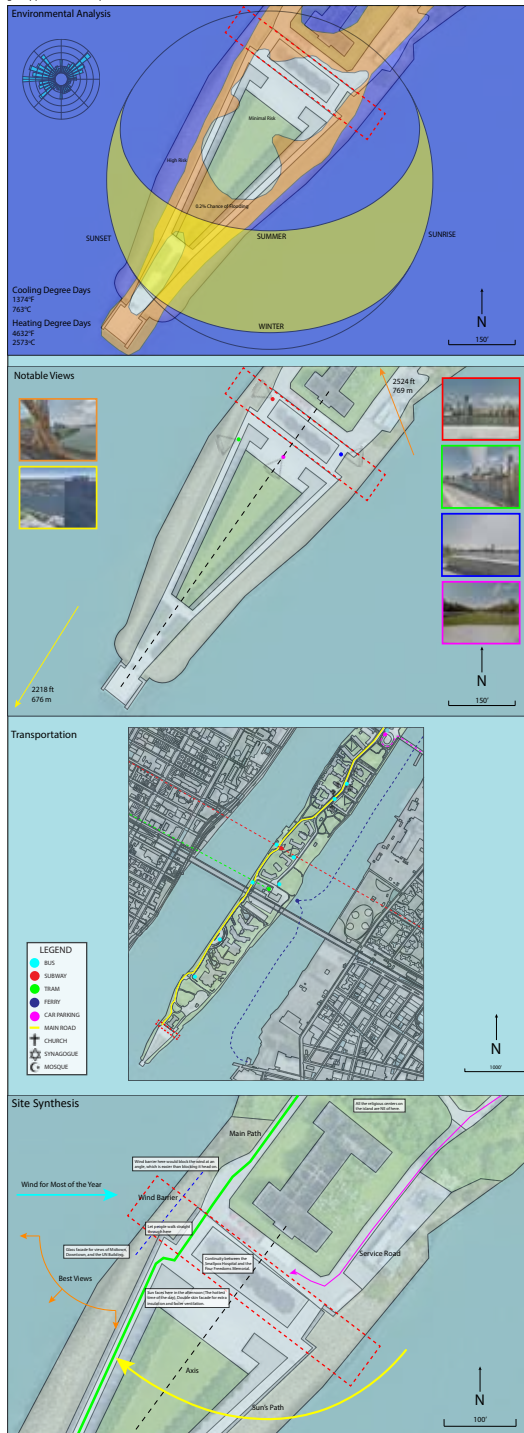
ALEXANDER LLANTADA

Freedom of Speech means that anyone can freely voice their opinions in public, whether through speech, writing, music, or visual media. The government can't silence anyone for their opinion, even if it is offensive or protests against the government. Just like how everyone can say anything, nobody has to listen to or agree with everything. While conflicts will definitely occur due to differing opinions or even hate speech, these occur among the individuals in society, so it is the responsibility of the government to stay out of it and let the people handle it themselves. Sexual comments and threats are obvious exceptions. The gallery that focuses on Freedom of Speech gives visitors a view of the interior courtyard and any events taking place in it, allowing them to hear the conversations below.

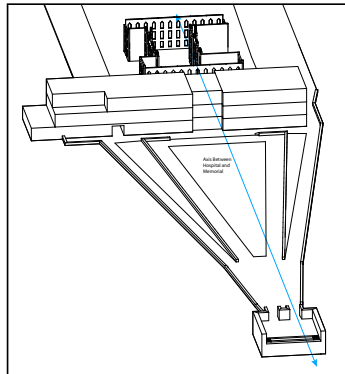
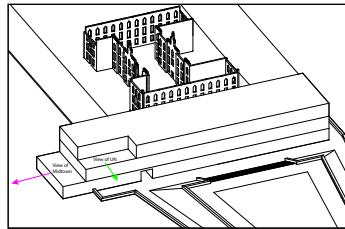
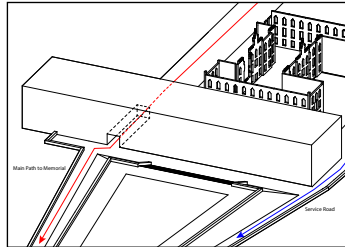
Freedom from Want means that everyone should have a life where they are satisfied with what they have. This is a life with all the necessities (food, water, clothes, shelter, etc.). Material possessions do not count. This gallery contains artwork focusing on people who are less fortunate, both around the world and within our country.

Freedom of Religion give anyone the right to follow any religion, or not follow a religion at all. This gallery contains artwork related to various religions, commentaries on their effects on society, ideas about God, etc. In the center is a prayer room that relies only on architecture to give a spiritual feeling. There are no religious symbols in the prayer room, so that the room can feel welcoming to all.

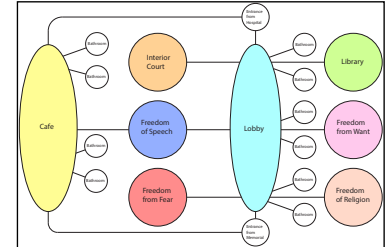
Freedom from Fear means that no one should have to live in fear of attack from another country. The random columns and narrow passages make this gallery appear unsettling to visitors, representing the fear. At the end is a balcony that frames a view of the United Nations building, telling the visitors that there is nothing to fear as long as the United Nations is still keeping the peace. The art in this gallery promotes world peace and shows the horrors of war.



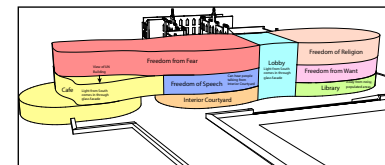
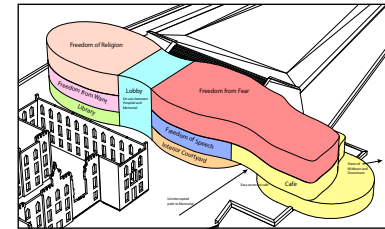
Massing Diagrams



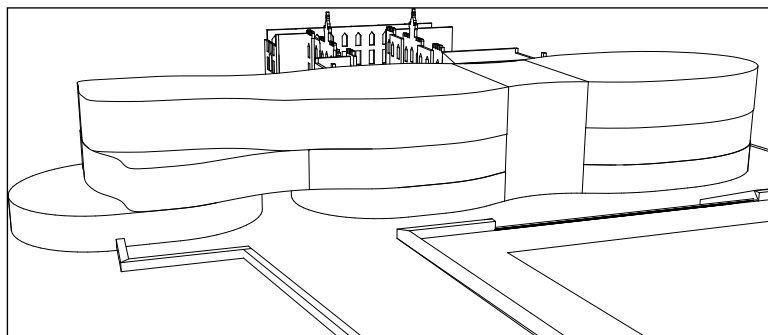
Bubble Diagram



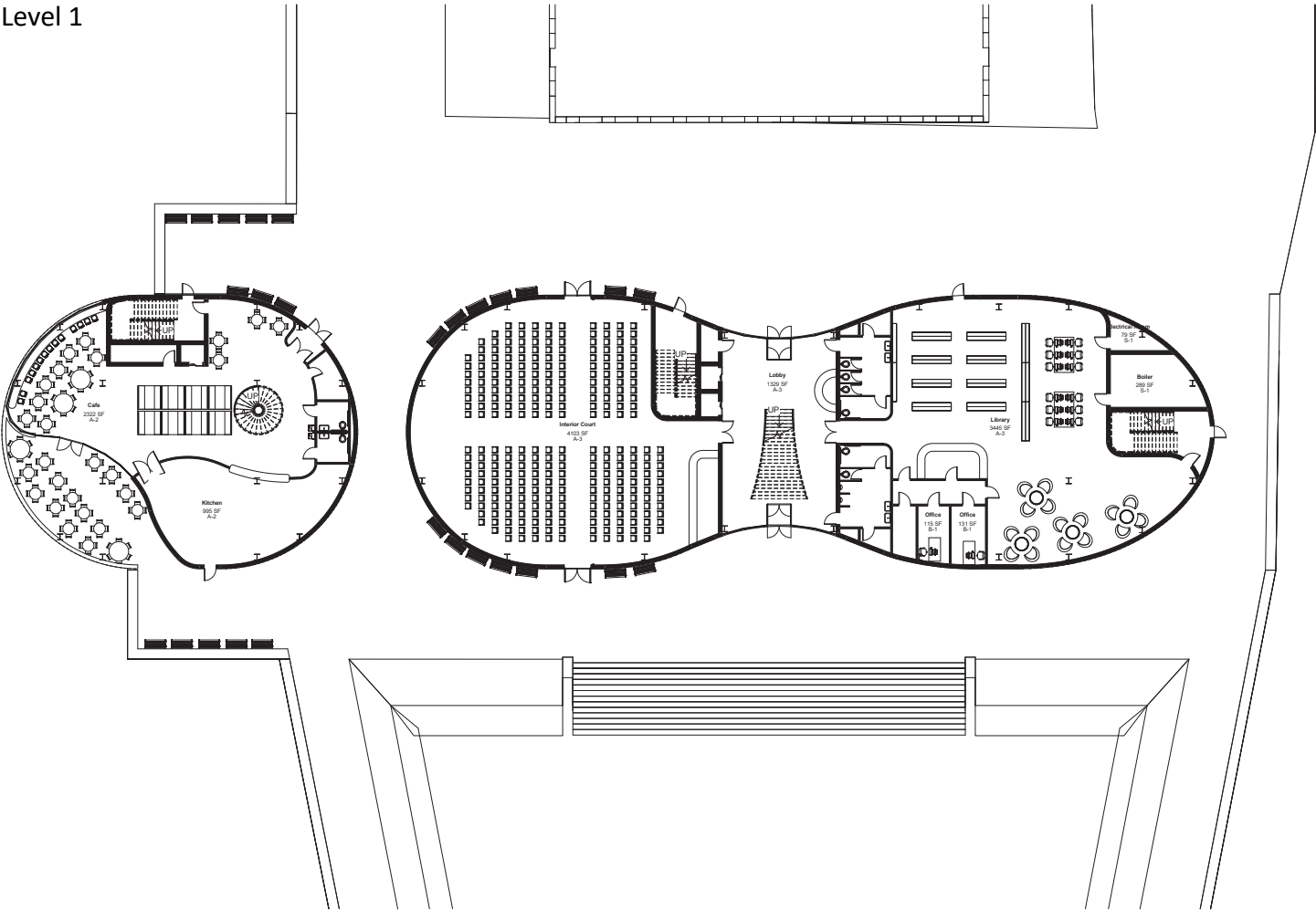
Program Placement



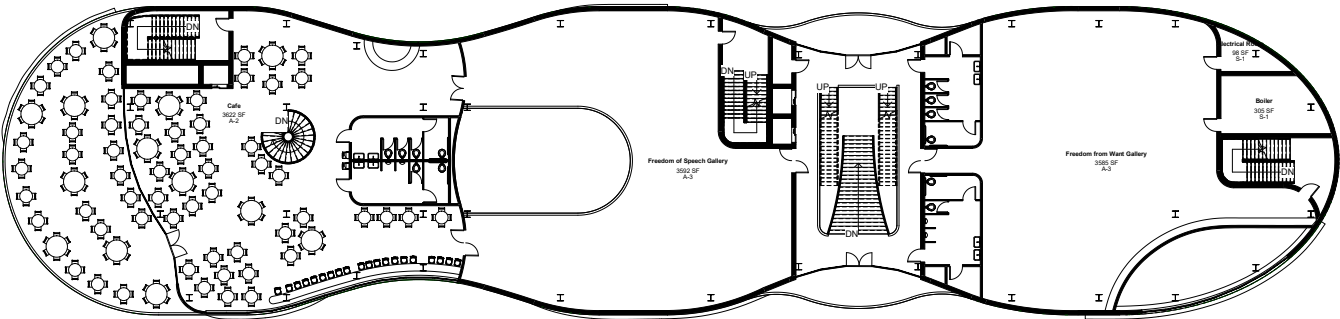
Final Mass



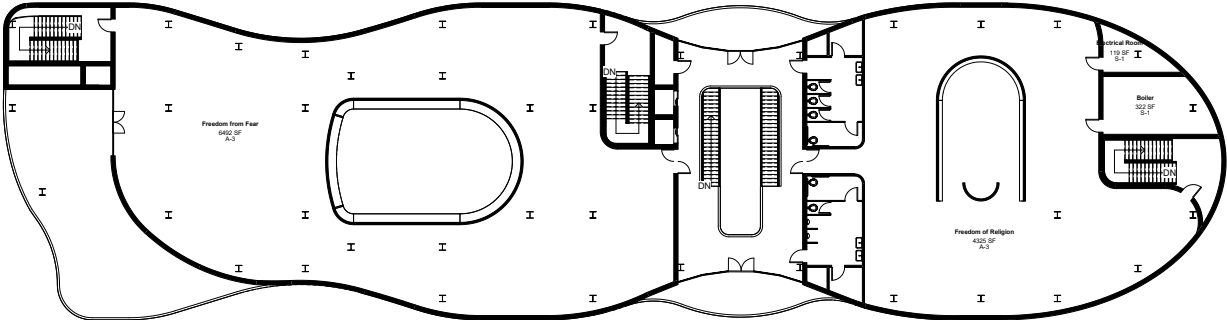
Level 1



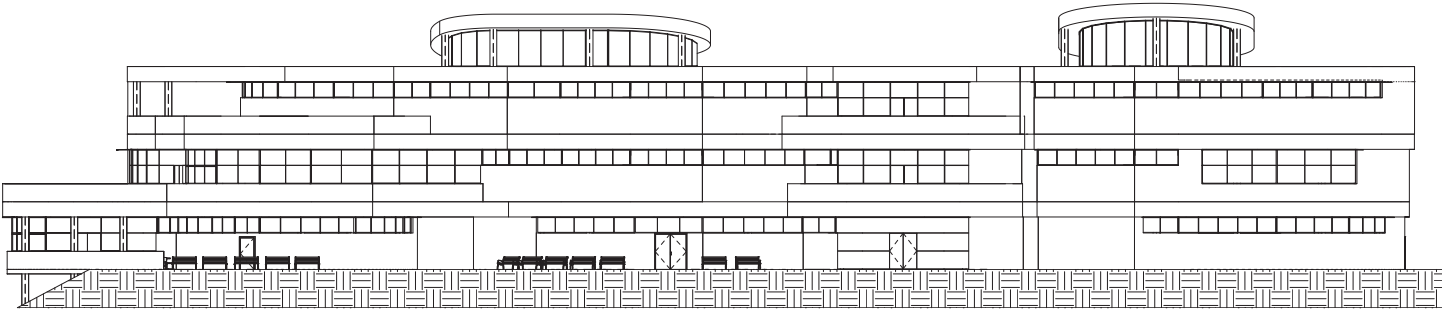
Level 2



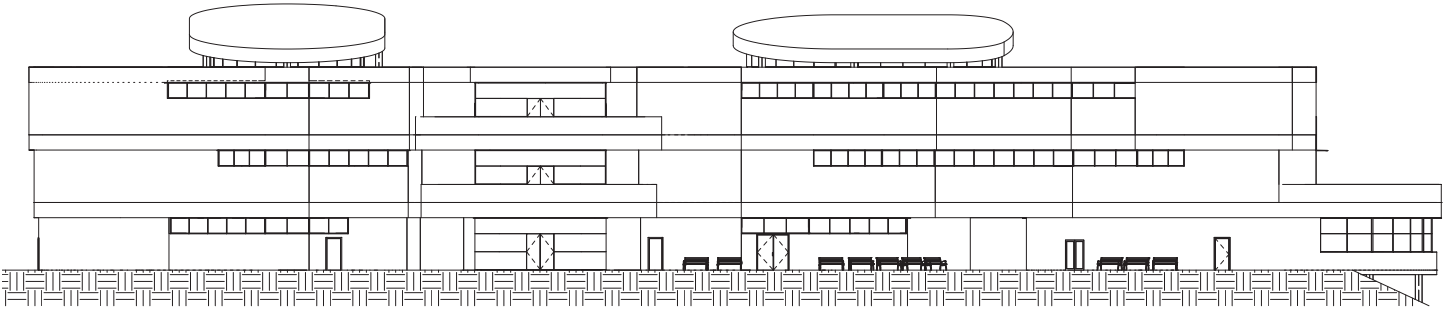
Level 3



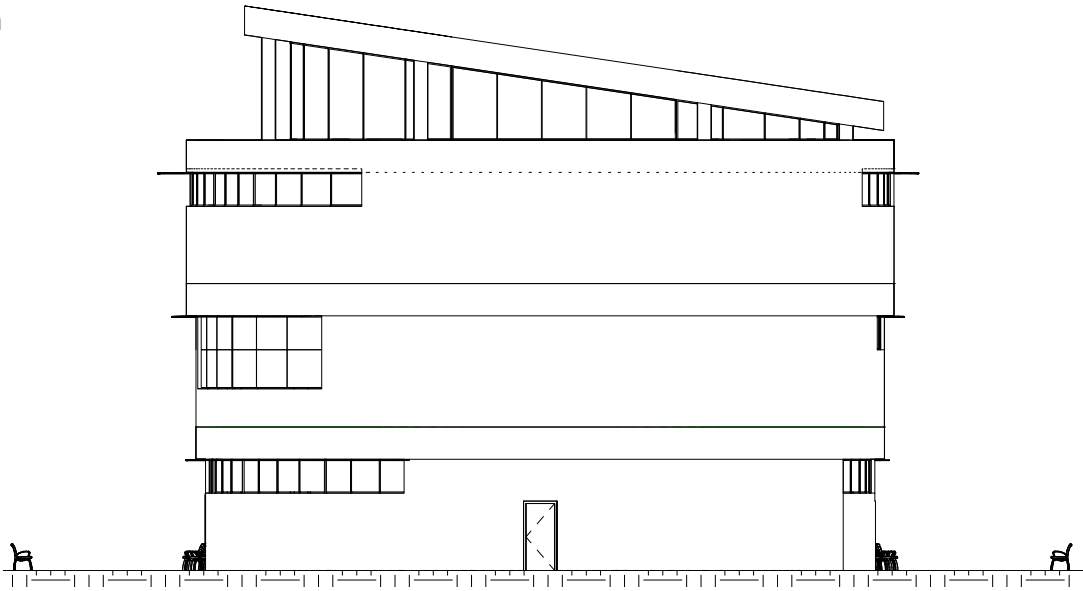
South Elevation



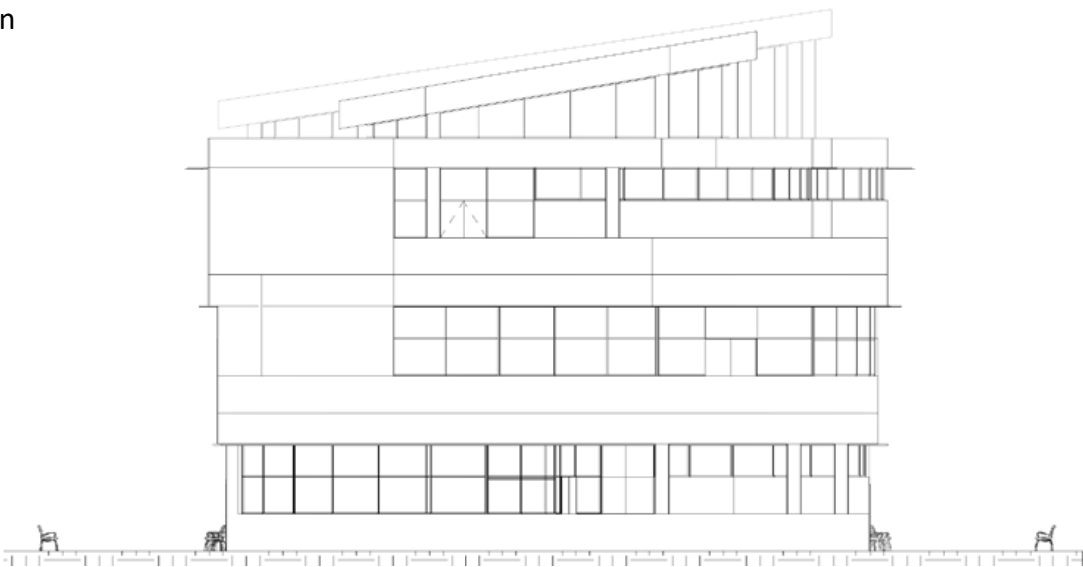
North Elevation



East Elevation



West Elevation



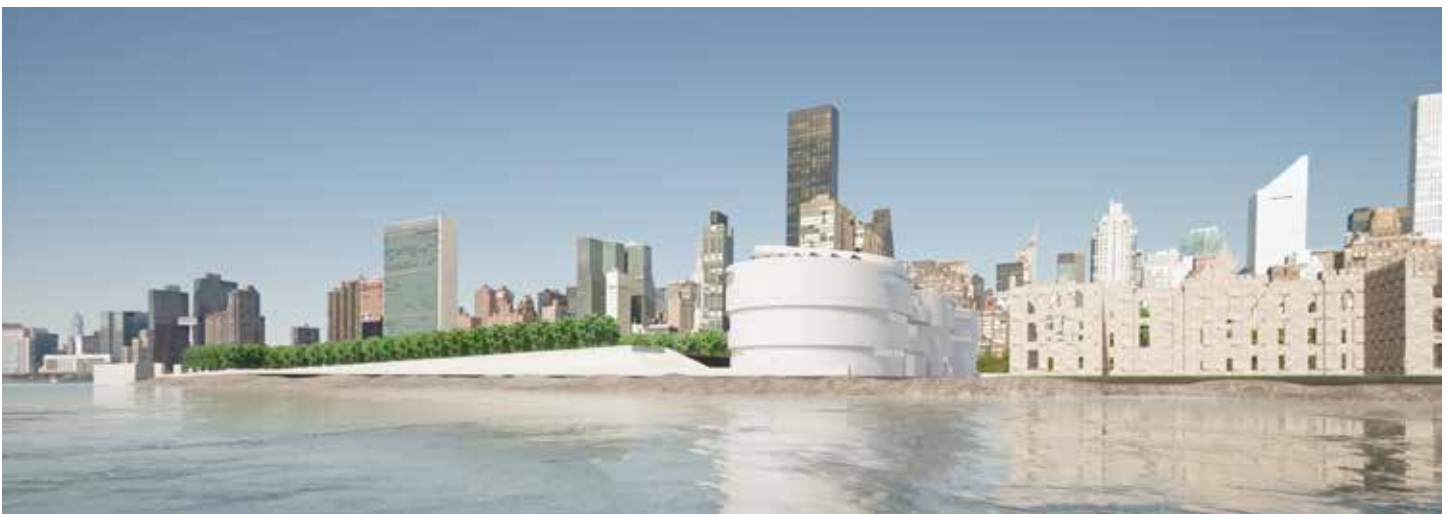
Bird's Eye View 1



Bird's Eye View 2



View From East



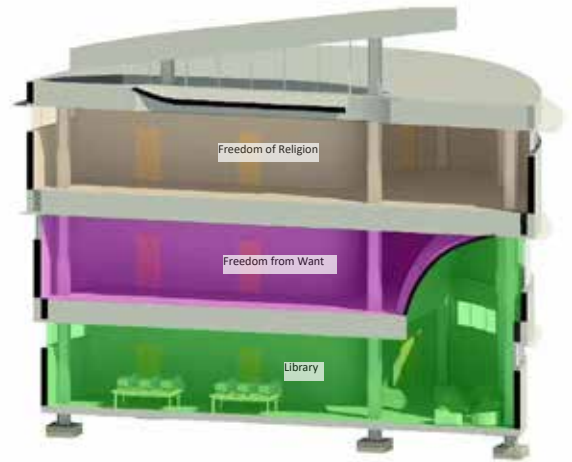
View From West



Short Section 1



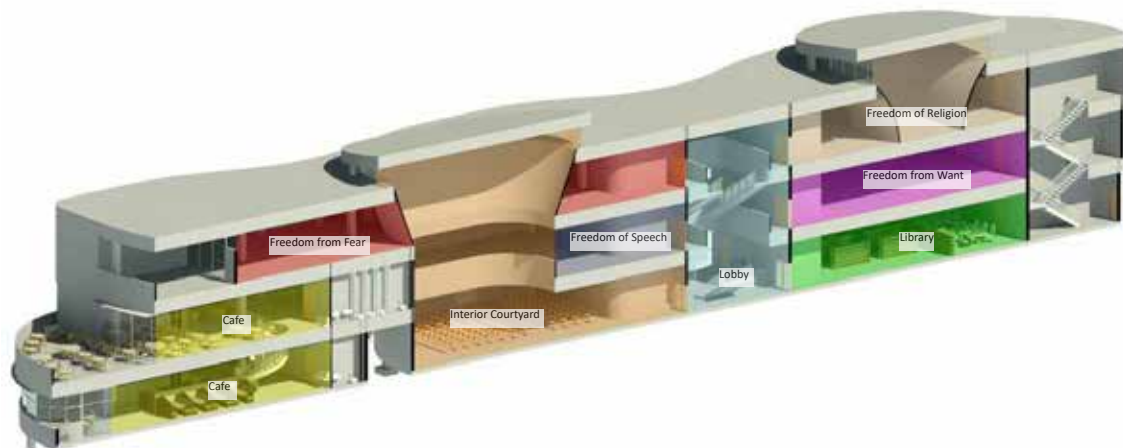
Short Section 2



Long Section 1

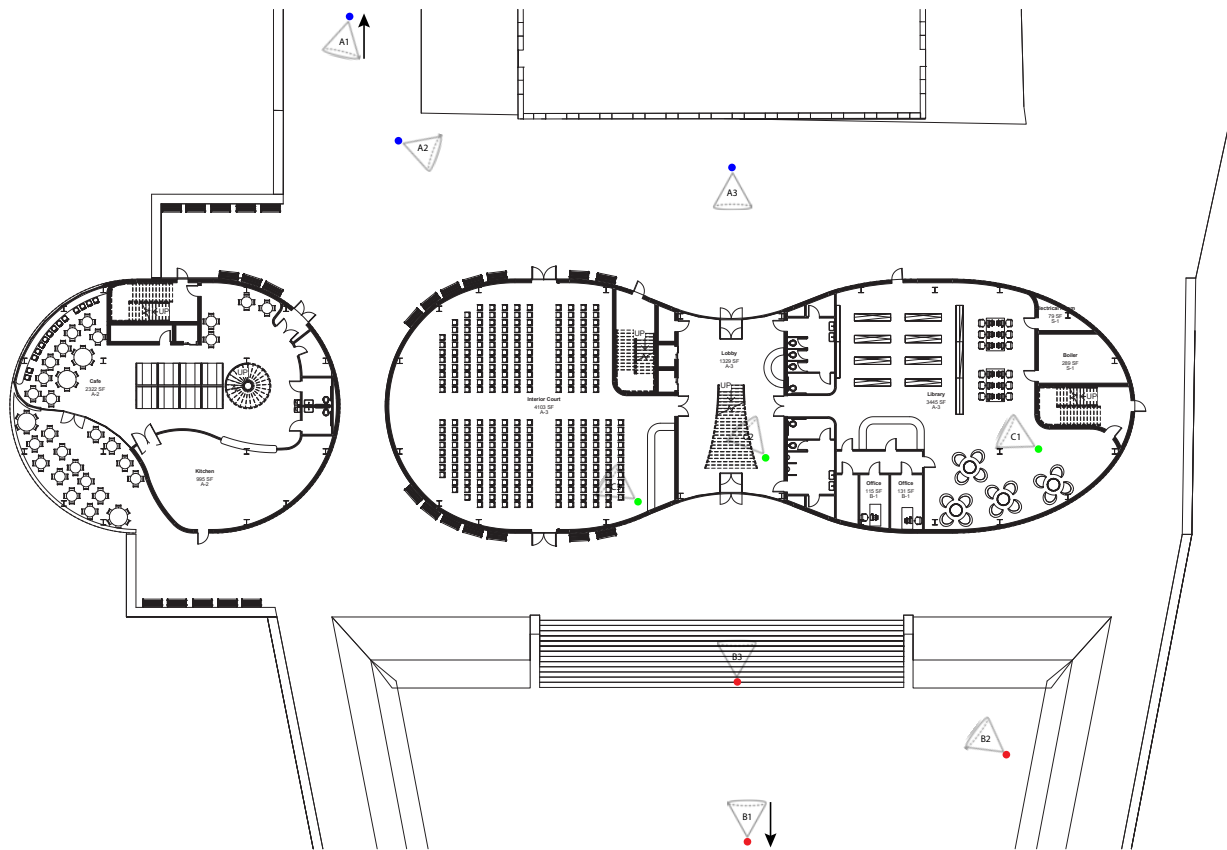


Long Section 2



# Wayfinding

A



A2



A1

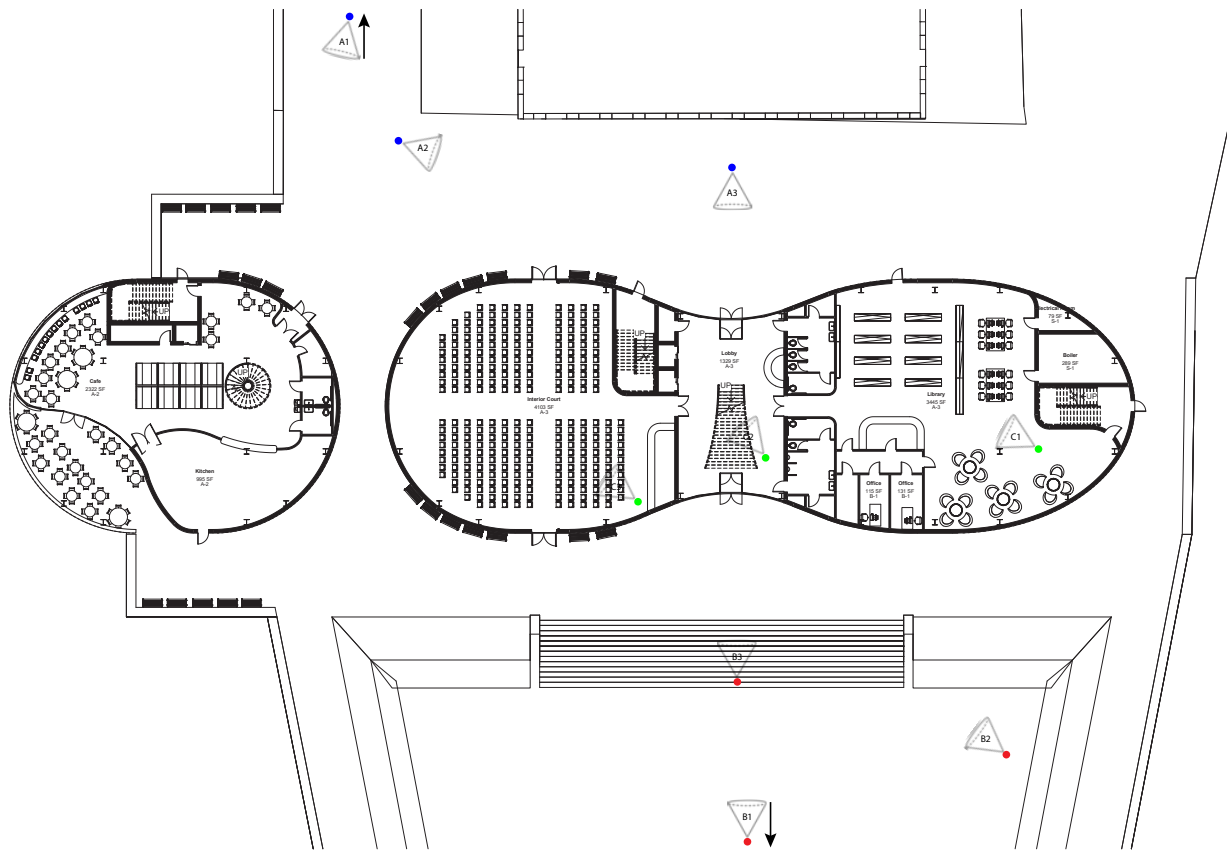


A3



# Wayfinding

B



B2



B1

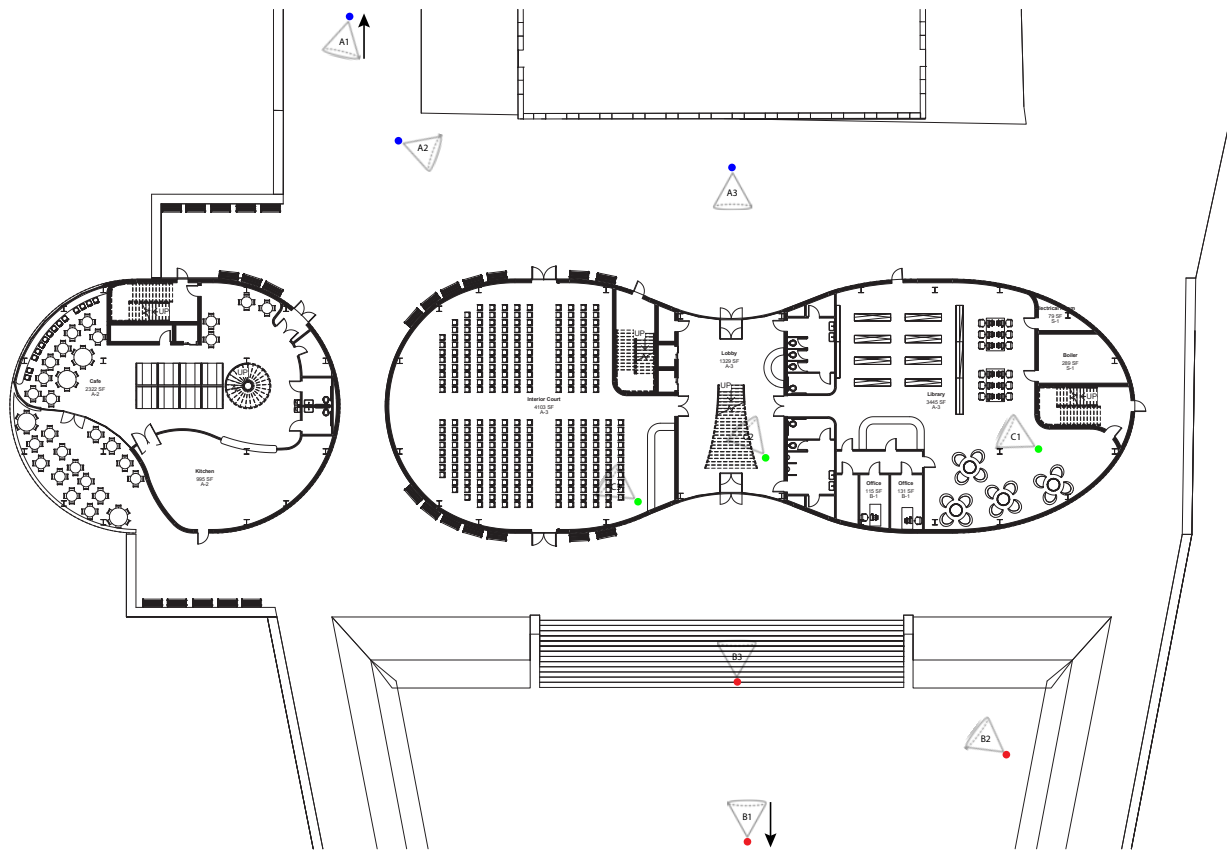


B3



# Wayfinding

C



C2



C1

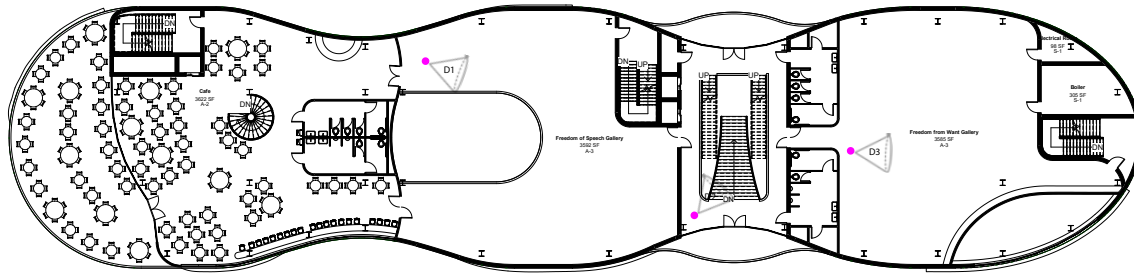


C3



# Wayfinding

D



D2



D1

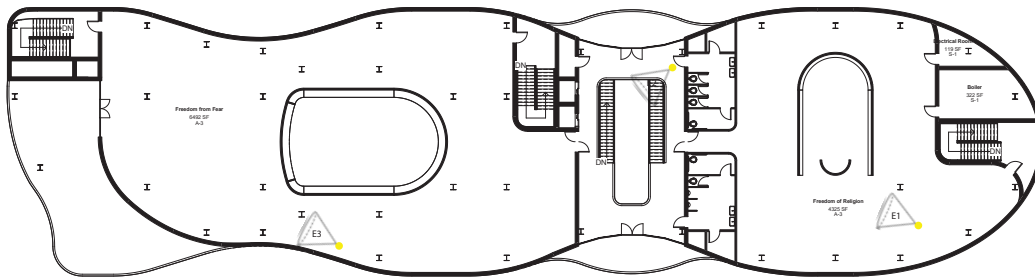


D3



# Wayfinding

E



E2



E1



E3



Freedom of Speech



Freedom from Want



Freedom of Religion 1



Freedom of Religion 2



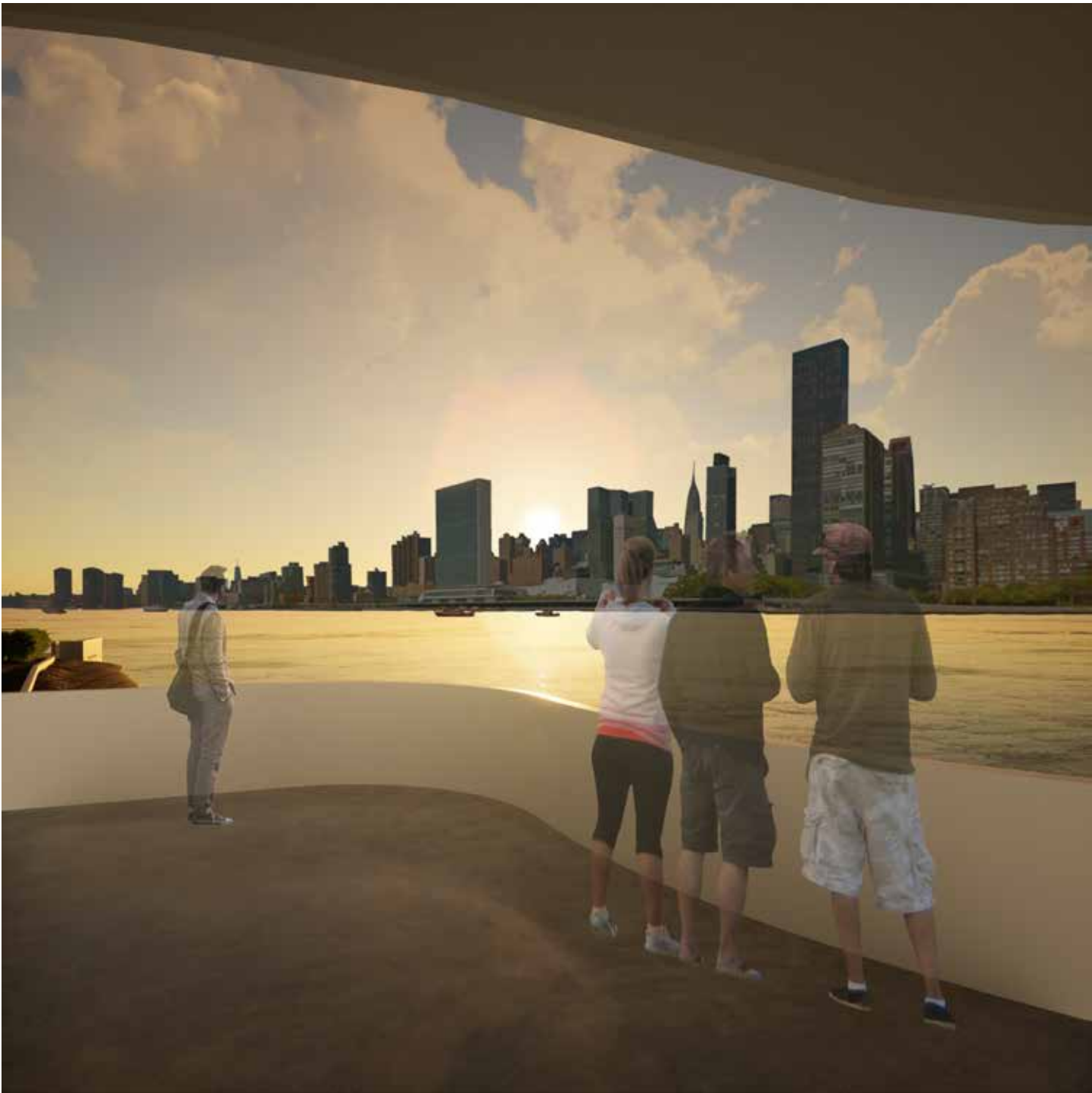
Freedom from Fear 1



Freedom from Fear 2



### Freedom from Fear 3



Interior Court Uses



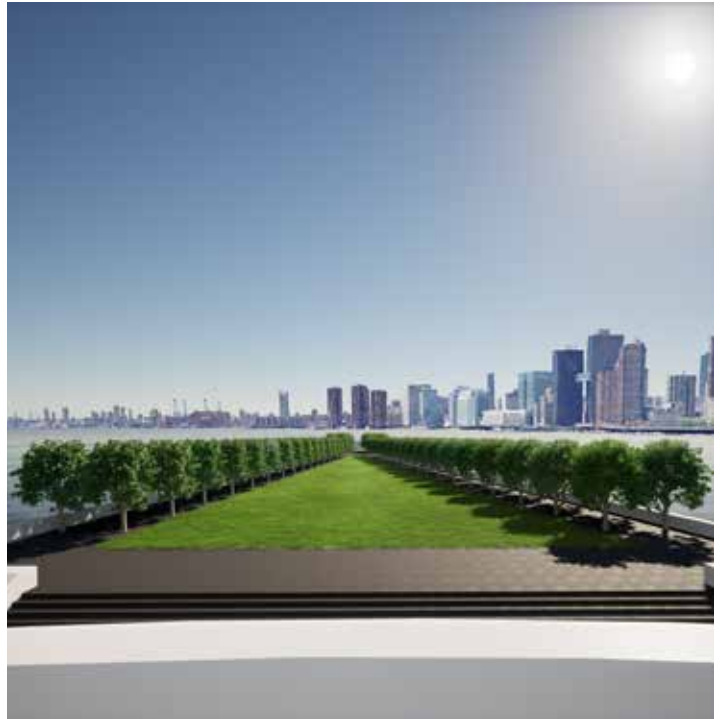
Library Views



Lobby



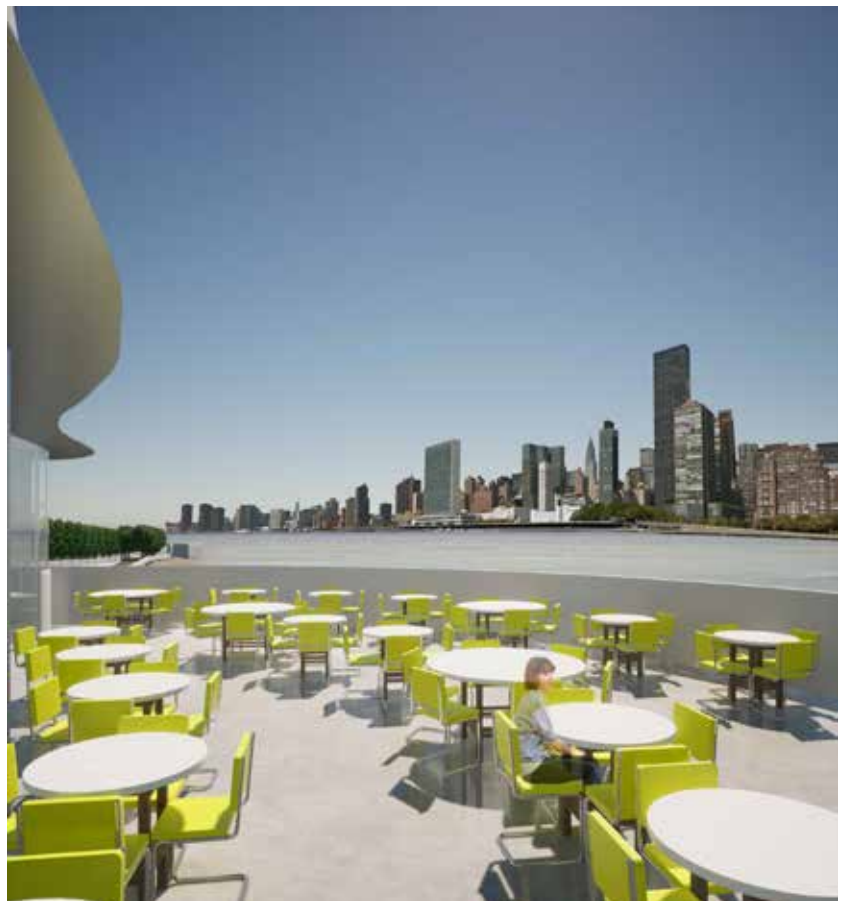
Balcony Facing Memorial



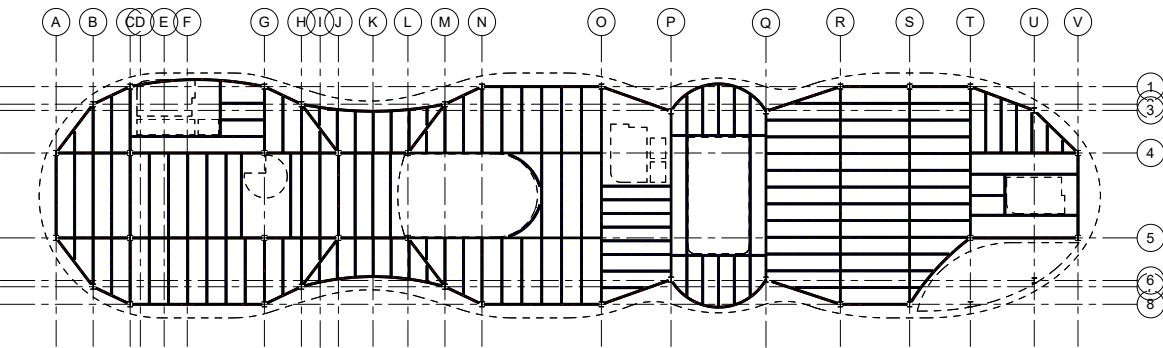
Cafe Views



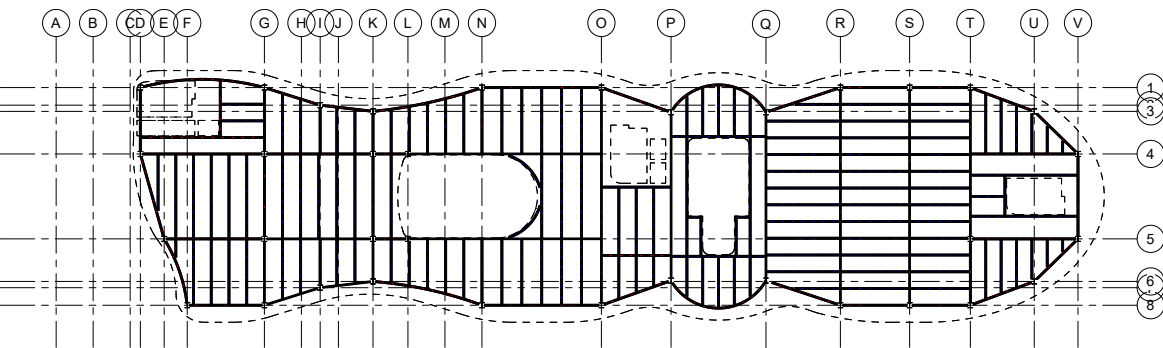
Outdoor Cafe



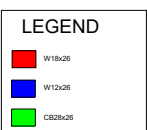
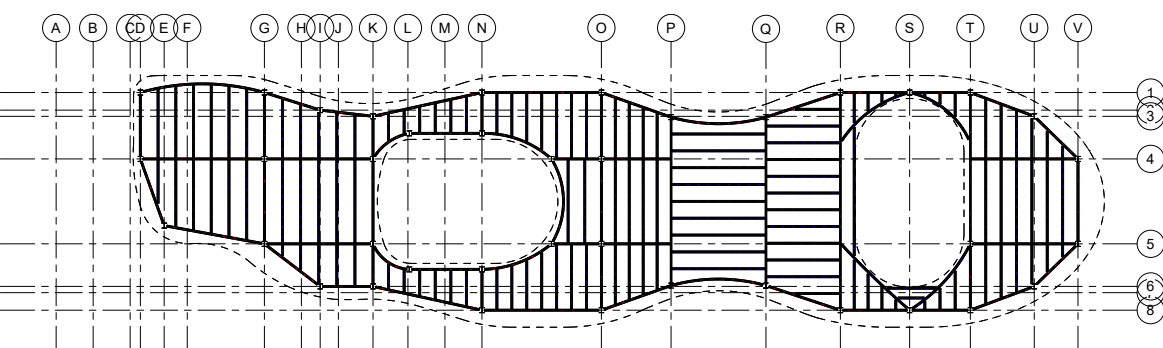
Level 2 Floor Structure



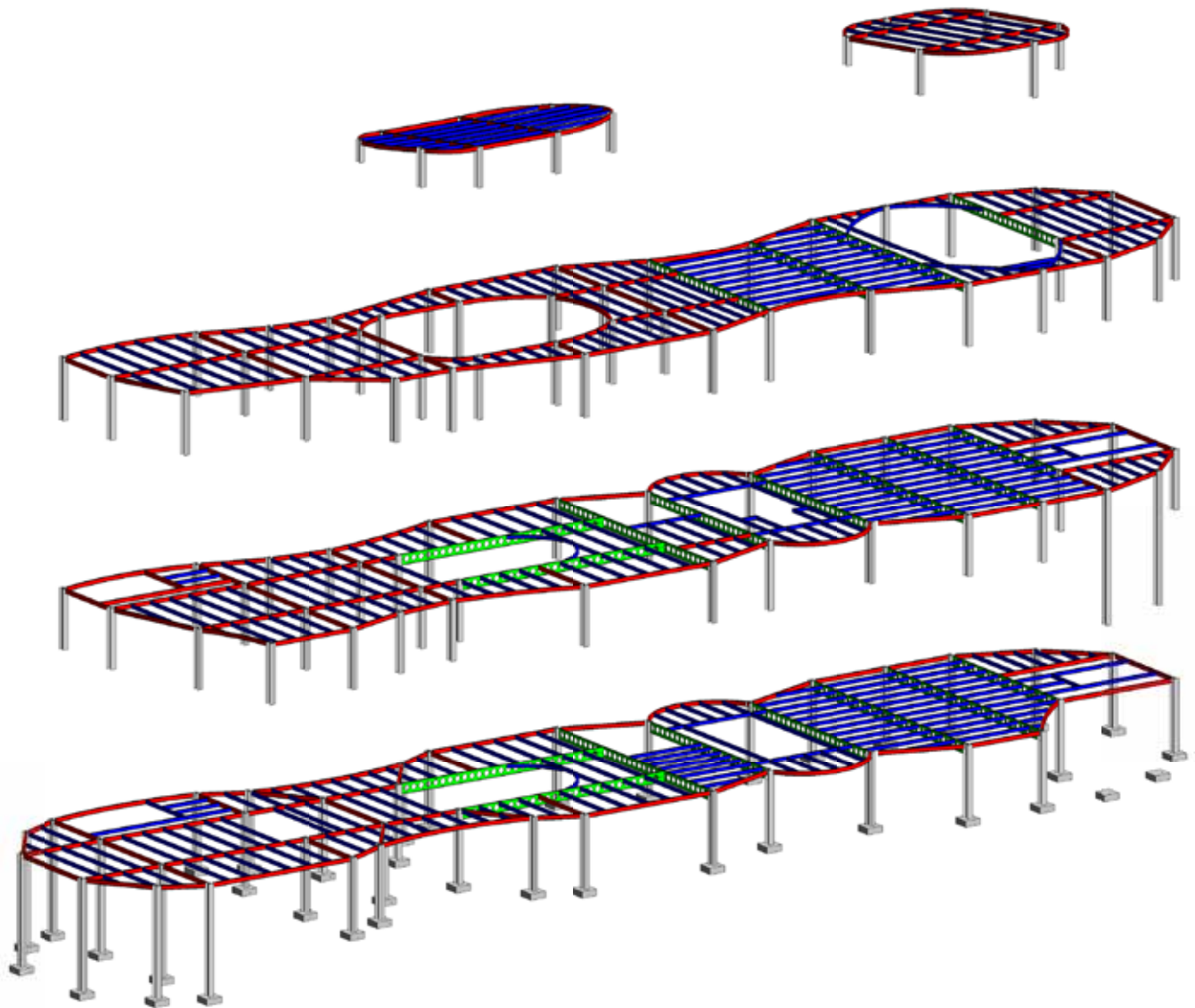
Level 3 Floor Structure



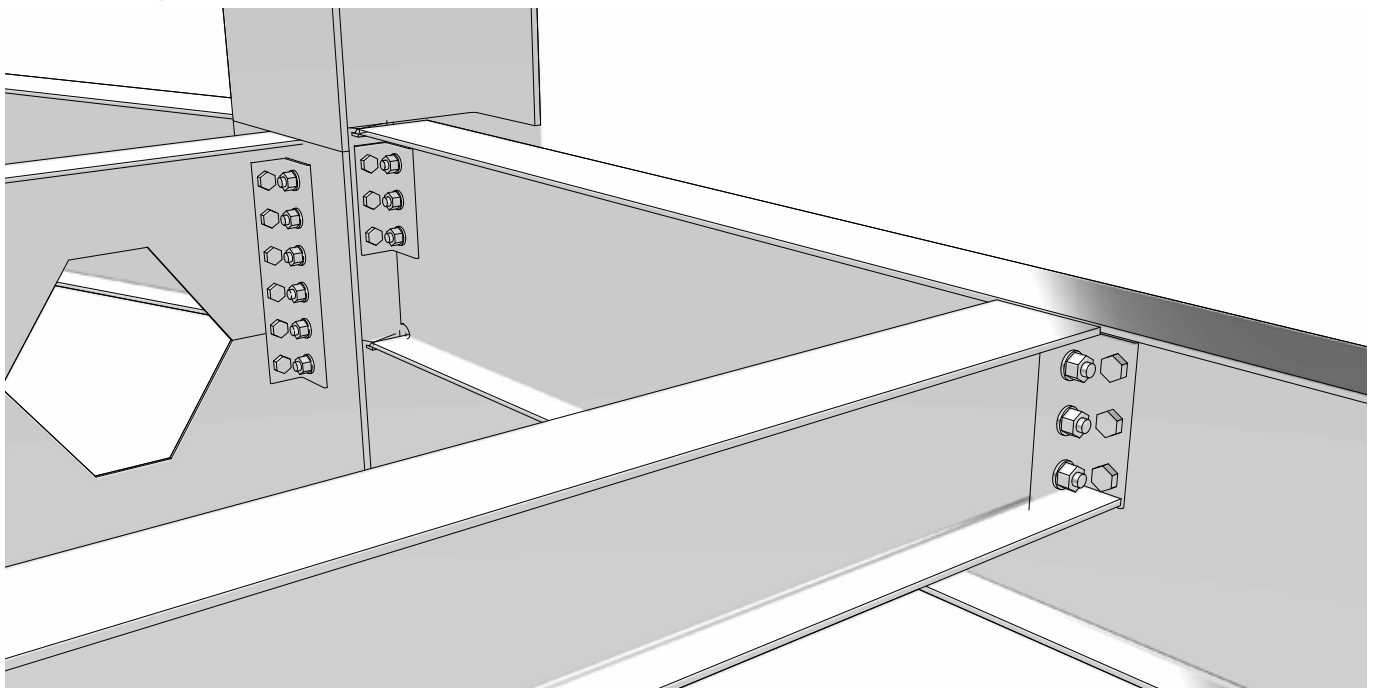
Roof Structure



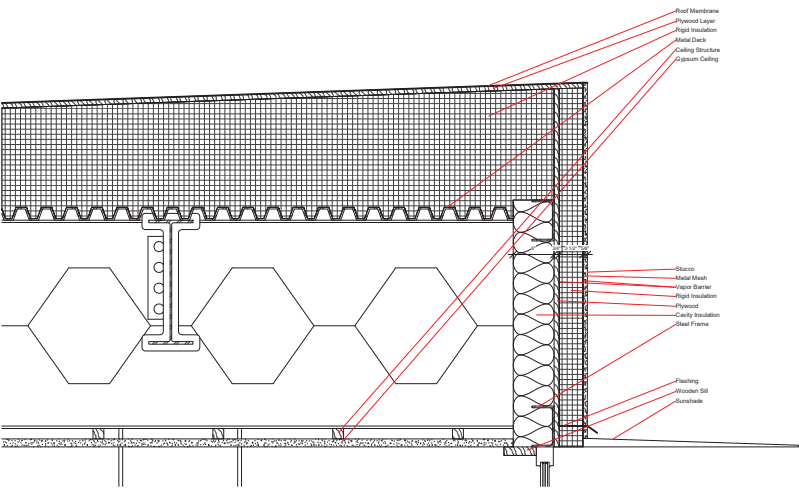
## 3D Structure



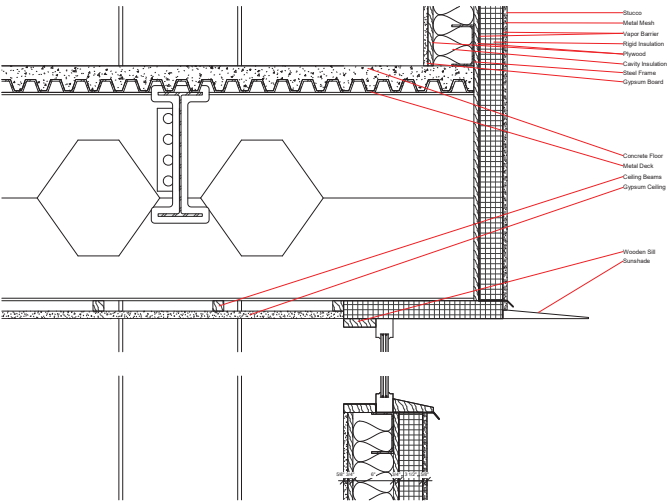
## Lateral Bracing



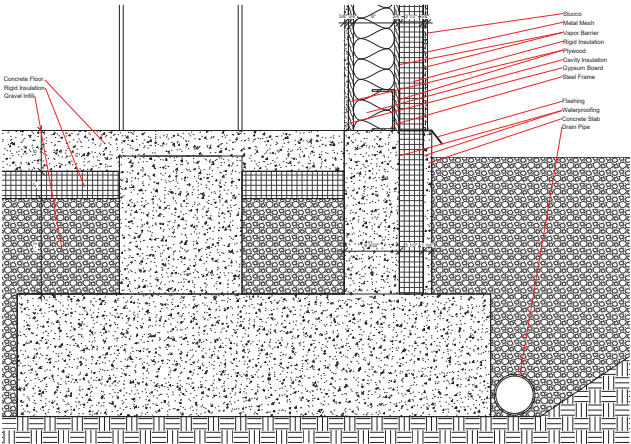
Wall Section Detail 3



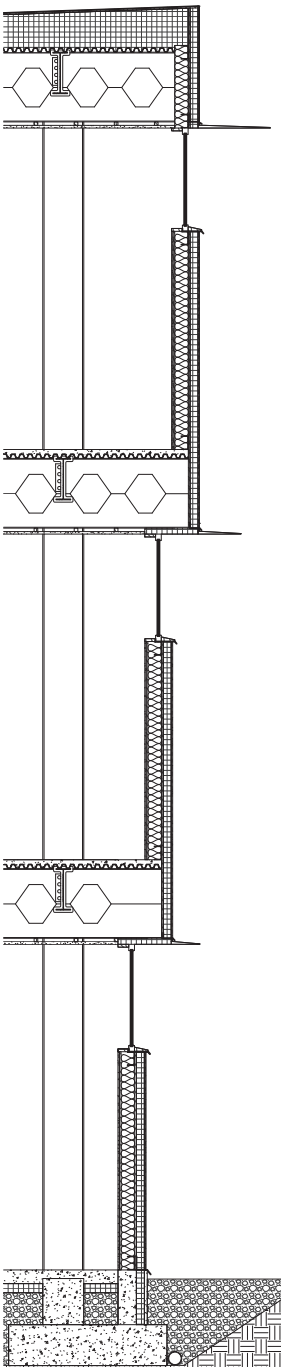
Wall Section Detail 2

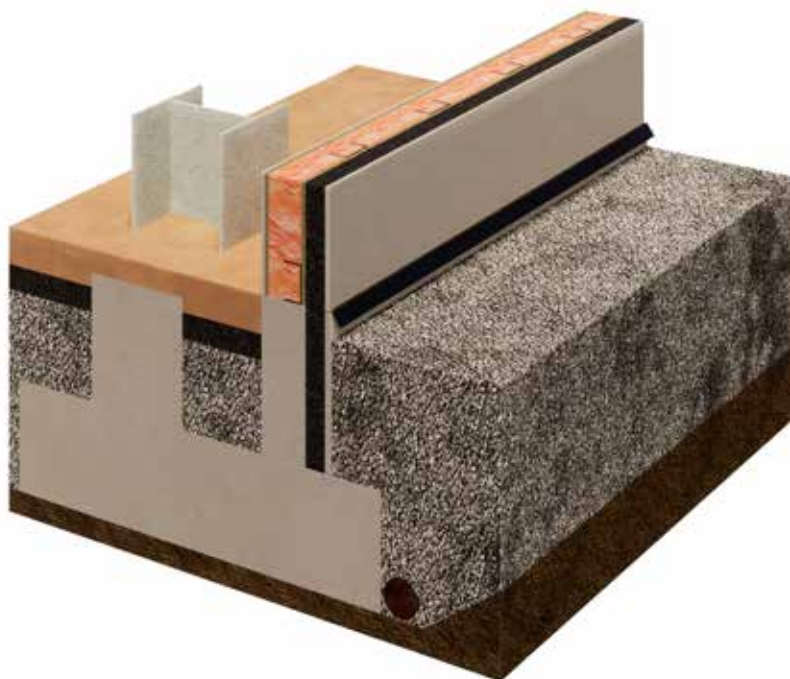
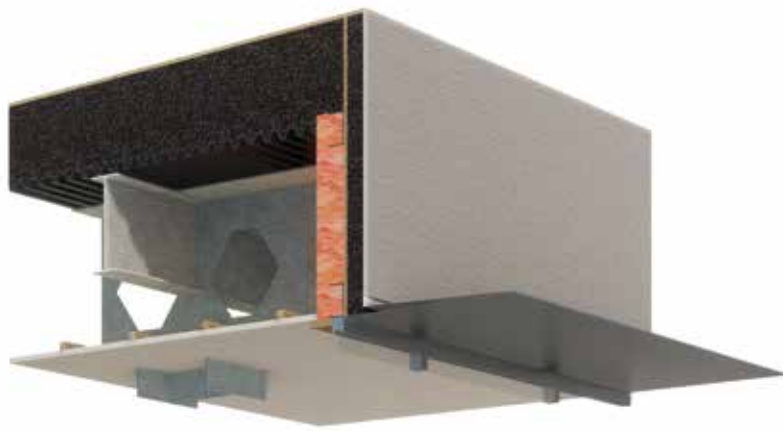


Wall Section Detail 1

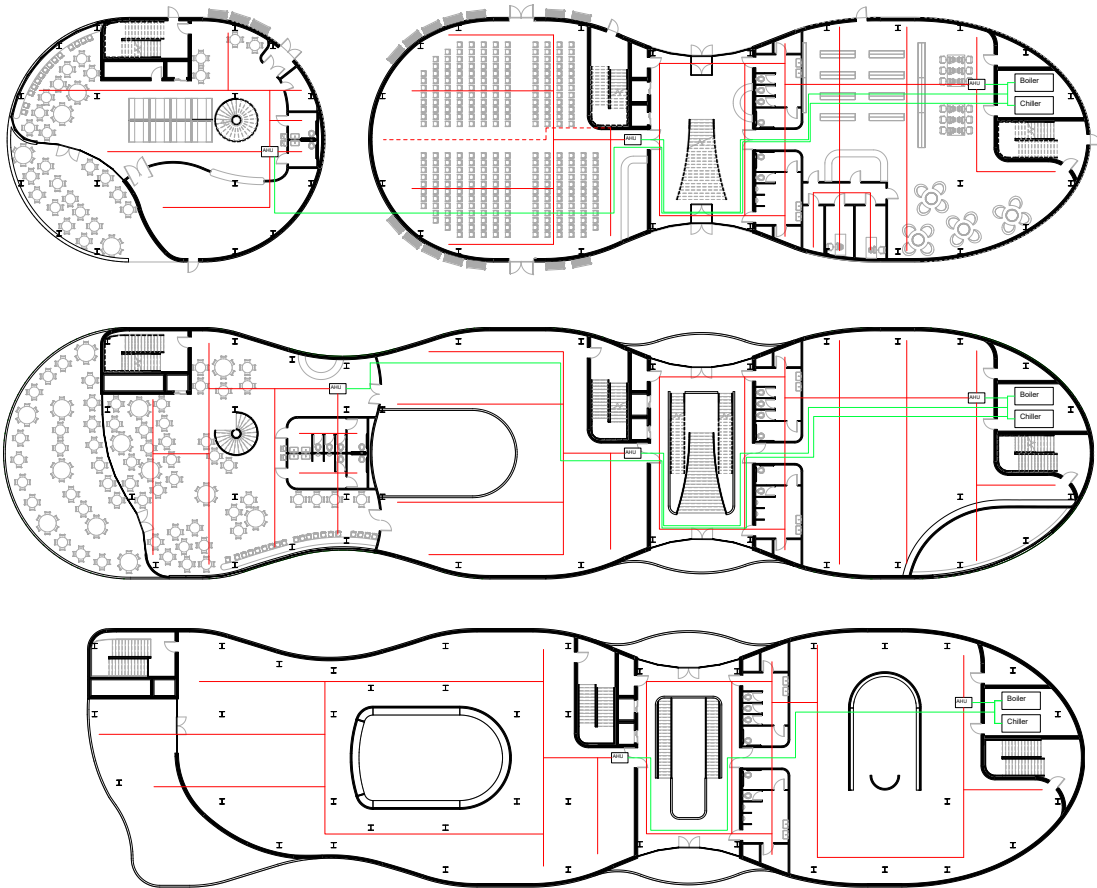


Wall Section

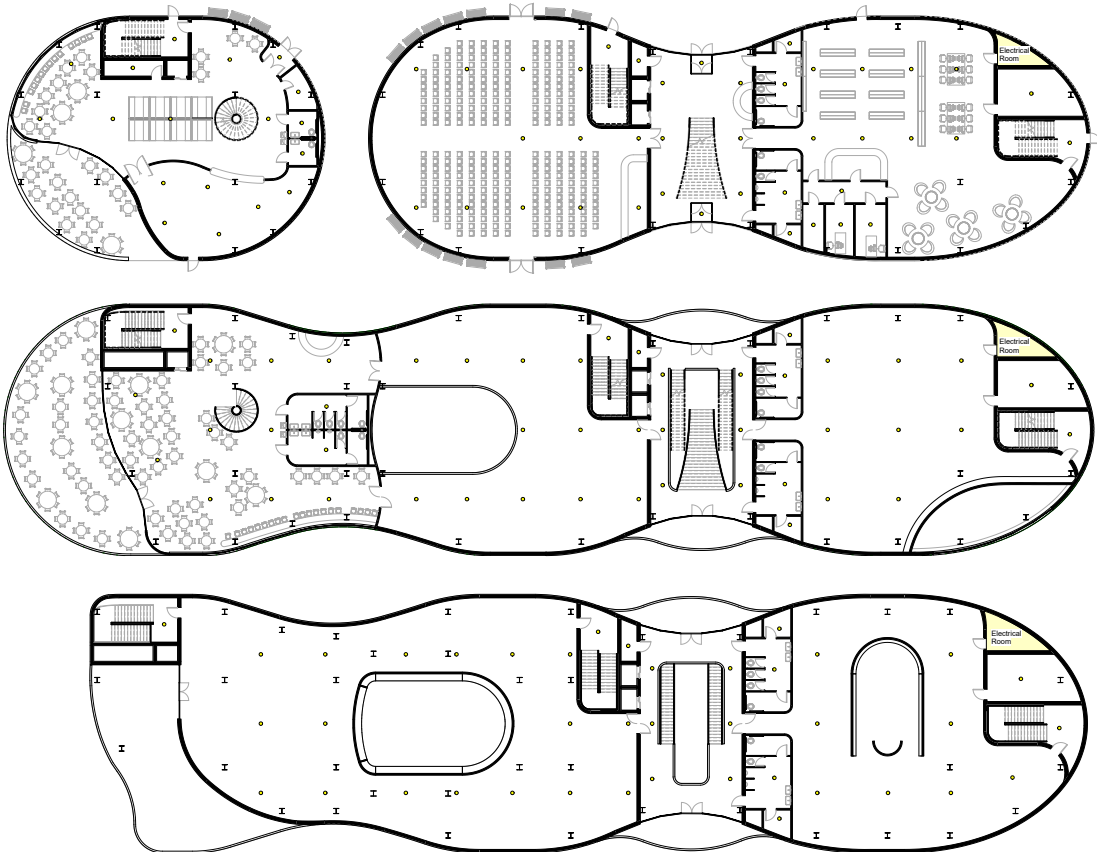




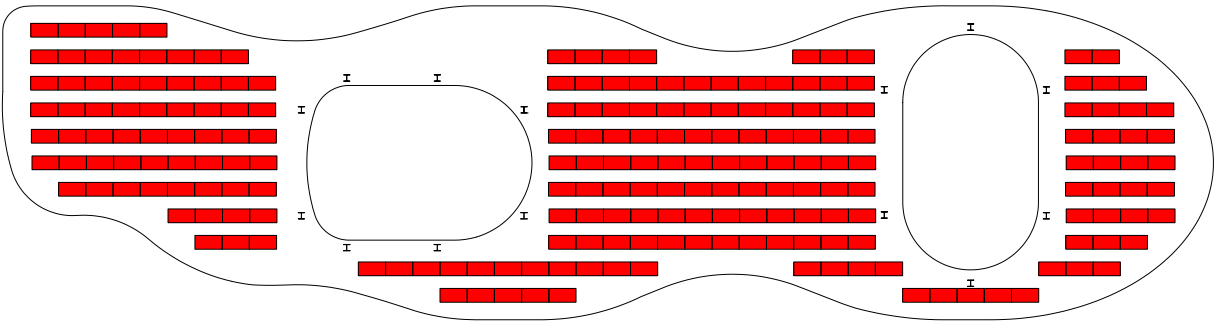
## HVAC Systems



## Electrical Rooms and Lighting



Solar Panels



Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at <https://sam.nrel.gov>) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

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The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

144,533 kWh/Year\*

System output may range from 136,815 to 153,567 kWh per year near this location.

Month	Solar Radiation ( kWh / m <sup>2</sup> / day )	AC Energy ( kWh )	Value ( \$ )
January	4.71	9,281	1,072
February	5.66	10,025	1,158
March	6.65	12,906	1,491
April	7.20	13,146	1,518
May	7.43	13,847	1,599
June	8.23	14,583	1,684
July	8.47	15,431	1,782
August	7.78	14,035	1,621
September	7.17	12,596	1,455
October	6.04	11,324	1,308
November	5.04	9,496	1,097
December	3.96	7,863	908
Annual	6.53	144,533	\$ 16,693

Location and Station Identification

Requested Location	New York City
Weather Data Source	Lat, Lon: 40.77, -73.98    4.2 mi
Latitude	40.77° N
Longitude	73.98° W

PV System Specifications *(Commercial)*

DC System Size	78 kW
Module Type	Premium
Array Type	2-Axis Tracking
Array Tilt	0°
Array Azimuth	225°
System Losses	14.08%
Inverter Efficiency	96%
DC to AC Size Ratio	1.2

Economics

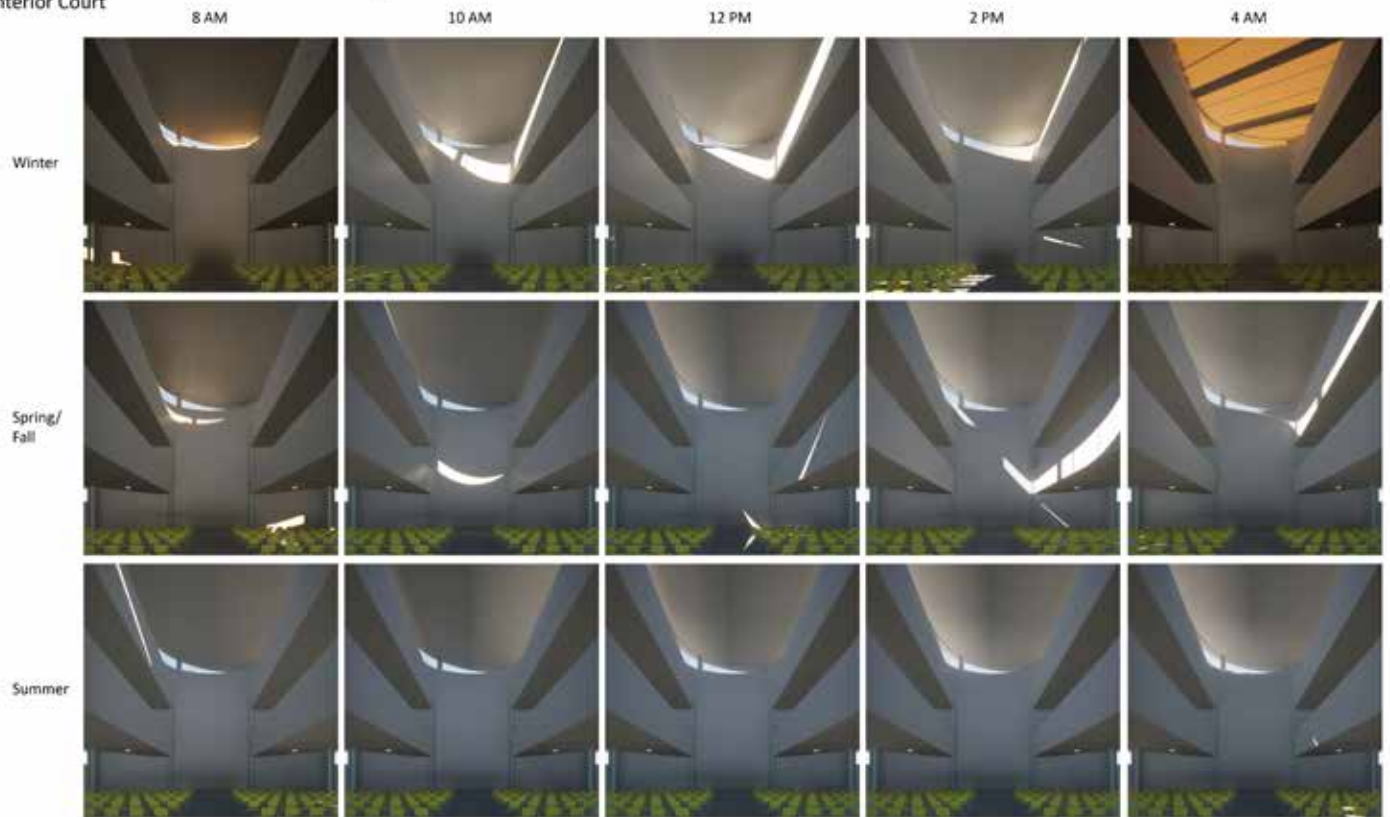
Average Retail Electricity Rate	0.116 \$/kWh
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Performance Metrics

Capacity Factor	21.2%
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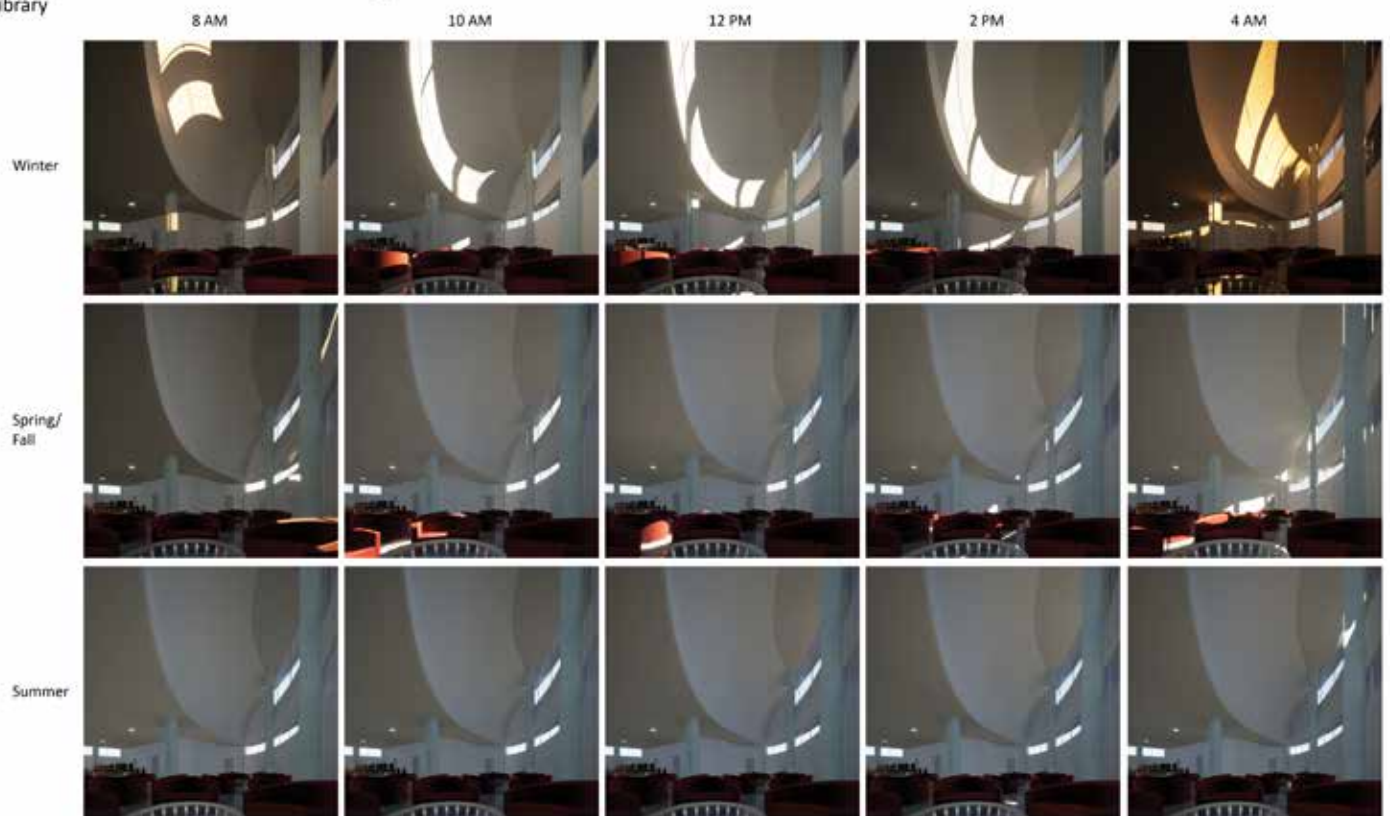
## Solar Access and Controlling

### Interior Court



## Solar Access and Controlling

### Library



Solar Access and Controlling

Cafe

8 AM

10 AM

12 PM

2 PM

4 AM

Winter



Spring/  
Fall

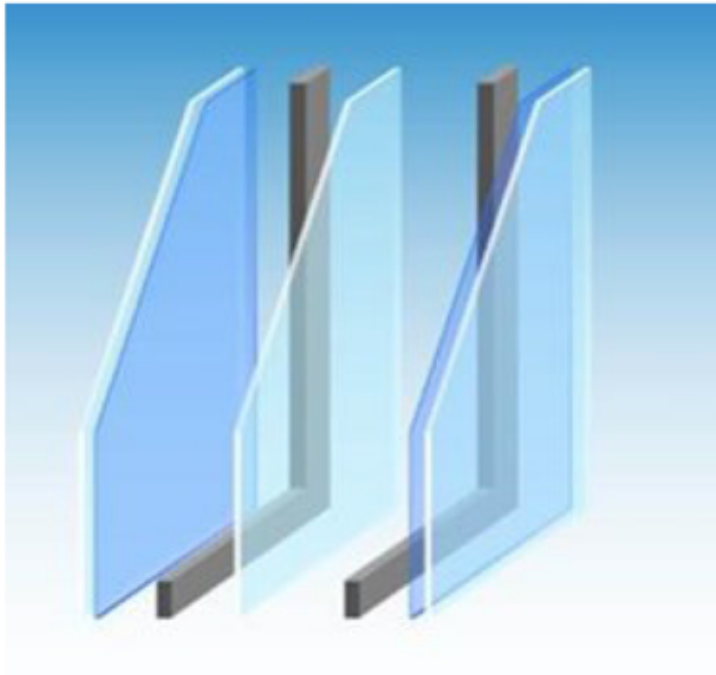


Summer



## Sustainable Materials

### CLIMATOP Triple Glazing



## CLIMATOP Triple Glazing

### Environmental Impacts

Global Warming Potential: 49.6  
Ozone Depletion: 6.56E-9  
Acidification Potential: 0.244  
Eutrophication Potential: 0.0584  
Photochemical Ozone Creation: 0.0151  
ADP Elements: 0.000381  
ADP Fossil Fuels: 606

### Resource Use

Renewable Primary Energy Excluding Raw Materials: 65  
Renewable Primary Energy Used As Raw Materials: 0  
Nonrenewable Primary Energy Excluding Raw Materials: 674  
Nonrenewable Primary Energy Used As Raw Materials: 0  
Use of Secondary Material: 2.99  
Use of Renewable Secondary Fuels: 0  
Use of Nonrenewable Secondary Fuels: 0  
Use of Net Fresh Water: 0.198

### Waste Categories

Hazardous Waste Disposed: 1.42E-6  
Non-Hazardous Waste Disposed: 1.6  
Radioactive Waste Disposed: 0.0272

### Output Flows

Components for Reuse: 0  
Materials for Recycling: 0.841  
Materials for Energy Recovery: 0  
Exported Energy: 0

## Sustainable Materials

### BLUE SCOPE Steel Hot Rolled



## BLUE SCOPE Steel Hot Rolled

### Environmental Impacts

Global Warming Potential: 1.46212  
Ozone Depletion: 5.88E-11  
Acidification Potential: 7.104E-3  
Eutrophication Potential: 4.61E-4  
Photochemical Ozone Creation: 9.72E-4  
ADP Elements: 4.14E-8  
ADP Fossil Fuels: 16.901

### Resource Use

Renewable Primary Energy Excluding Raw Materials: 0.853  
Renewable Primary Energy Used As Raw Materials: 0  
Nonrenewable Primary Energy Excluding Raw Materials: 0.853  
Nonrenewable Primary Energy Used As Raw Materials: 17.027  
Use of Secondary Material: 0.17  
Use of Renewable Secondary Fuels: 0  
Use of Nonrenewable Secondary Fuels: 0  
Use of Net Fresh Water: 2.16E-3

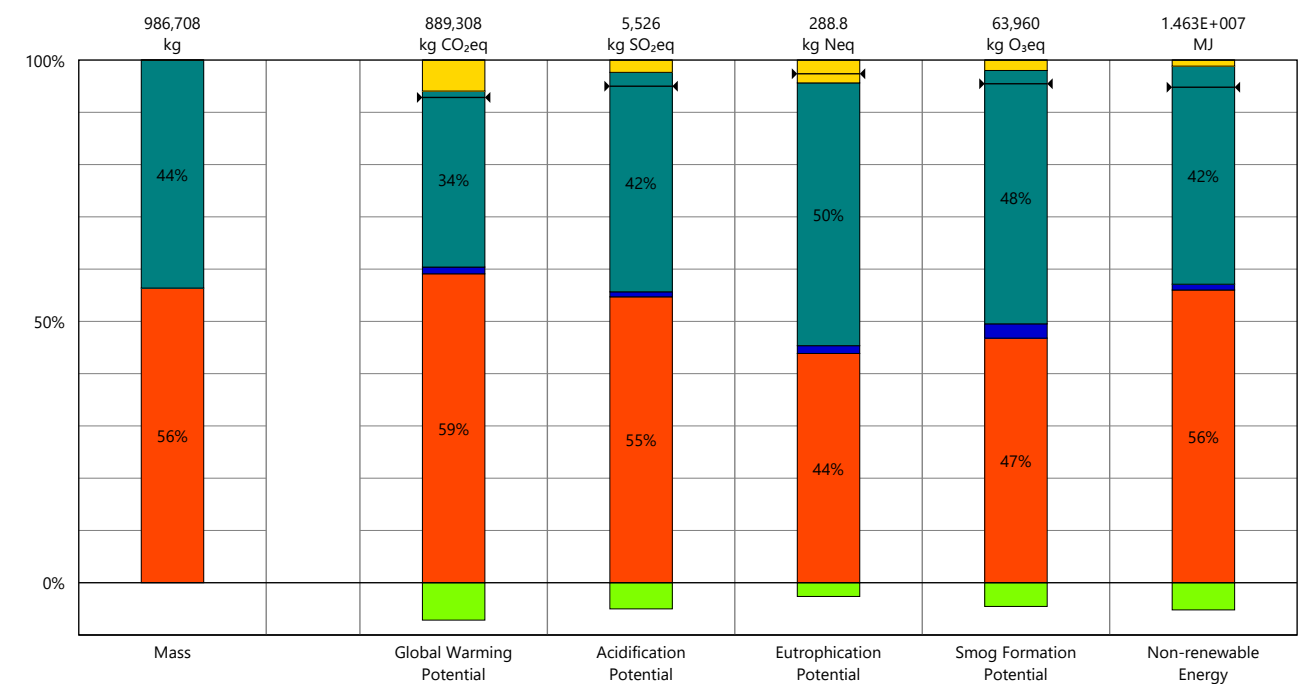
### Waste Categories

Hazardous Waste Disposed: 2.75E-5  
Non-Hazardous Waste Disposed: 0.124  
Radioactive Waste Disposed: 9.95E-6

### Output Flows

Components for Reuse: 0  
Materials for Recycling: 0.89  
Materials for Energy Recovery: 0  
Exported Energy: 0

Results per Life Cycle Stage

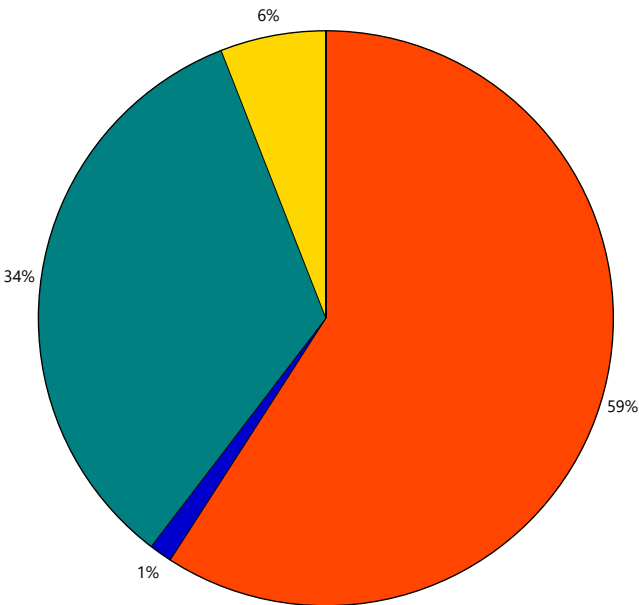


Legend

Net value (impacts + credits)

Life Cycle Stages

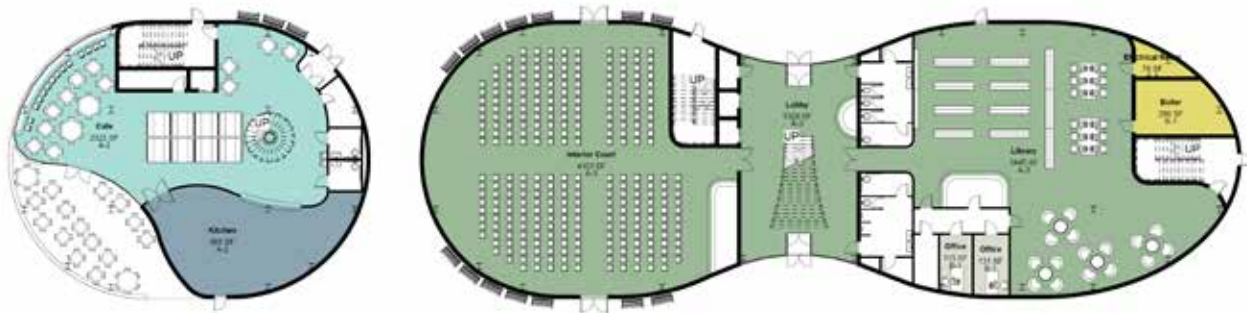
- Product [A1-A3]
- Transportation [A4]
- Maintenance and Replacement [B2-B5]
- End of Life [C2-C4]
- Module D [D]



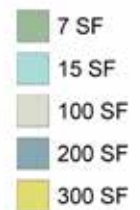
Global Warming Potential

## Occupancy Types

1st Floor

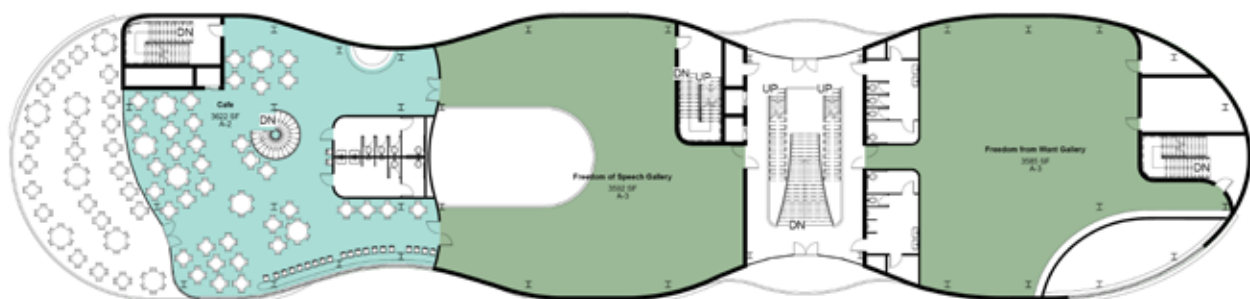


### Load Factors



## Occupancy Types

2nd Floor

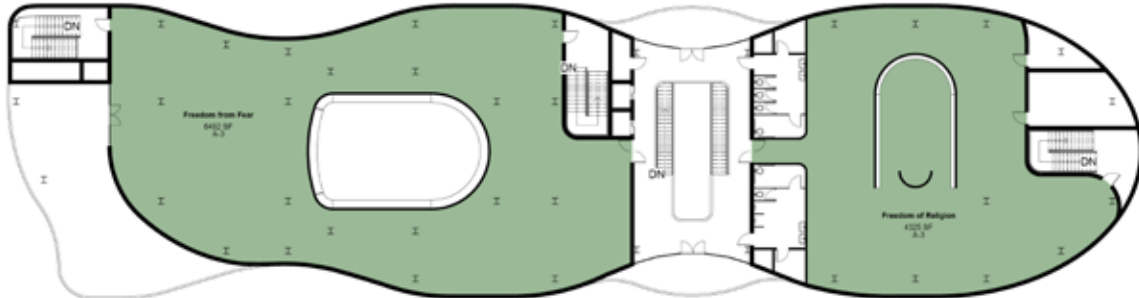


### Load Factors



## Occupancy Types

3rd Floor



Load Factors

7 SF

## Minimum Corridor and Door Widths

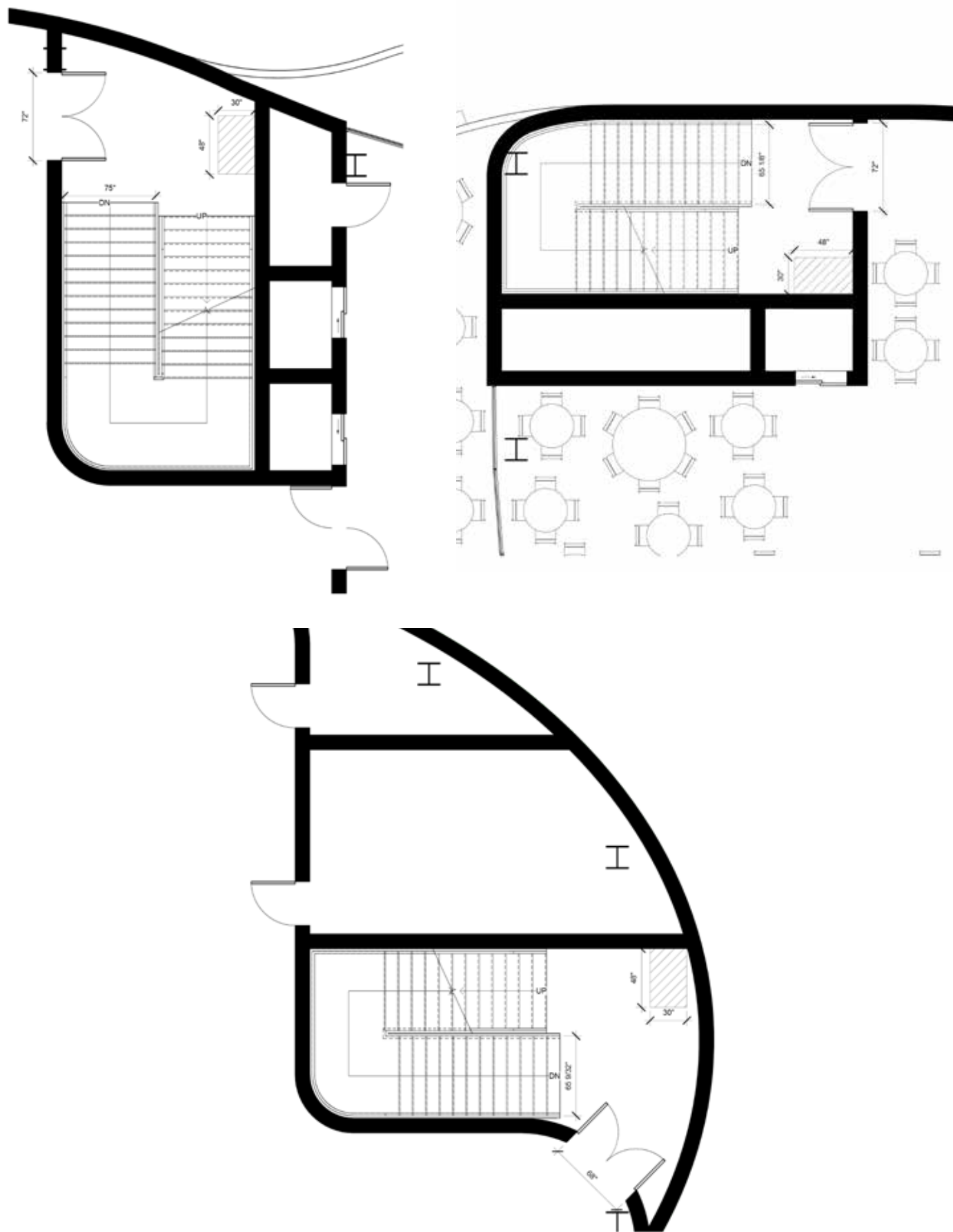
Room Schedule

Each room has 2 means of egress, so divide these numbers by 2.

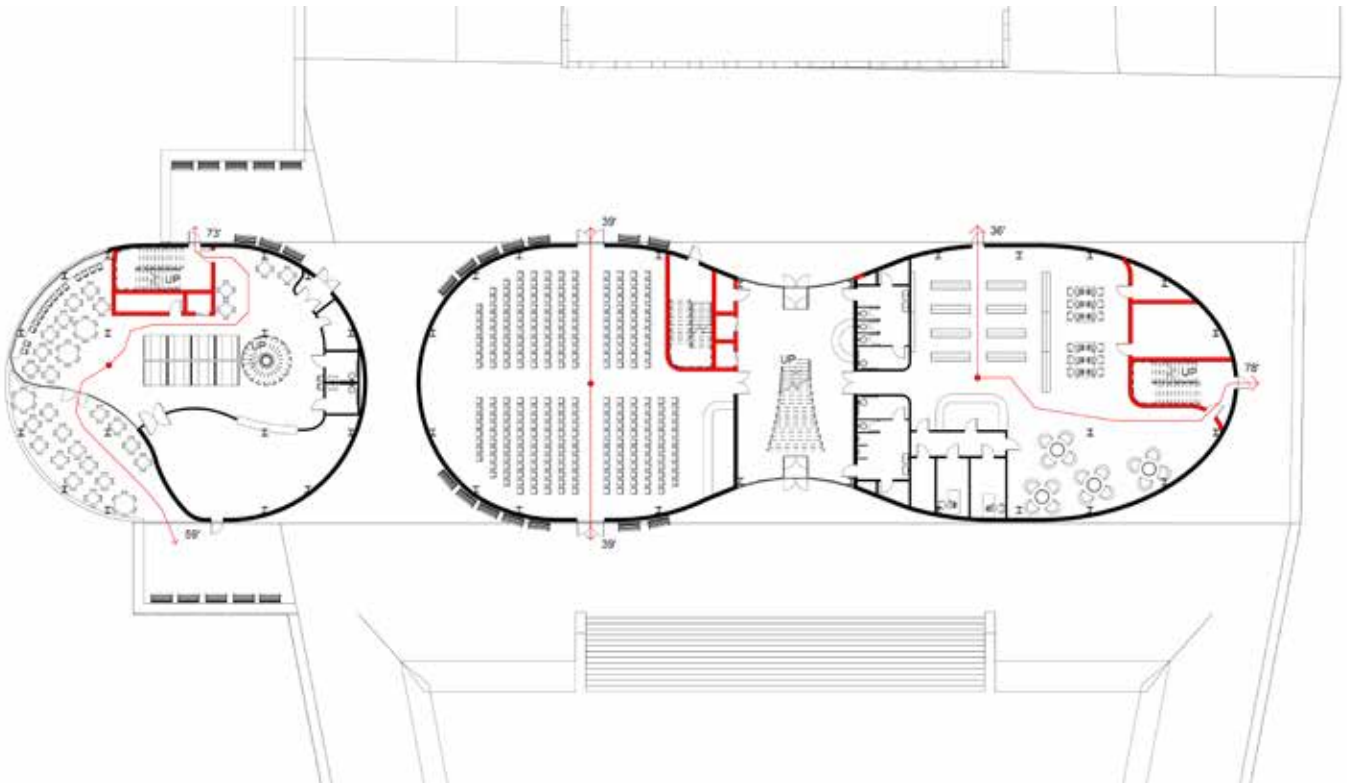
Occupant Load x 0.2" (with sprinklers)    Occupant Load x 0.15" (with sprinklers)

Room Schedule						
Name	Area	Occupancy	Load Factor	Occupant Load	Exit Stair Width Total	Exit Door Width Total
Interior Court	4103 SF	A-3	7 SF	586	9' - 9 7/32"	7' - 3 29/32"
Lobby	1329 SF	A-3	7 SF	190	3' - 1 31/32"	2' - 4 15/32"
Library	3445 SF	A-3	7 SF	492	8' - 2 7/16"	6' - 1 13/16"
Boiler	289 SF	S-1	300 SF	1	0' - 0 3/16"	0' - 0 5/32"
Electrical Room	79 SF	S-1	300 SF	0	0' - 0 1/16"	0' - 0 1/32"
Office	131 SF	B-1	100 SF	1	0' - 0 1/4"	0' - 0 3/16"
Office	115 SF	B-1	100 SF	1	0' - 0 7/32"	0' - 0 3/16"
Kitchen	995 SF	A-2	200 SF	5	0' - 1"	0' - 0 3/4"
Cafe	2322 SF	A-2	15 SF	155	2' - 6 31/32"	1' - 11 7/32"
Freedom of Speech	3592 SF	A-3	7 SF	513	8' - 6 5/8"	6' - 4 31/32"
Cafe	3622 SF	A-2	15 SF	241	4' - 0 9/32"	3' - 0 7/32"
Freedom from Wa	3585 SF	A-3	7 SF	512	8' - 6 7/16"	6' - 4 13/16"
Freedom from Fe	6492 SF	A-3	7 SF	927	15' - 5 15/32"	11' - 7 1/8"
Freedom of Relig	4325 SF	A-3	7 SF	618	10' - 3 19/32"	7' - 8 11/16"
Electrical Room	98 SF	S-1	300 SF	0	0' - 0 1/16"	0' - 0 1/16"
Electrical Room	119 SF	S-1	300 SF	0	0' - 0 3/32"	0' - 0 1/16"
	34642 SF			4244		

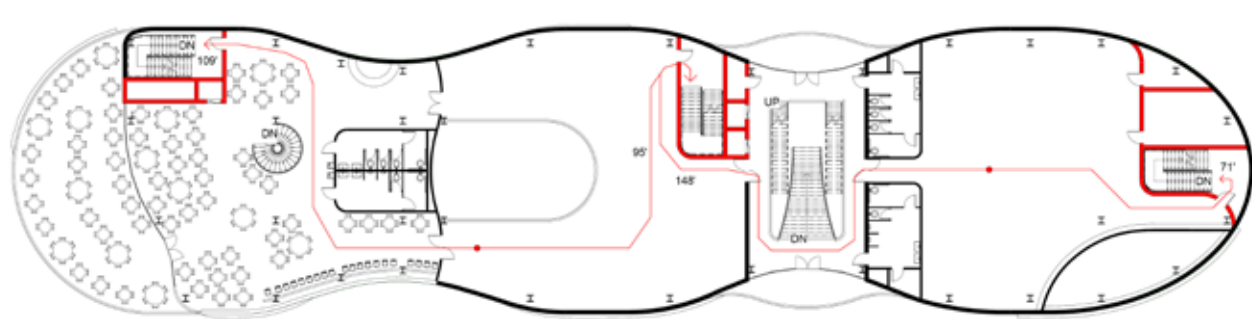
Egress Stairs



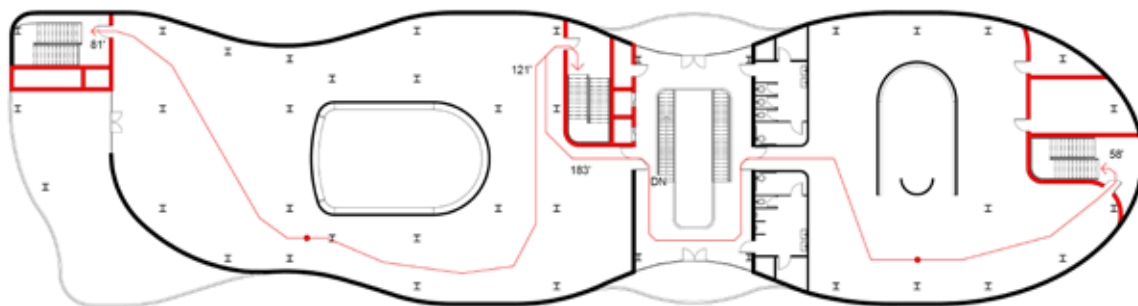
## Egress Travel Distances Level 1



## Egress Travel Distances Level 2

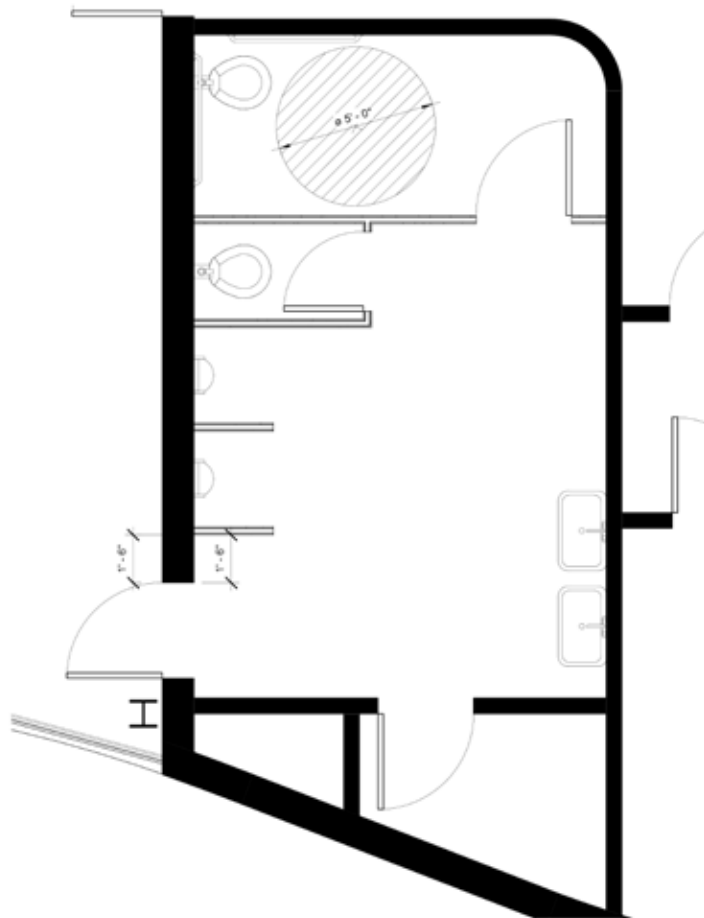


## Egress Travel Distances Level 3



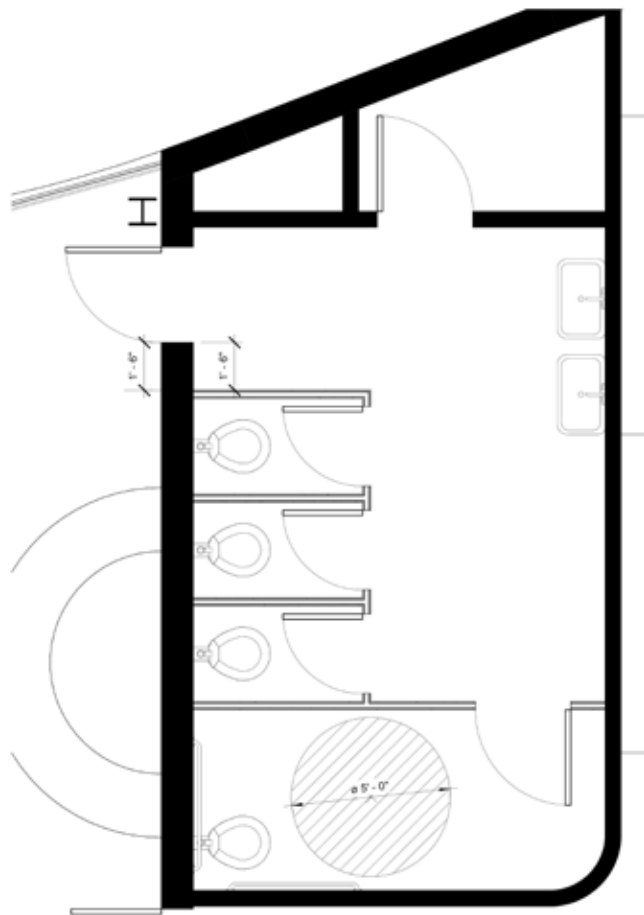
## Restroom Design

Men's Restroom



## Restroom Design

Women's Restroom



Restroom Design

Small Restroom

