

ALEXANDER LLANTADA
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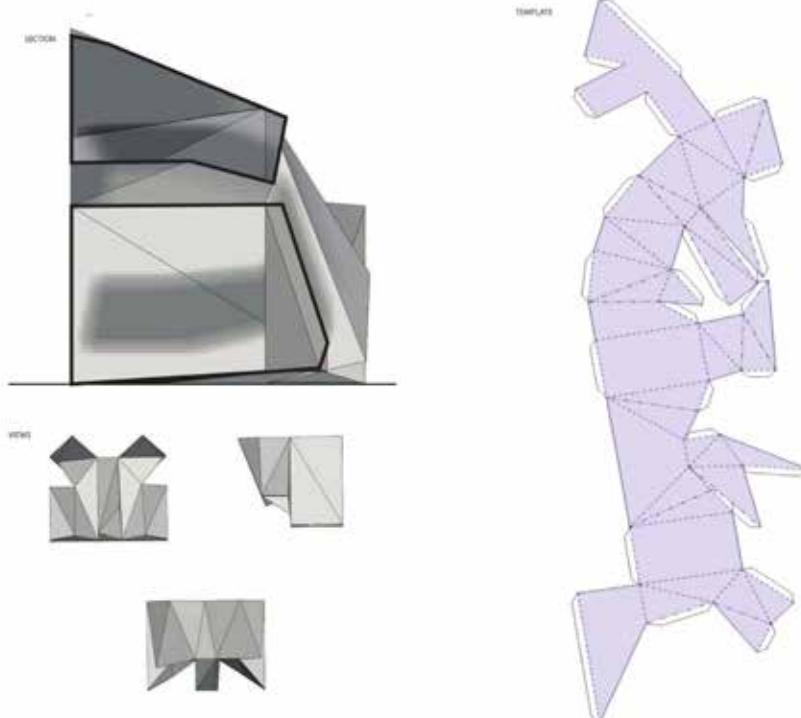
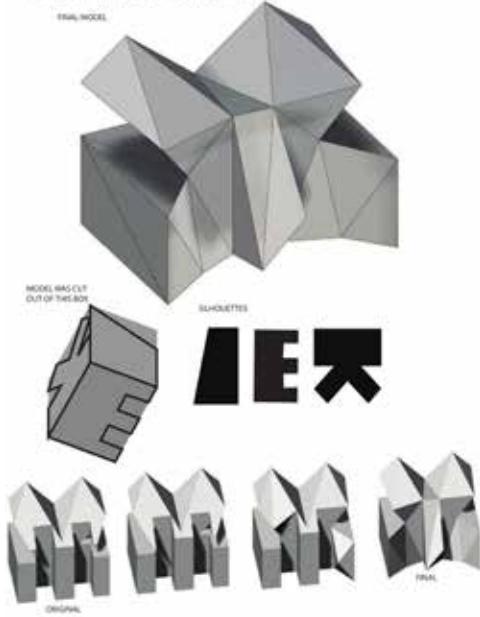
FIRST YEAR STUDIO

FALL 2015

EX02: SILHOUETTE TO VOLUME

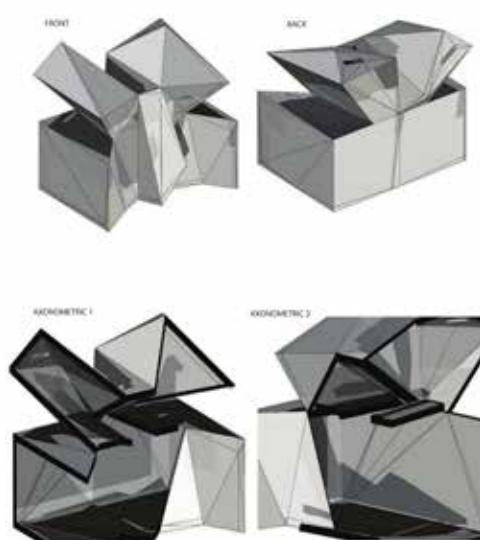
ASSIGNMENT: DEVELOP A THREE DIMENSIONAL OBJECT THROUGH THE USE OF TWO DIMENSIONAL SILHOUETTES.
DESIGN INTENT: I MADE A THREE DIMENSIONAL OBJECT THAT WOULD FIT ALL THREE SILHOUETTES AT ONCE, THEN I REDUCED THE NUMBER OF VOLUMES TO MAKE THE MODEL EASIER TO BUILD.

WORKFLOW: RHINO, MESHLAB, PERMUTA, PHYSICAL MODELS



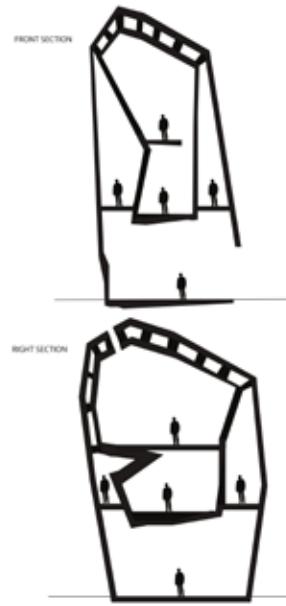
EX03: APERTURE

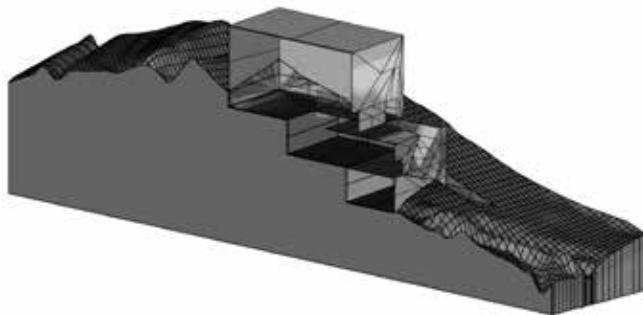
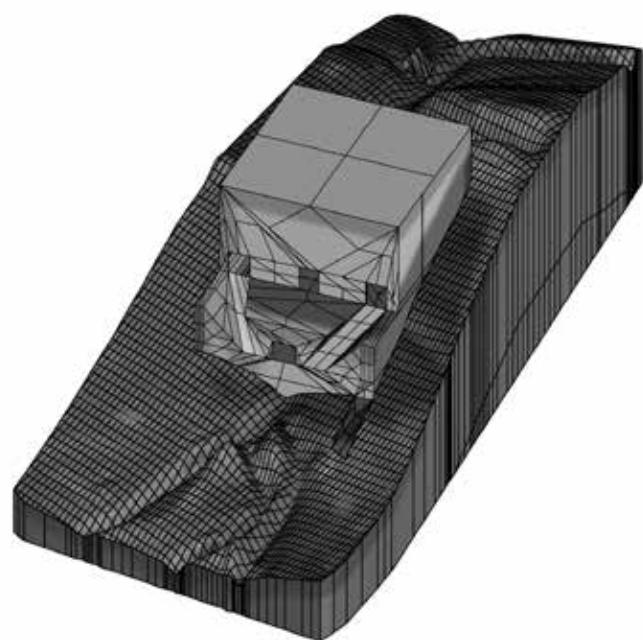
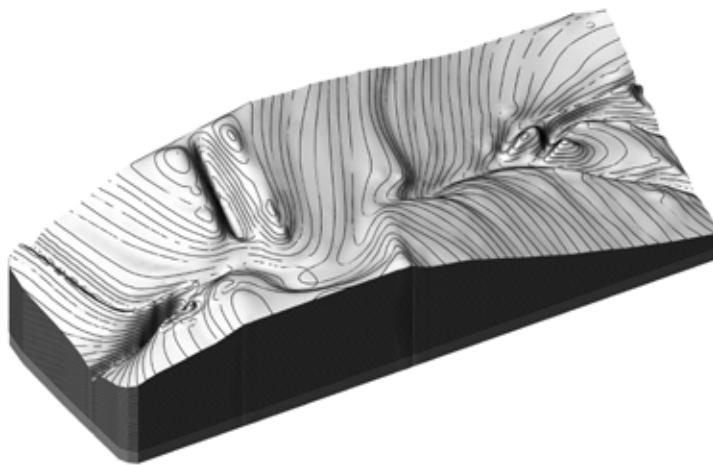
ASSIGNMENT: DEVELOP A THREE DIMENSIONAL OBJECT WITHIN A SURFACE OF A VOLUME.
DESIGN INTENT: I EXPLORED INDIRECT AND DIRECT LIGHTING BY DESIGNING DIFFERENT TYPES OF APERTURES. I USED THE APERTURES TO CREATE A VARIETY OF LIGHTING SCENES. FOR EXAMPLE, THE TWO APERTURES ON THE SIDE OF THE MODEL ARE MEANT TO TAKE IN LIGHT ONLY DURING SUMMER AND WINTER.
WORKFLOW: RHINO, MESHLAB, PERMUTA, PHYSICAL MODELS



EX04: VOLUME WITHIN A VOLUME

ASSIGNMENT: DEVELOP OF TWO VOLUMES NESTED WITHIN EACH OTHER.
DESIGN INTENT: I USED A DRINKING EXPERIENCE AS A POINT OF INSPIRATION. I WANTED TO CREATE A VOLUME THAT COULD BE USED AS A SPACE FOR HUMAN OCCUPATION. I USED A DRINKING EXPERIENCE TO DEVELOP THE SPACE BETWEEN THE TWO VOLUMES. MY MODEL IS MEANT TO ACCOMMODATE LOUD DANCE PARTIES ON THE LOWER LEVEL AND SMALLER DRINKING SITUATIONS ON THE UPPER LEVEL.
WORKFLOW: RHINO, MESHLAB, PERMUTA, PHYSICAL MODELS, KODICE ILLUSTRATOR



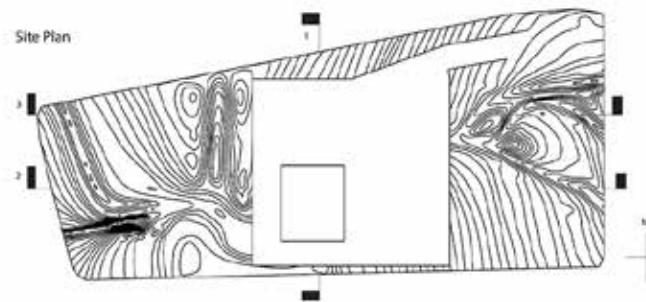


Exercise 7: Sticks and Panels

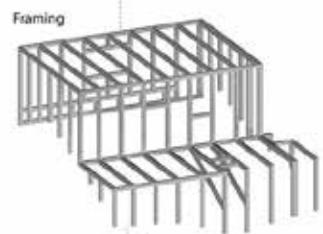
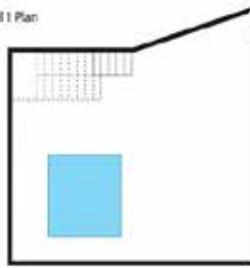
Design Intent: To be able to experience the flow of water from inside the building without being restricted to standing on a platform. The grid on the receipt floor allows water to seep out and it is narrow enough for the people to step over. The structure of the building is based on this grid.



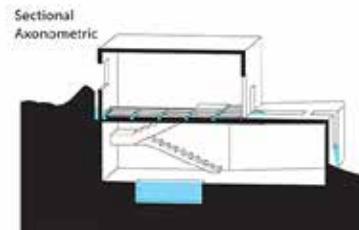
Site Plan



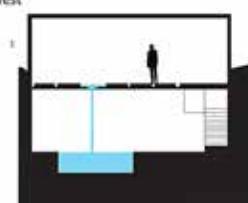
Level 1 Plan



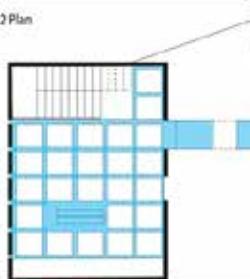
Sectional Axometric



East-West



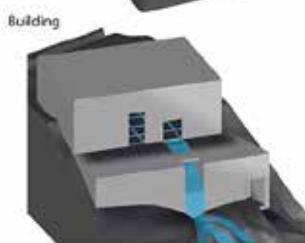
Level 2 Plan



North-South



Perspective



FIRST YEAR STUDIO

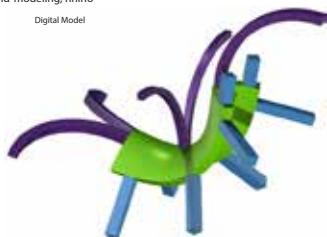
SPRING 2016

EX 1: MATERIALS

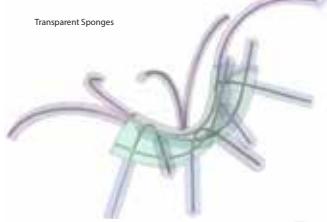
Design Intent: To explore the strength of a sponge when reinforced by paperclips. The sponges are given a "skeleton" by sticking the paperclips in when dry. Wetting the sponge allows for more flexibility when bending the paperclips. When the sponge dries again, it regains its rigidity.

Workflow: Hand-modeling, Rhino

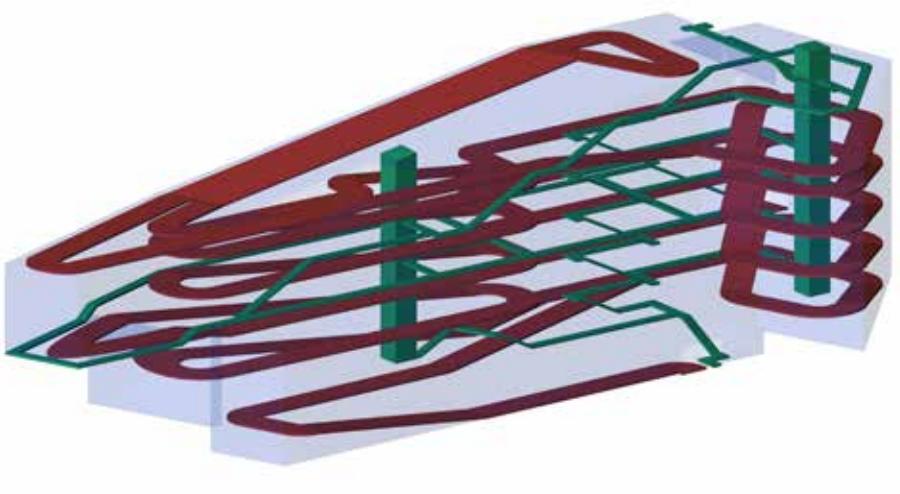
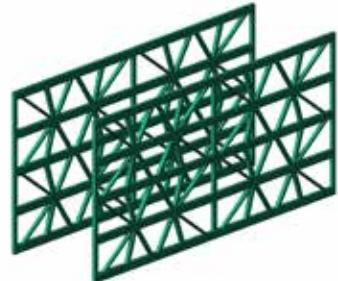
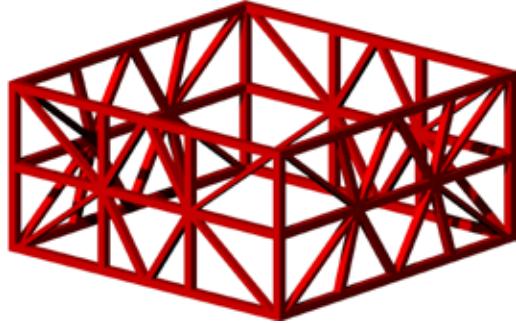
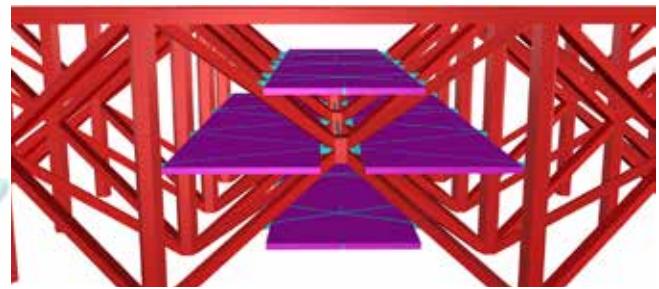
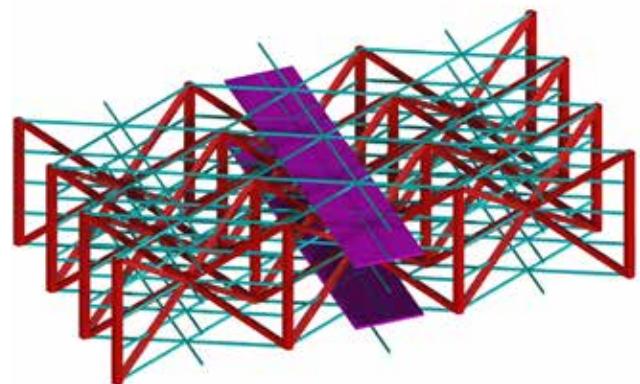
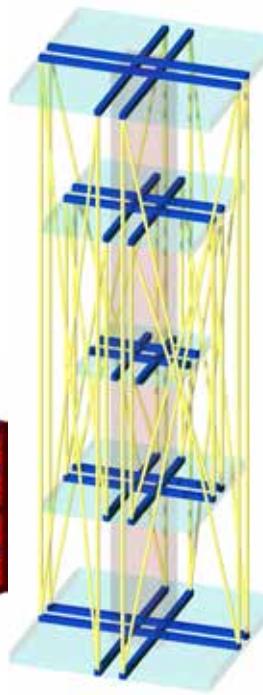
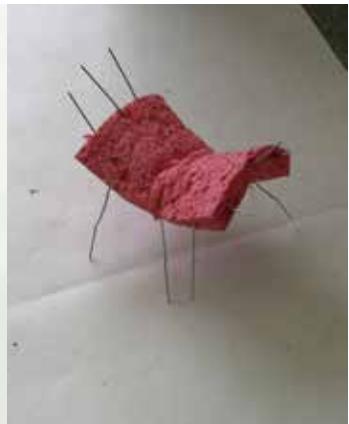
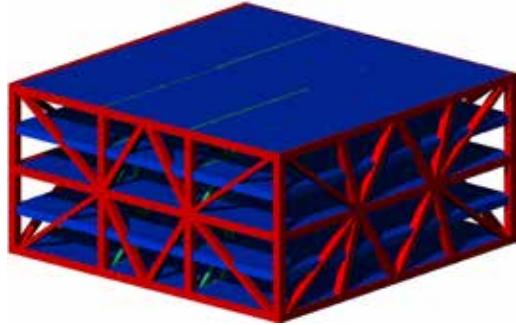
Digital Model



Transparent Sponges



Paperclip Skeleton



EX 7: PARK+

BY: ALEXANDER LLANTADA
CRITIC: GONZALO LOPEZ GARRIDO

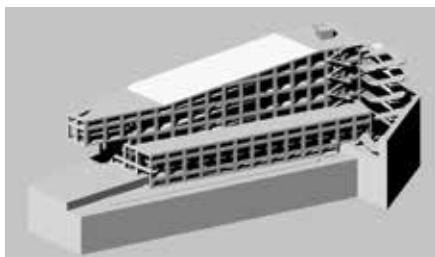
CRITIC: GONZALO LOPEZ GARRIDO



Exploded Axonometric



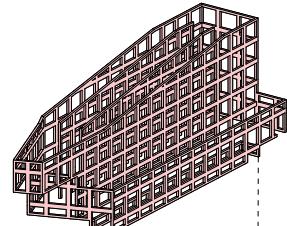
Site



Interior Views



A diagram showing a heat sink assembly. It consists of a base plate with a central fin and two side fins. A blue-colored thermal interface material is applied to the top surface of the base plate. A metal bracket is attached to the side fins, and a metal plate is attached to the top fin. Arrows indicate the direction of heat flow from the base plate through the fins to the top plate.



A diagram showing a stack of four books. A red ribbon bookmark is inserted into the top book, with its ends extending outwards. The books are arranged with their spines facing the viewer, and the top book is slightly tilted to show the bookmark.

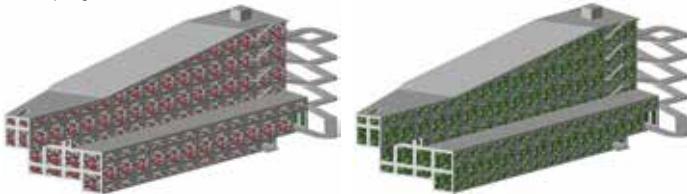
Plan Views

Section Perspective 1

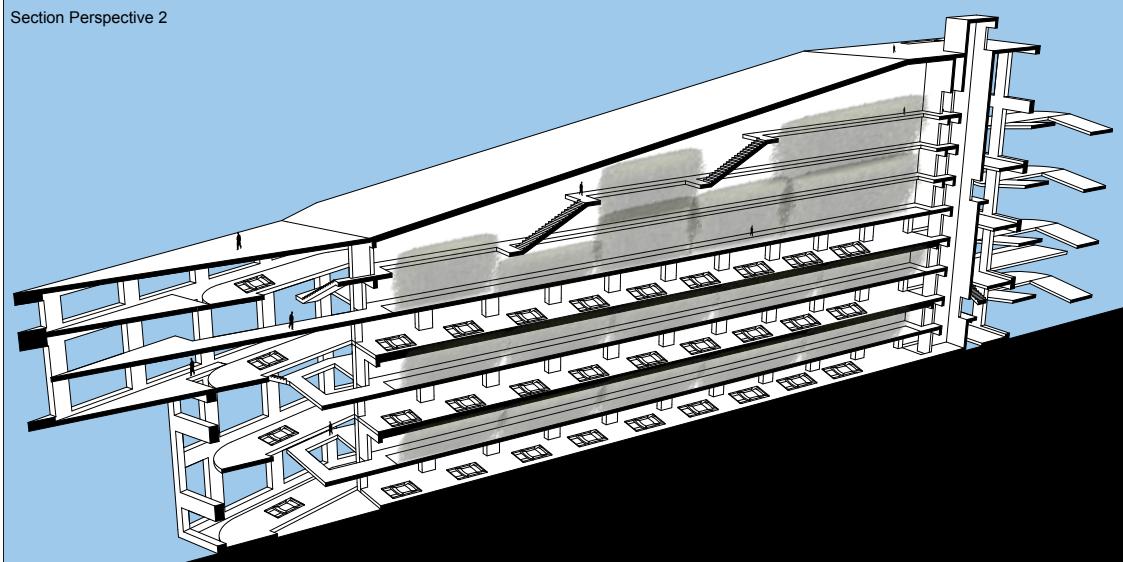


Spring

Winter



Section Perspective 2



SECOND YEAR STUDIO

FALL 2016

PROJECT 2: OBSERVATION TOWER
ALEXANDER LLANTADA

Key Frames 1

Motion Drawing 1

Key Frames 2

Motion Drawing 2

Model Elevation

Model Axometric View

Model Photos

Clips 1

Clips 2

Interior Views

Combined Drawing

Bird's Eye View

Front Section

Plan 3

Side Elevation

Front Elevation

Side Section

Front Section

Plan 2

Plan 1

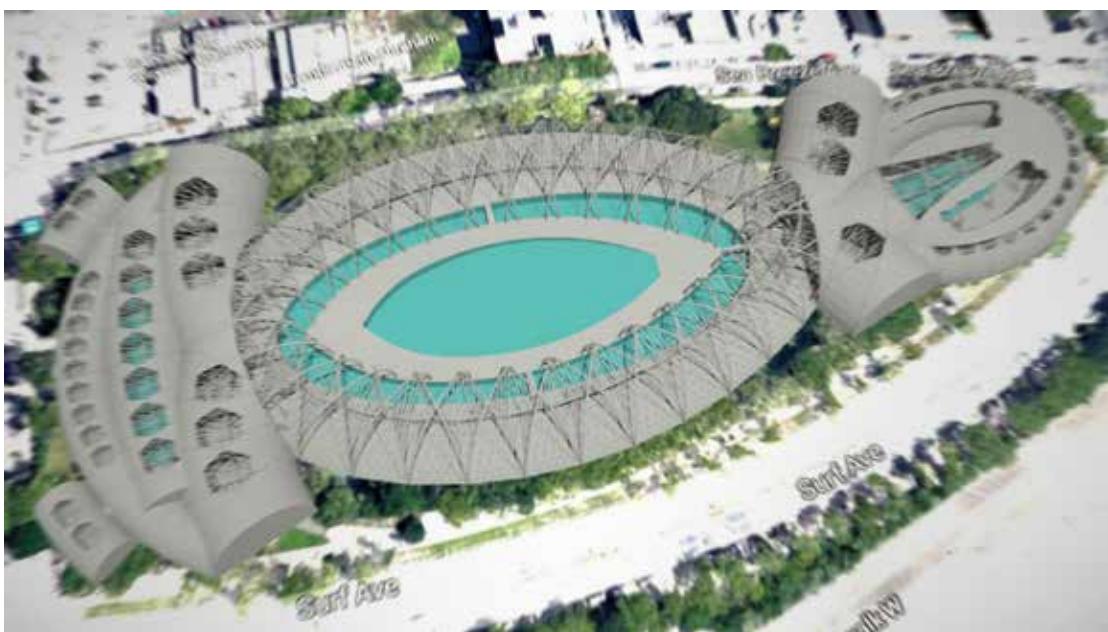
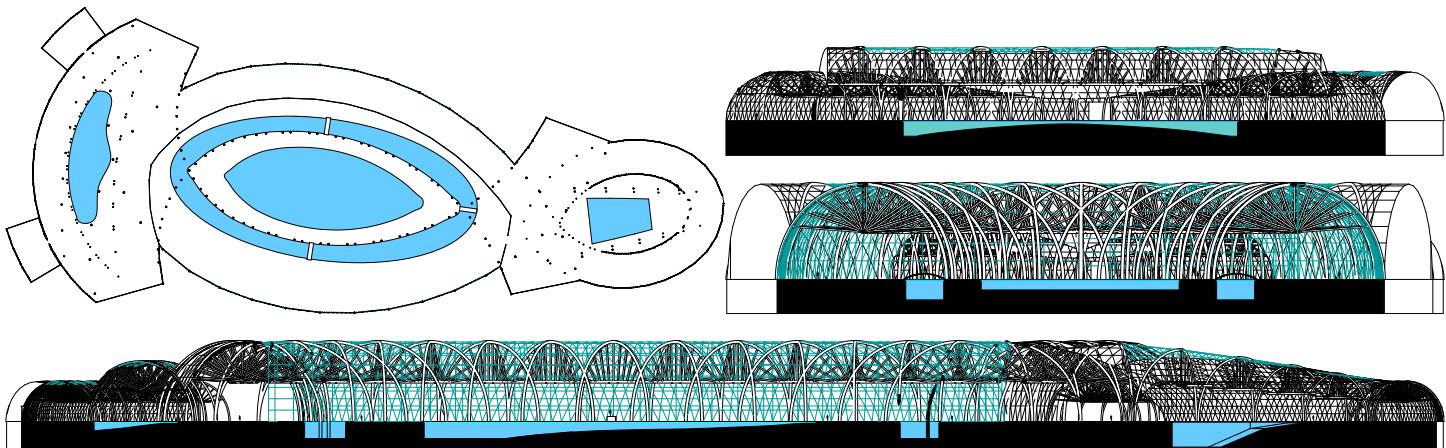
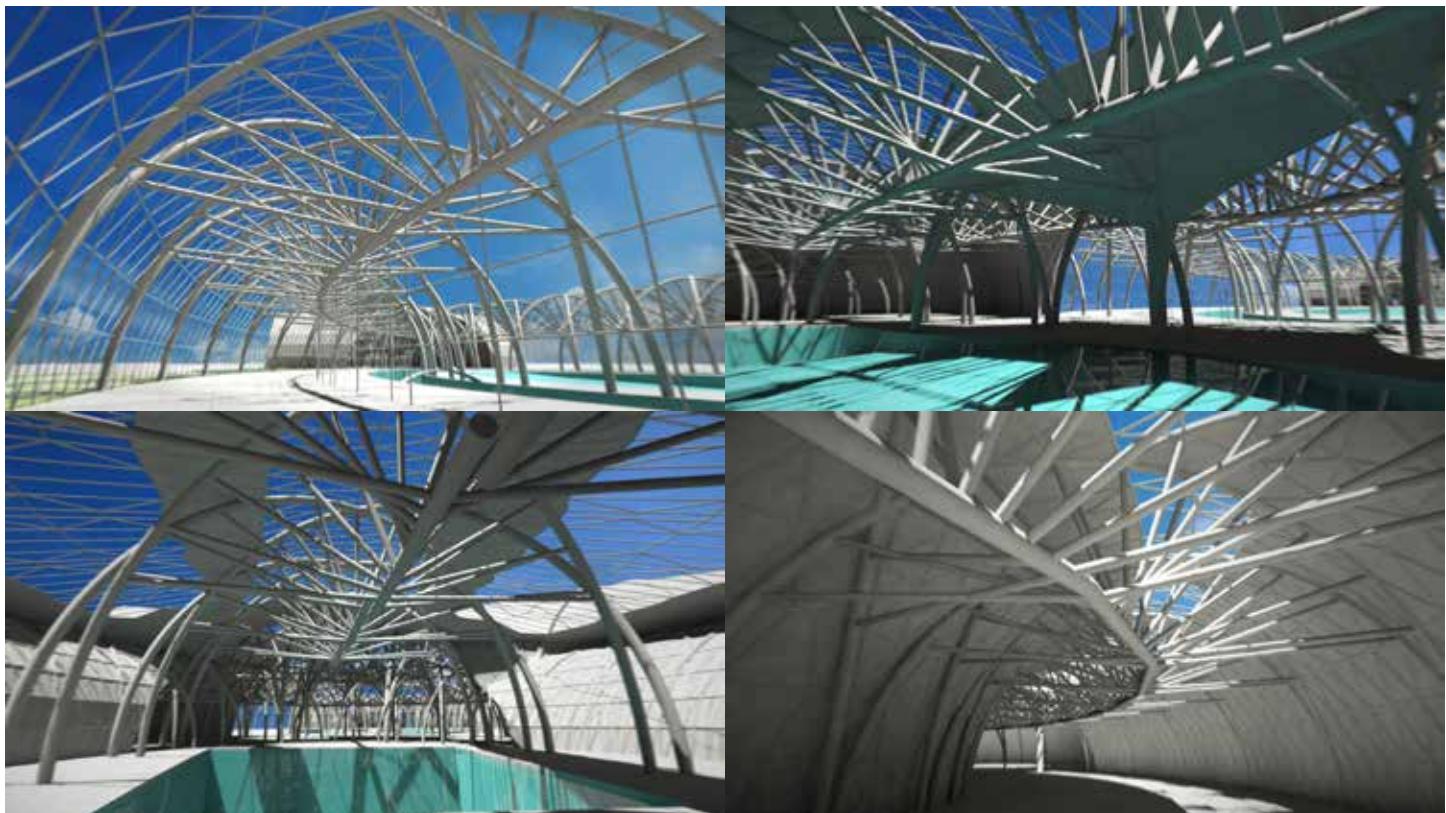
Joint System

1:16"

1:1/12"

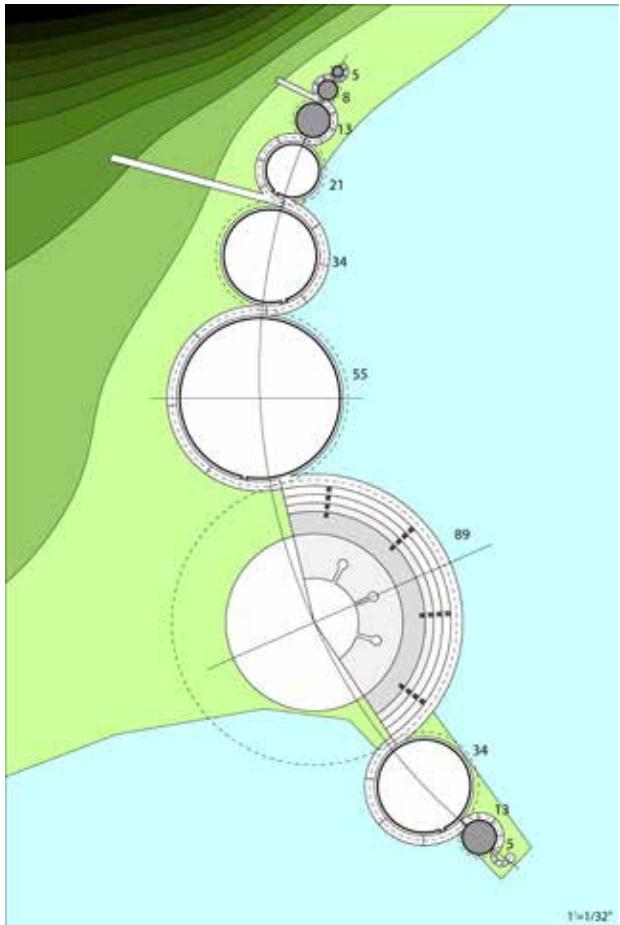
1:1/16"

1:1/8"

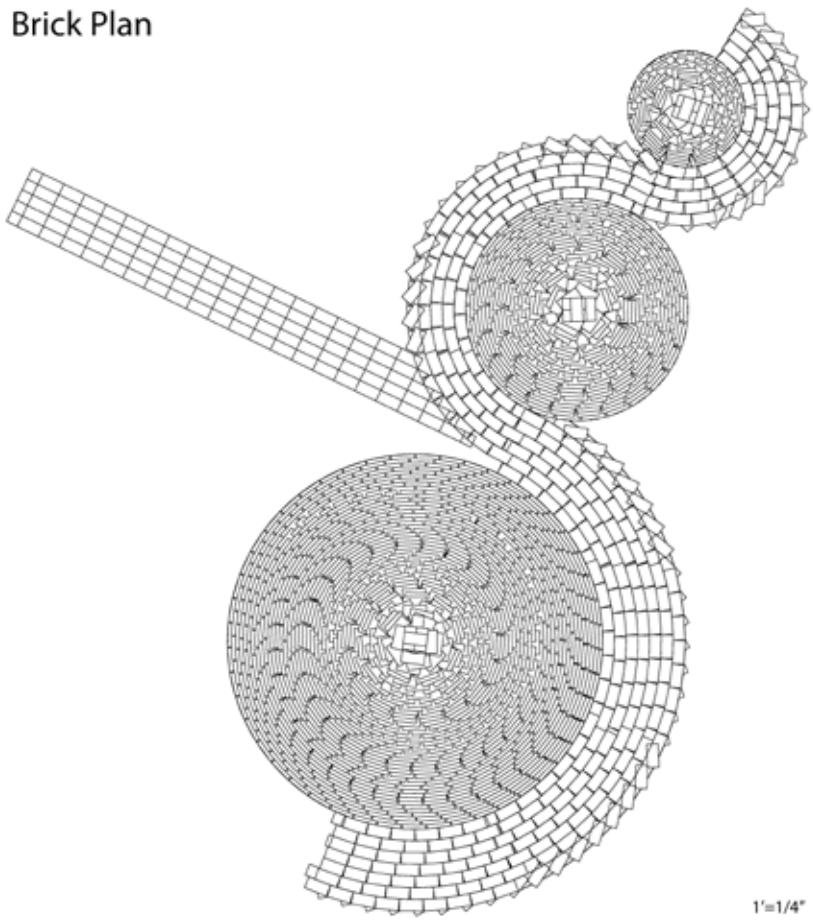


SECOND YEAR STUDIO

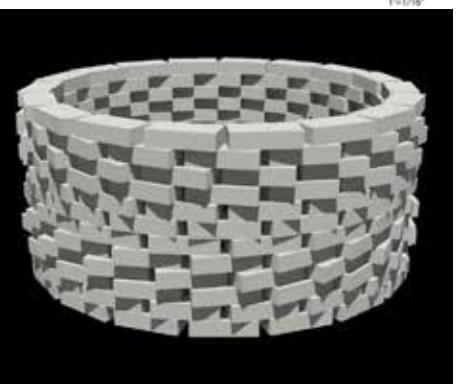
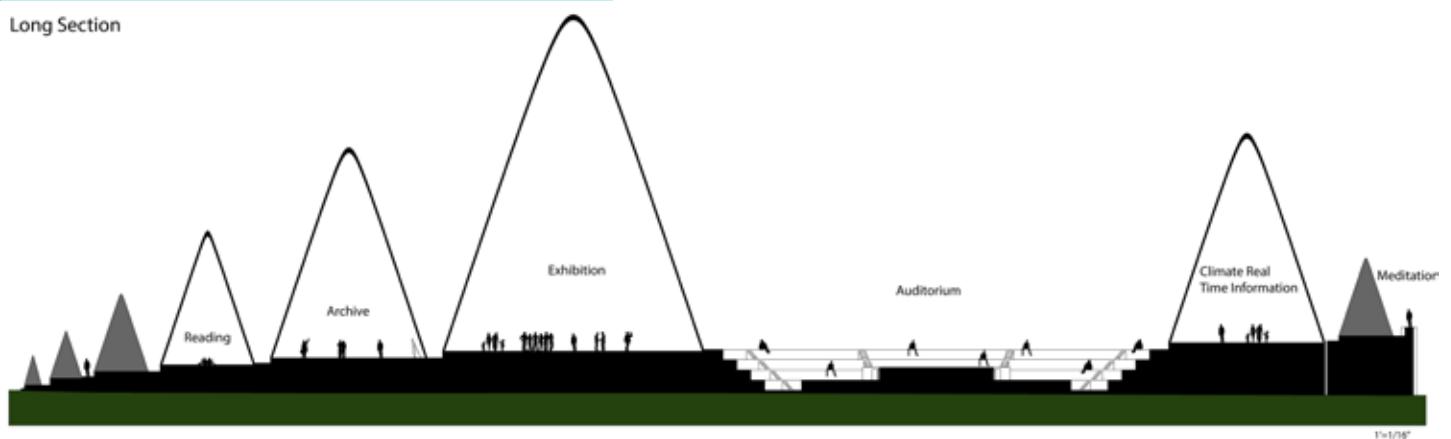
SPRING 2017

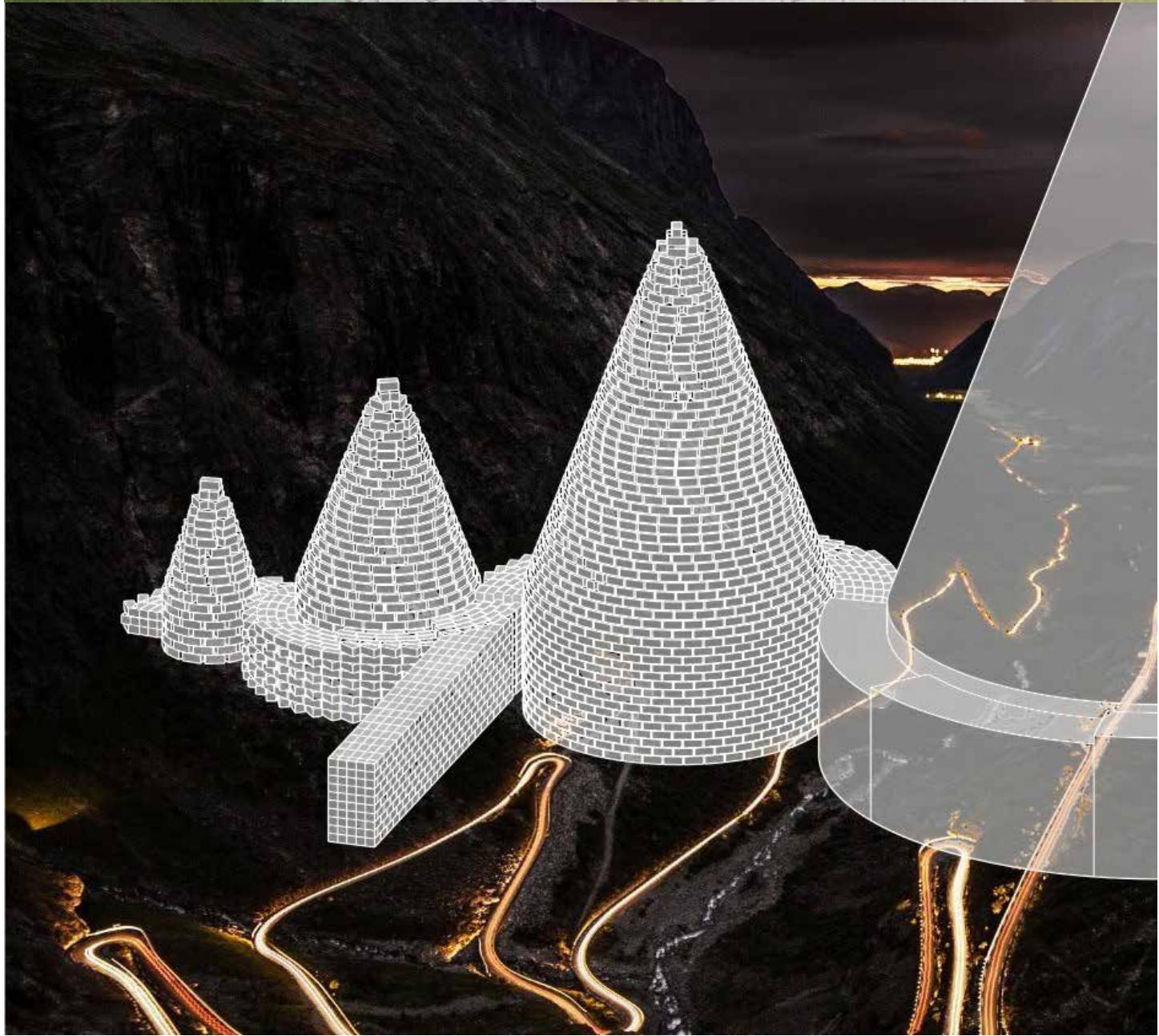
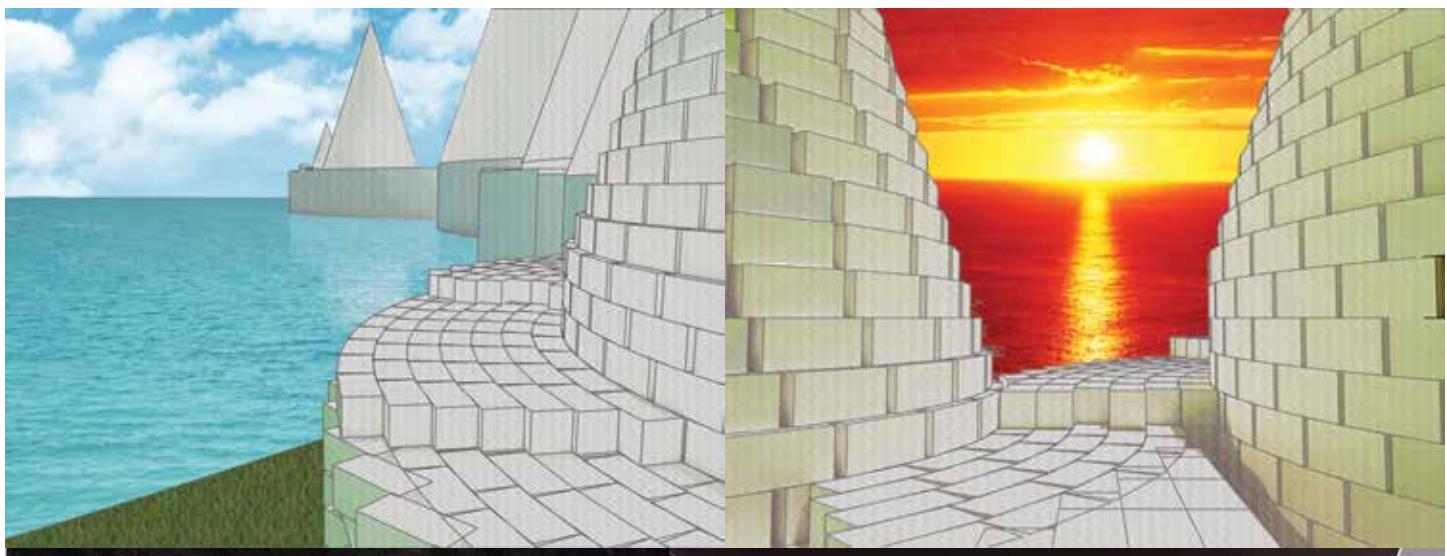


Brick Plan



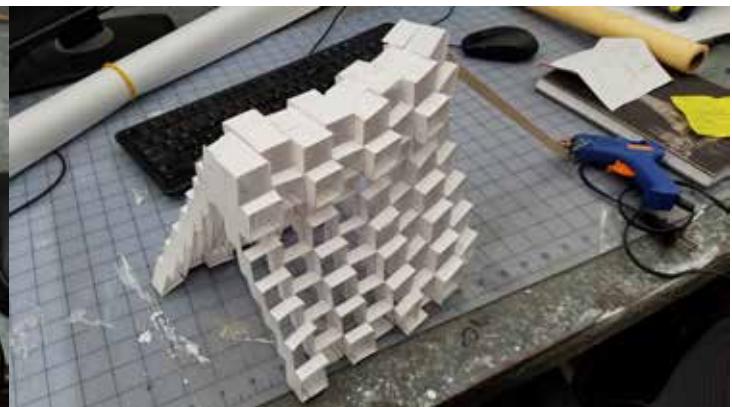
Long Section



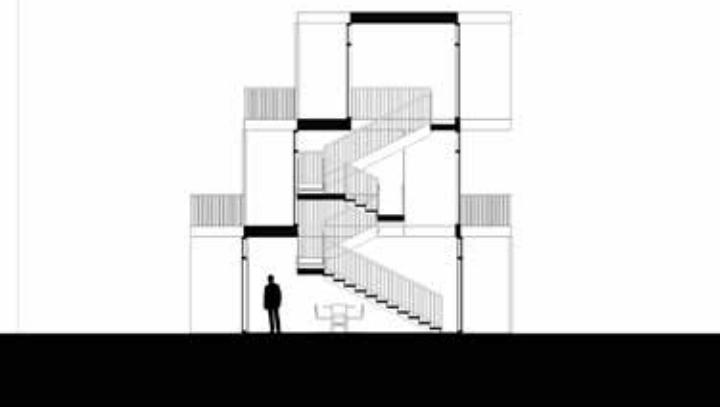


THIRD YEAR STUDIO

FALL 2017

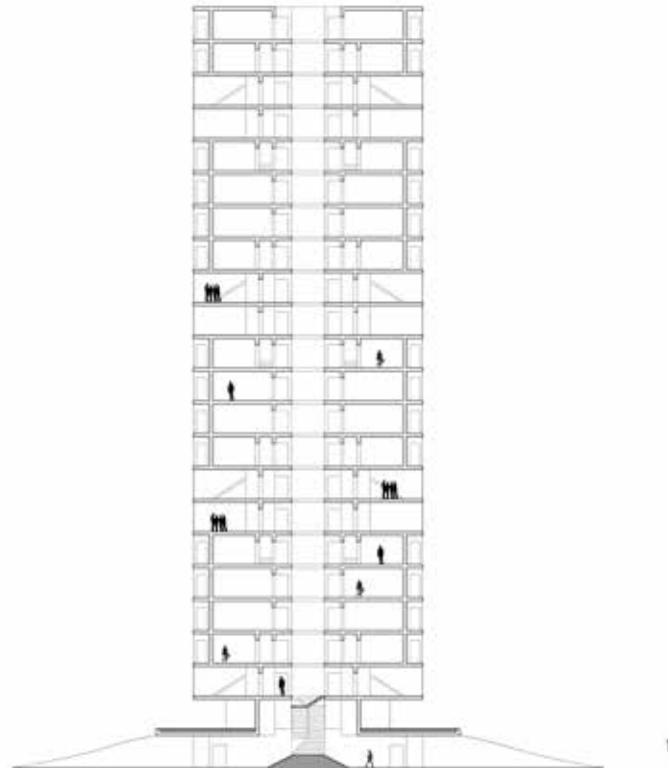
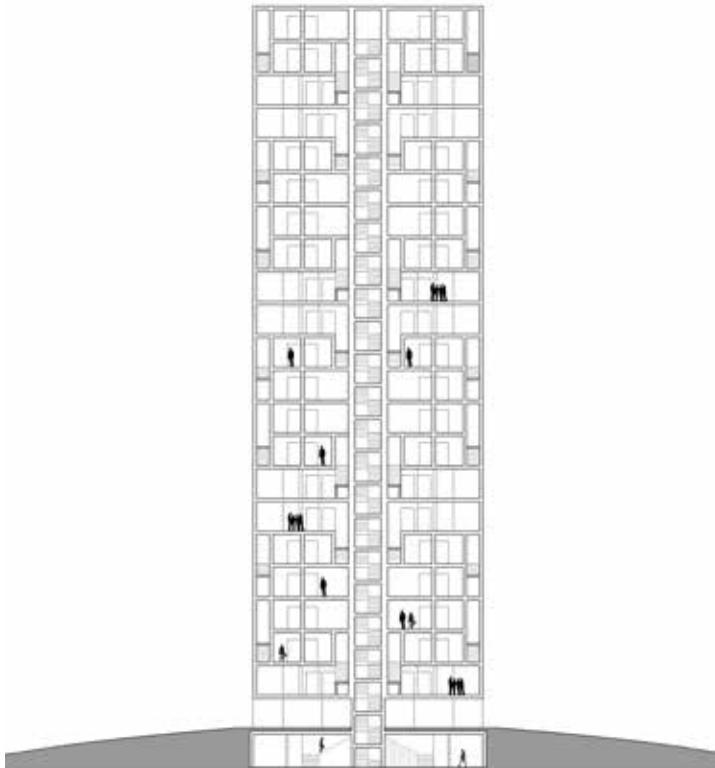


Section 2

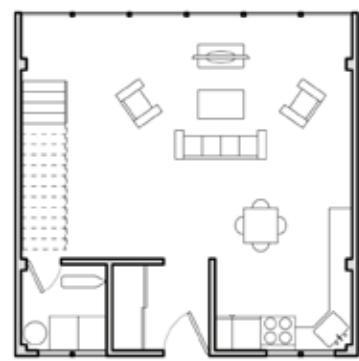
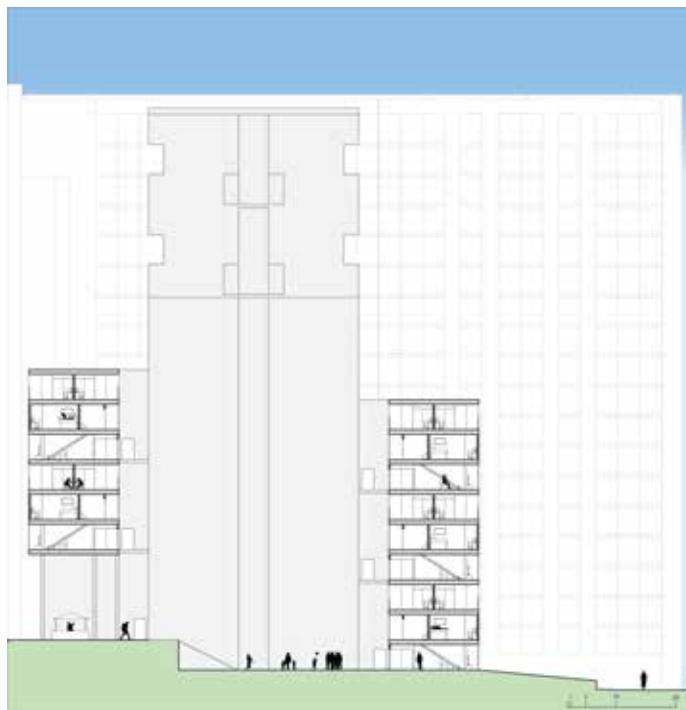


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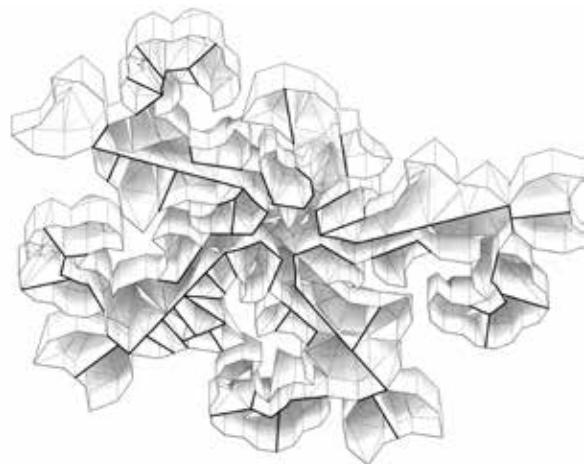
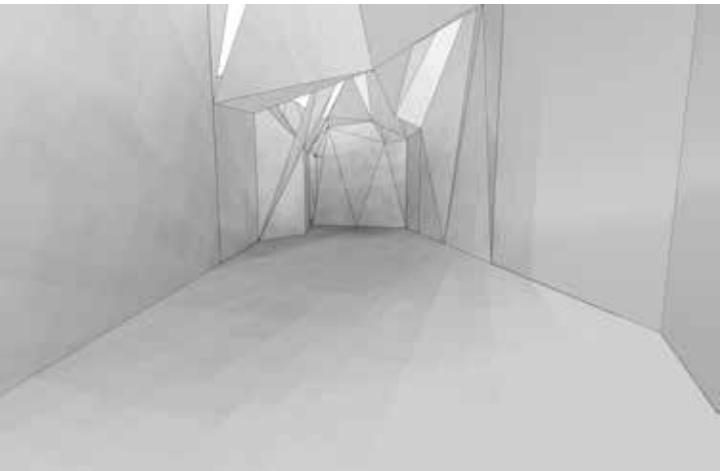
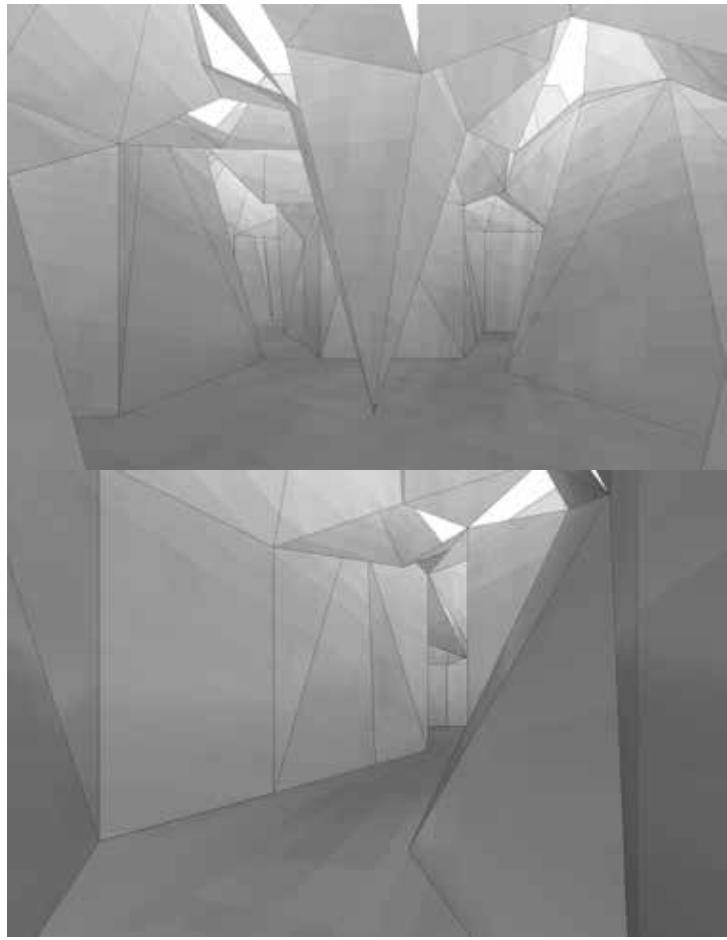
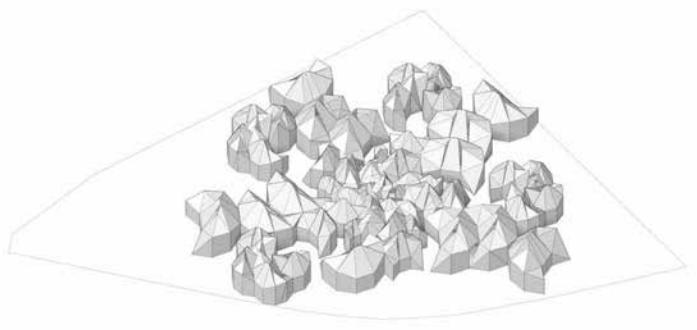
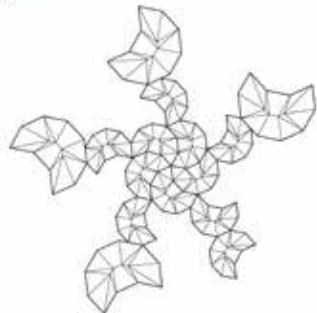
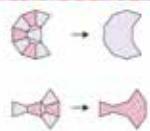
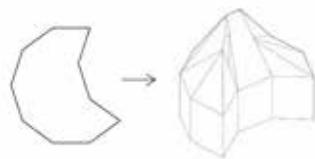
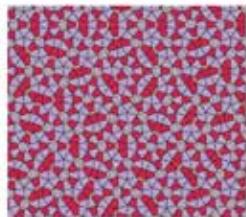


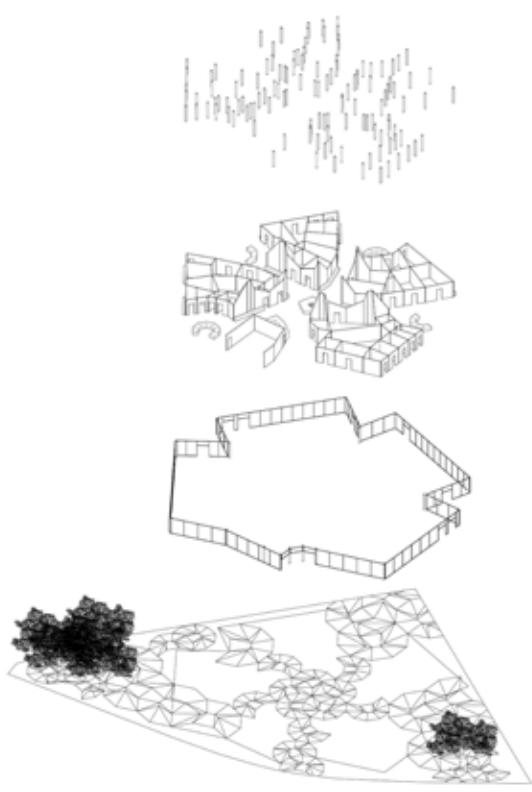
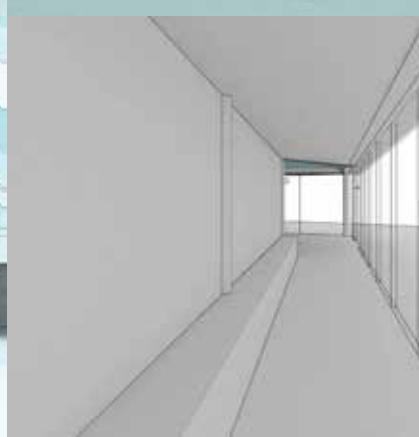
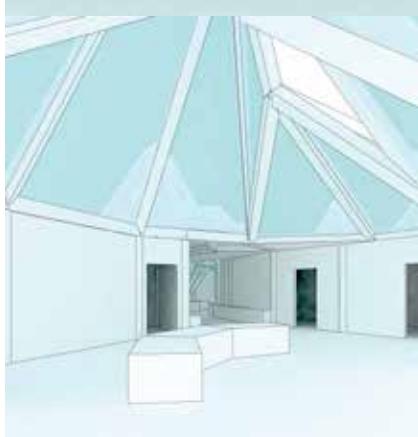
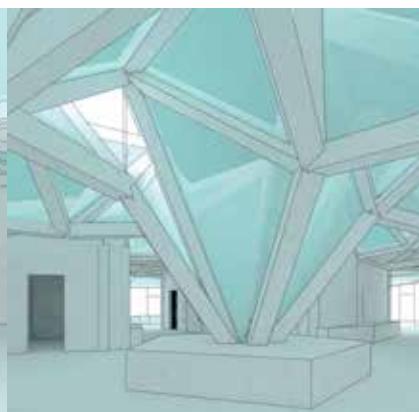
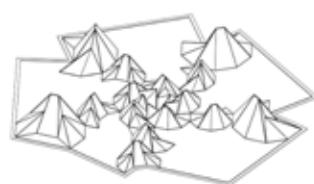
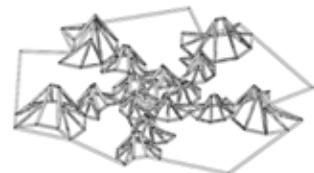
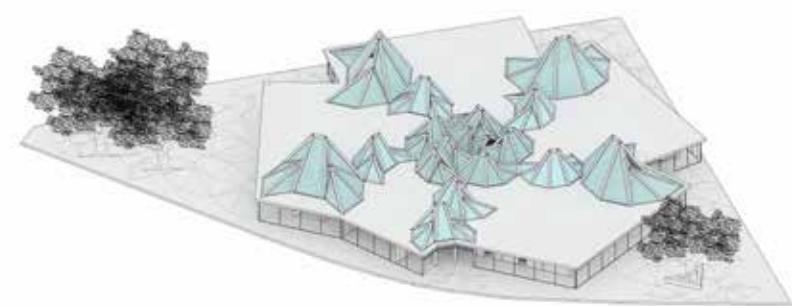
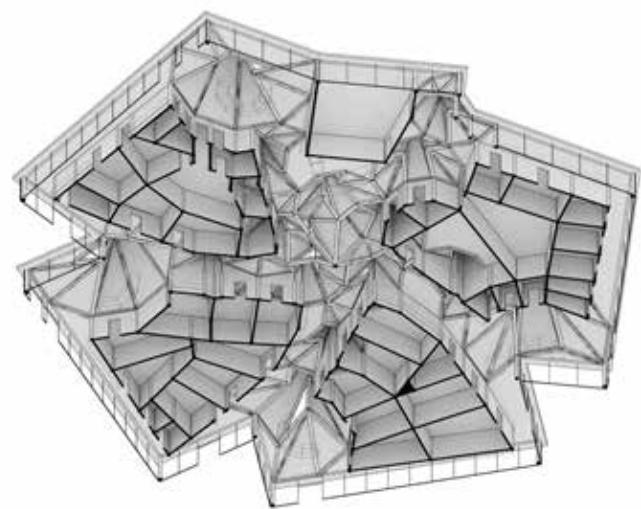
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THIRD YEAR STUDIO

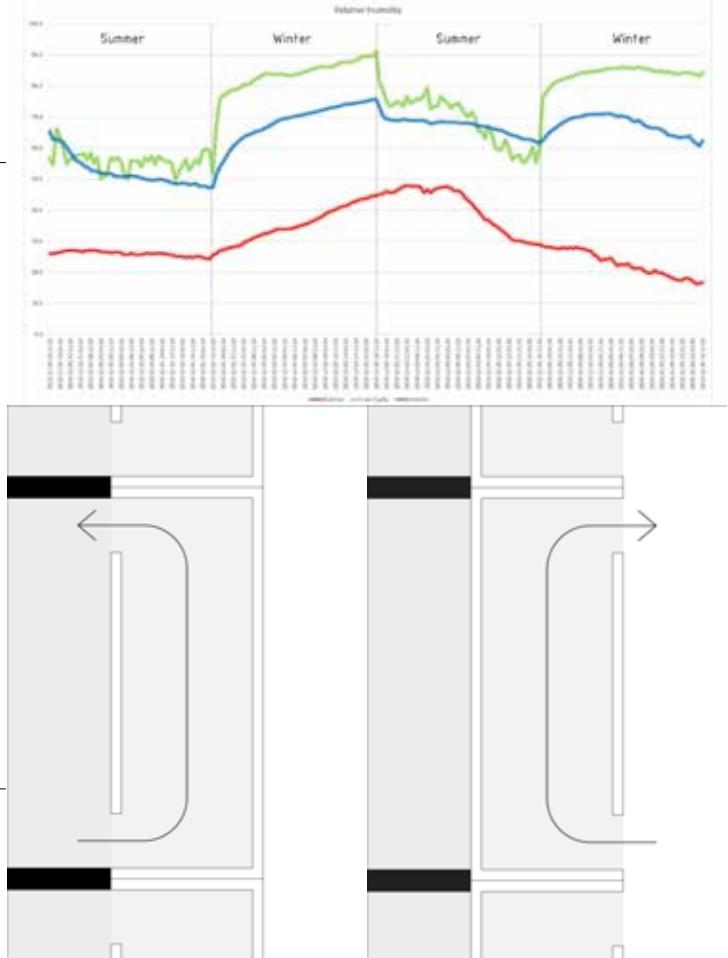
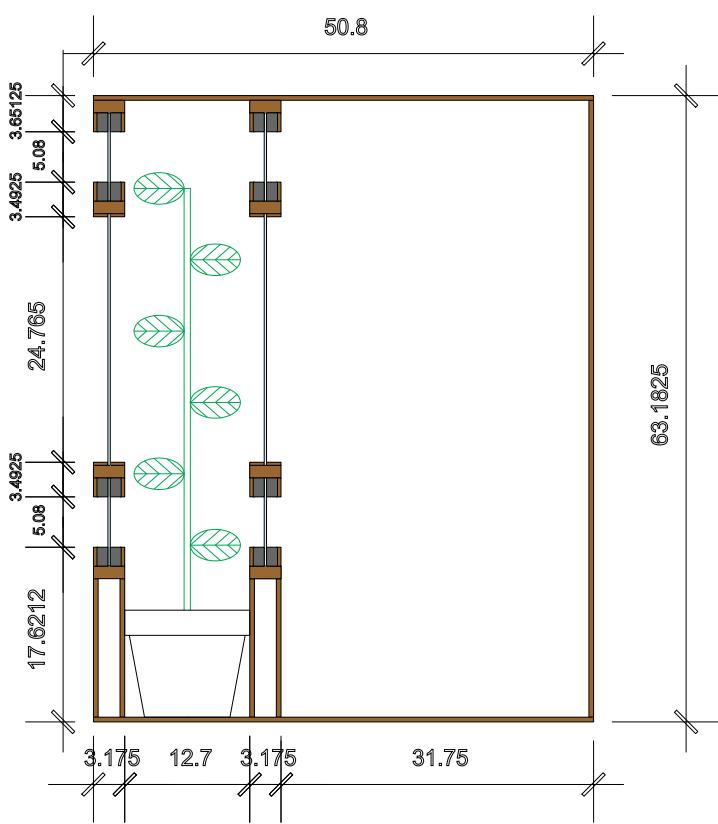
SPRING 2018

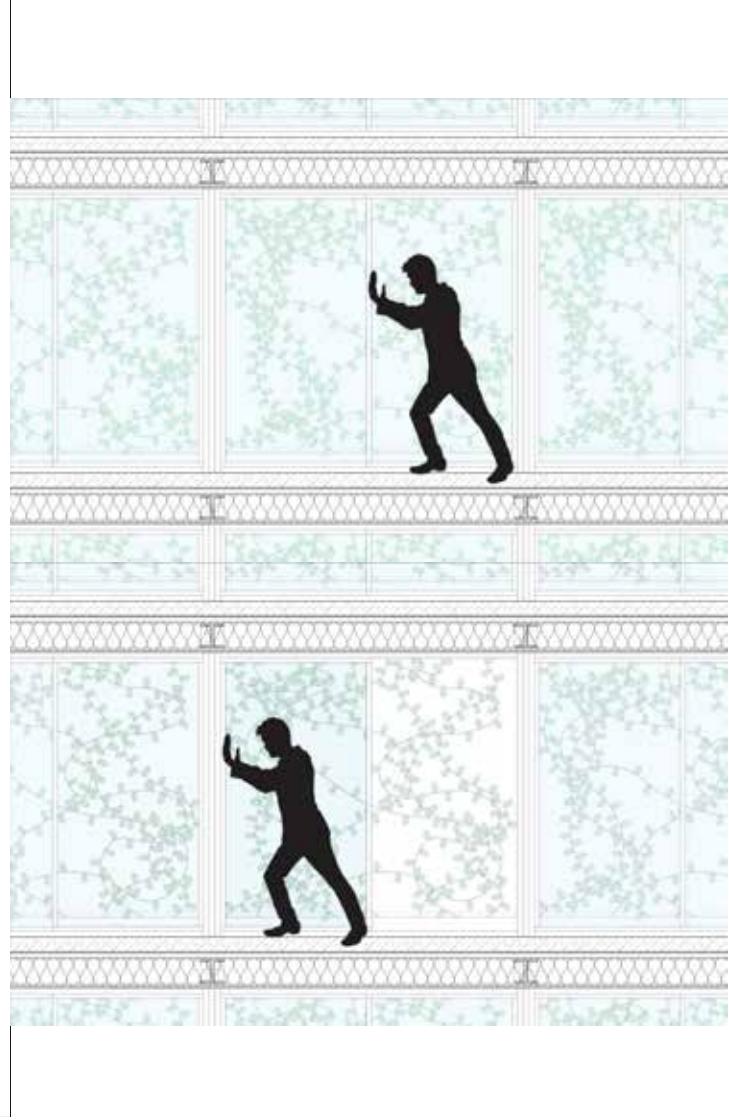
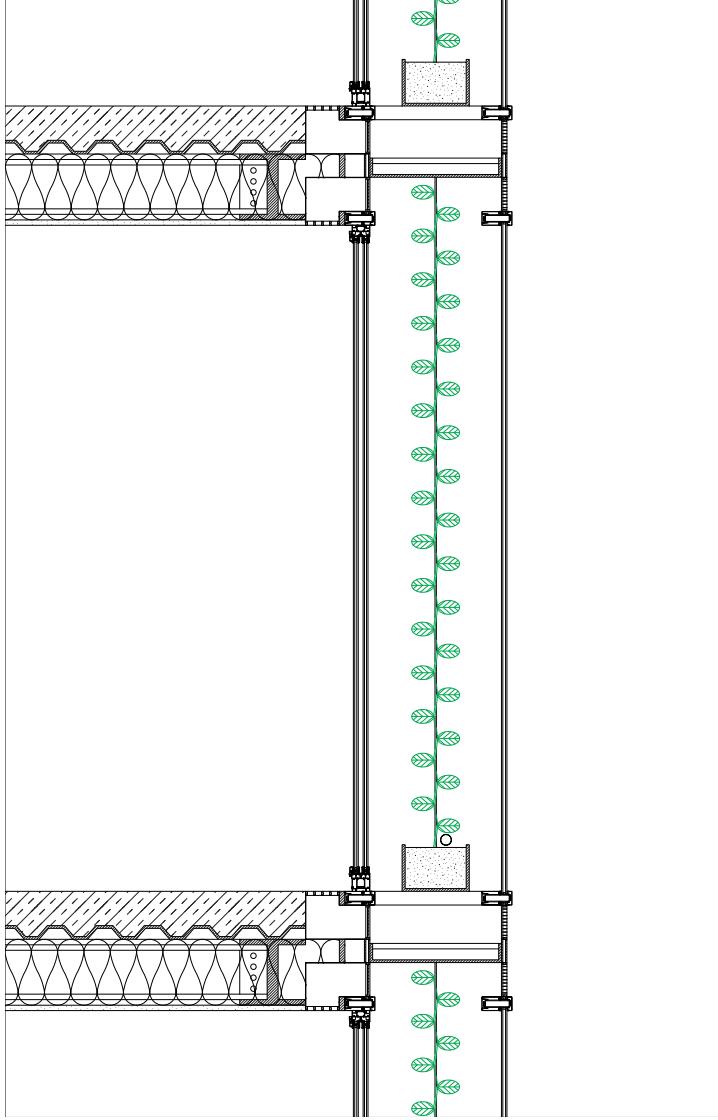




FOURTH YEAR STUDIO

FALL 2018



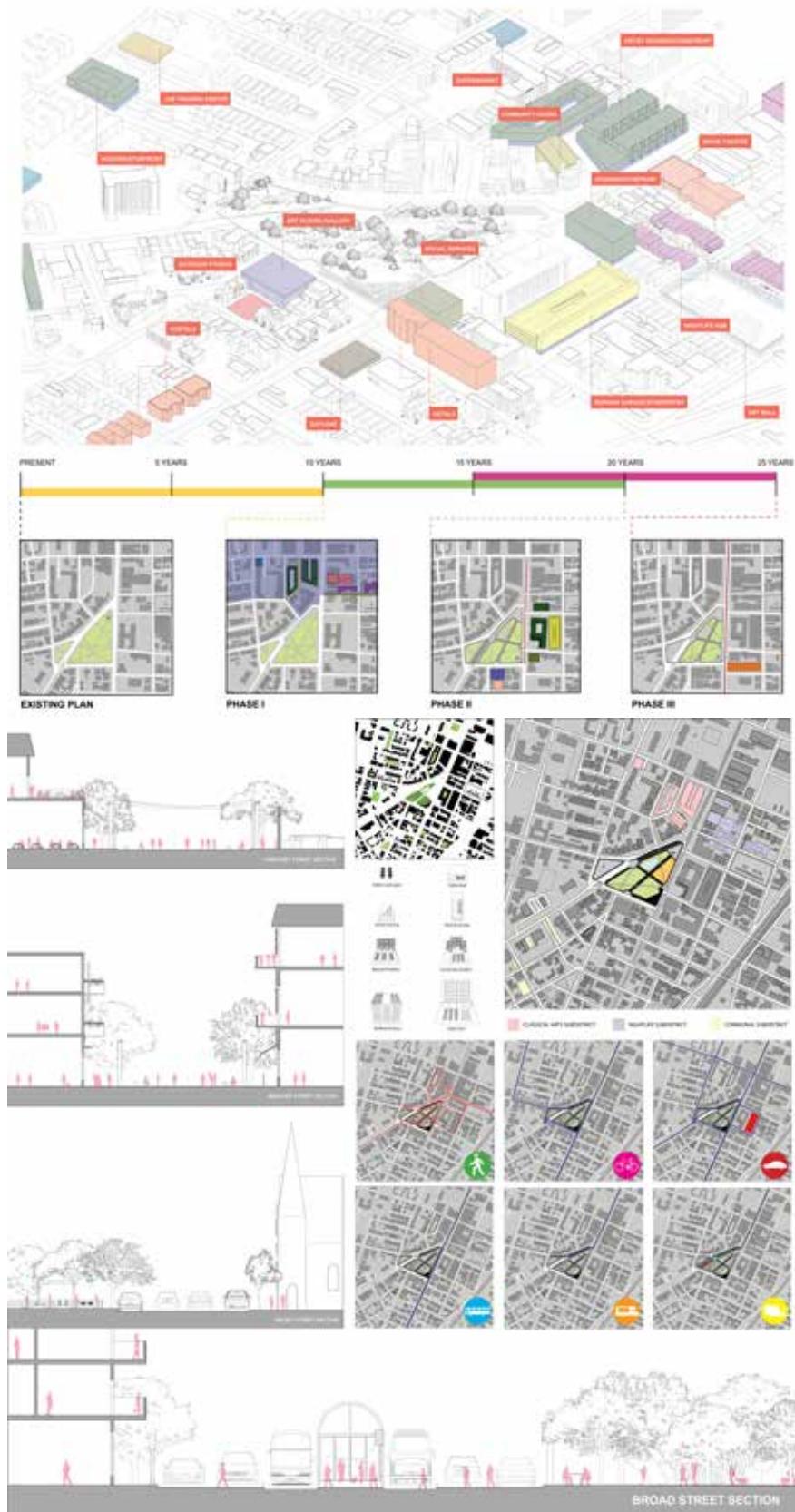


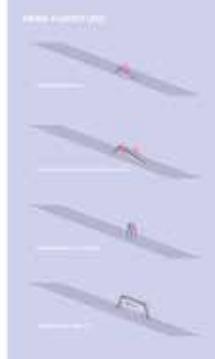
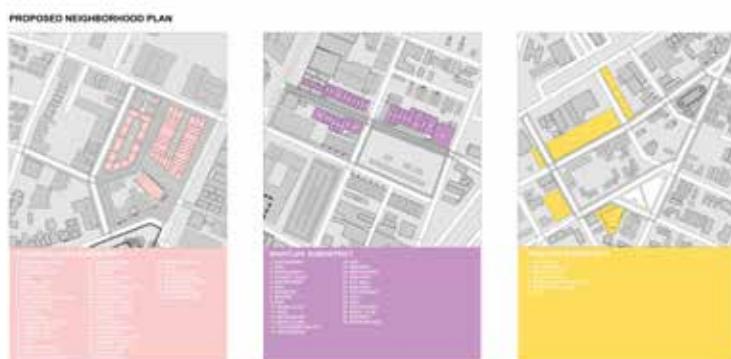
FOURTH YEAR STUDIO

SPRING 2019

STREETS FOR THE PEOPLE

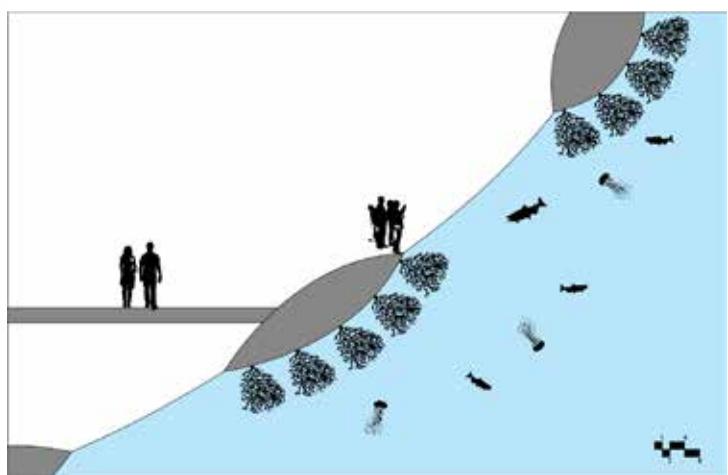
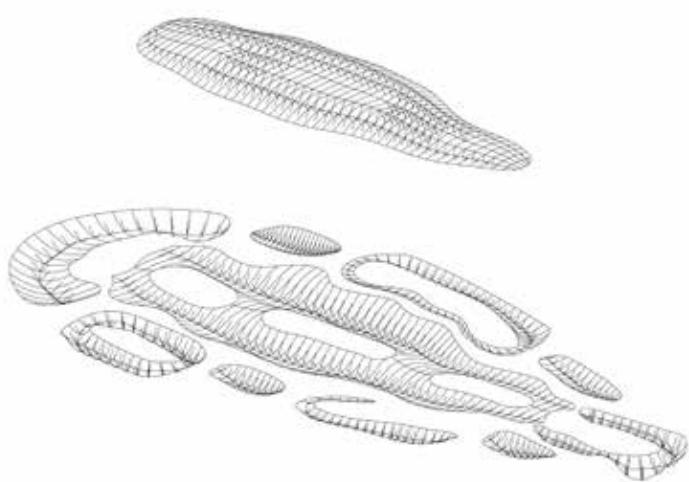
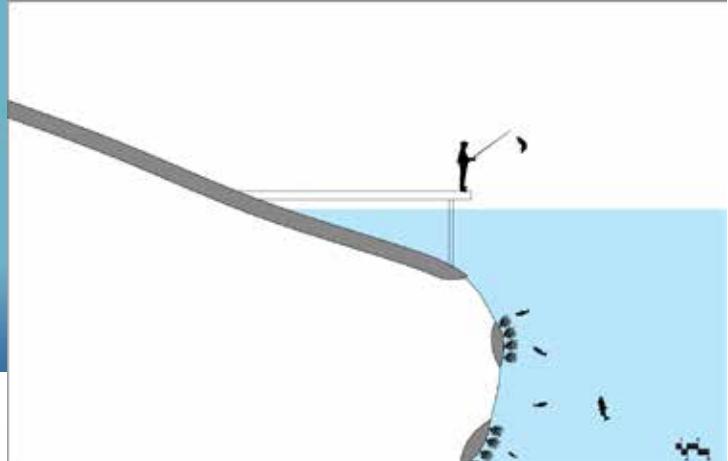
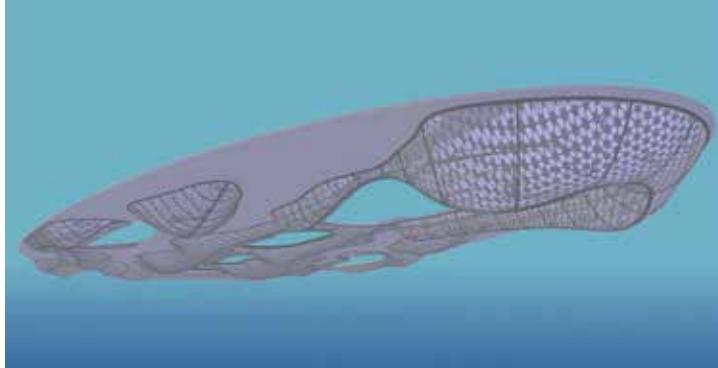
TO EMBRACE AND ENHANCE THE EXISTING COMMUNITY AND BRING OWNERSHIP OF THE STREETS BACK TO THE PEOPLE

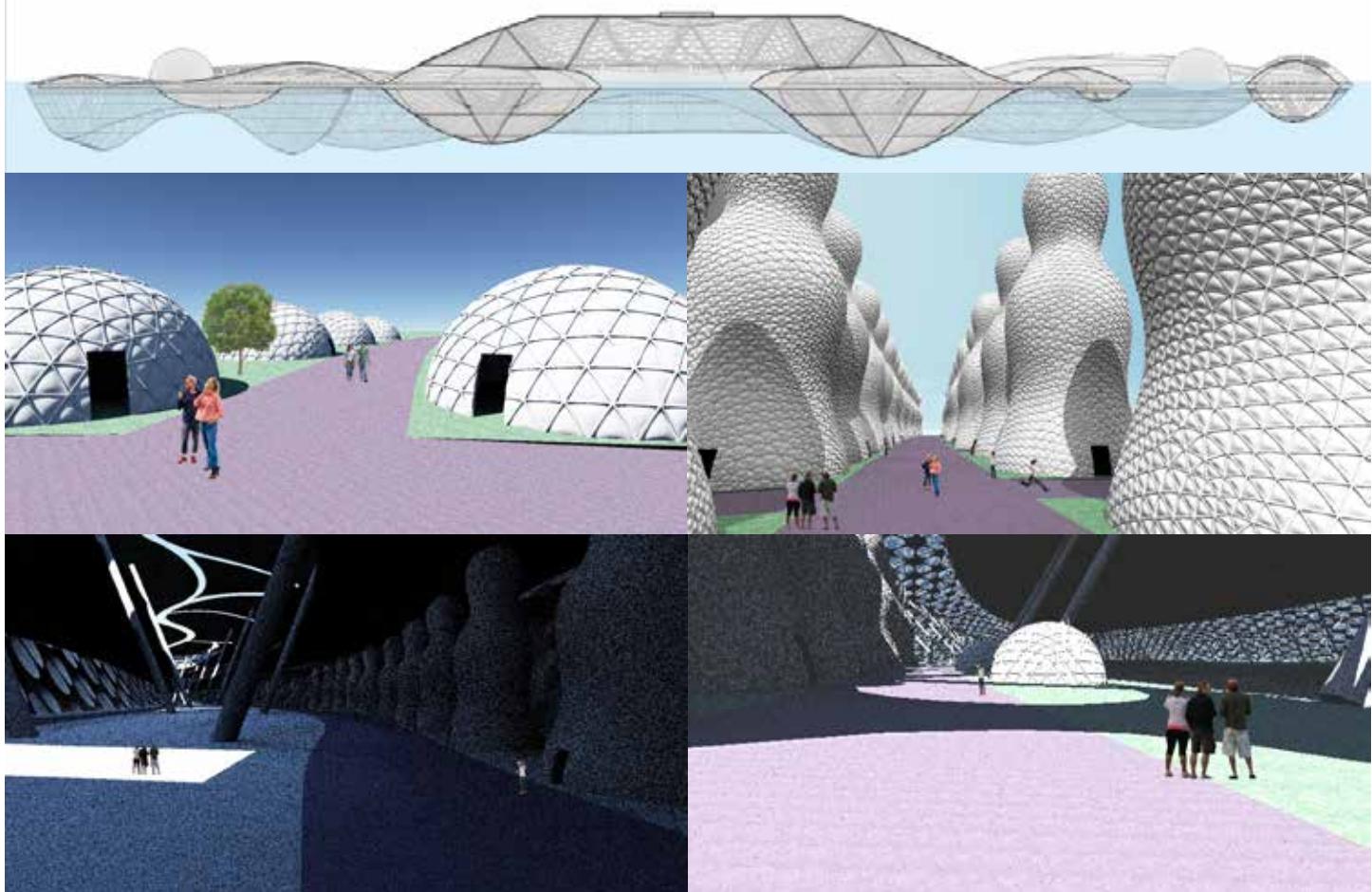
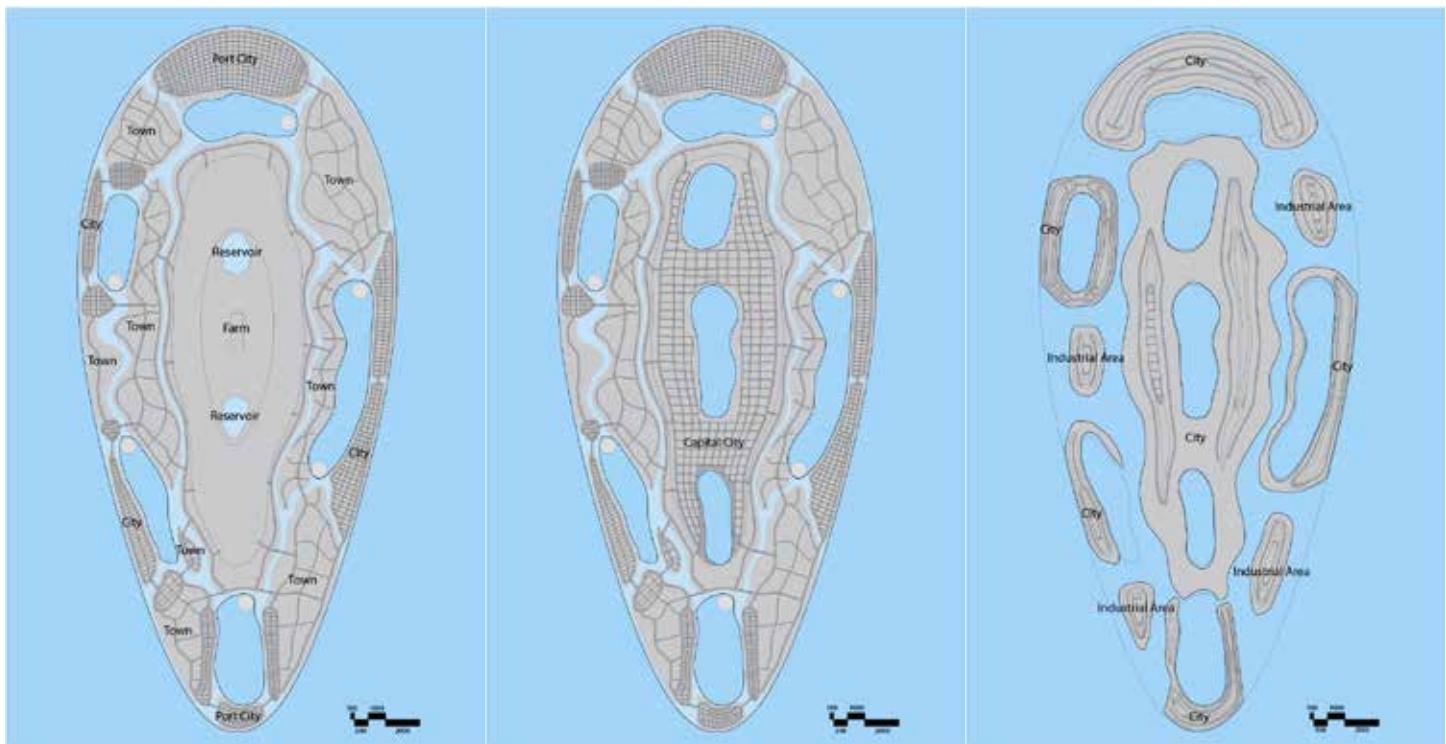




FIFTH YEAR STUDIO

FALL 2019





TWINMOTION PROJECT 1

SPRING 2020



TWINMOTION PROJECT 2

SPRING 2020



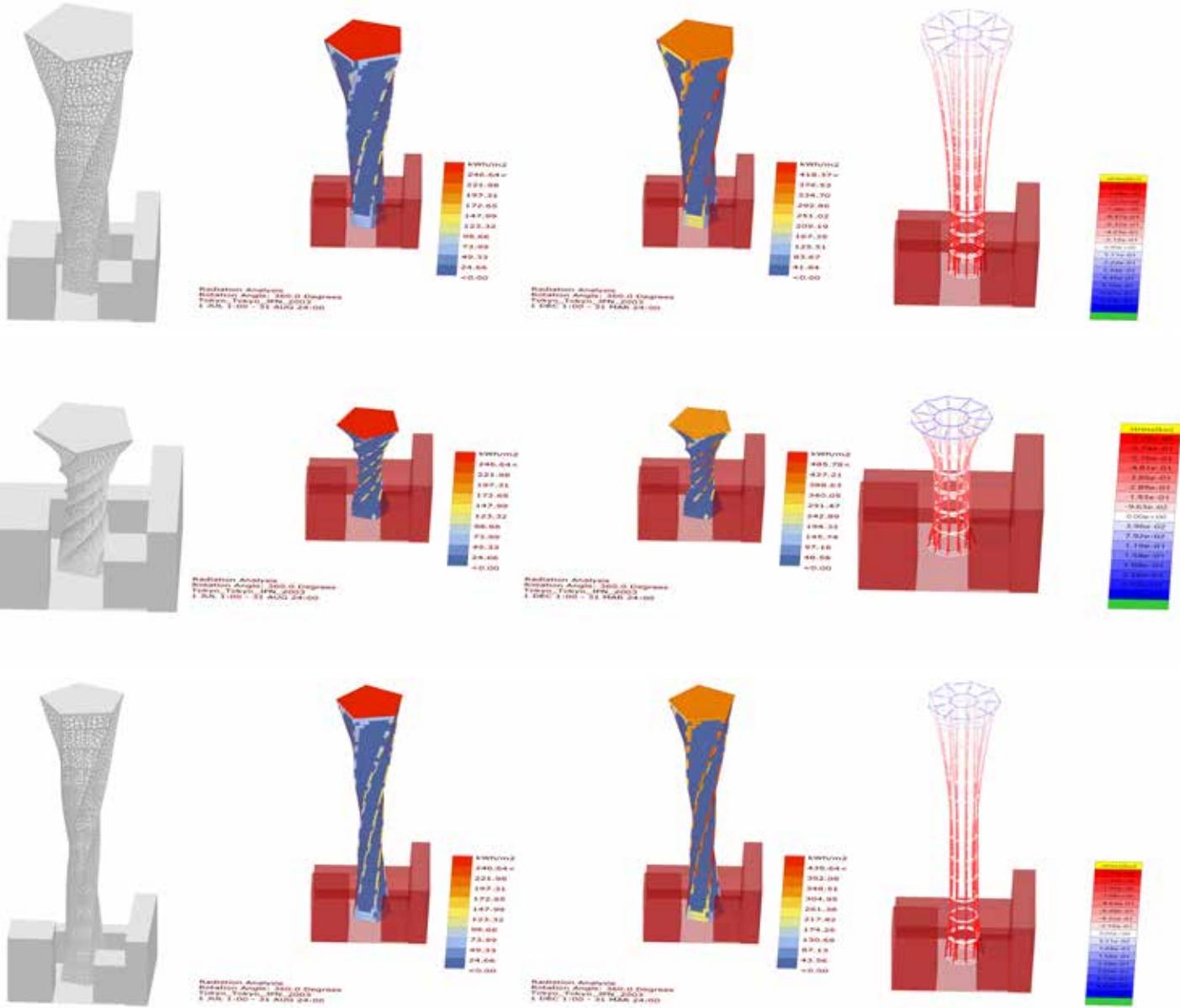
TWINMOTION PROJECT 3

SPRING 2020

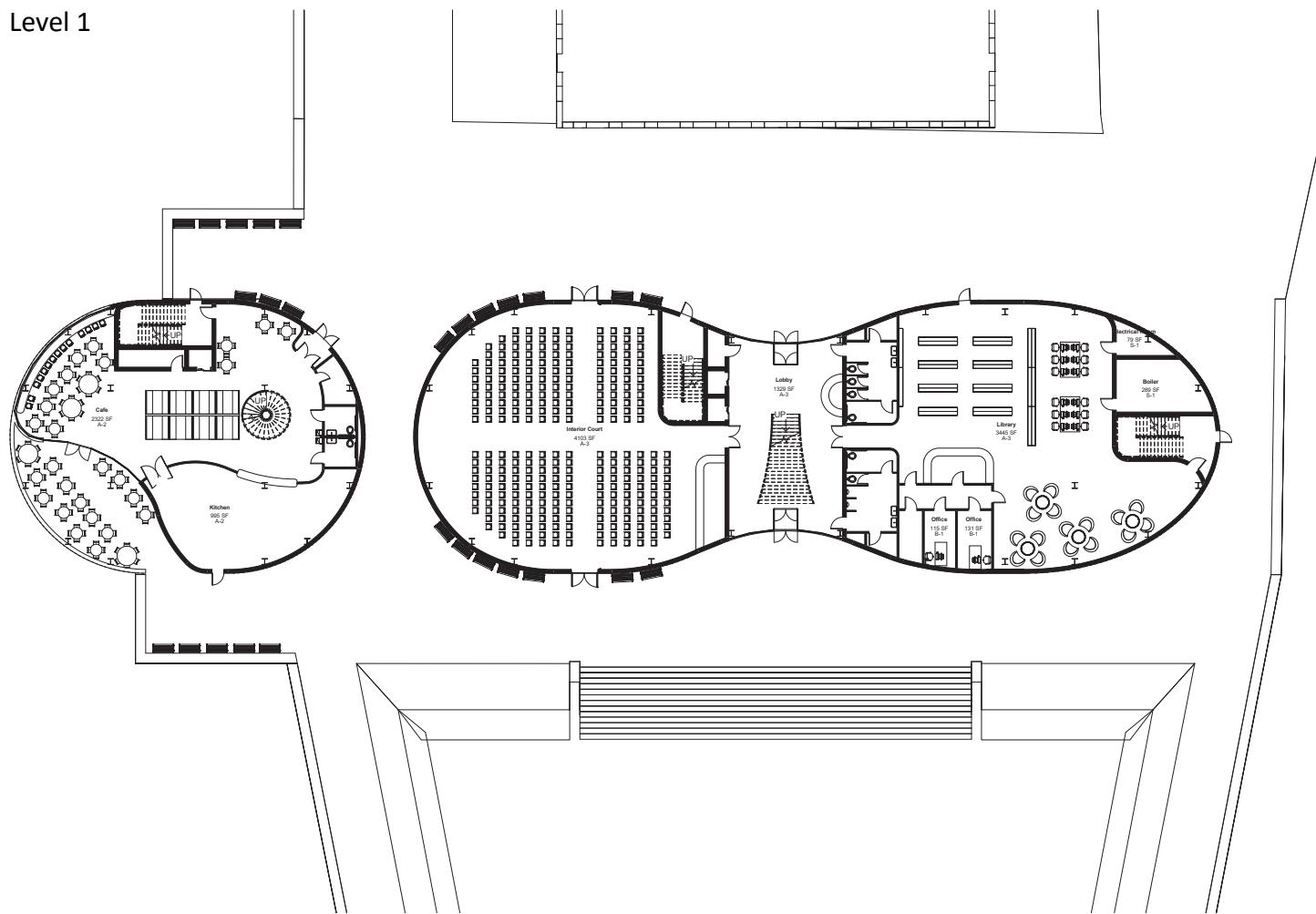


GRASSHOPPER PROJECT

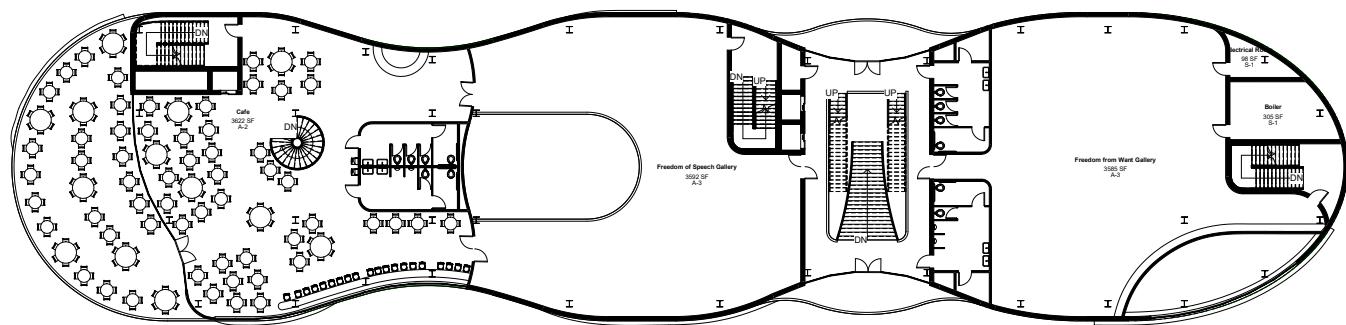
SPRING 2020



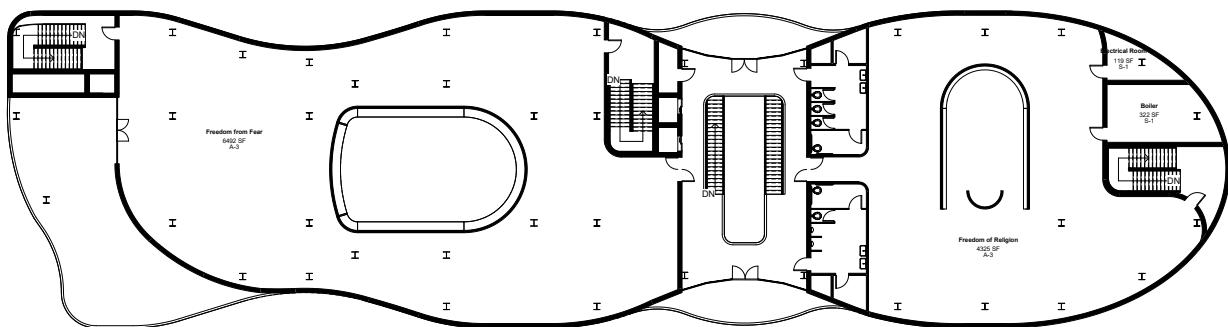
Level 1



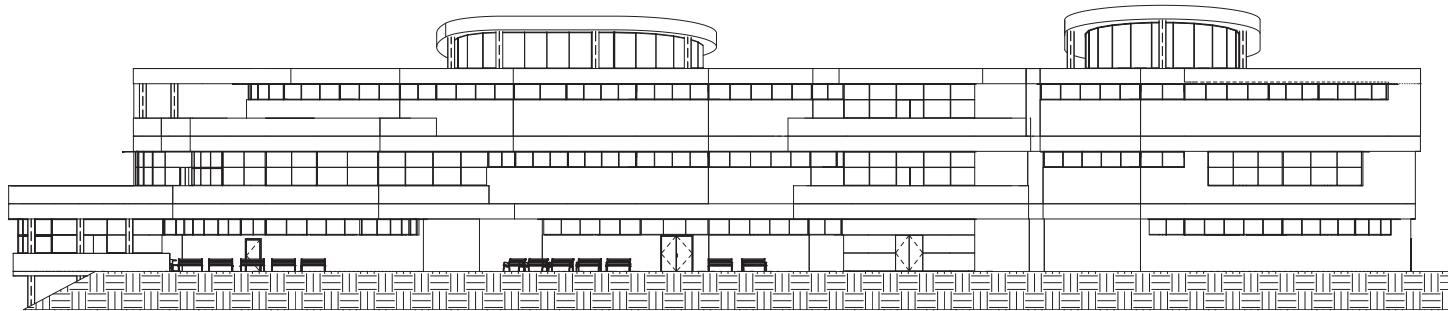
Level 2



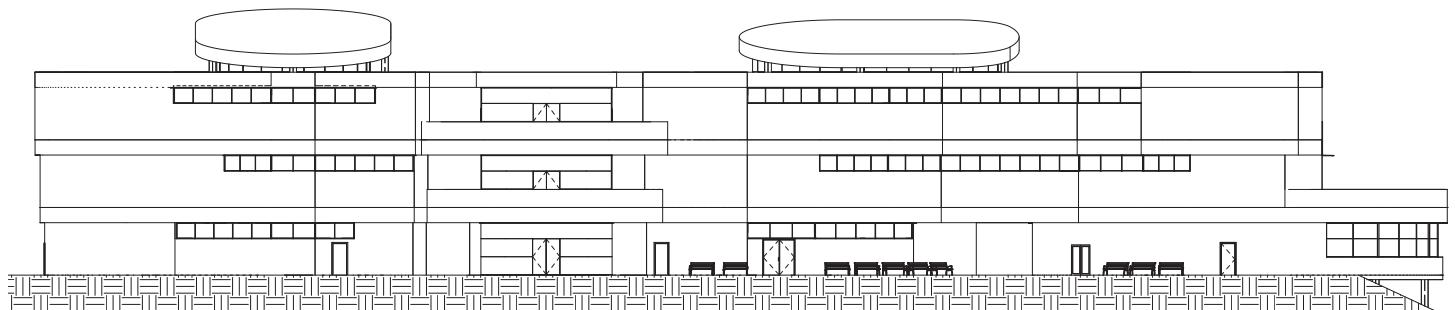
Level 3



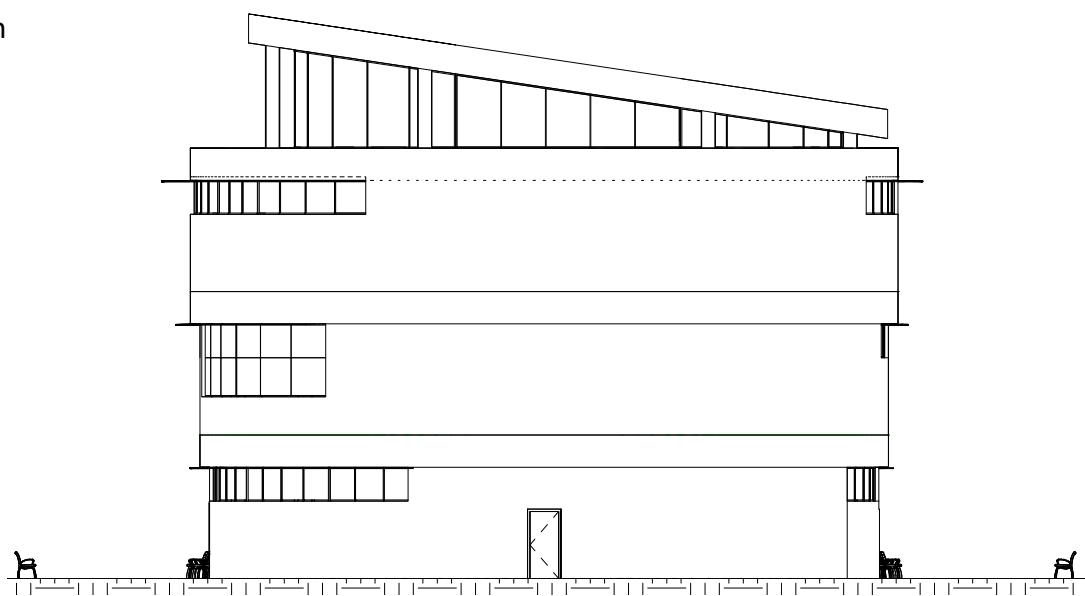
South Elevation



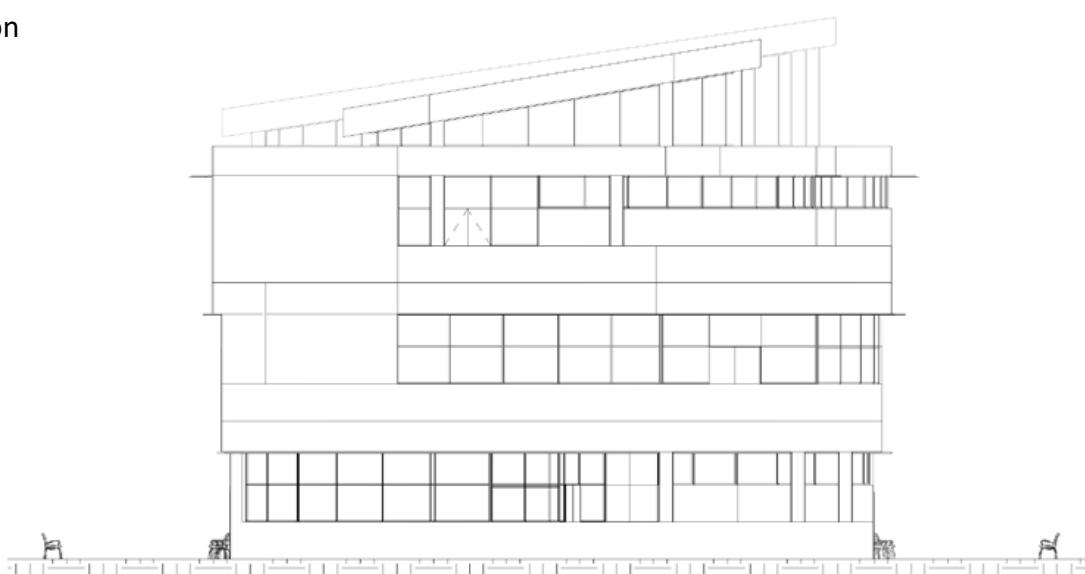
North Elevation



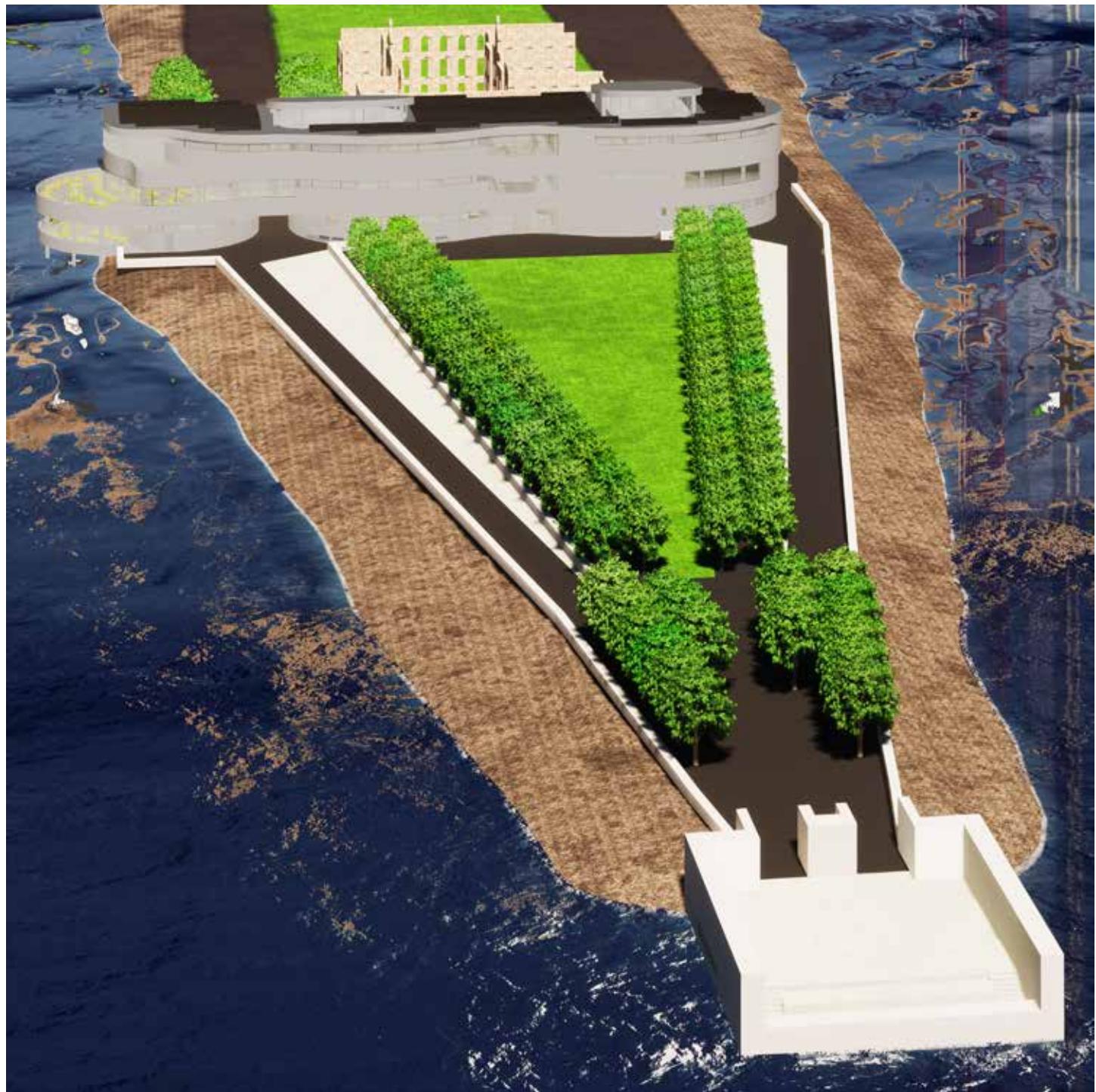
East Elevation



West Elevation



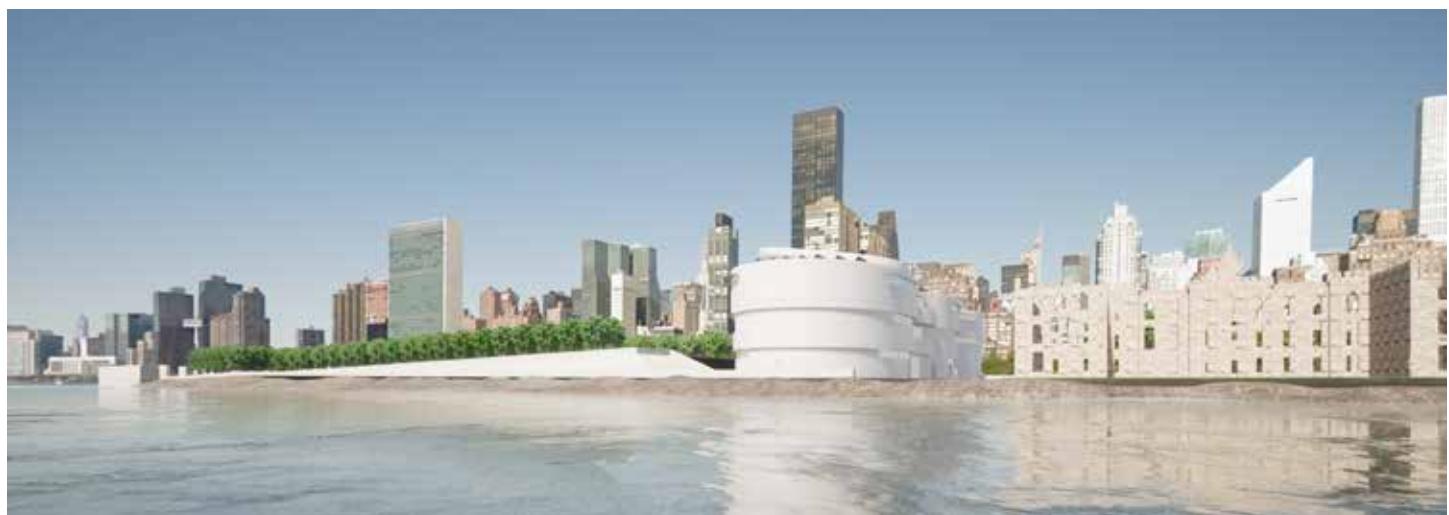
Bird's Eye View 1



Bird's Eye View 2



View From East



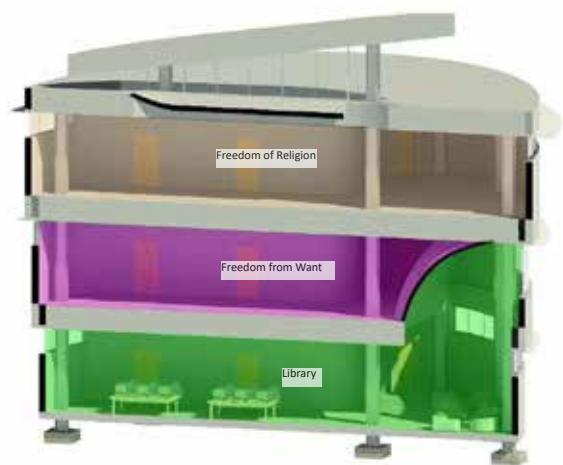
View From West



Short Section 1



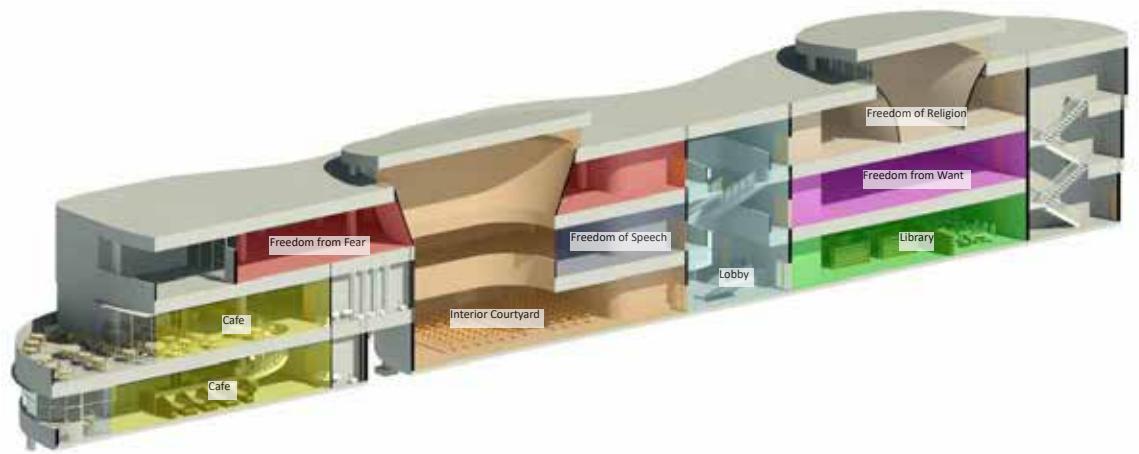
Short Section 2



Long Section 1

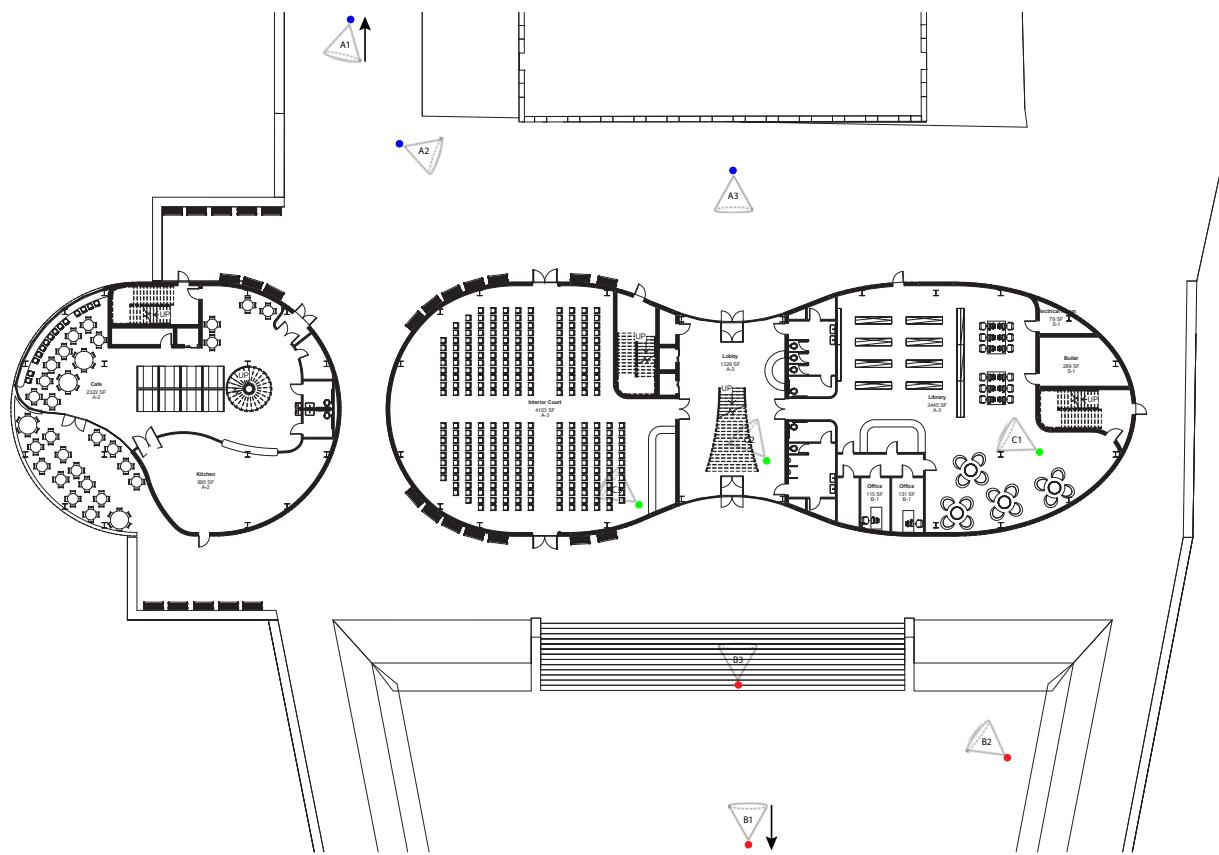


Long Section 2



Wayfinding

A



A2



A1

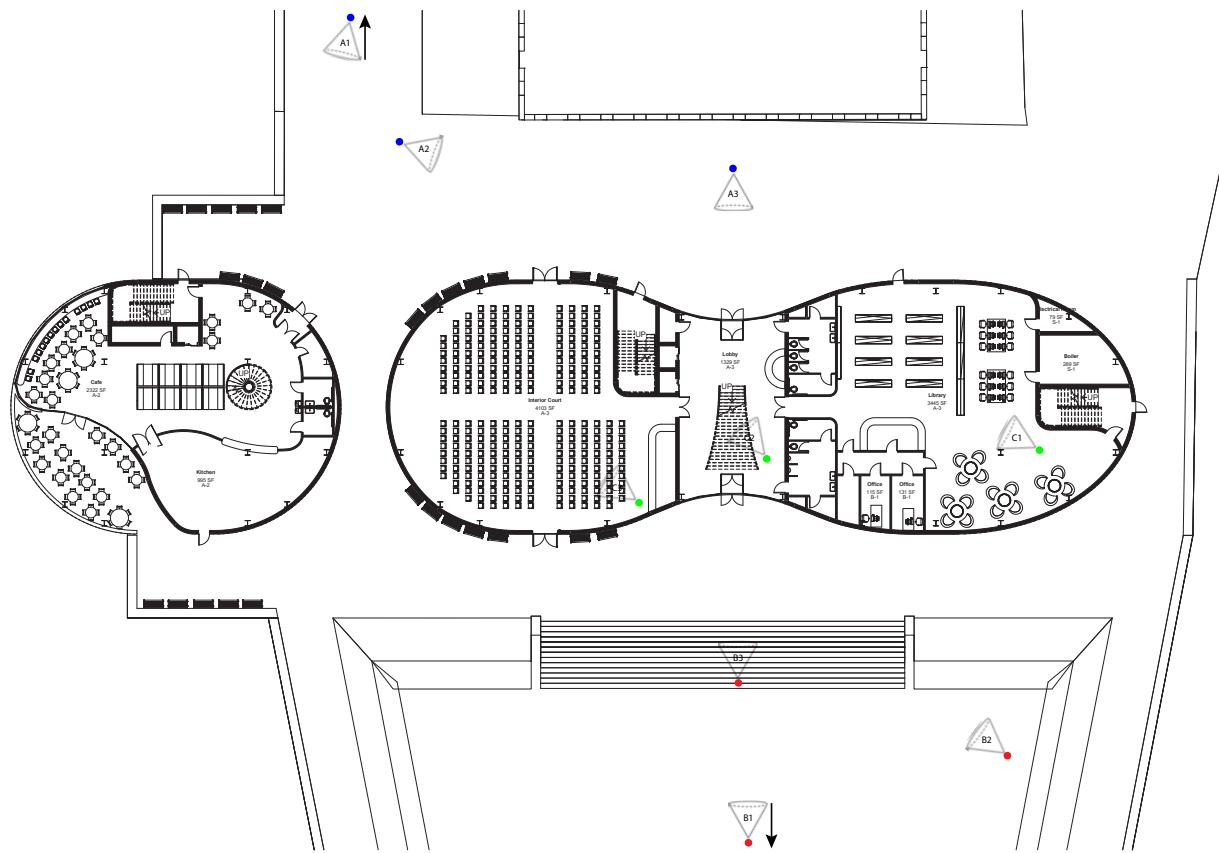


A3



Wayfinding

B



B2



B1

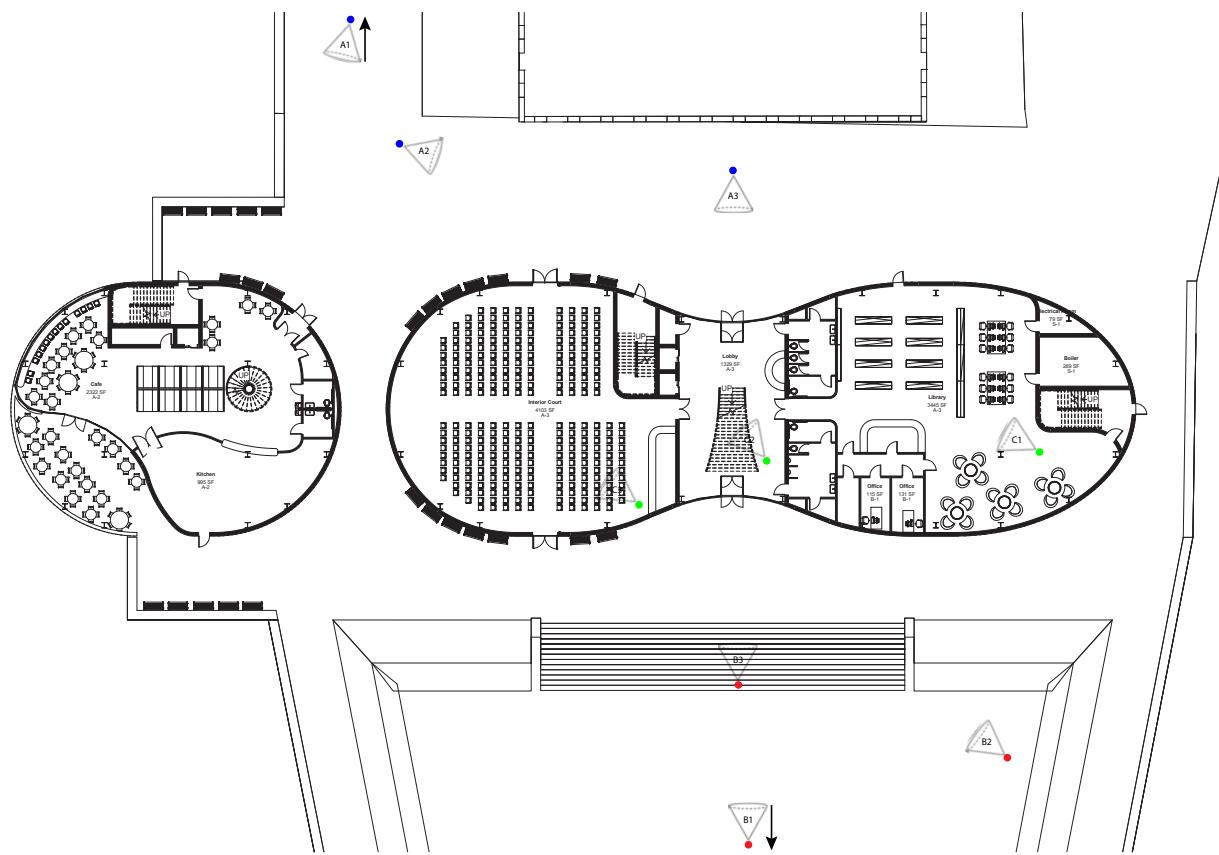


B3



Wayfinding

C



C2



C1

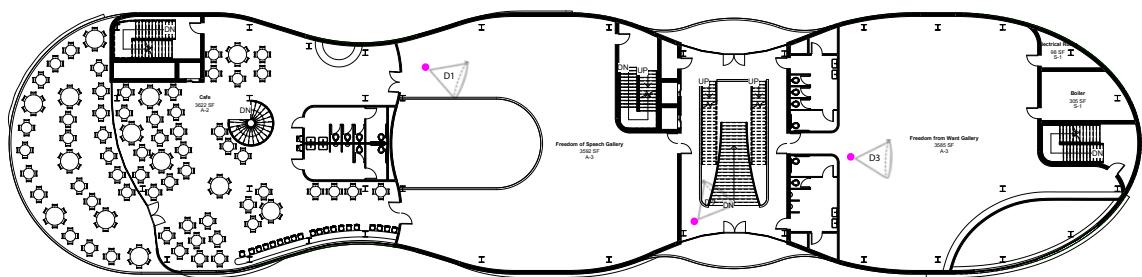


C3



Wayfinding

D



D2



D1

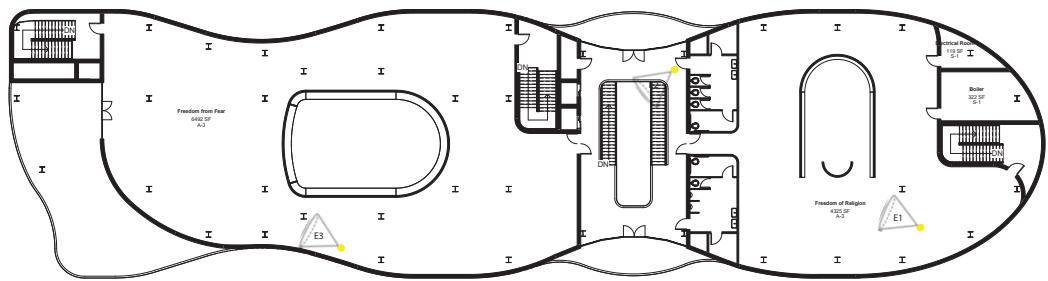


D3



Wayfinding

E



E2



E1



E3



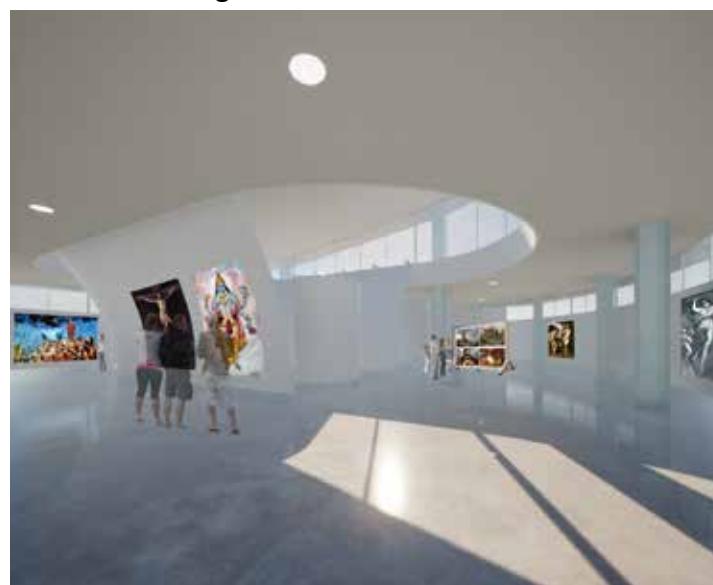
Freedom of Speech



Freedom from Want



Freedom of Religion 1



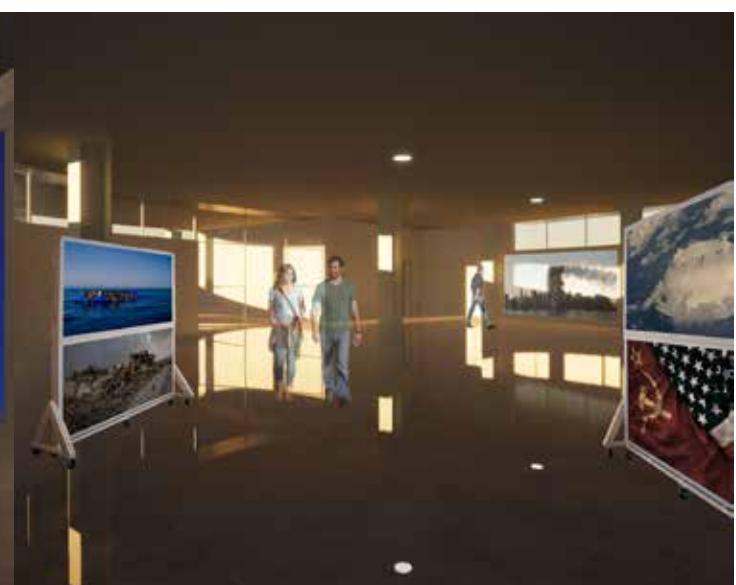
Freedom of Religion 2



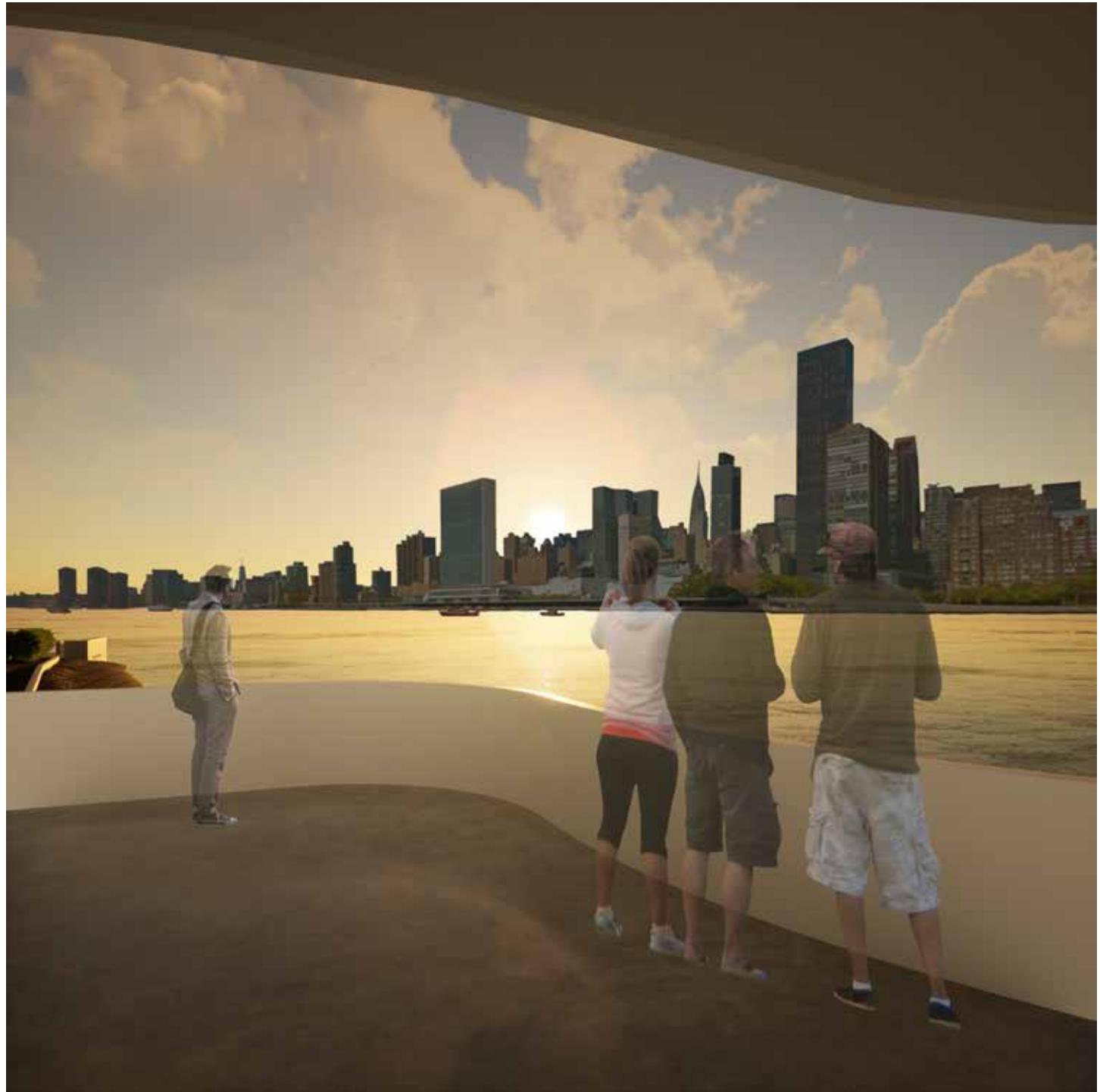
Freedom from Fear 1



Freedom from Fear 2



Freedom from Fear 3



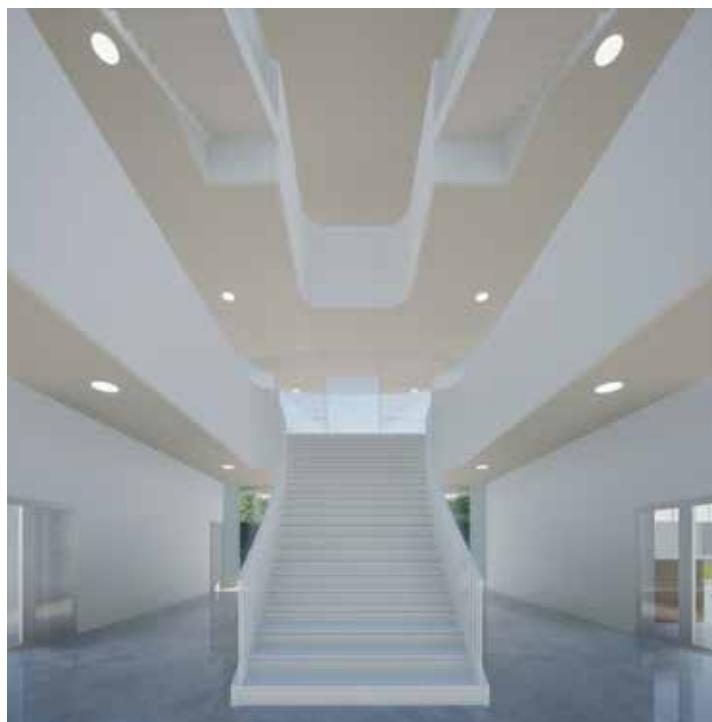
Interior Court Uses



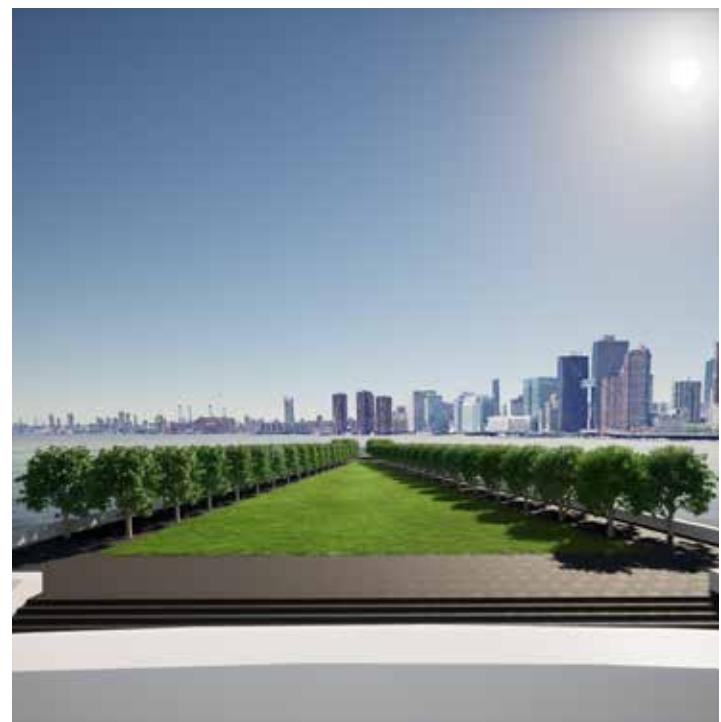
Library Views



Lobby



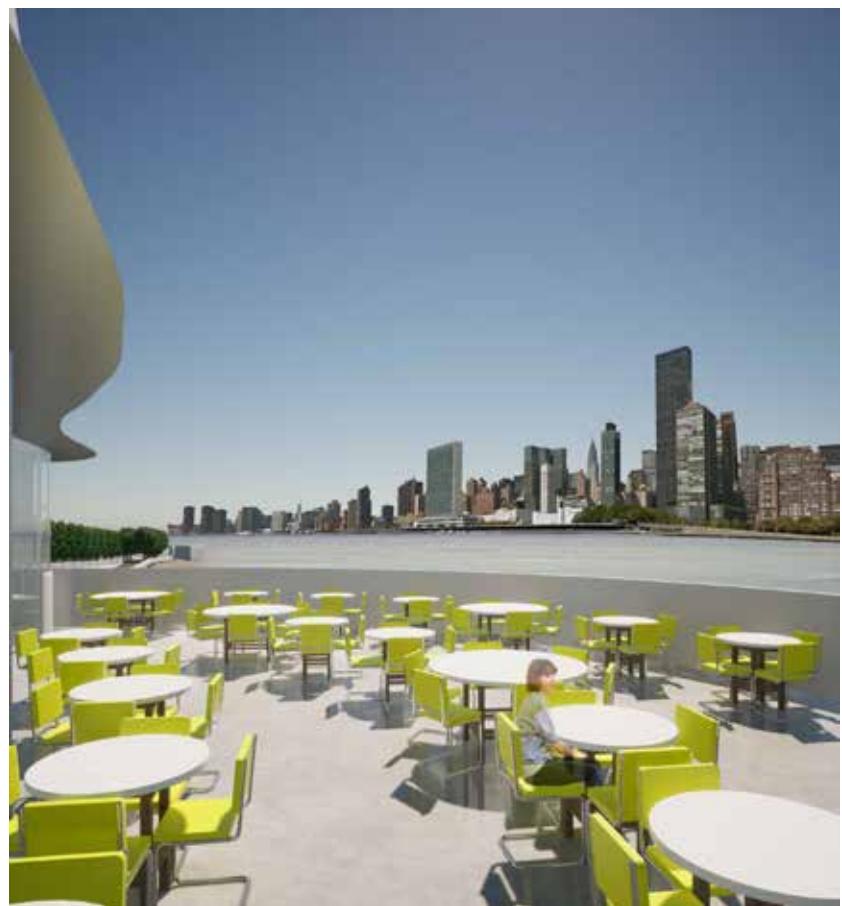
Balcony Facing Memorial



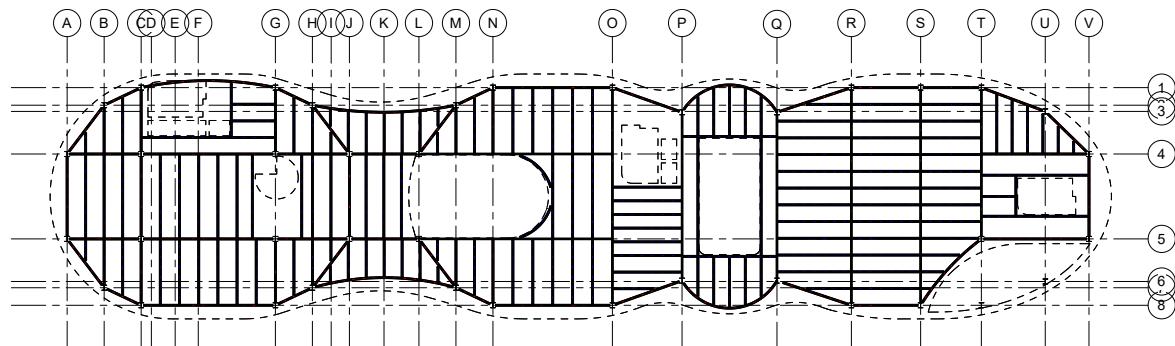
Cafe Views



Outdoor Cafe



Level 2 Floor Structure



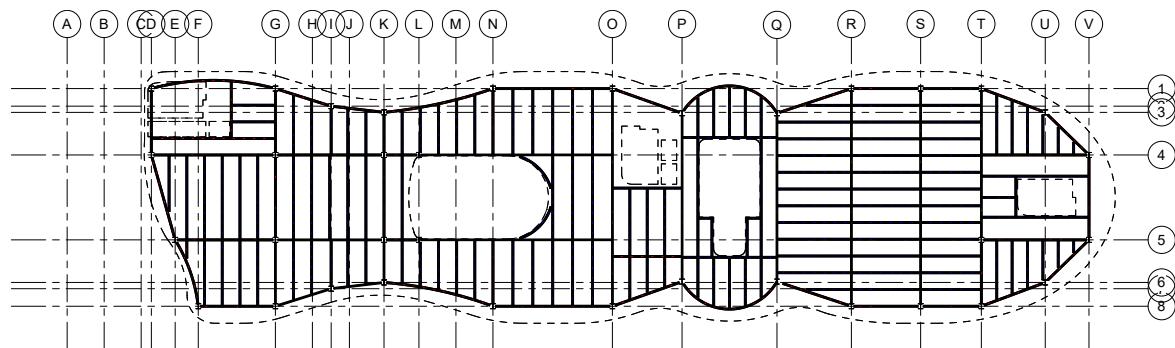
LEGEND

W18x26

W12x26

CB28x26

Level 3 Floor Structure



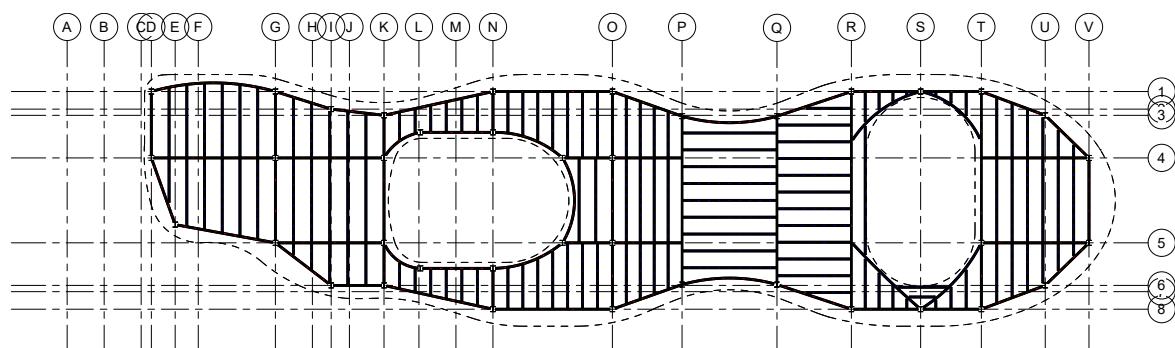
LEGEND

W18x26

W12x26

CB28x26

Roof Structure



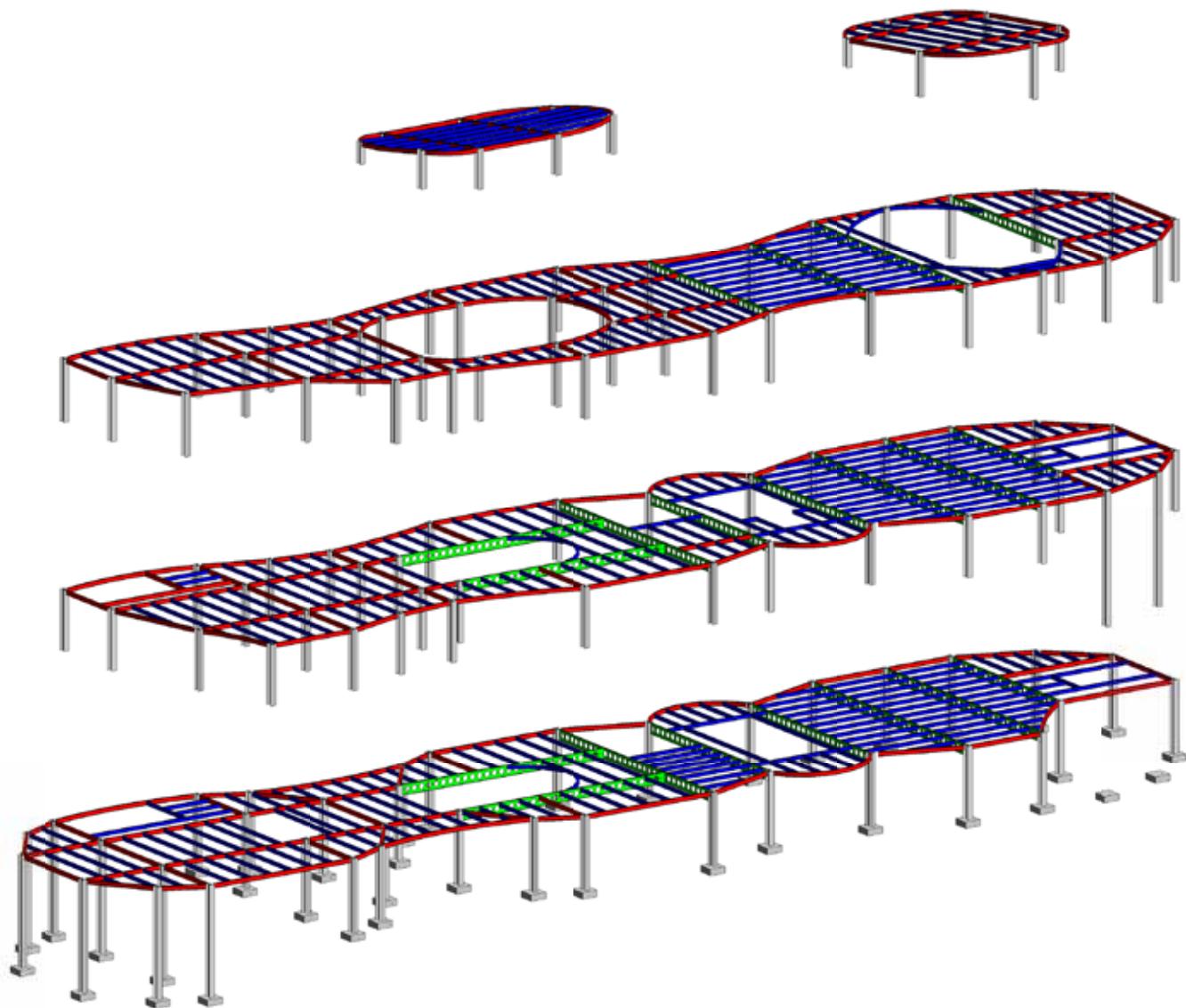
LEGEND

W18x26

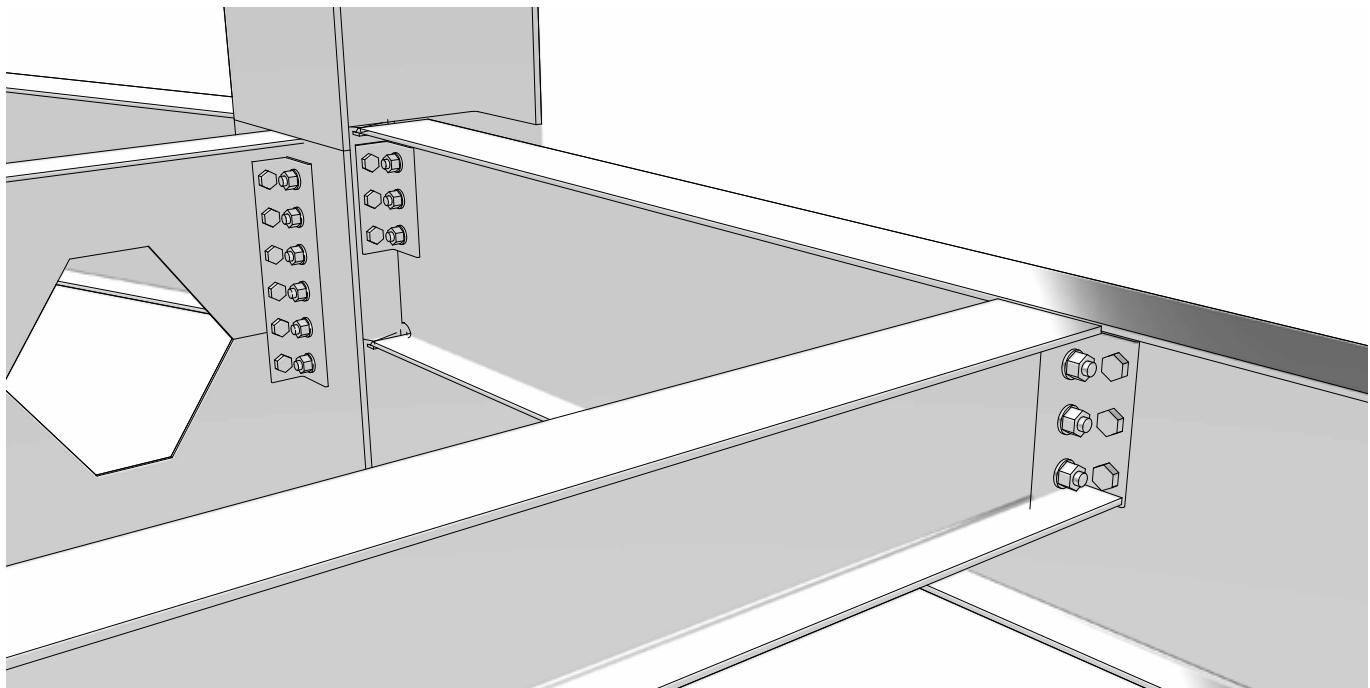
W12x26

CB28x26

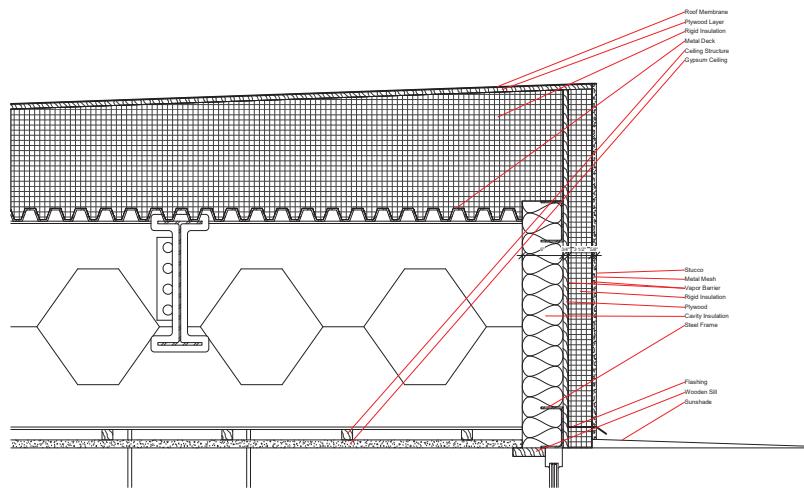
3D Structure



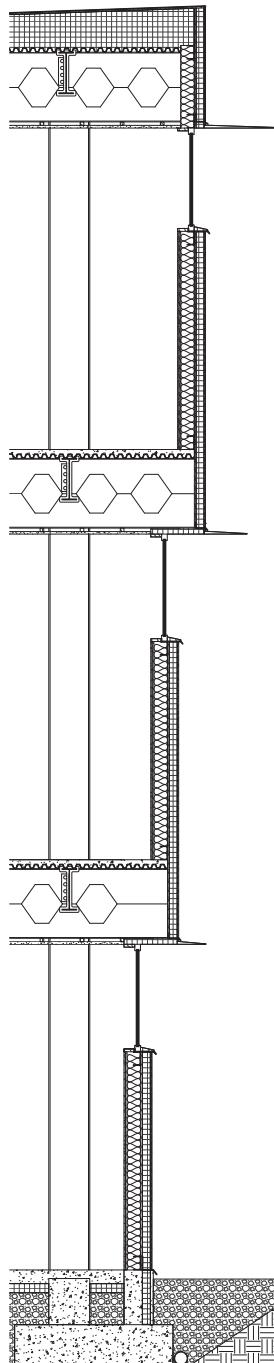
Lateral Bracing



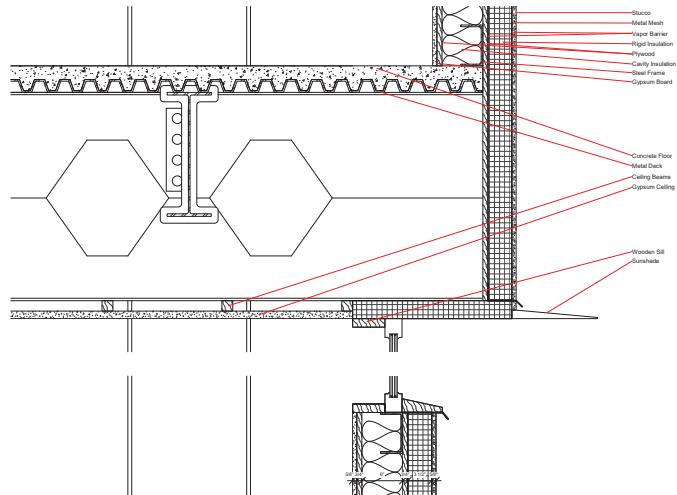
Wall Section Detail 3



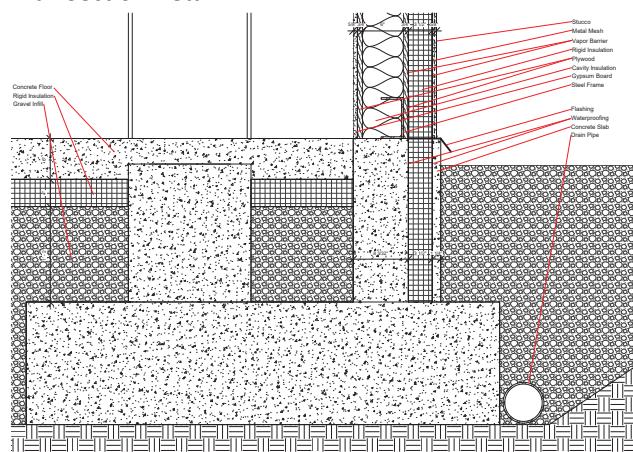
Wall Section



Wall Section Detail 2

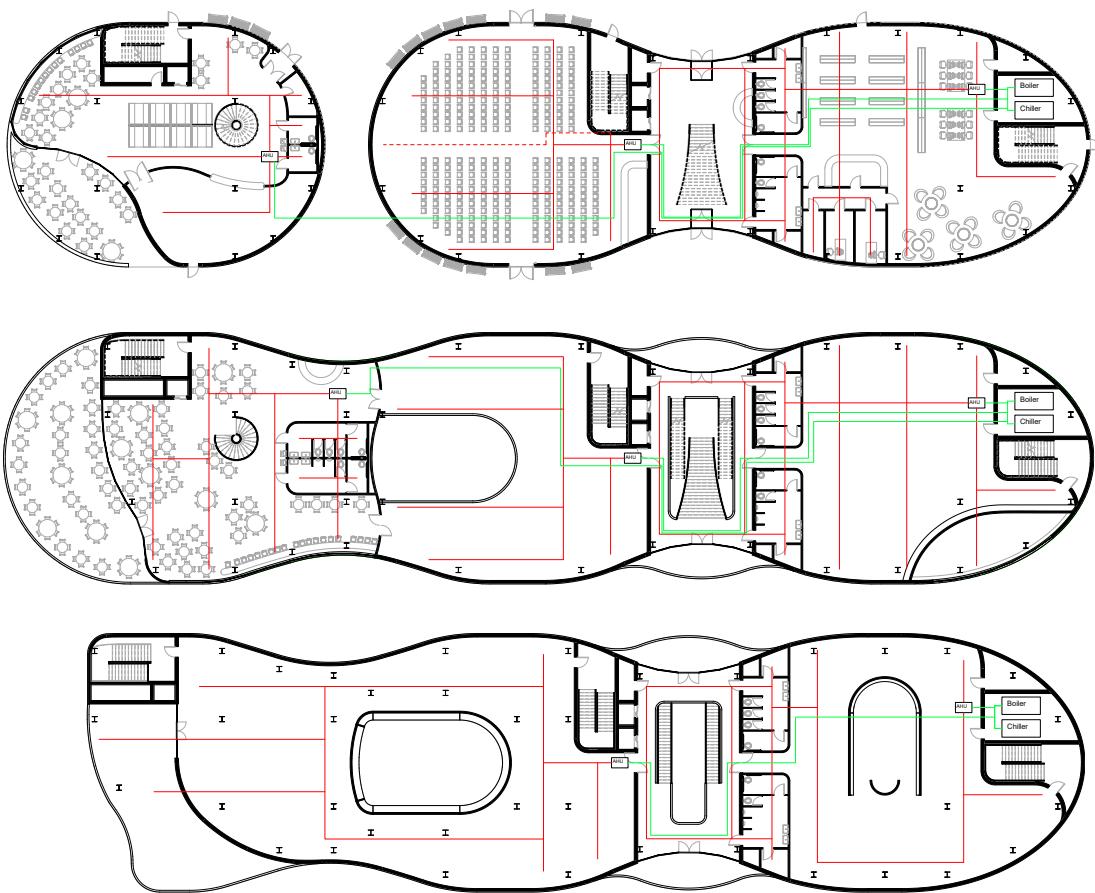


Wall Section Detail 1

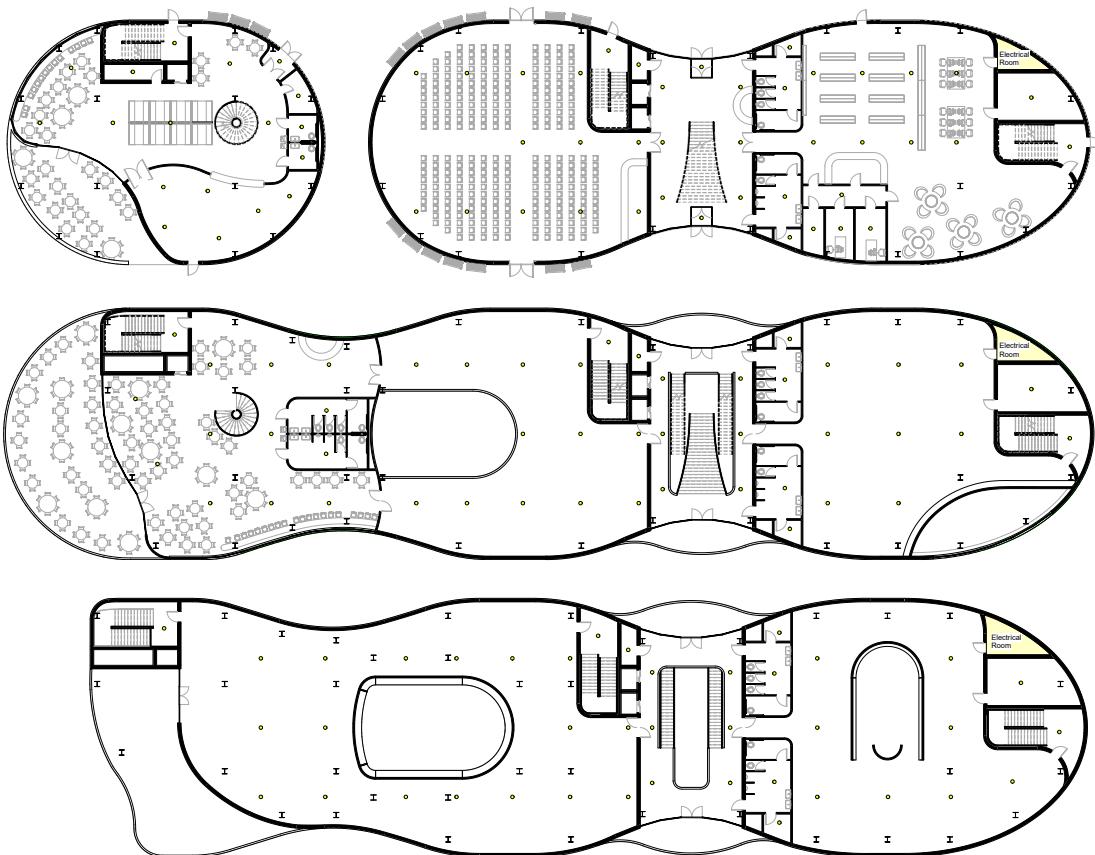




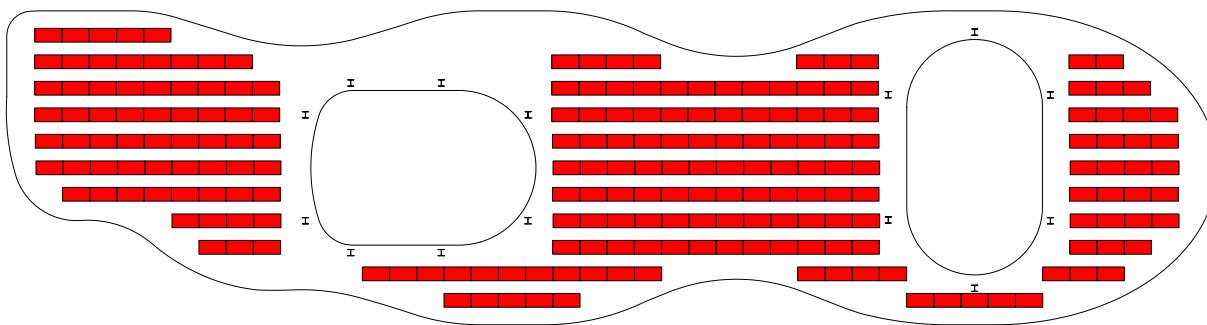
HVAC Systems



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 ² / 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

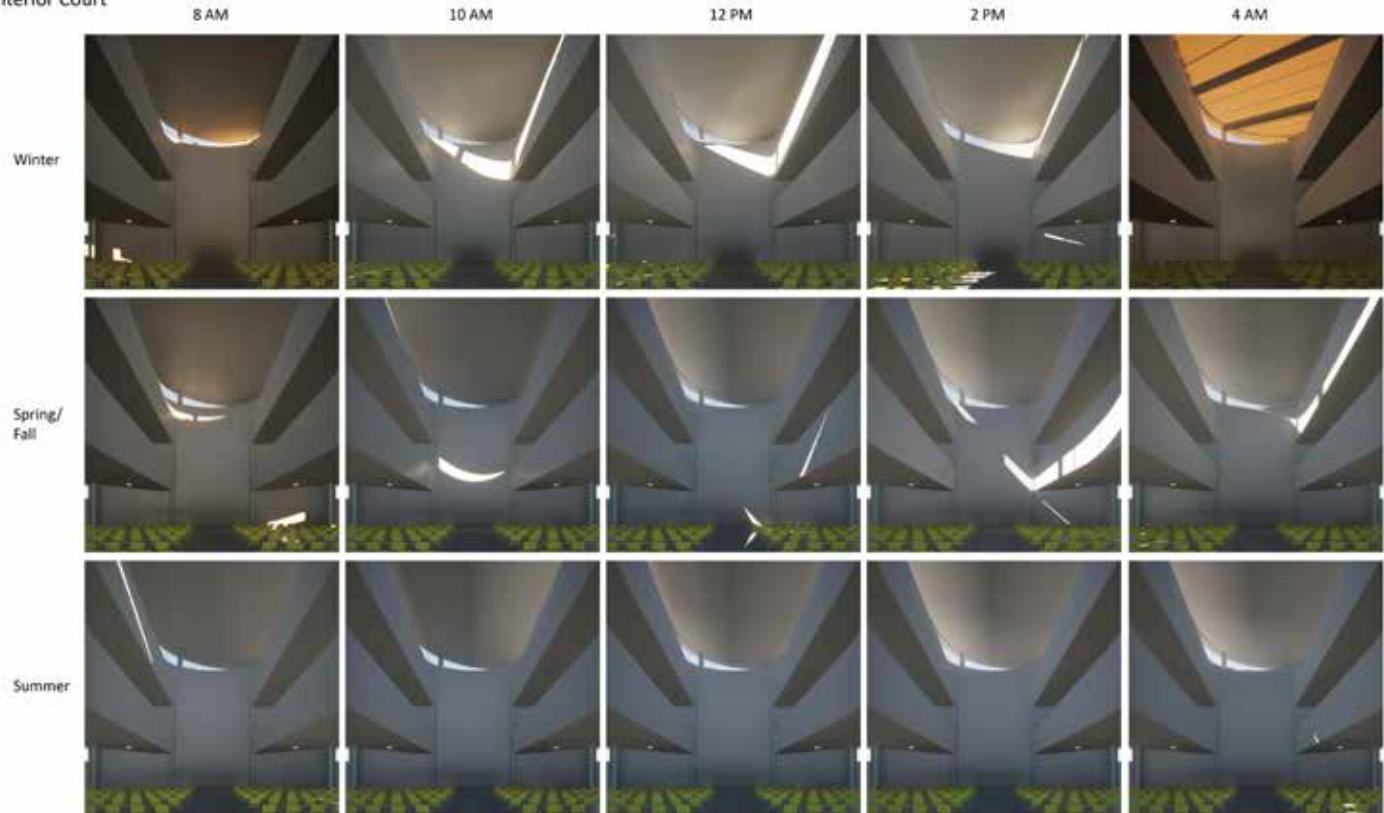
Average Retail Electricity Rate	0.116 \$/kWh
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Performance Metrics

Capacity Factor	21.2%
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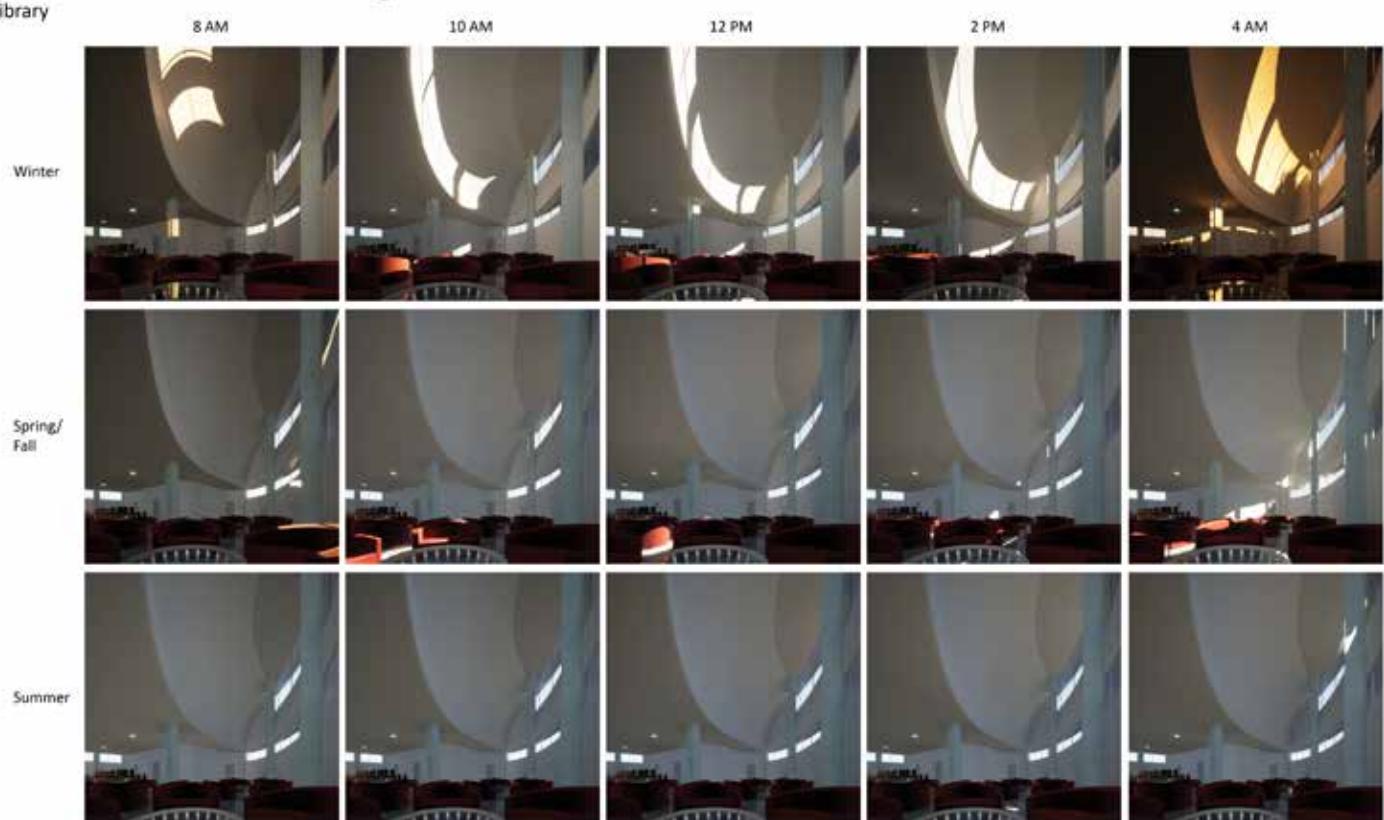
Solar Access and Controlling

Interior Court



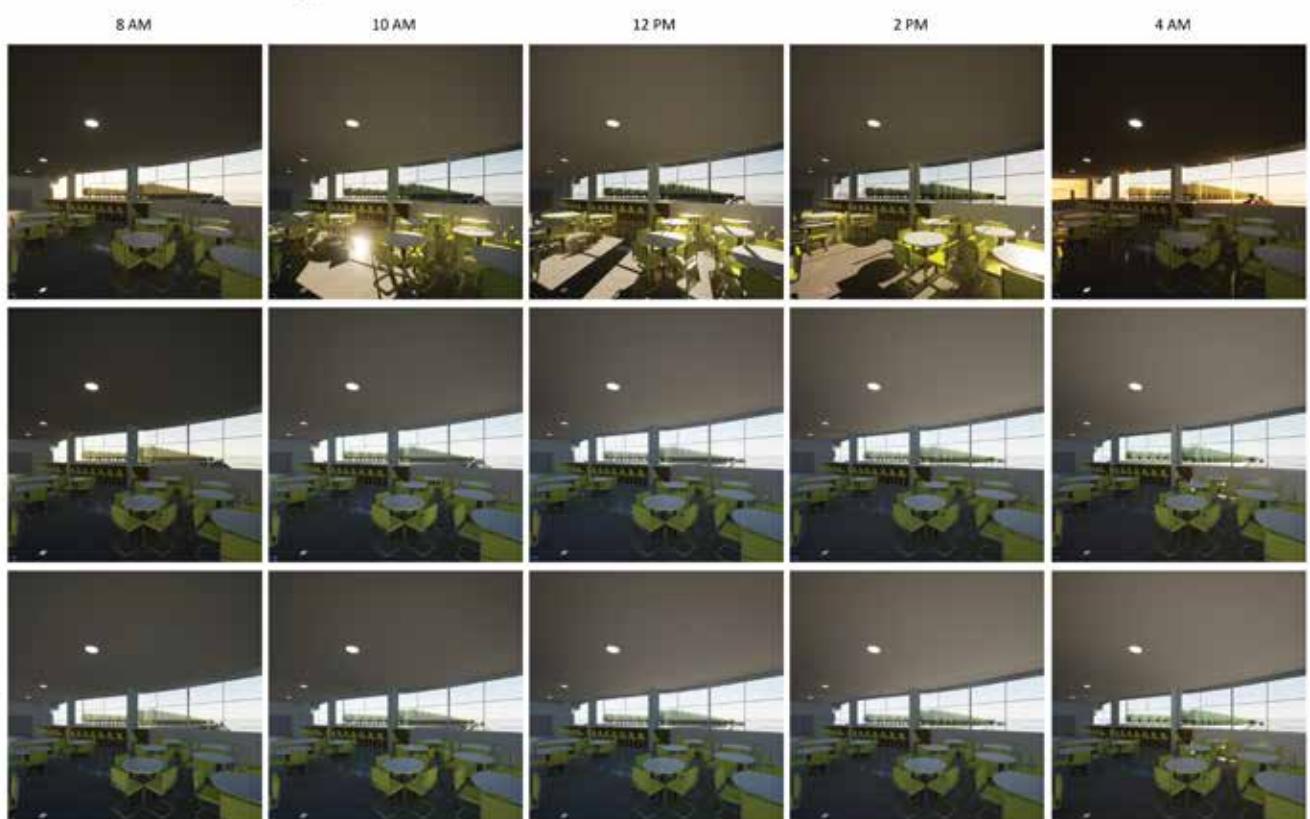
Solar Access and Controlling

Library



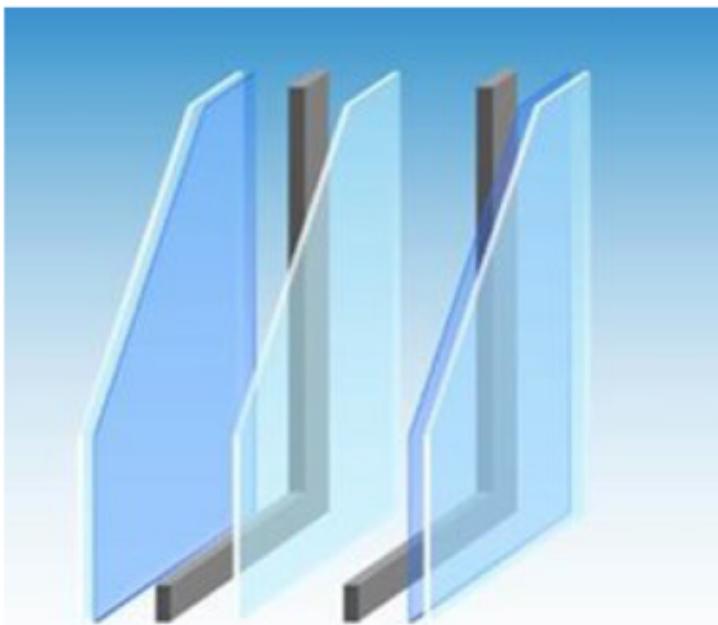
Solar Access and Controlling

Cafe



Sustainable Materials

CLIMATOP Triple Glazing



Sustainable Materials

BLUE SCOPE Steel Hot Rolled



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

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

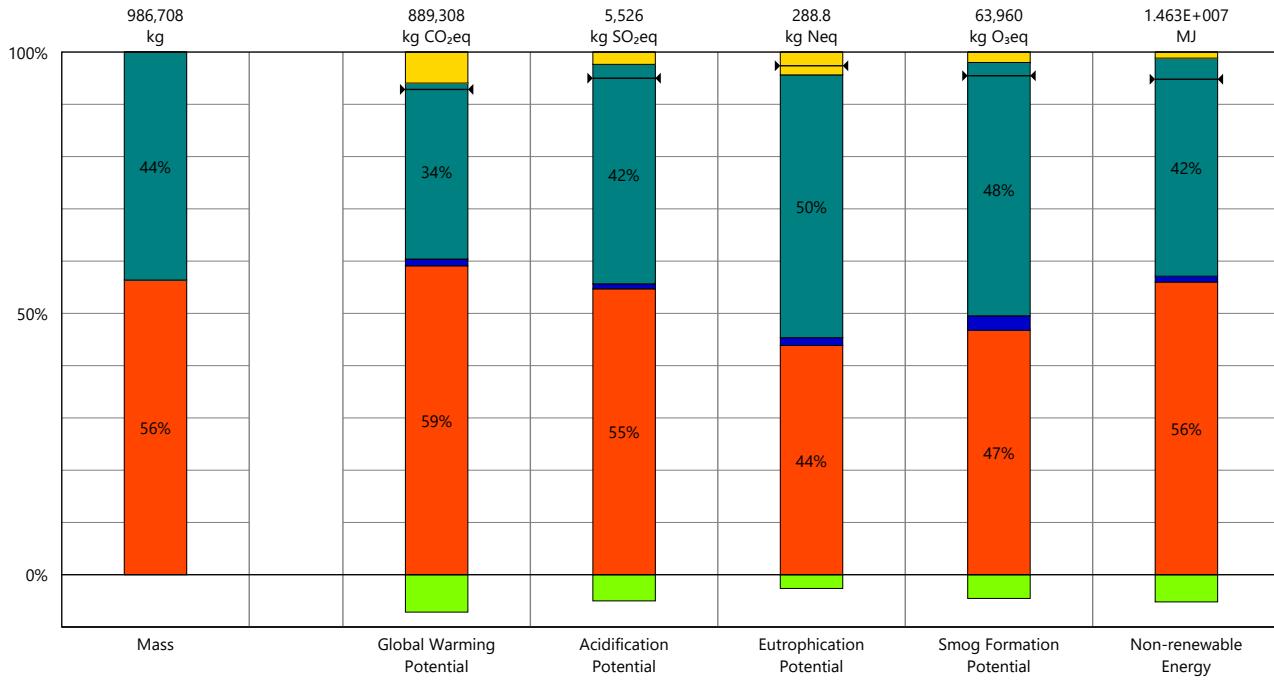
Waste Categories

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

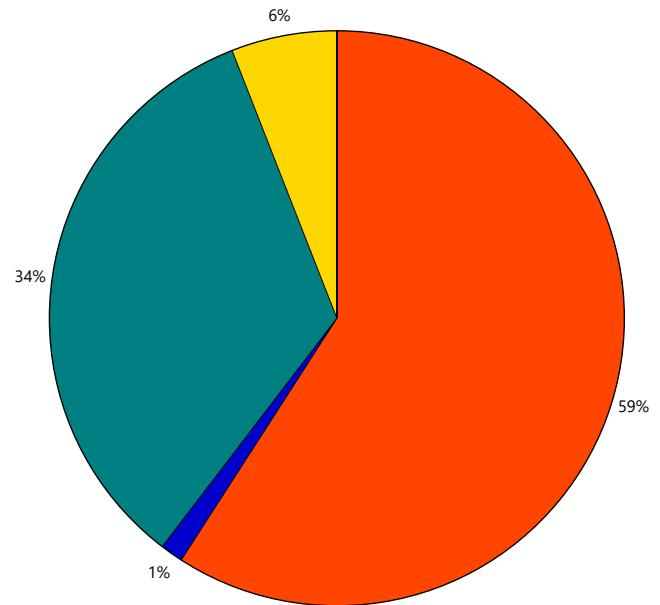


Legend

Net value (impacts + credits)

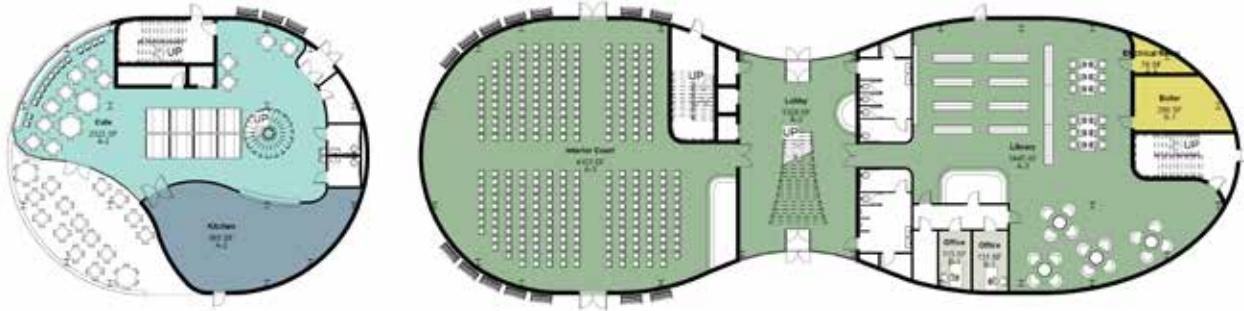
Life Cycle Stages

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

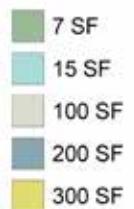


Occupancy Types

1st Floor

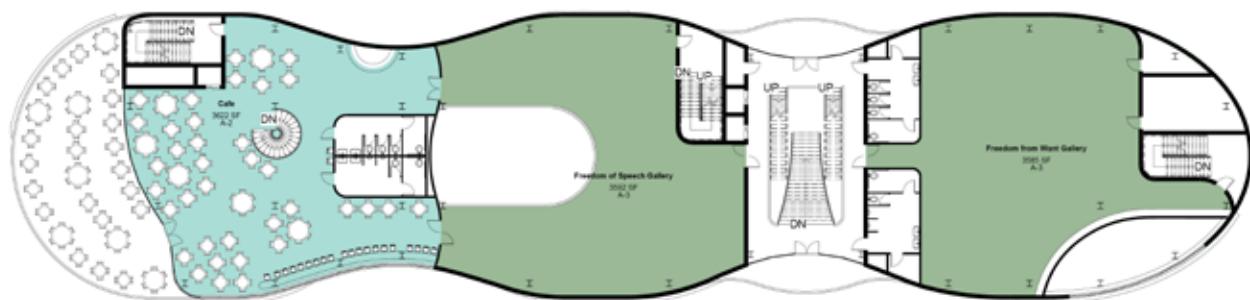


Load Factors



Occupancy Types

2nd Floor

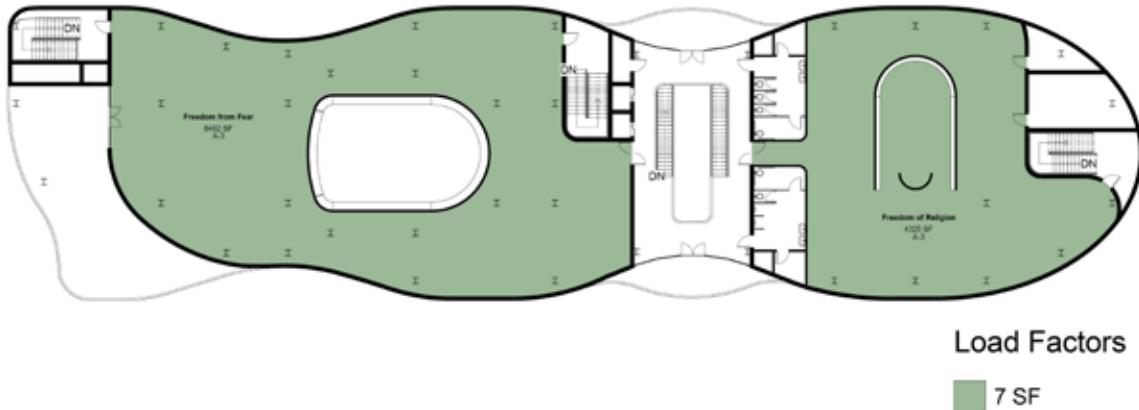


Load Factors



Occupancy Types

3rd Floor



Minimum Corridor and Door Widths

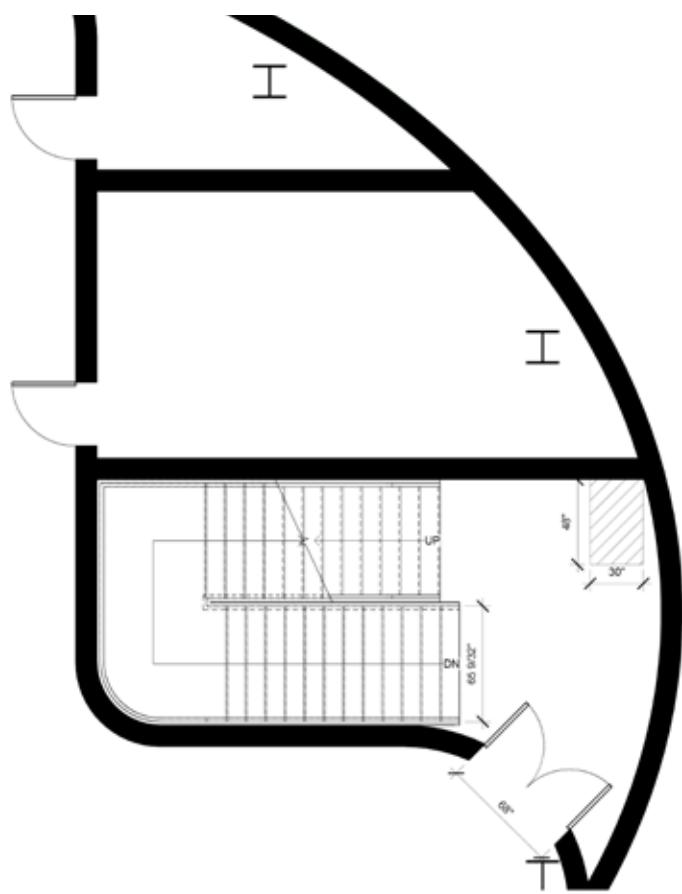
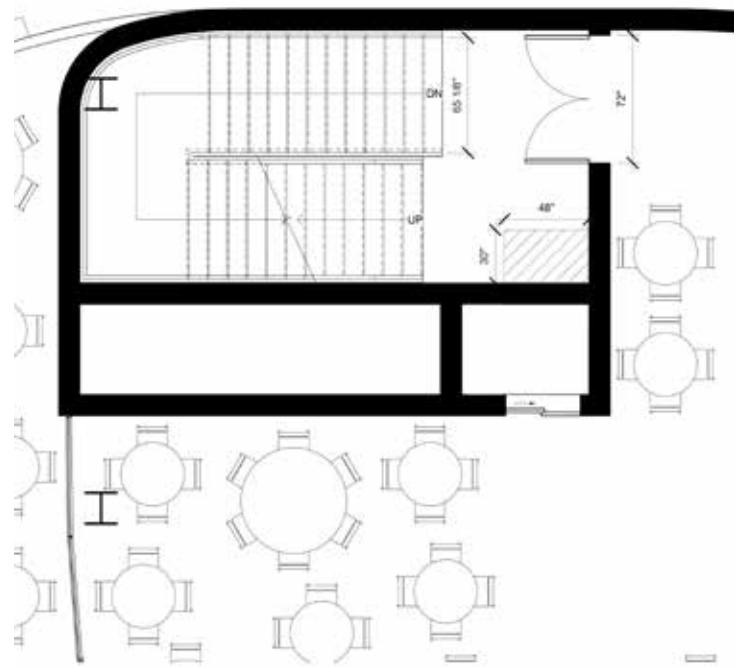
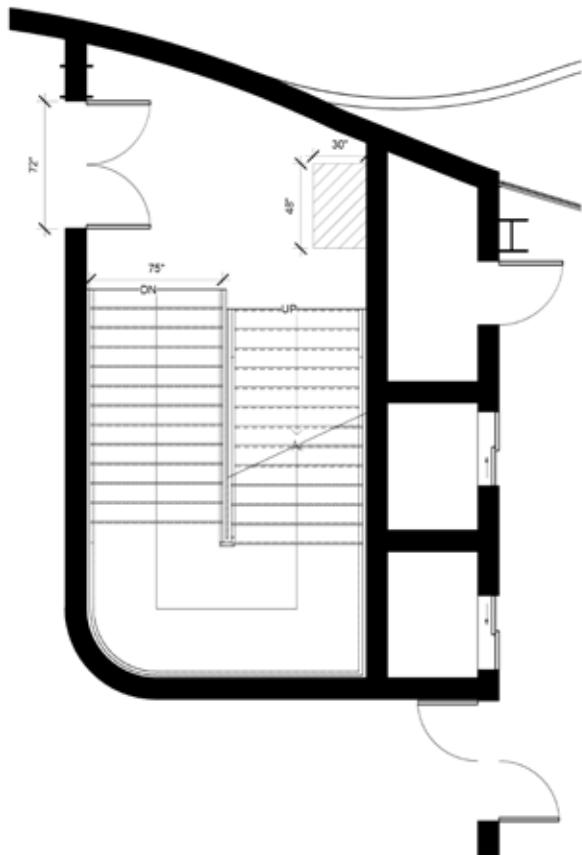
Room Schedule

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

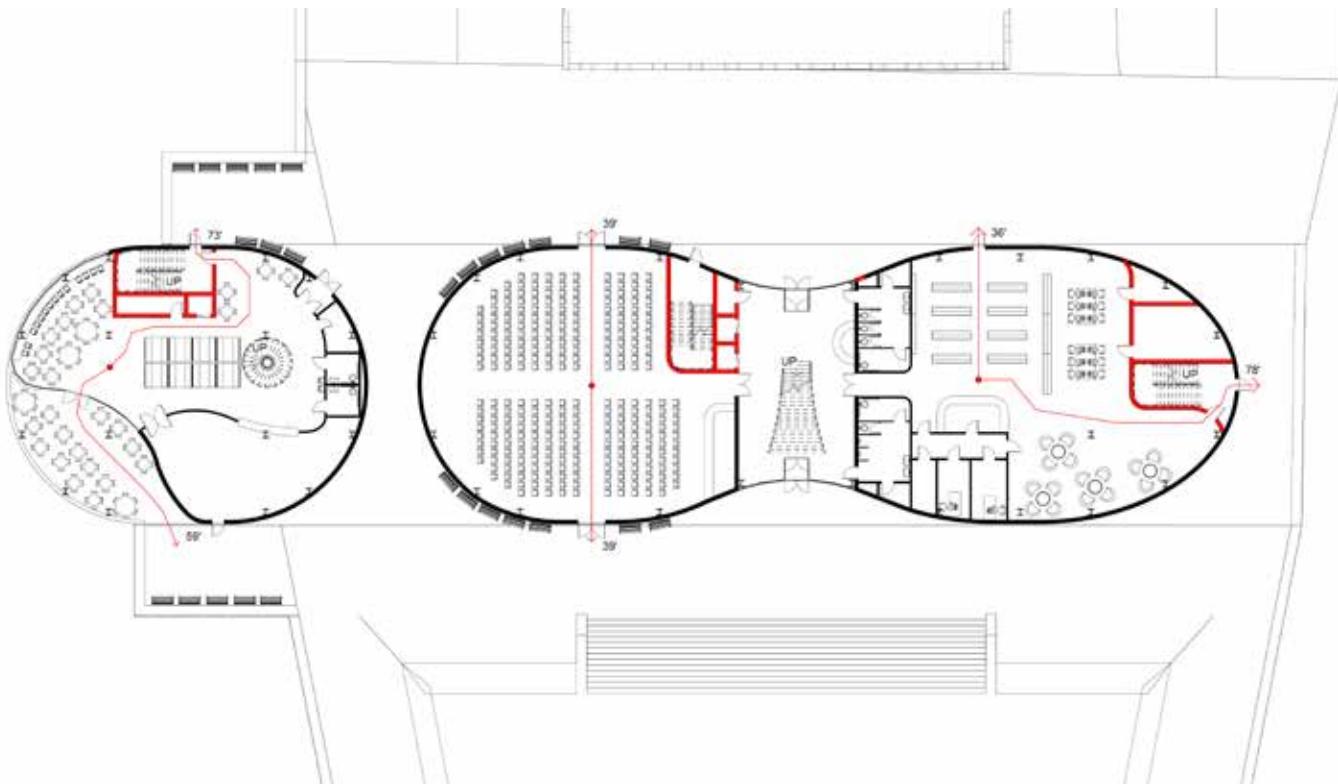
Occupant Load x 0.2" (with sprinklers) Occupant Load x 0.15" (with sprinklers)

Room Schedule		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 Speec	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 Fea	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		

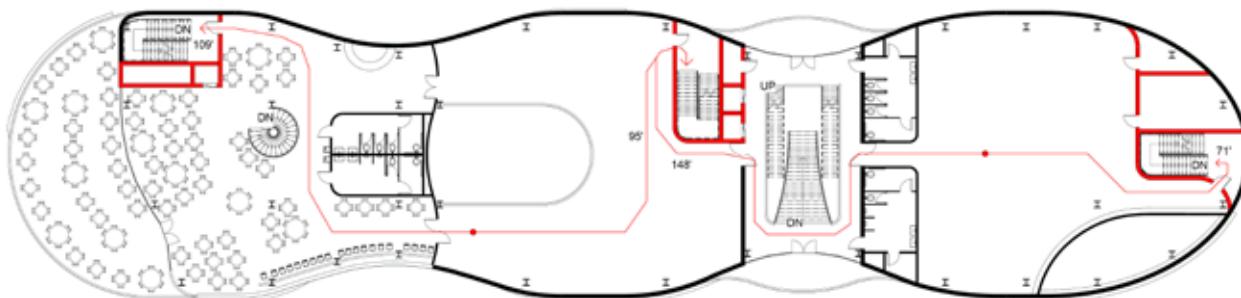
Egress Stairs



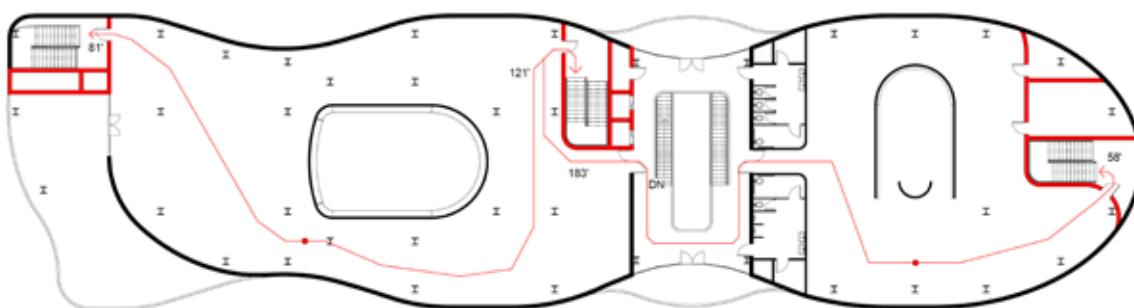
Egress Travel Distances Level 1



Egress Travel Distances Level 2

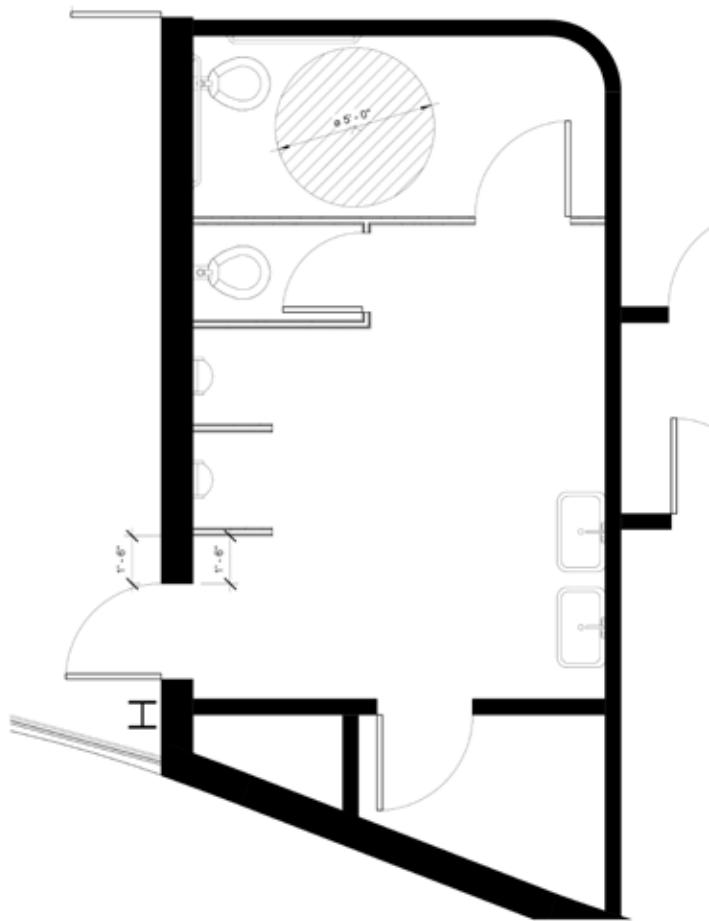


Egress Travel Distances Level 3



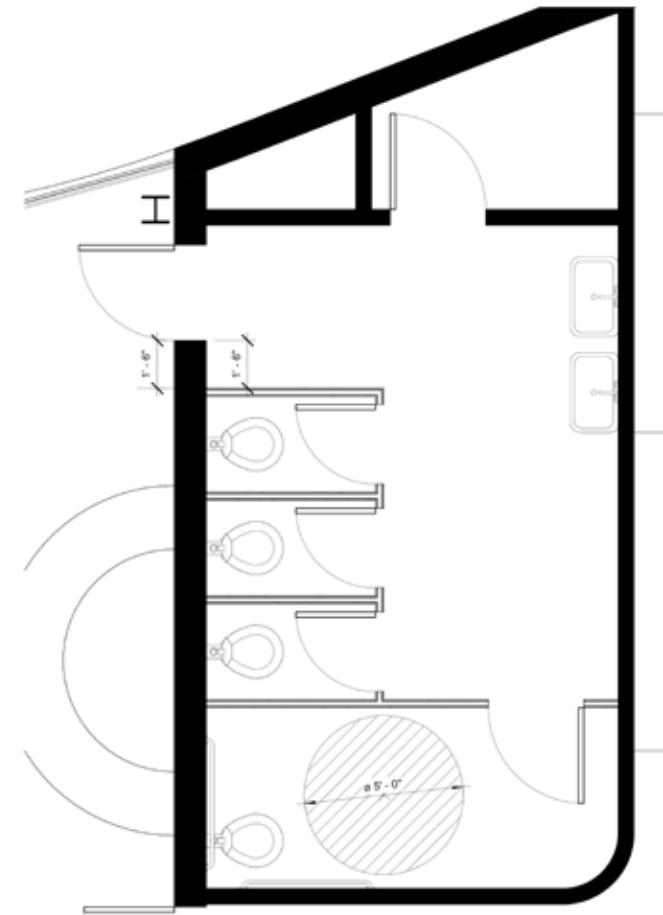
Restroom Design

Men's Restroom



Restroom Design

Women's Restroom



Restroom Design

Small Restroom

