

Alexandra Marquez

Student Work | 2021-2023

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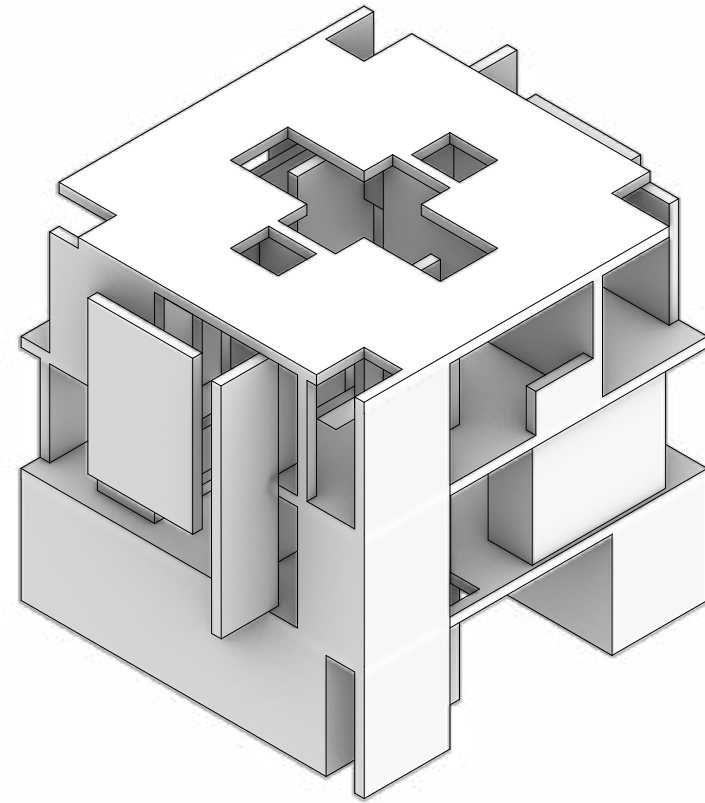
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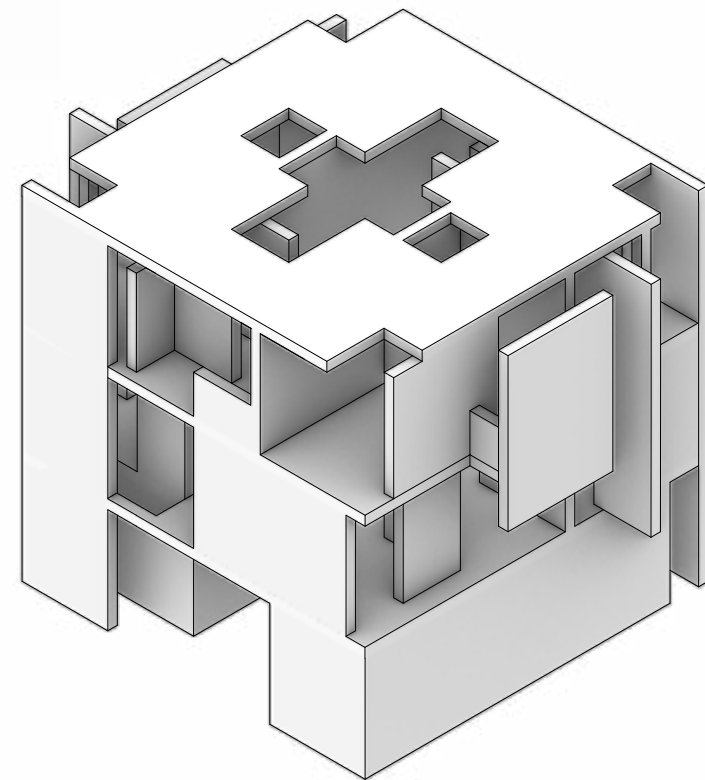
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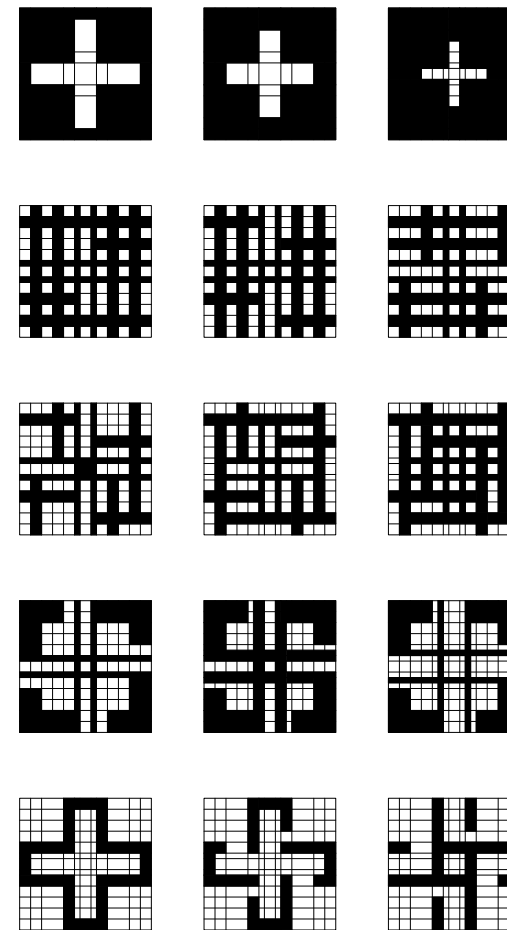
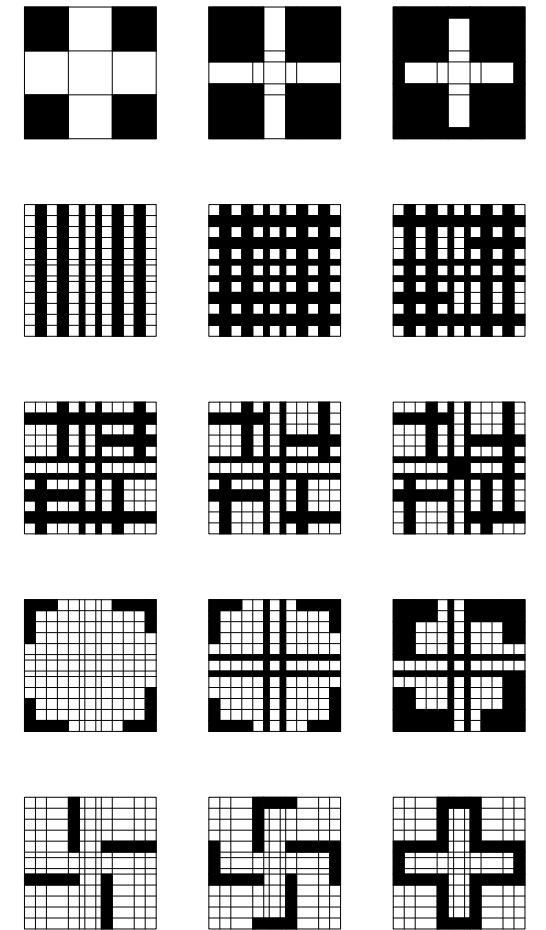
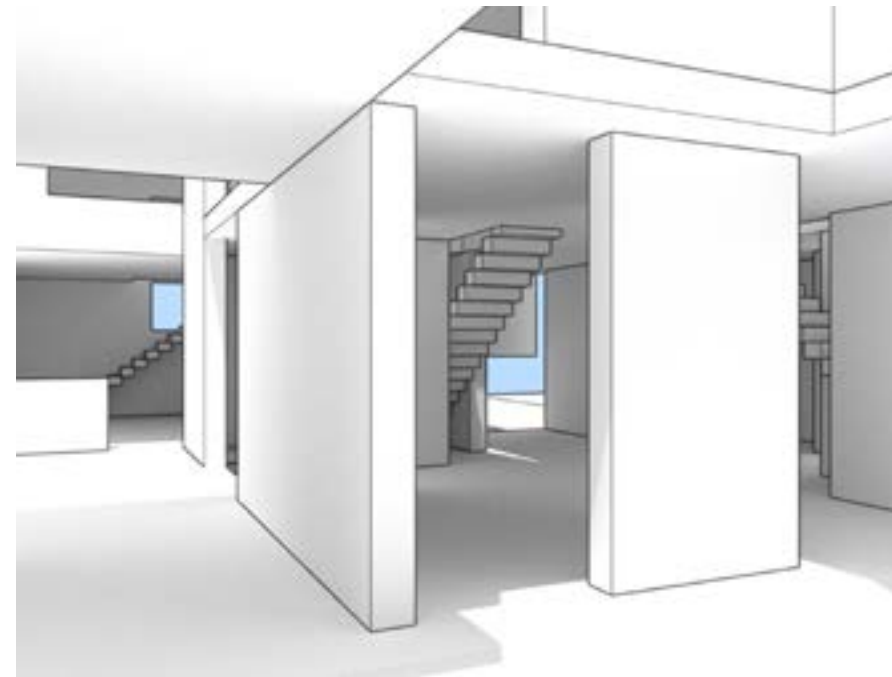
UNHOUSE

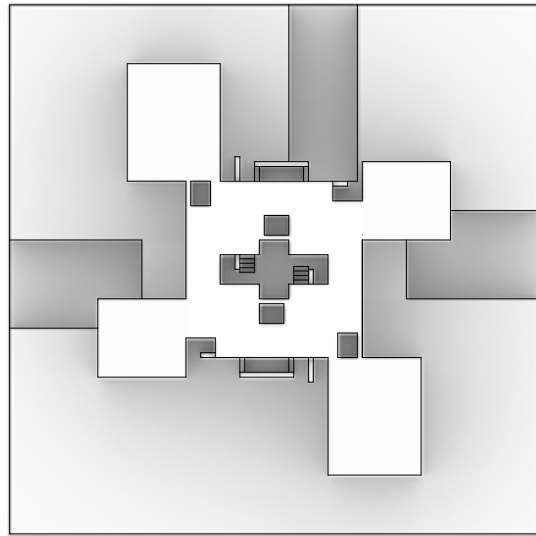
Project

This Project called the UnHouse is meant to explore the idea of what makes a House a Home. The project starts with diagrams exploring spacial relationships and potential viewpoints throughout the home. This home is about the reconnectedivity of a couple that came to this home to get away from their everyday lives. The floor plans shown have this connected views through the living room to the kitchen just like the upper most floor does.

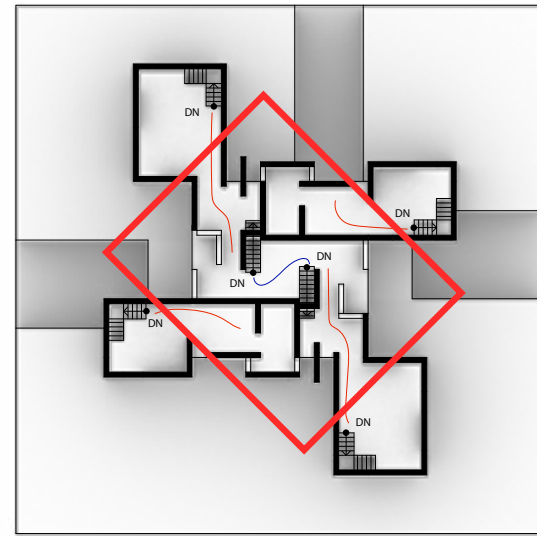


Alexandra Marquez
Professor Simon Eisinger
Design I
ARCH 201
Fall 2021

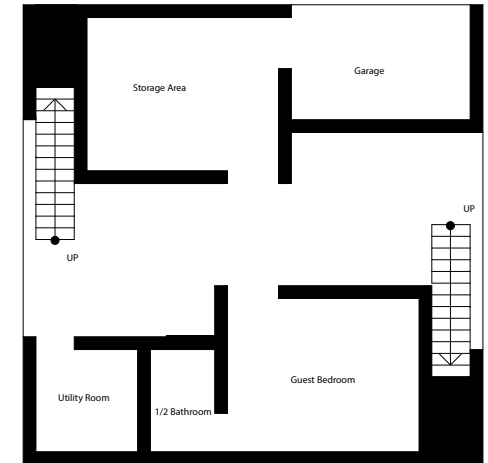
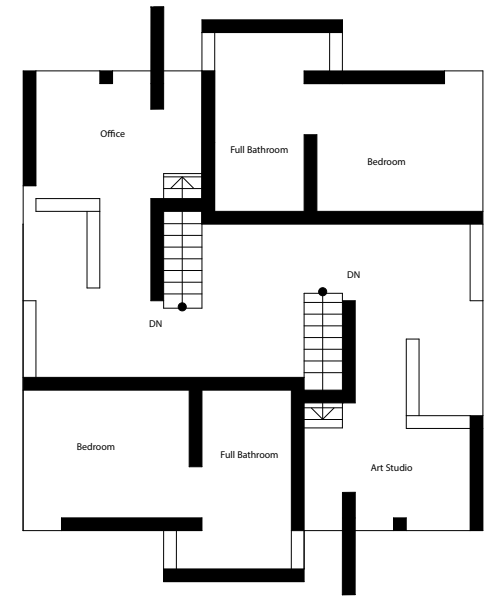
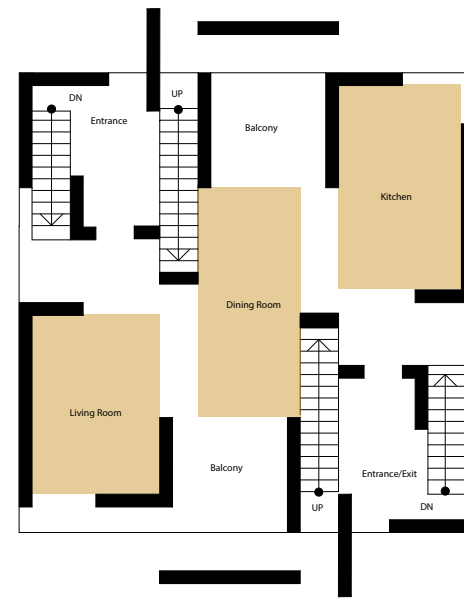
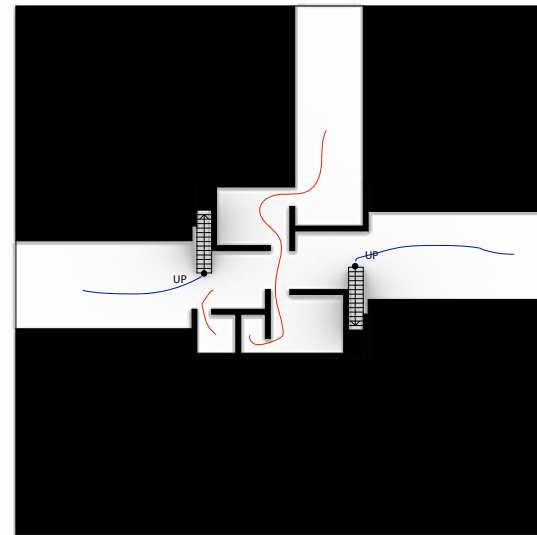
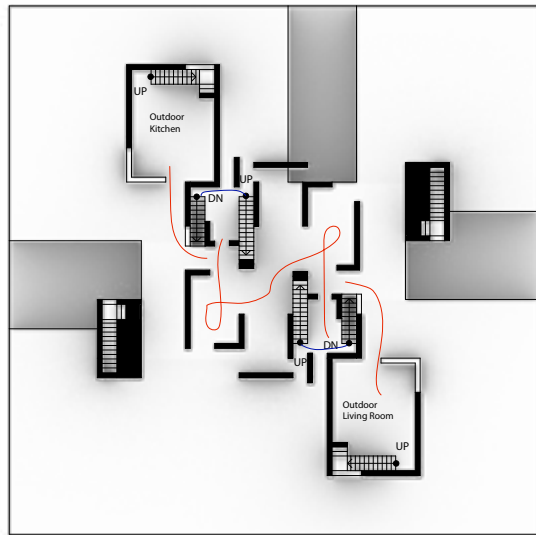




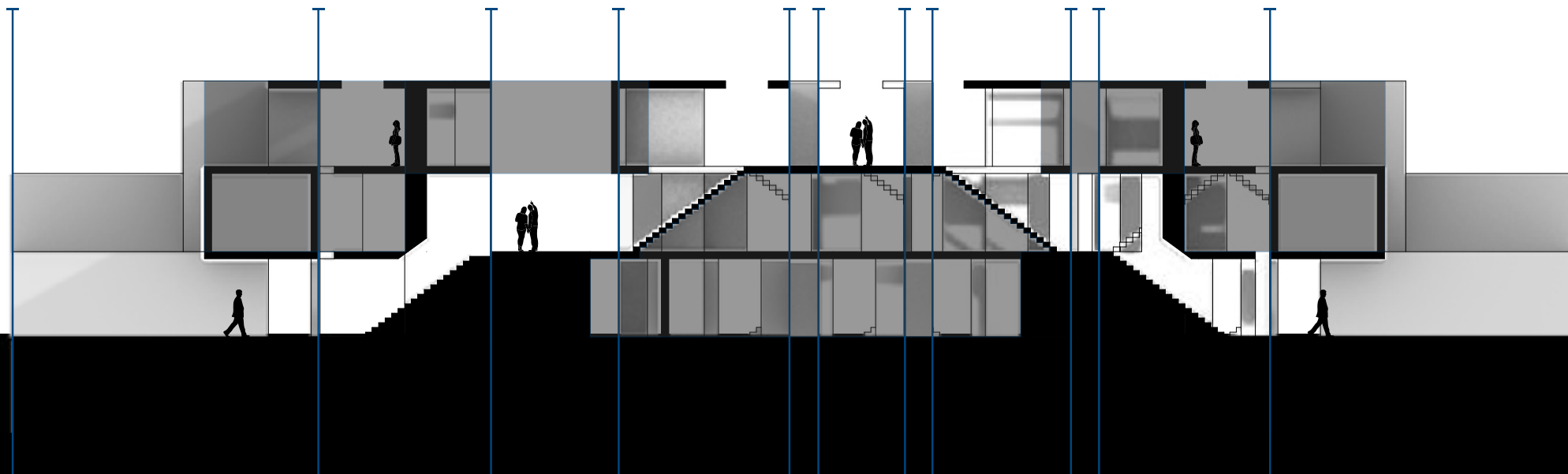
The red lines are showing circulation throughout the Home.



The red rectangle shows how the upper floor has these series of connected views.



Continuous Section that shows one path of the circulation

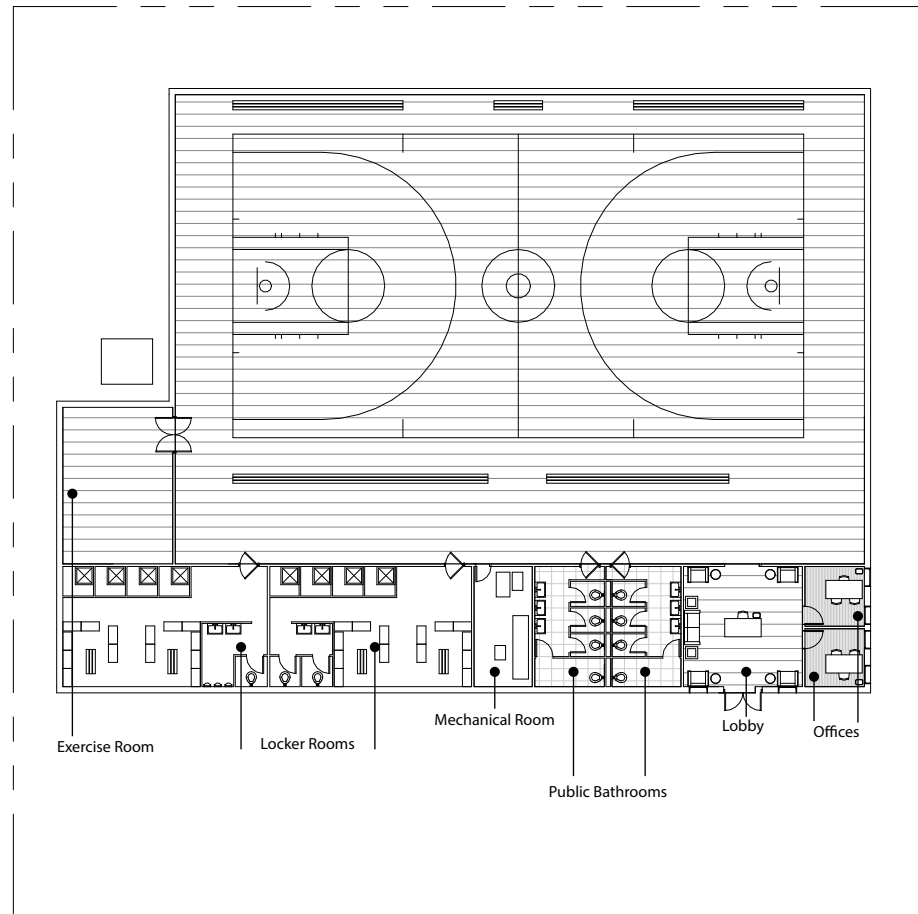
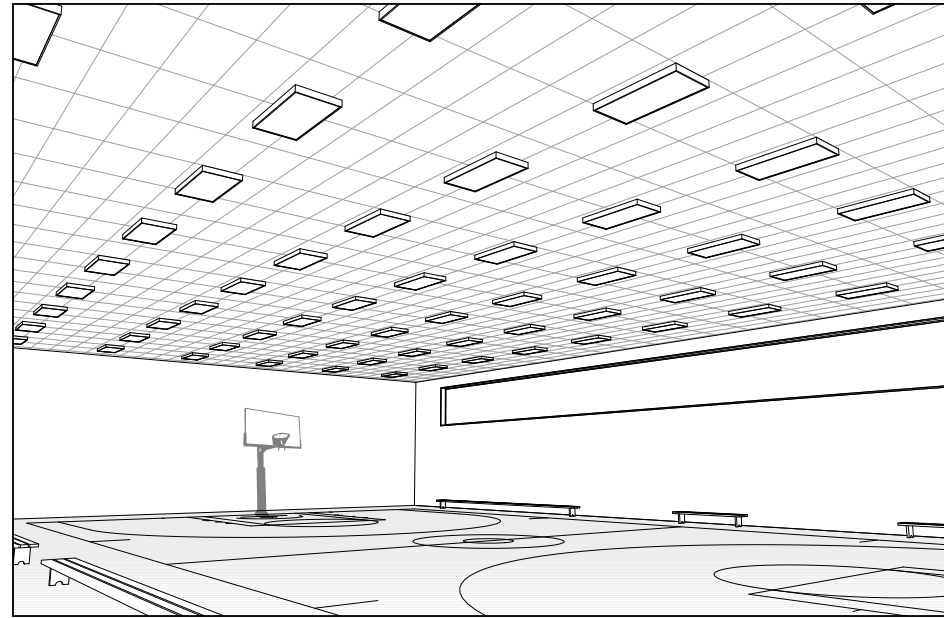


GYMNASIUM

New York

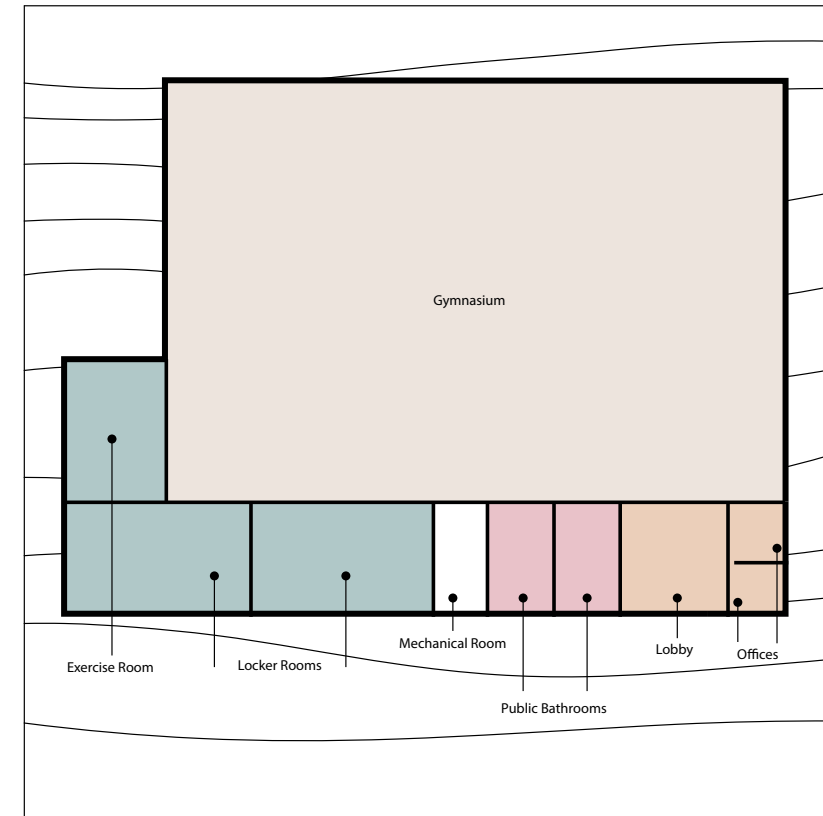
The Gynasium Project was part of the Enviromental Systems II Course. Active systems like Mechanical, Electrical, Heating and Cooling, and Acoustic Systems are present and thought of in this project. The Gynamsium although simple in its design was a starting point to understand how all of the systems work as one big active system of a building.

Alexandra Marquez
 Professor Andrew Thomas
 Environmental Systems II
 ARCH 325
 Spring 2023

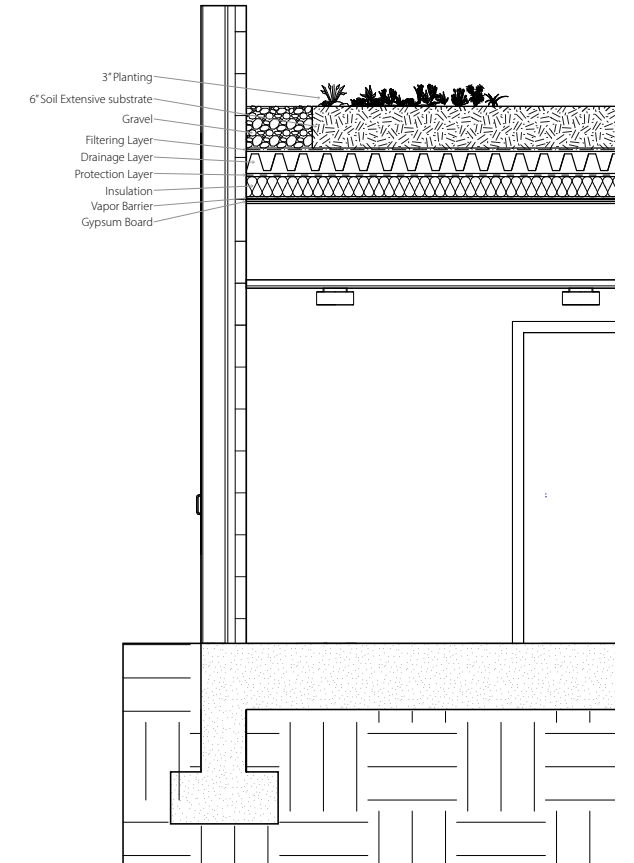
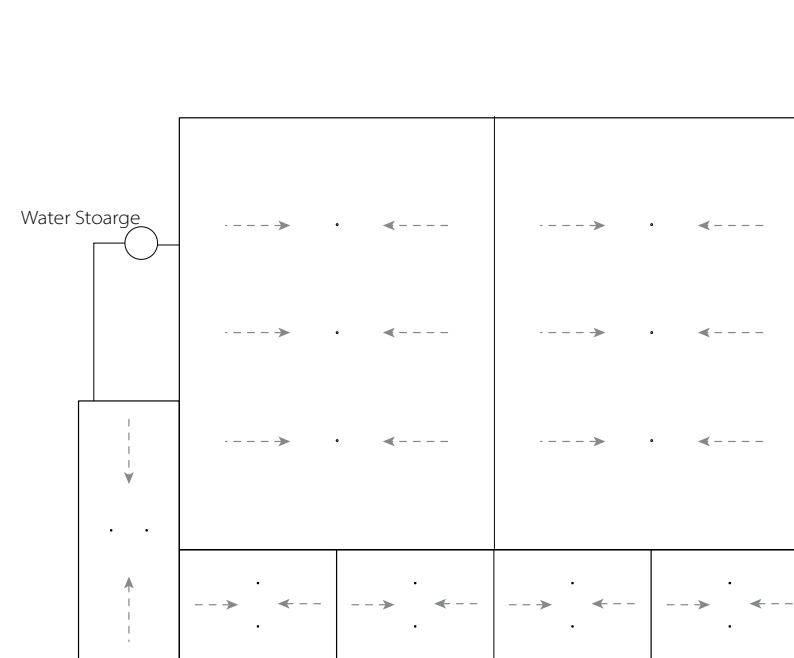


Zoning
 Scale: 1'0" = 1/16"

- Zone 1
- Zone 2
- Zone 3
- Zone 4



Roof Drainage Plan
 Scale: 1'0" = 1/16"



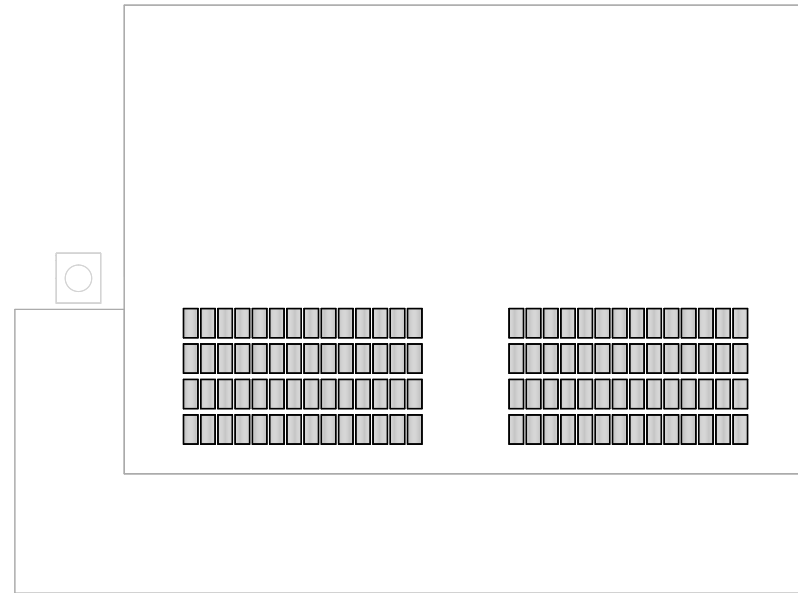
Roof Plan

Scale: 1'0" = 1/16"

Energy Consumption Calculation

GYMNASIUM							TOTAL KW
	watts	quantity	kw	kw	hrs	kw/h	
LIGHTS	72	88	6336		6.336	8	50.688
SCOREBOARD	300	2	600		0.6	3	1.8
EXERCISE ROOM							TOTAL KW
LIGHTS	40	4	160		0.16	8	1.28
TREADMILLS	600	5	3000		3	3	9
EXERCISE BIKES	300	3	900		0.9	3	2.7
LOCKER ROOM							TOTAL KW
LIGHTS 1	18	16	288		0.288	8	2.304
LIGHTS 2	40	7	280		0.28	8	2.24
HAND DRYERS	500	4	2000		2	2	4
OFFICES & LOBBY							TOTAL KW
LIGHTS 1	18	6	108		0.108	8	0.864
LIGHTS 2	100	6	600		0.6	8	4.8
COMPUTERS	500	4	2000		2	8	16
BATHROOMS & MECHANICAL ROOM							TOTAL KW
LIGHTS 1	18	16	288		0.288	8	2.304
LIGHTS 2	40	3	120		0.12	8	0.96
BOILER	100	1	100		0.1	6	0.6
DUCT FAN	750	1	750		0.75	6	4.5
COOLING TOWER	460	1	460		0.46	6	2.76
TOTAL ENERGY CONSUMPTION A DAY							106.8
TOTAL ENERGY CONSUMPTION IN A MONTH							3204

96 panels needed



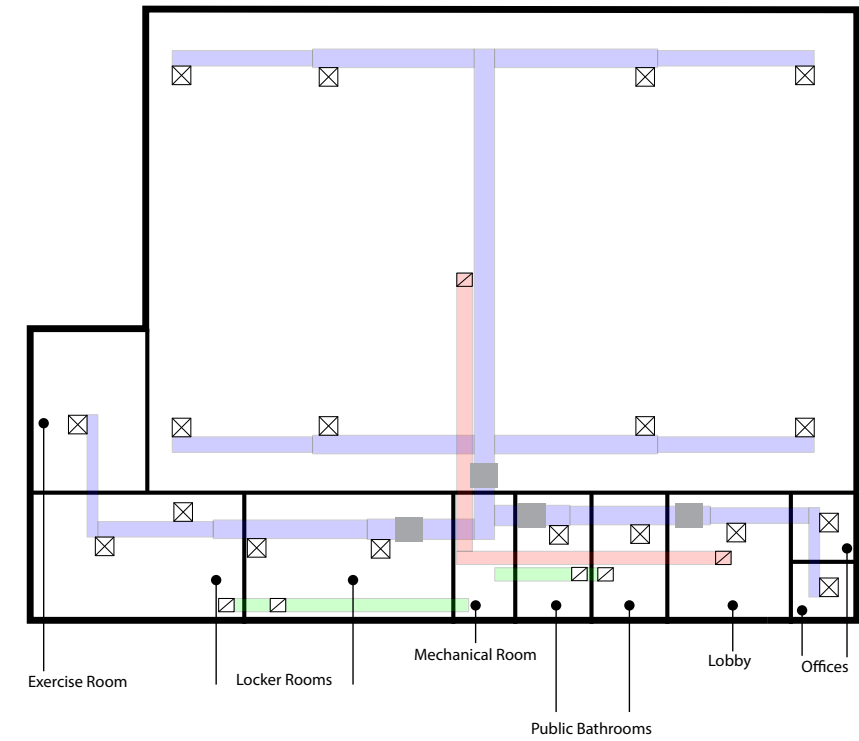
Estimate required roof area	Your roof area
3204 kWh	9,085 sq ft
1.38 kWh per sq ft	96 panels needed
33.6 kWh per panel	Required area: 1,440 sq ft

You have sufficient space for your solar panel system!

HVAC System

Scale: 1'0" = 1/16"

- Supply
- Return
- Exhaust
- VAV Box

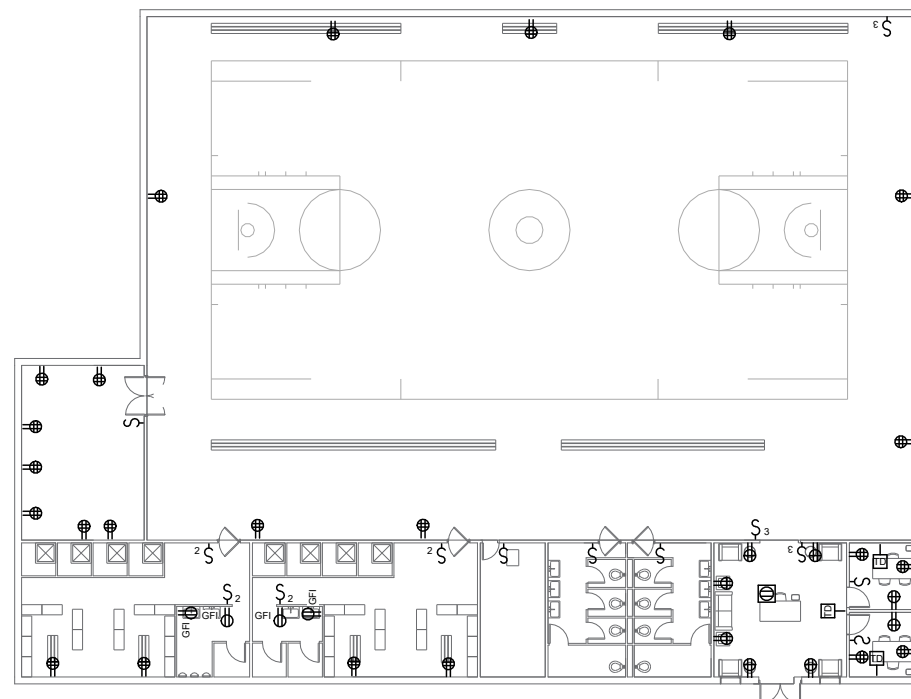


Electrical Plan

Scale: 1'0" = 1/16"

Electrical Symbol Legend

- Single Switch
- Double Switch
- Three Way Switch
- Wifi
- Outlet - Duplex (Receptacle)
- Outlet - Quadruplex (Receptacle)
- Single GFI Receptacle
- Duplex Floor Receptacle



Calculations & Lighting Fixture

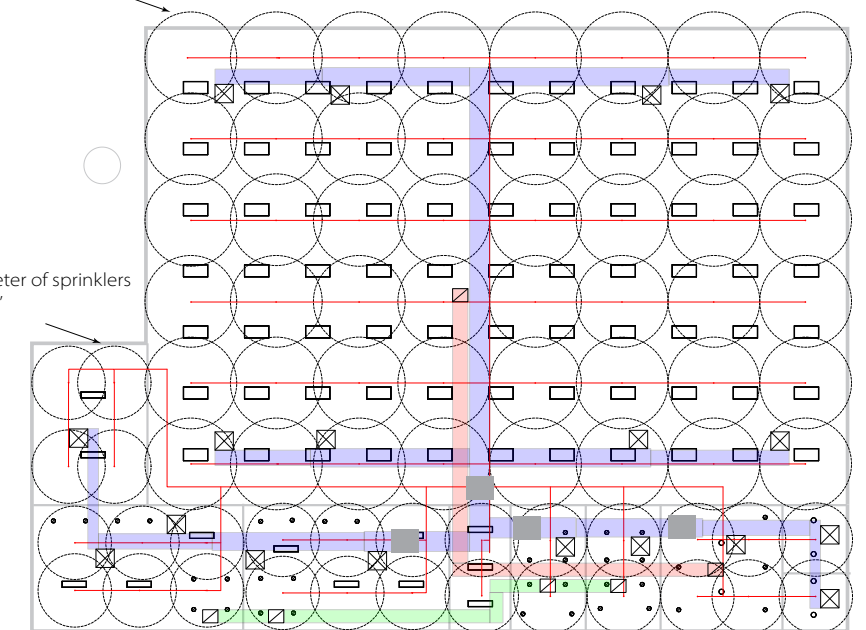
Scale: 1'0" = 1/16"

Additional Row of lighting fixtures

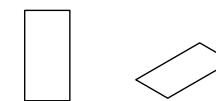
GYM								
length	width	height	volume	target FC	dirty lights	fixt category		
120	70	22	184800	30	0.92	0.9		
cavity ratio		CoU	LLF	Area				
		2.4881	0.43	0.828	8400			
lumens required			lumens/ lamp (bulb)					
707785.6			8043.02					
# of lamps			88					
sf per fixt				95.4545				
sq grid space				9.77008				

Diameter of sprinklers are 15'

Diameter of sprinklers are 12'



Made by EnVisionLED



2x4-72W (8,280lumens)

Edge-lit LED Panel

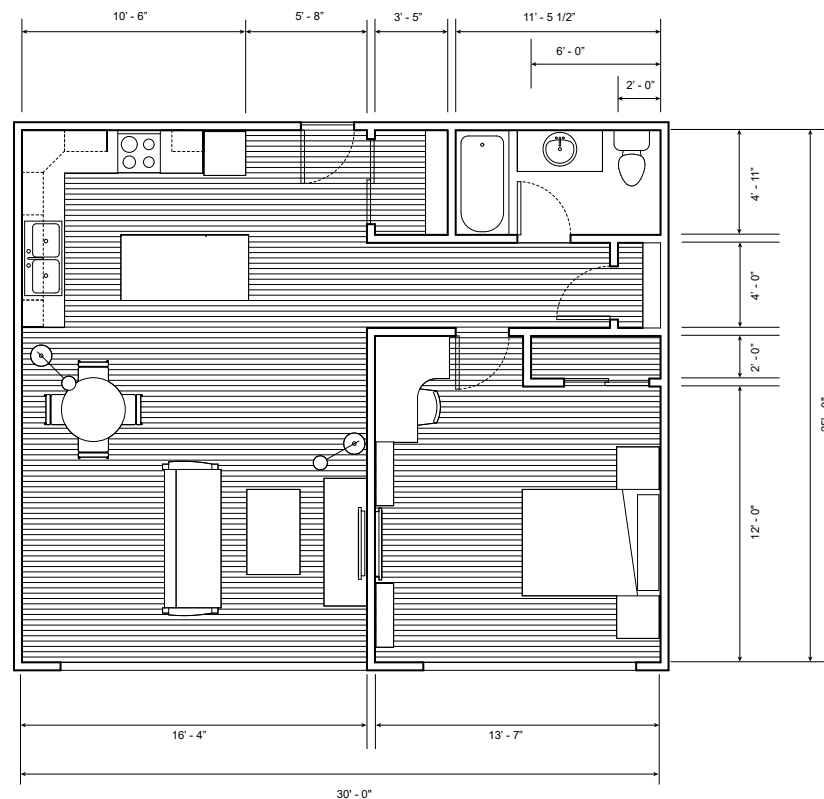
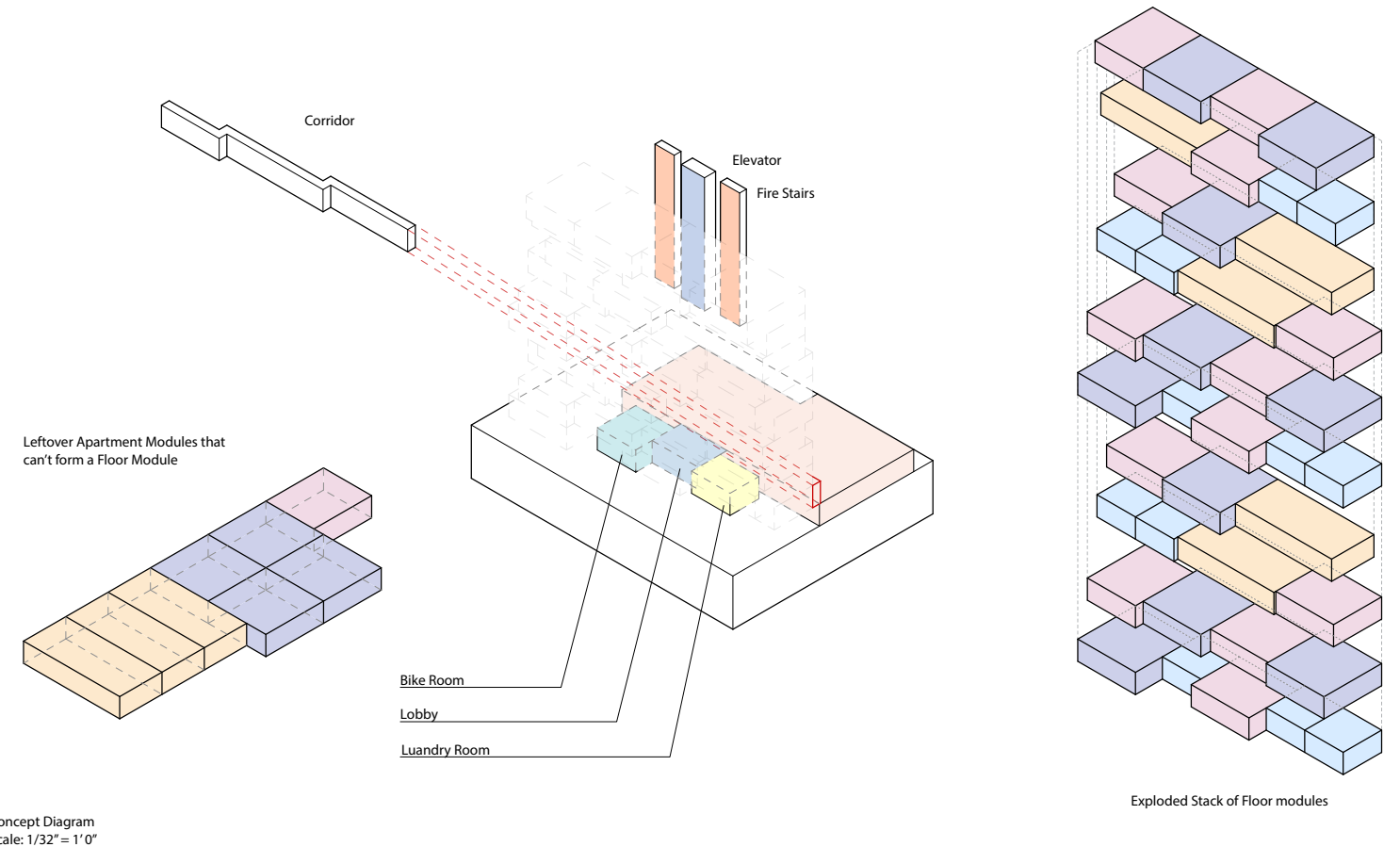
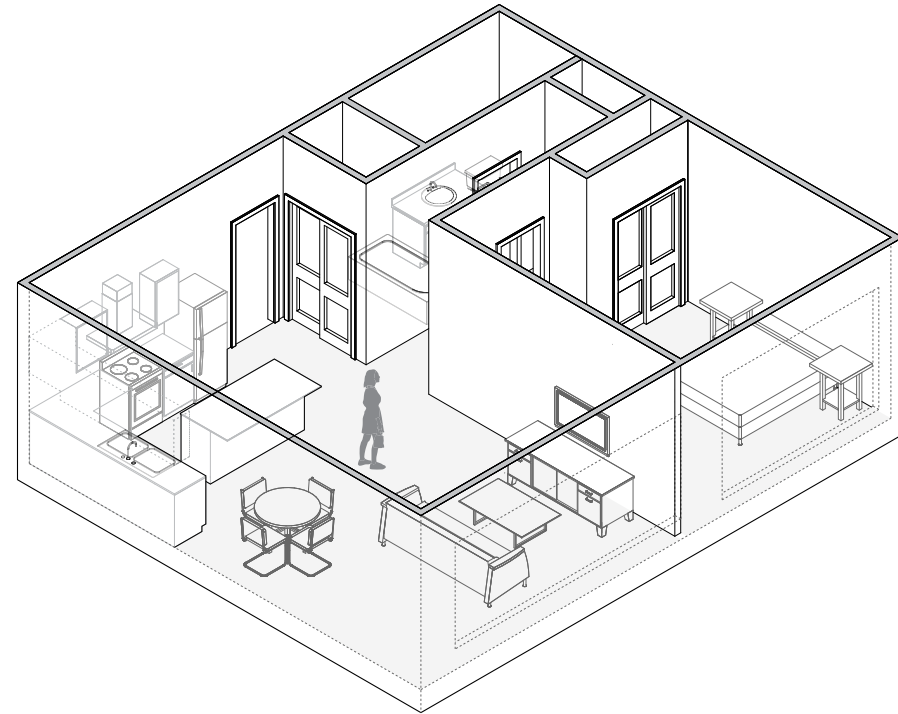
The 2x4 Edge-lit LED Panel. Retrofit existing fluorescent troffers used in drop ceilings, enjoy minimal power consumption, long life span, and bright illumination.

APARTMENTS

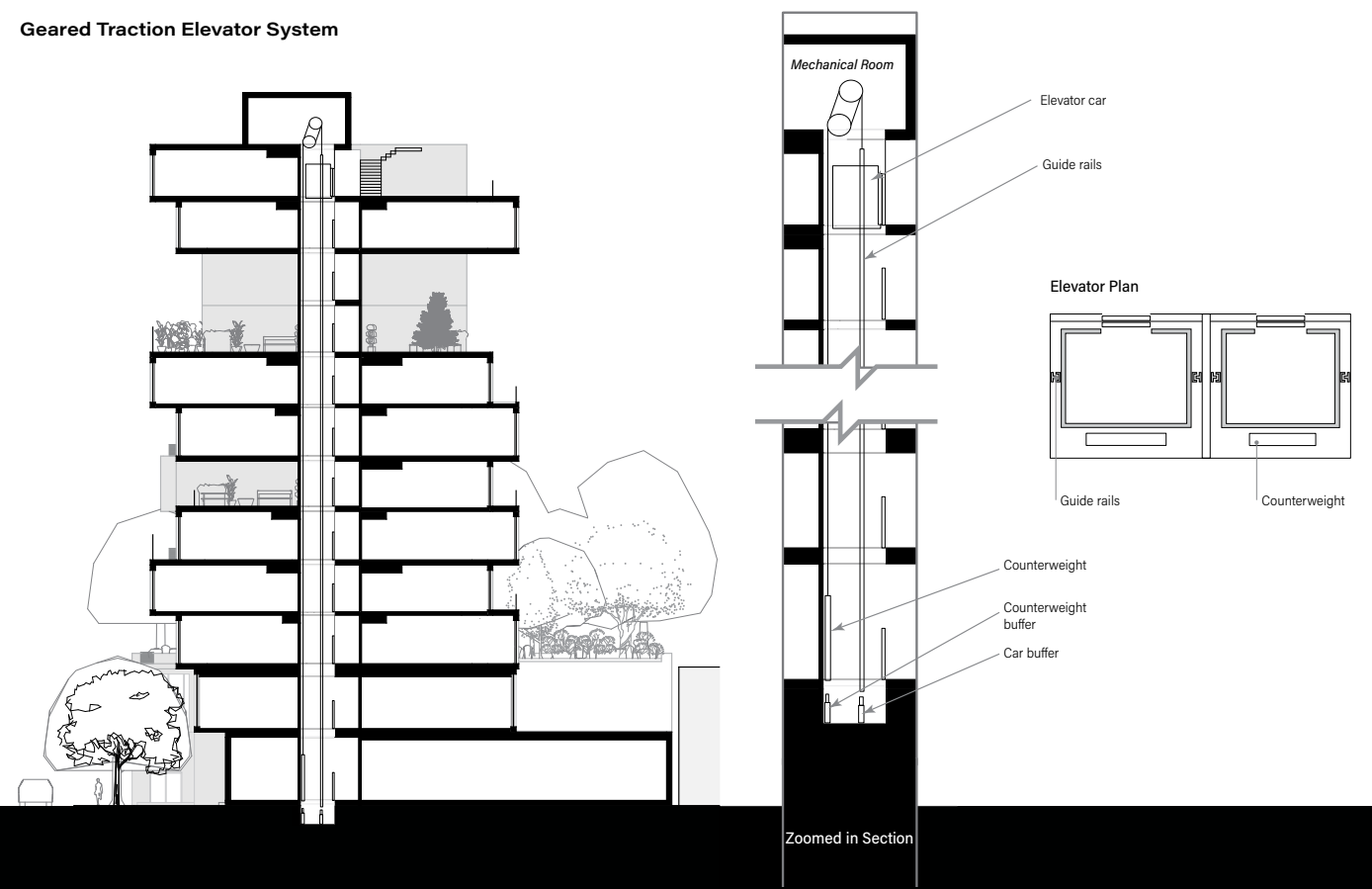
Forest Hills, New York

The Apartment Building Project was a project where we started to design housing for the Forest Hills neighborhood that would have a mixture of units. Whether it be units for 1 person or a family of 4. The concept behind the Apartment Building was to use these pre-design units as modules and create a level of modules that would then be designed in a stack method. Then when the stacked moduled levels are designed the need for a break between floors is seen to which green outdoor accessible spaces are design for future residents to enjoy.

Alexandra Marquez
 Professor Bradley Englsman
 Design III
 ARCH 301
 Fall 2022



Geared Traction Elevator System

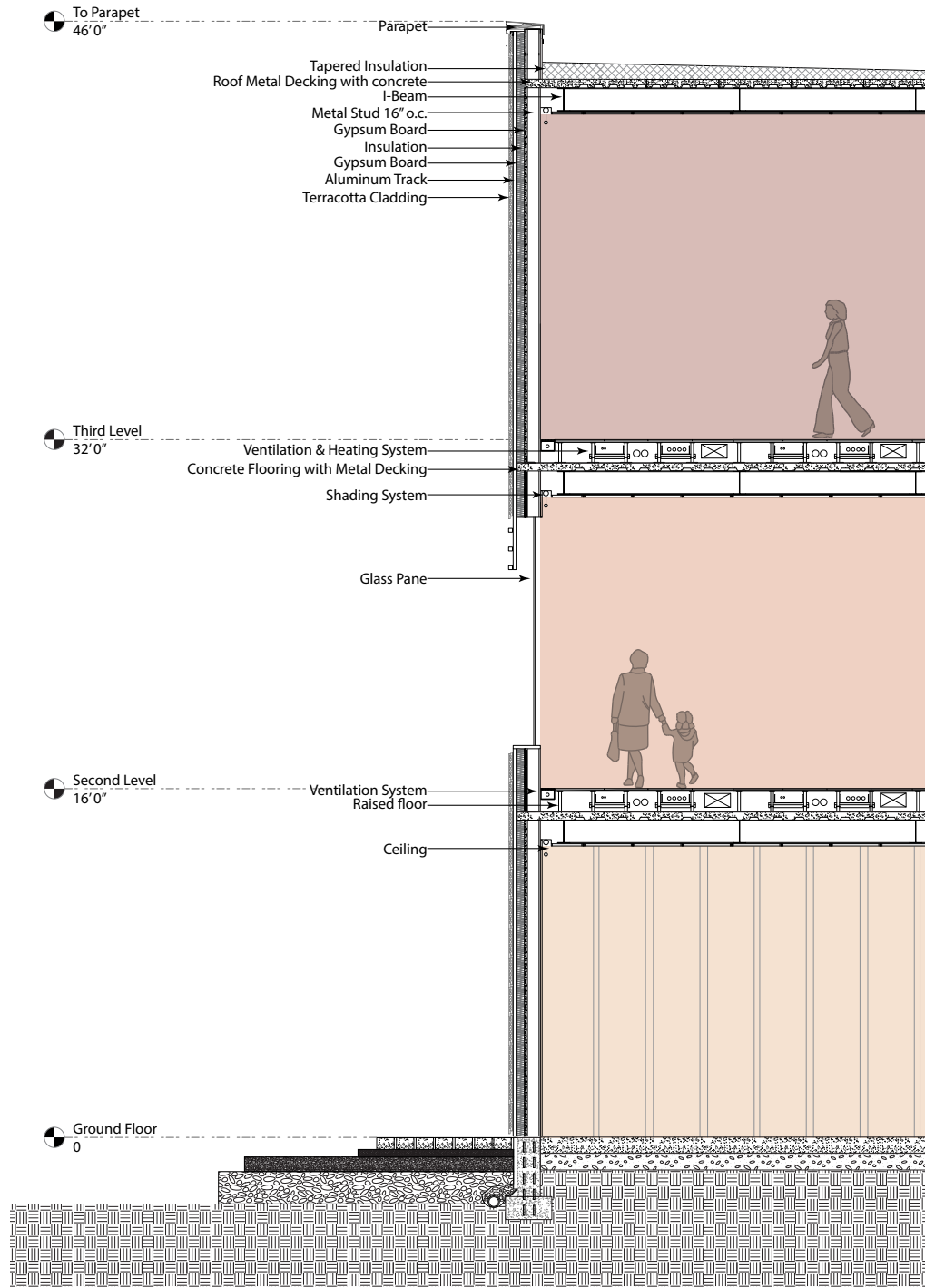




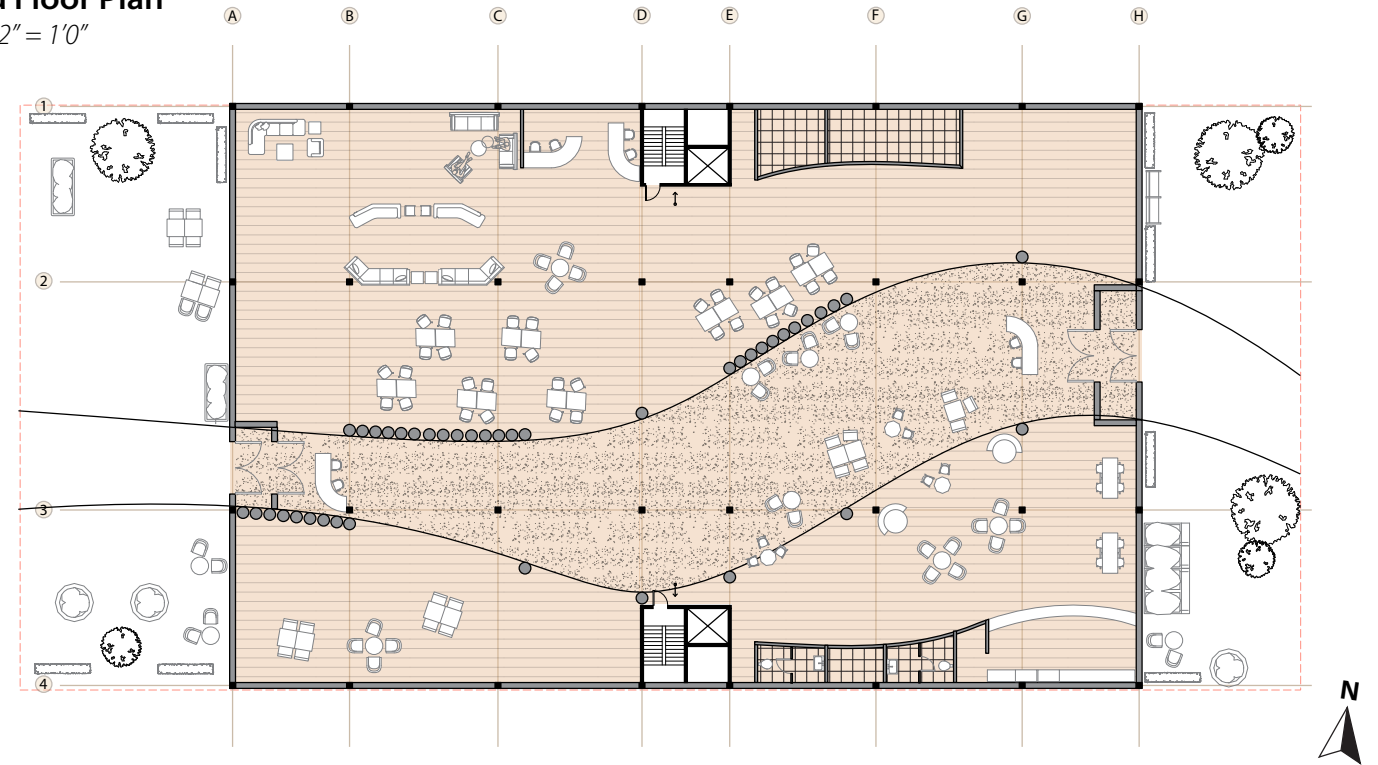
Public Library

Clinton Hill, Brooklyn

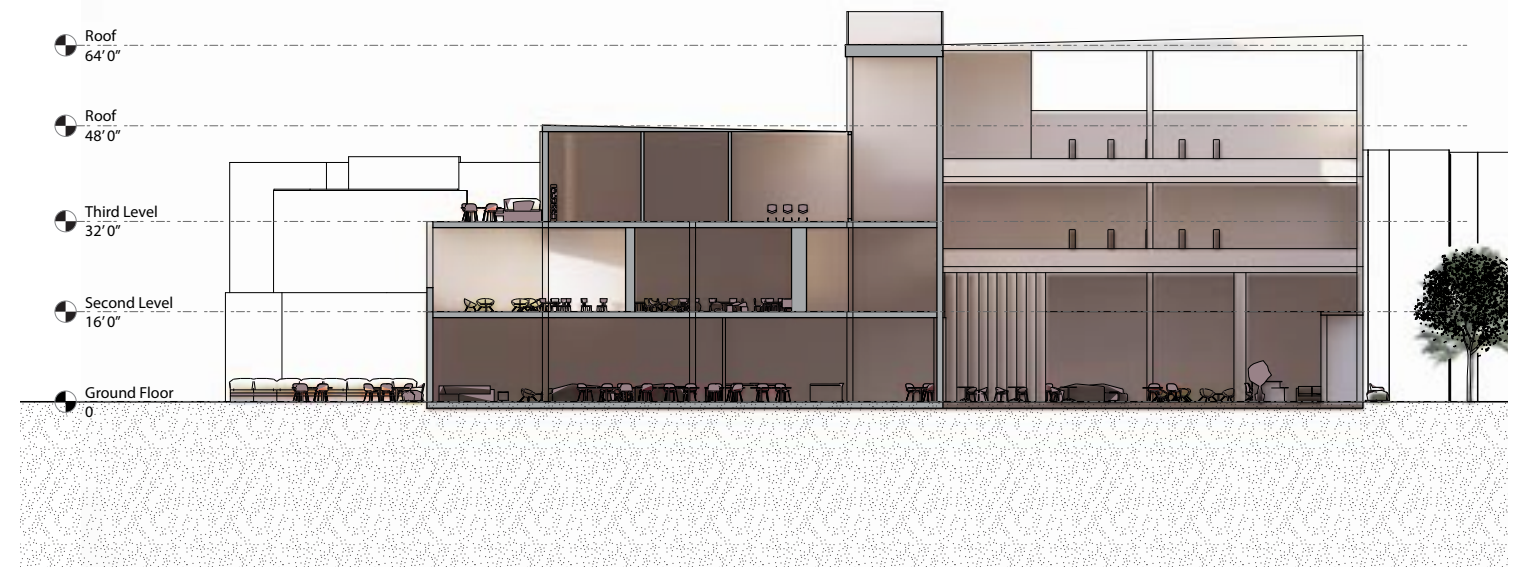
The Clinton Hill public library project was to design a library through the lens of integrative design. Which meant thinking about the construction of the wall section and the materiality of the building. The design process focuses on creating a dynamic space that fosters collaboration and community engagement in the lobby area of the library. The open curve that is resembled throughout the building is meant for a visual aid from the floors and provides natural lighting throughout the building.



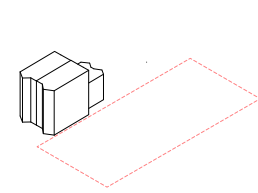
Ground Floor Plan
Scale: 1/32" = 1'0"



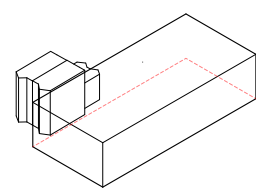
Section
Scale: 1/16" = 1'0"



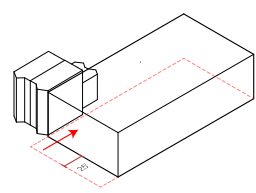
Alexandra Marquez
Professor Paul Ruppert
Design IV
ARCH 401
Fall 2023



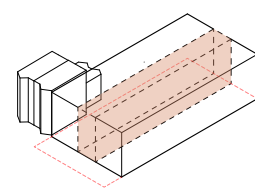
Analyzing the Site
The site has 2 streets on each end. One is noisier than the other. All buildings are about the same height.



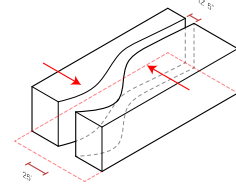
Extrusion of the Site
Using all the lot to extrude upwards to the same height as the surrounding buildings.



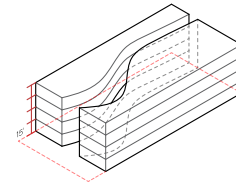
Offsetting the Mass
Creates a mass that has similar qualities as the surrounding buildings.



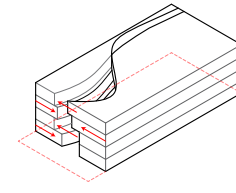
Splitting the Site
According to the pattern of an adjacent building that has divisions in its facade. Using the divisions I start to depict where the void/openings would be located.



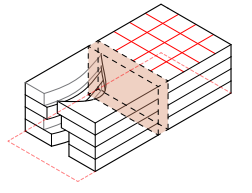
Push and Pull
Starting to identify where the entrances start to become different from each other based on the noise level of the streets.



Division of Levels
Creating levels that can accommodate for double height spaces.

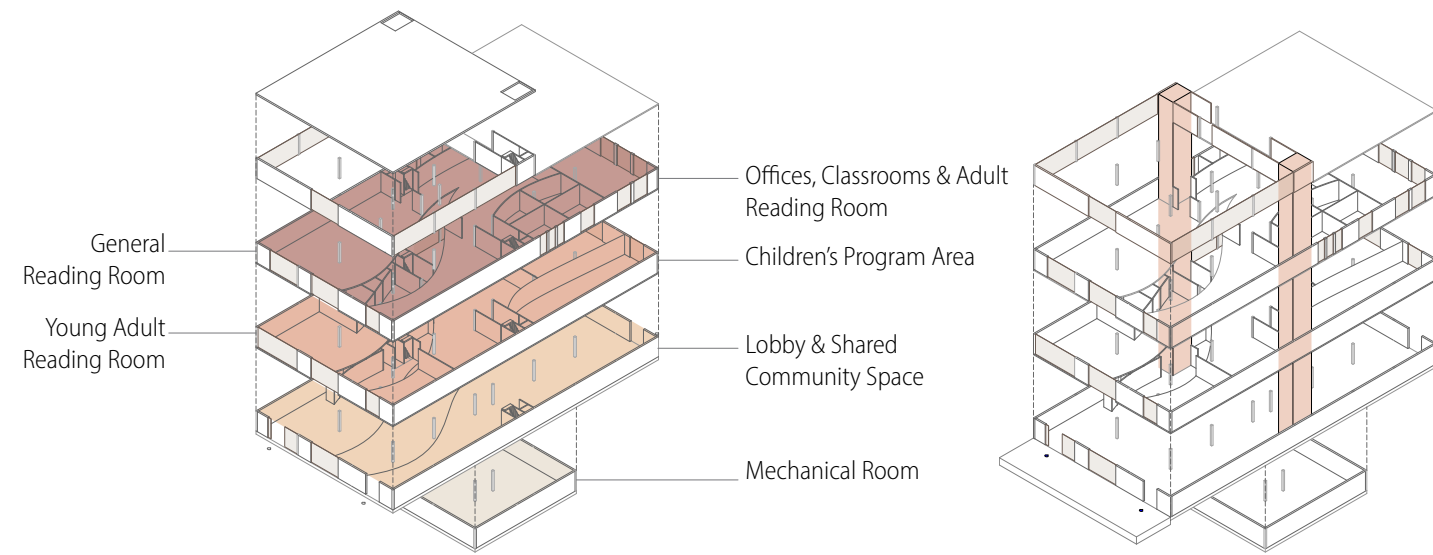


Shifting Levels
This allows a creation of overhangs for summer sun and a way to let winter sun as well as summer wind in.



Scaling Down South Side
This allows for sun to enter the space while shading summer sun and allowing winter sun in.

Program Distribution



Perspective View

From Washington Ave. Entrance



East Elevation



Perspective View

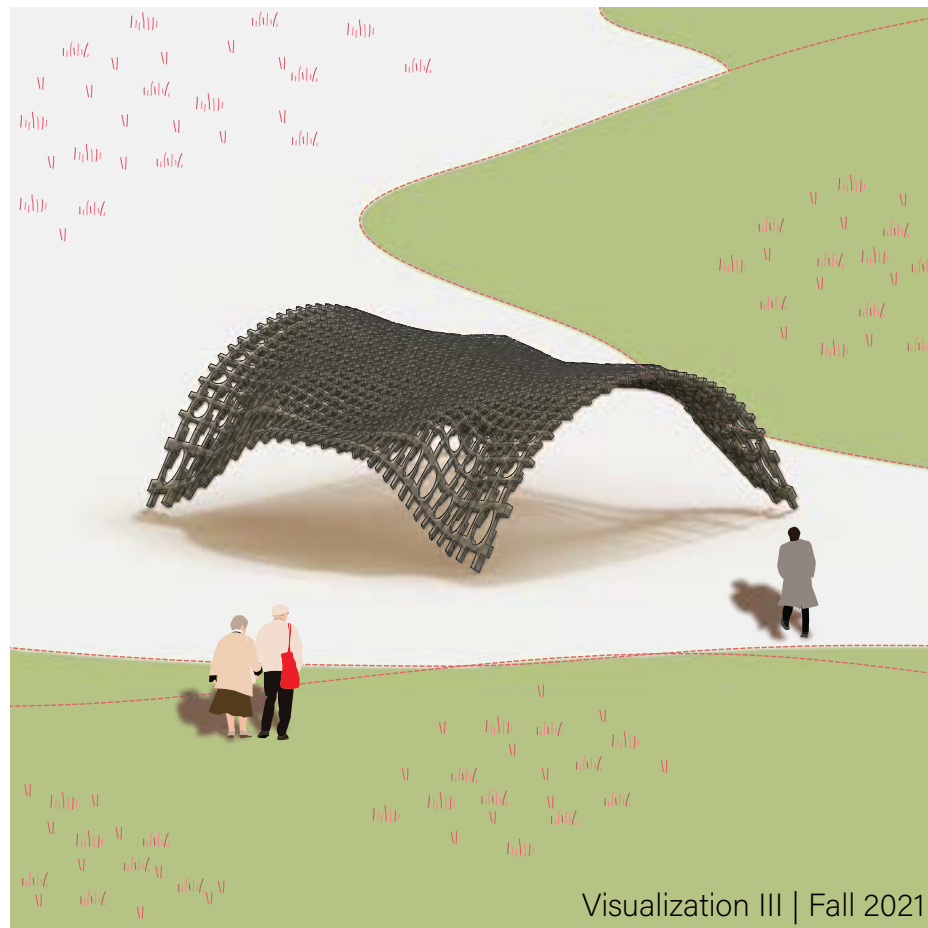
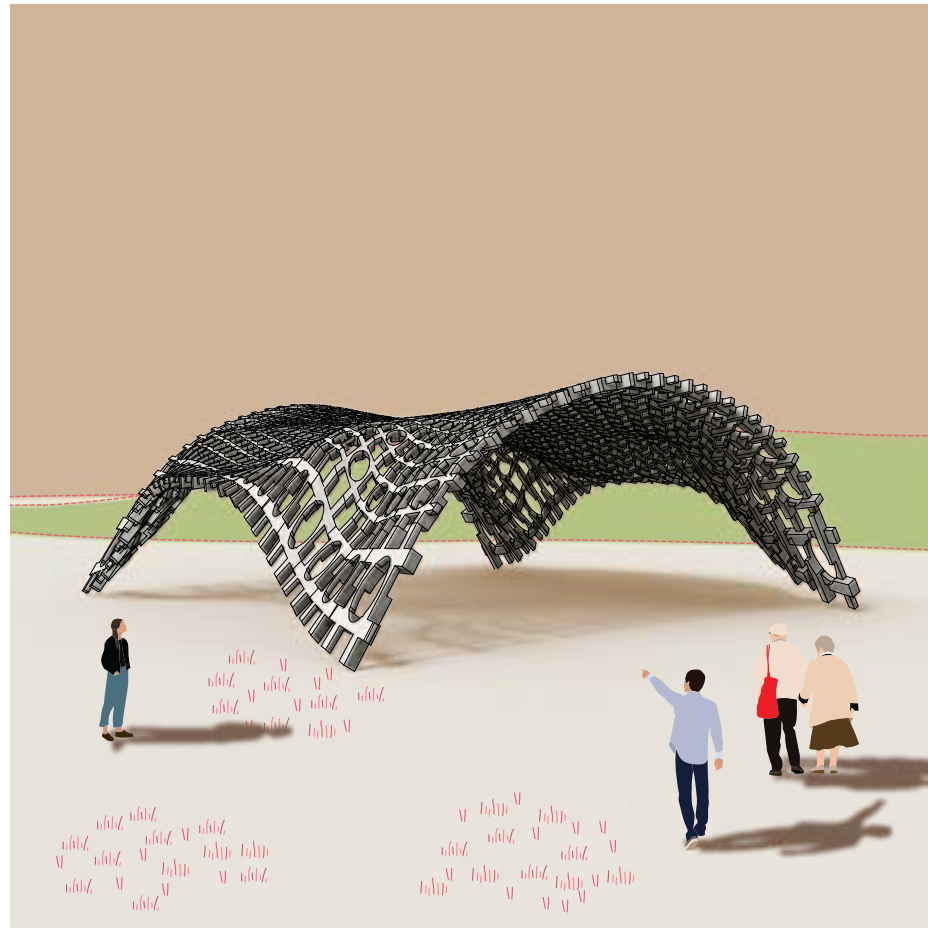
From General Reading Room



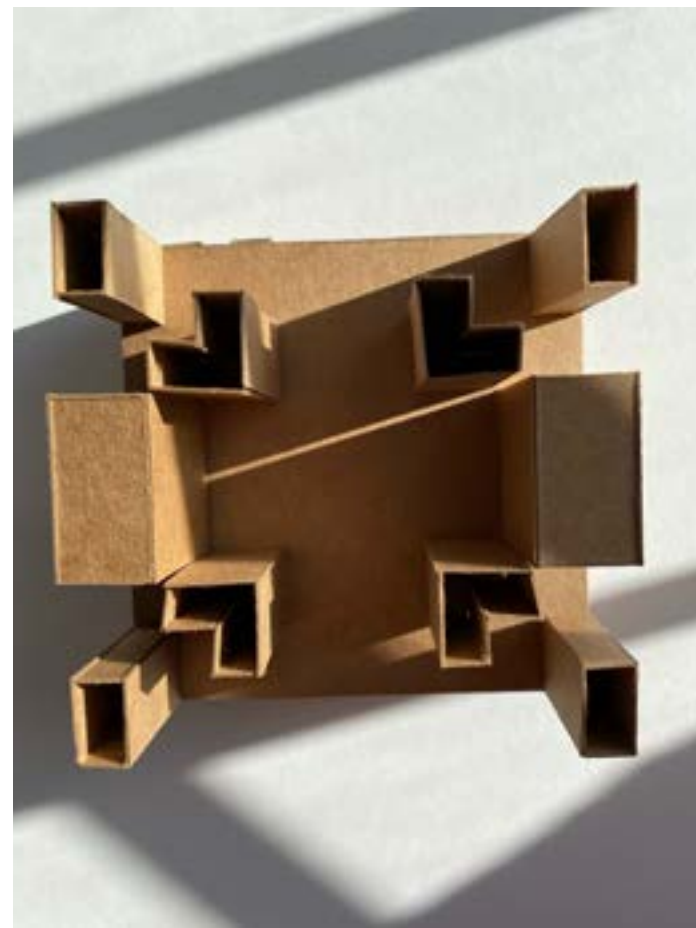
OTHER WORKS

Drawings Throughout the years

These diagrams represent some of my proudest work, showcasing key moments in my educational journey. While I had many drawings to choose from, these selections highlight the diverse techniques I explored, from illustration and structural studies to sketching, 3D modeling, and model-making. Each piece reflects my growth and experimentation across various mediums and approaches.



Visualization III | Fall 2021



Design I | Fall 2021

Photograph



Sketch

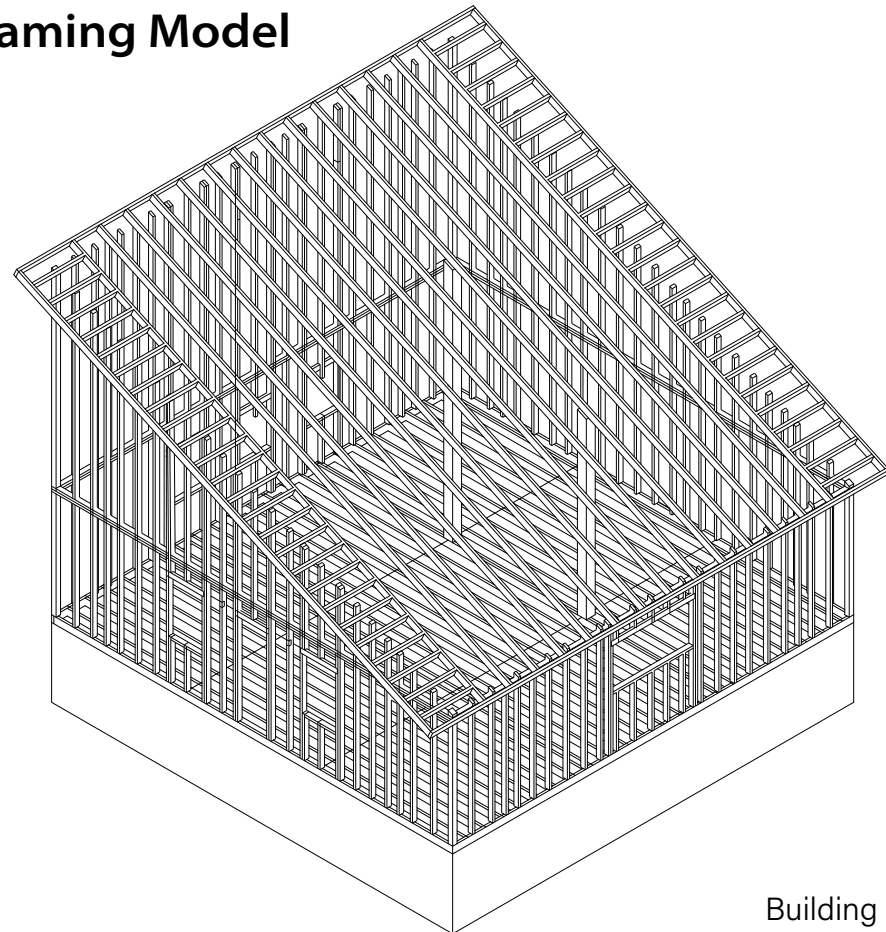


Revit Model



CAD Construction Drawings | Fall 2022

Wood Framing Model



Building Construction I | Fall 2021

Community Center
Site Plan



Design IV | Spring 2023

