

EAST CAROLINA UNIVERSITY

UNDERGRADUATE PORTFOLIO

ANUSHKA BHATE

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Luxury Island Resort

[Link to Animation Video](#)

Introduction

East Carolina University Honors College
Greenville, NC

(Expected Graduation: July 2025)

- Majors: Design Engineering (Architectural Concentration) & Biology
- Minor: Business Administration
- Early Assurance to Brody School of Medicine
- MS in Regenerative Medicine at Johns Hopkins University (2026)

Research Interests

- Sustainable design
- The future of Additive Manufacturing
- Use of Biomimicry

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Greenville, NC 27834

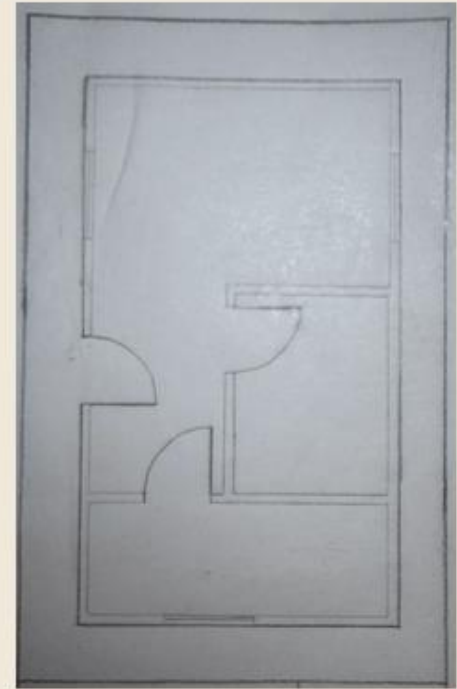
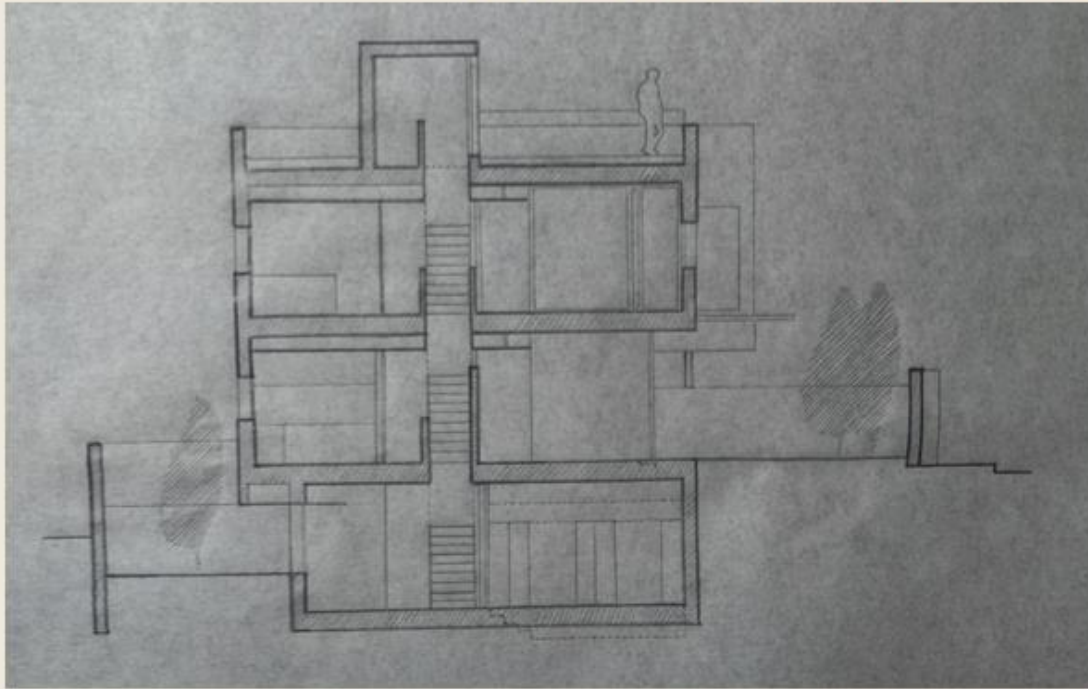
Anushka Bhate



PART 1
HAND DRAFTING

HAND DRAFTING DEVELOPMENT

ELEVATION VIEW & SIMPLE FLOOR PLAN



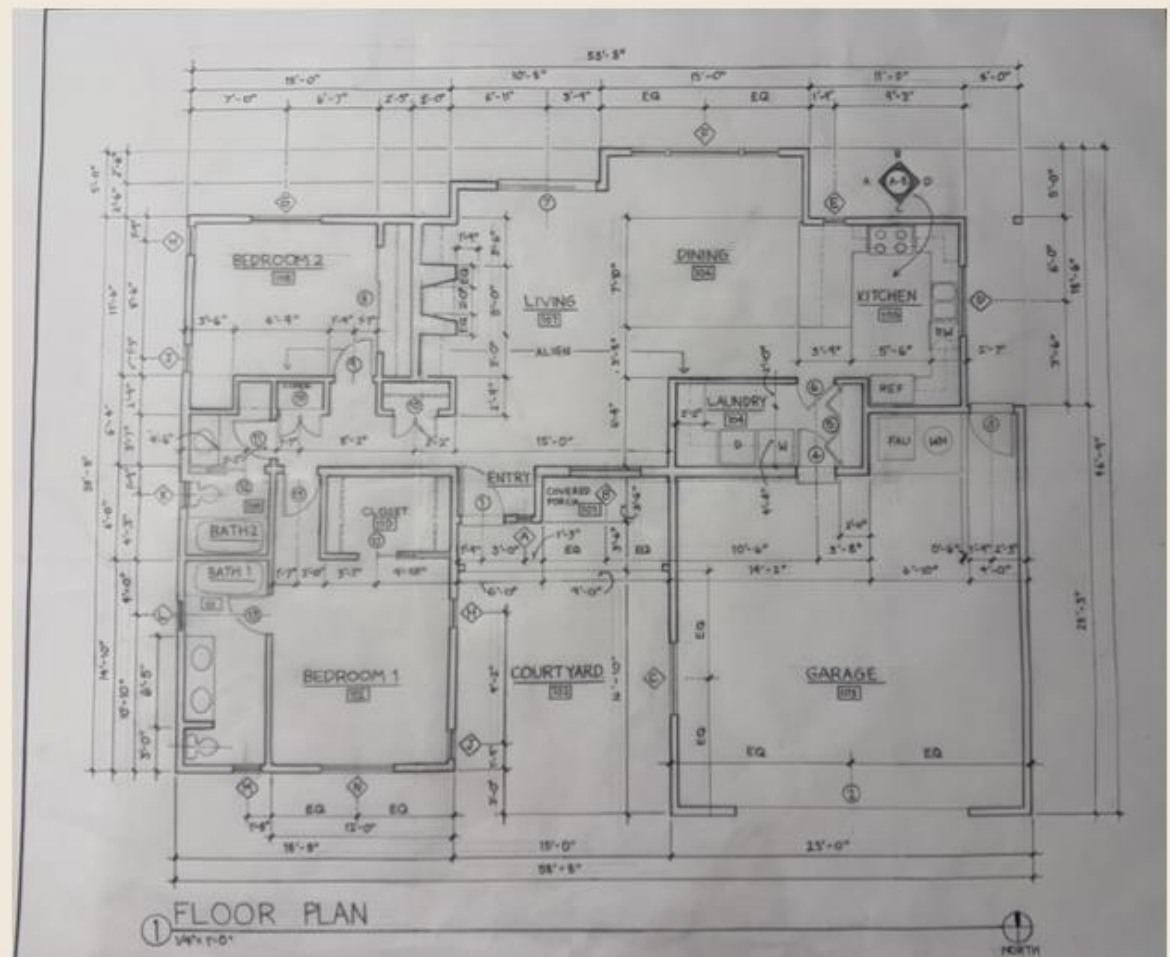
FULL FIRST FLOOR PLAN:

Includes dimensions

Labels

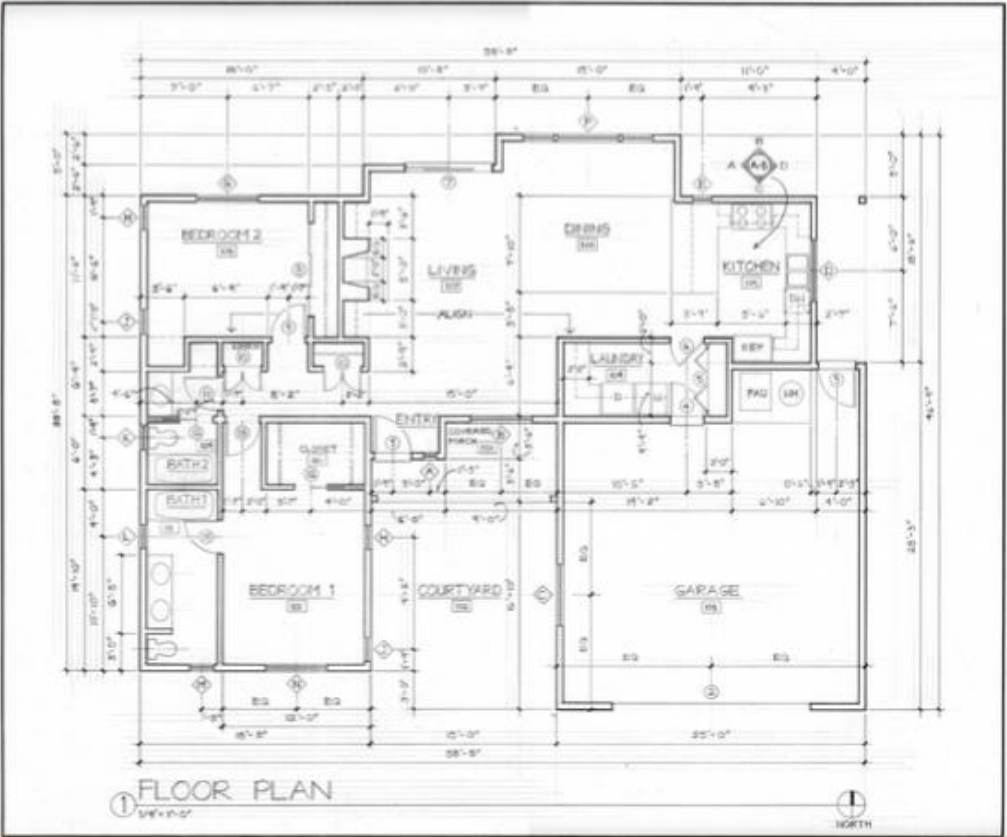
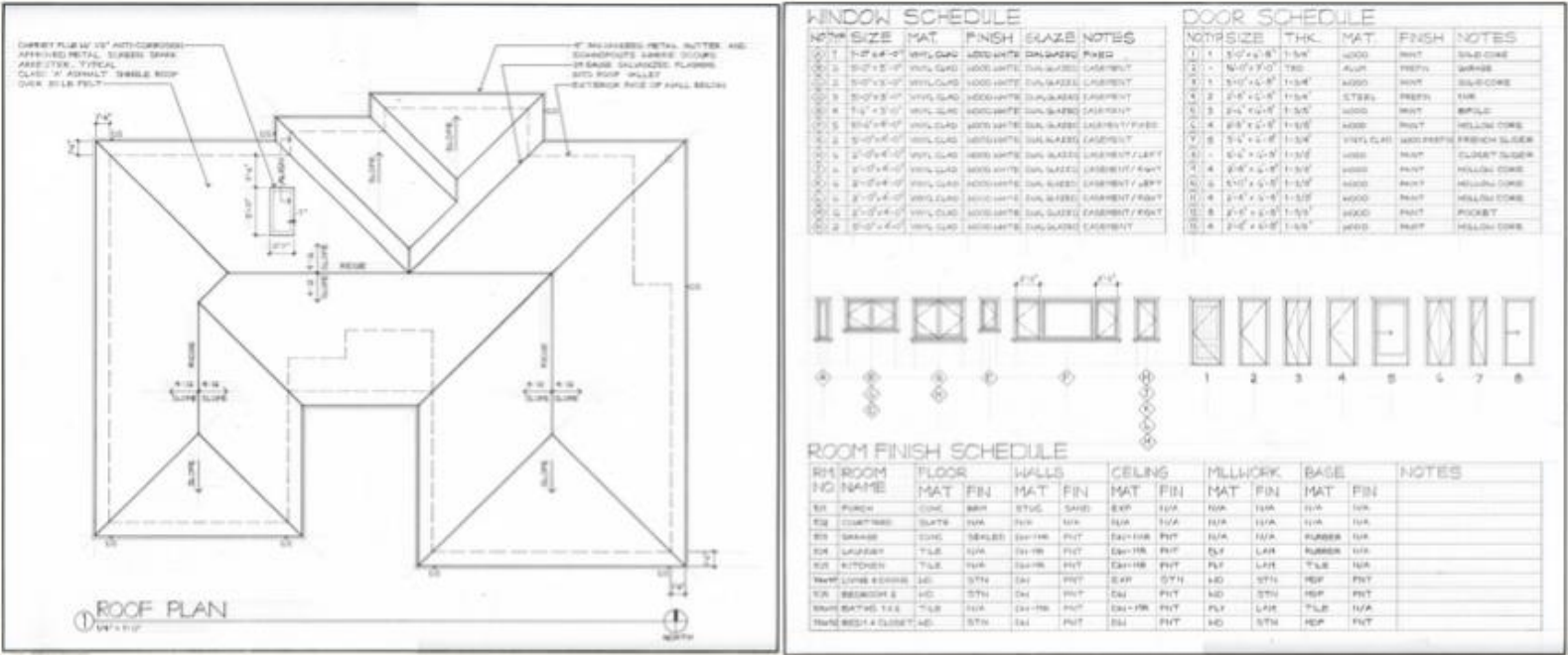
Basic furniture

Appliances (e.g. toilets, fridge, microwave, stove, etc.)



PROJECT
01

HAND
DRAFTING
RESIDENTIAL
BUILDING



SINGLE STORY RESIDENCE

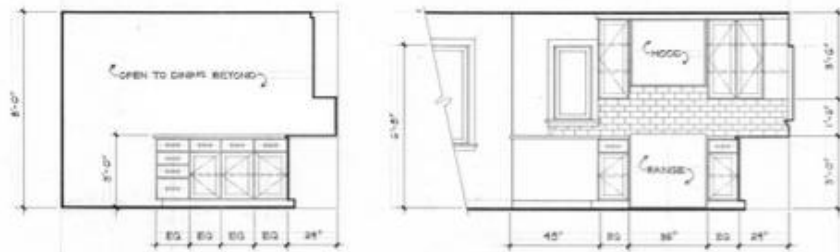
DRAFTED ON 18X24 VELLUM PAPER

SKILLS ACQUIRED:

- HAND-DRAFTING
- USING VARIOUS LINEWEIGHTS
- CREATING DOOR AND WINDOW SCHEDULES
- DIMENSIONING USING ARCHITECTURAL SCALE

PROJECT 01

ELEVATION AND SECTION DRAWINGS



A KITCHEN ELEVATION
1/2" x 1'-0"

B KITCHEN ELEVATION
1/2" x 1'-0"

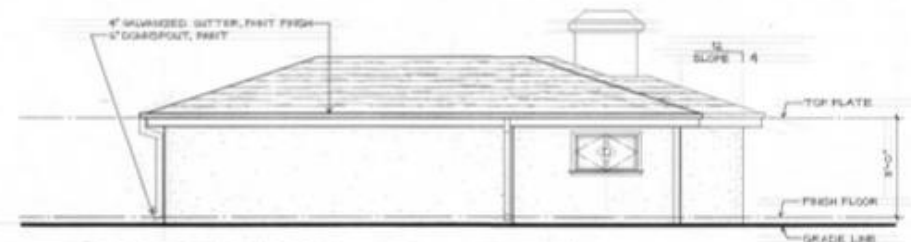


C KITCHEN ELEVATION
1/2" x 1'-0"

D KITCHEN ELEVATION
1/2" x 1'-0"



1 SOUTH ELEVATION
1/4" x 1'-0"



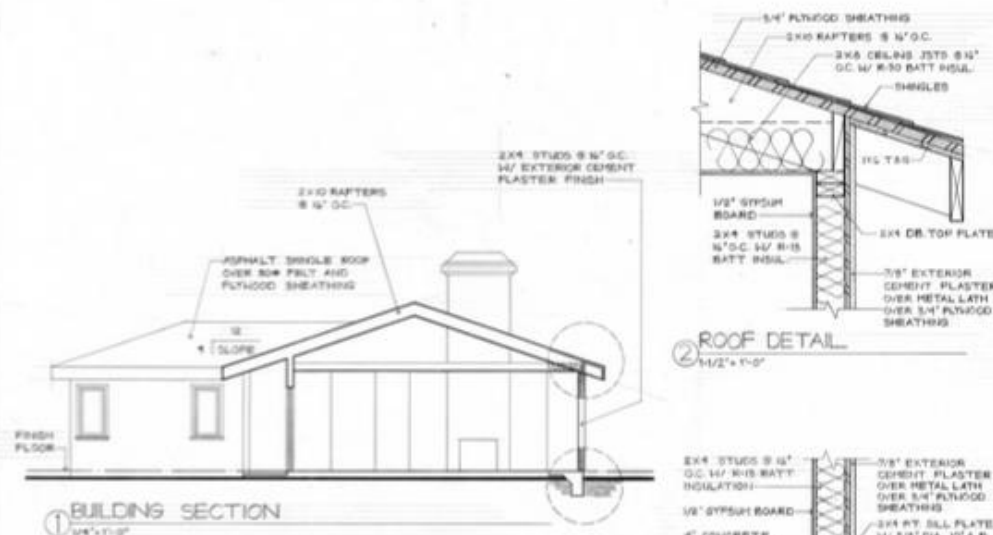
2 EAST ELEVATION
1/4" x 1'-0"



1 NORTH ELEVATION
1/4" x 1'-0"



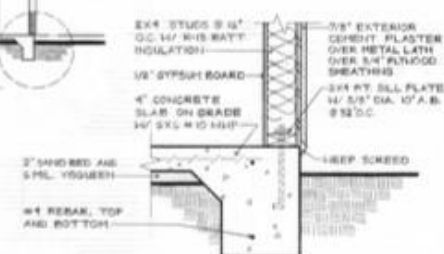
2 WEST ELEVATION
1/4" x 1'-0"



1 BUILDING SECTION
1/4" x 1'-0"



2 ROOF DETAIL
1/2" x 1'-0"



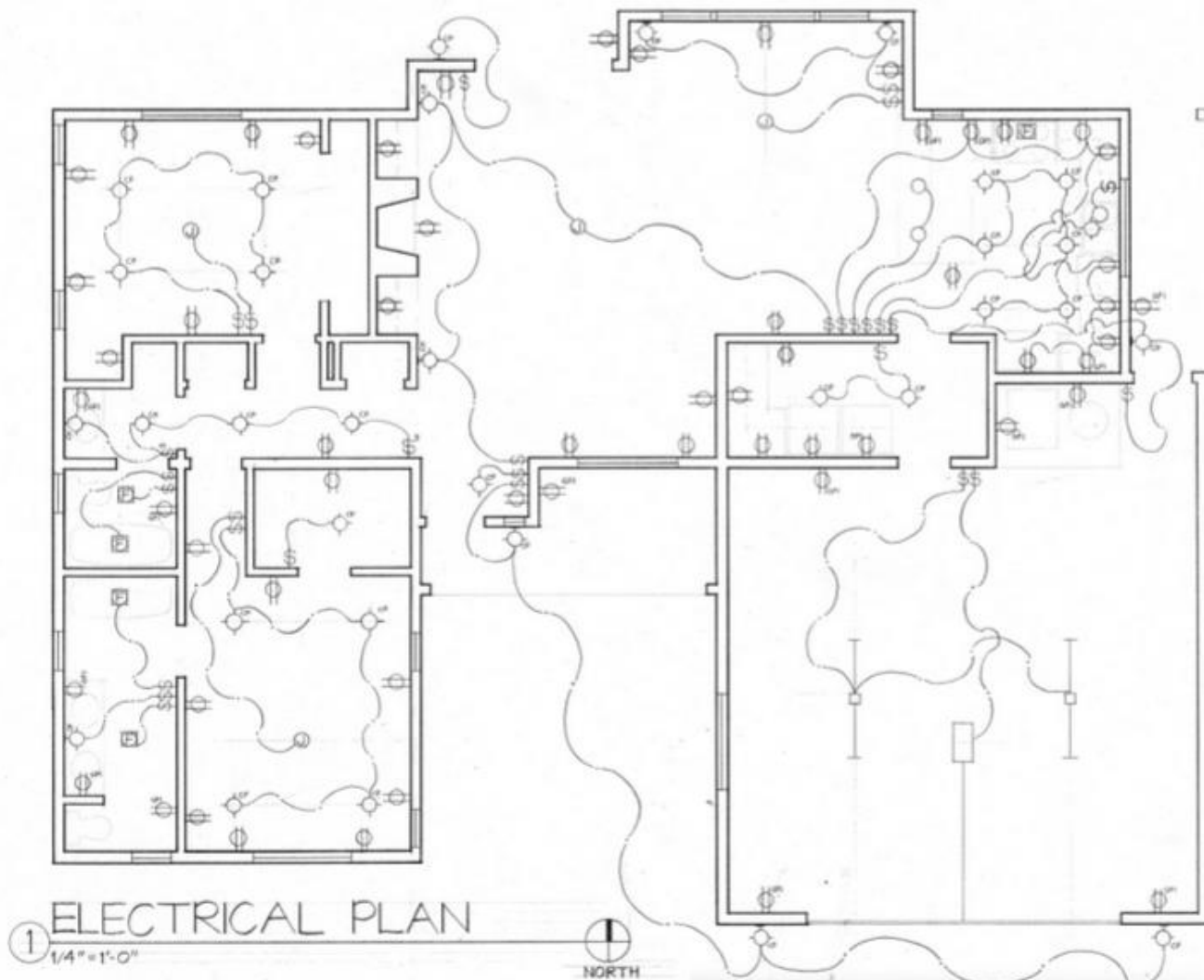
3 FOOTING DETAIL
1/2" x 1'-0"

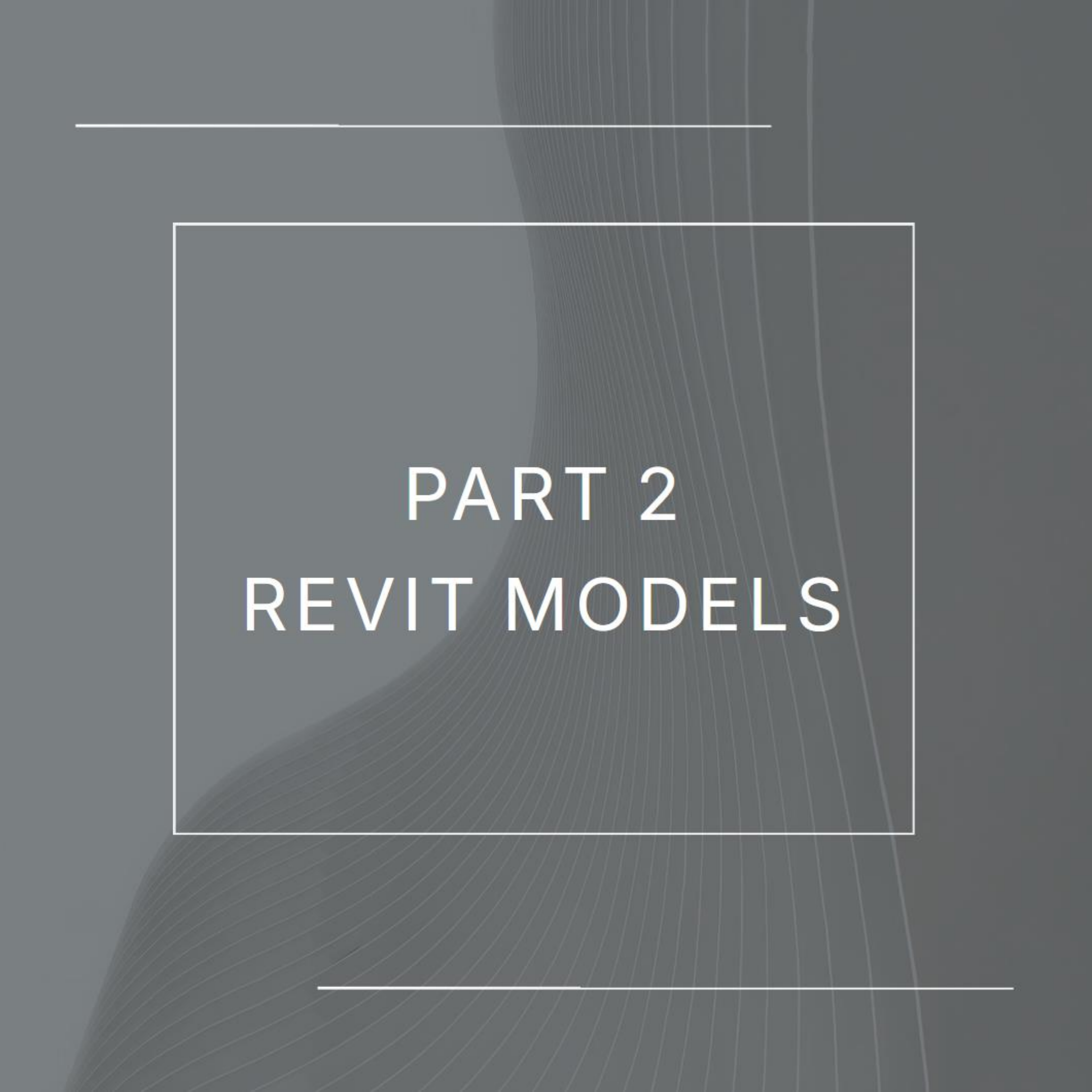
PROJECT 01

ELECTRICAL AND LIGHTING PLANS

ELECTRICAL LEGEND

○	SINGLE RECEPTACLE OUTLET	⎓	SINGLE POLE SWITCH W/ DIMMER WALL-MOUNTED	→→→	TRACK LIGHT FIXTURE
⊖	DUPLEX RECEPTACLE OUTLET	⎓	SINGLE POLE SWITCH 3-WAY W/DIMMER WALL-MOUNTED	▧	2x4 FLUORESCENT LIGHT FIXTURE
⊕	QUADPLEX RECEPTACLE OUTLET	⎓	TELEPHONE JACK HARD WIRED	⊞	VENT-FAN-LIGHT FIXTURE
⊖	WATER-PROOF DUPLEX RECEPTACLE OUTLET	⎓	DATA/TELEPHONE JACK HARD WIRED	○	WALL-MOUNTED LIGHT FIXTURE
⊖	GROUND-FAULT CIRCUIT INTERRUPTER	⊖	THERMOSTAT	○	LED RECESSED LIGHT FIXTURE
⊖	220 VOLT RECEPTACLE OUTLET	⊖	1x4 FLUORESCENT LIGHT FIXTURE	○	INCANDESCENT RECESSED LIGHT FIXTURE
⊖	JUNCTION BOX	⊖	1x4 FLUORESCENT UNDERMOUNT LIGHT FIXTURE	⊖	SMOKE DETECTOR
⎓	SINGLE POLE SWITCH 3-WAY WALL-MOUNTED	⎓	PENDANT FLUORESCENT LIGHT FIXTURE	⊖	CARBON MONOXIDE SENSOR



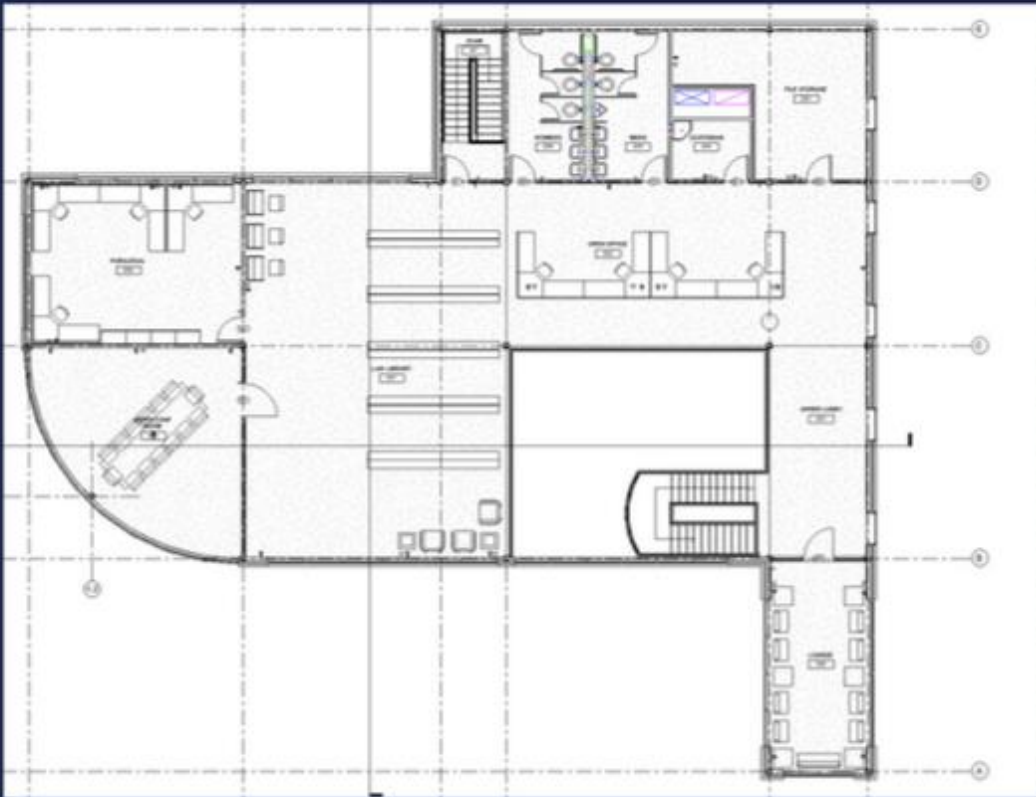
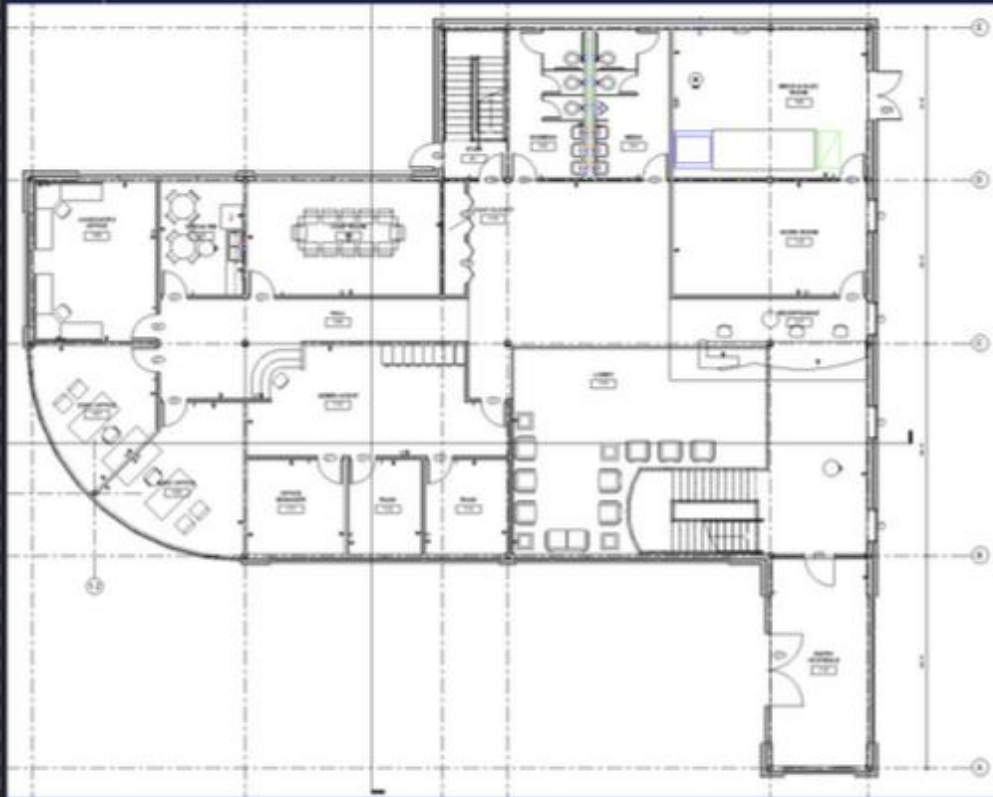


PART 2

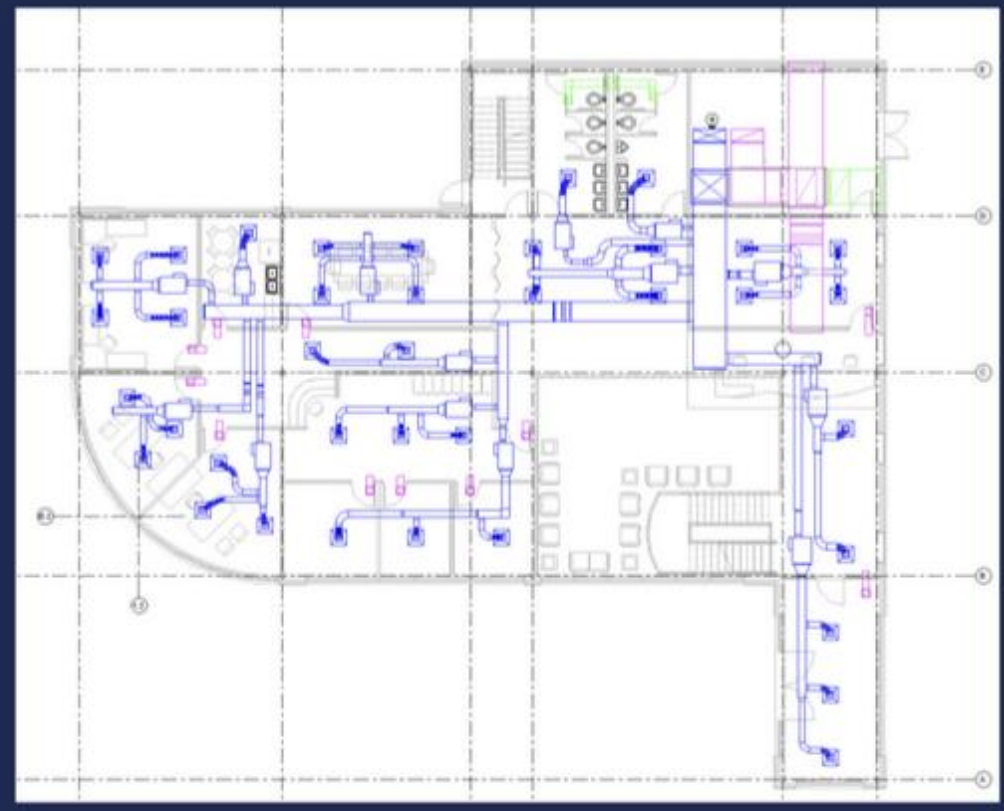
REVIT MODELS

PROJECT 02 - COMMERCIAL DESIGN - LAW OFFICE

FLOOR PLANS



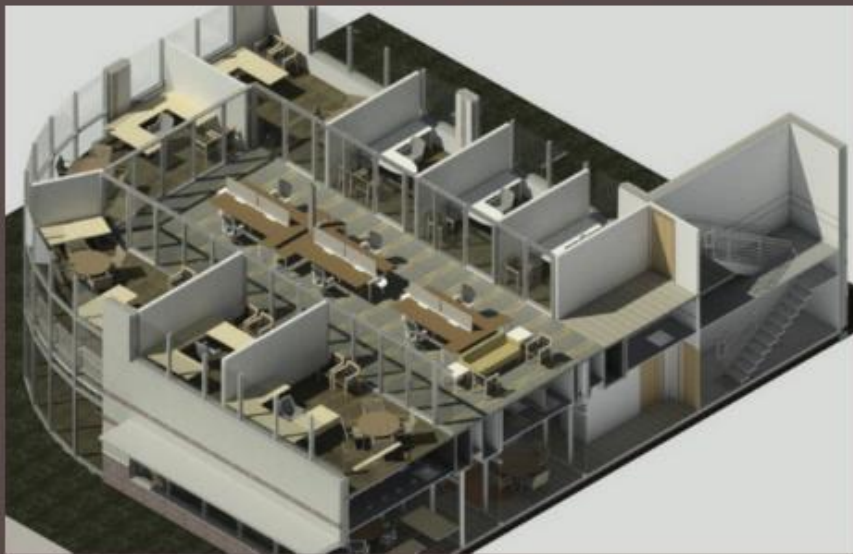
FLOOR PLAN DEVELOPMENT- HVAC



LAW OFFICE INTERIOR RENDERS



LAW OFFICE EXTERIOR VIEWS & RENDERS



PROJECT 03 - ECU AUSTIN BUILDING MODEL



SITE PLANNING AND TAKING MEASUREMENTS

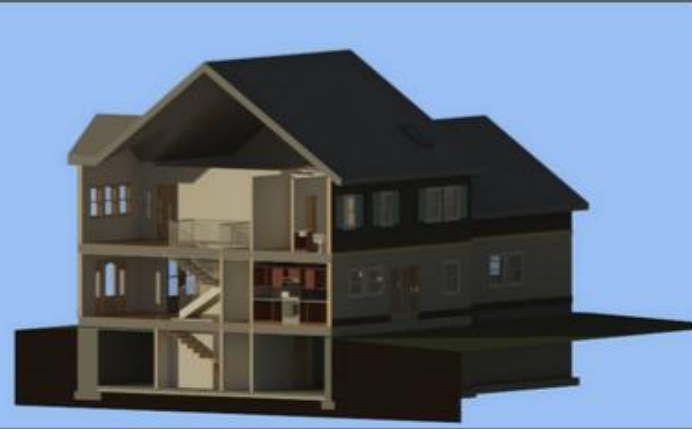
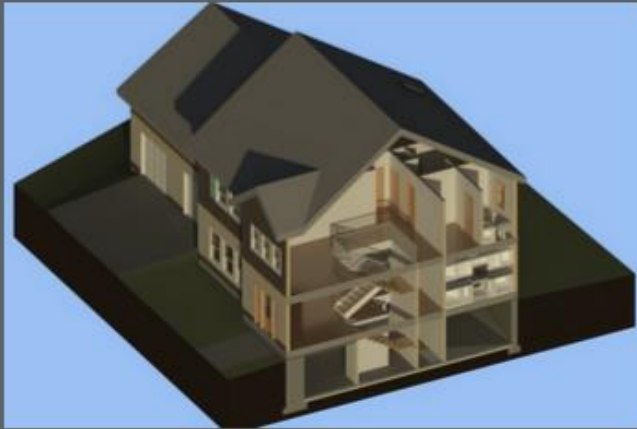


CREATING 3D MODEL IN REVIT



FINAL RENDER

PROJECT 04 - RESIDENTIAL DESIGN



PROJECT 05- Redesign ECU Chancellor's Residence

The scope of this project was to redesign the existing residence of the East Carolina University Chancellor into a specific assigned American Colonial style. My team was assigned to redesign the residence into a French Colonial style home. This project entailed researching elements of the assigned colonial style, and creating a luxurious and tasteful redesigned residence for our university's Chancellor.

Exterior Views



Section Views



French Colonial Style Chancellor's Residence

1st Floor Plan



2nd Floor Plan



French Colonial Style Chancellor's Residence

3D Model



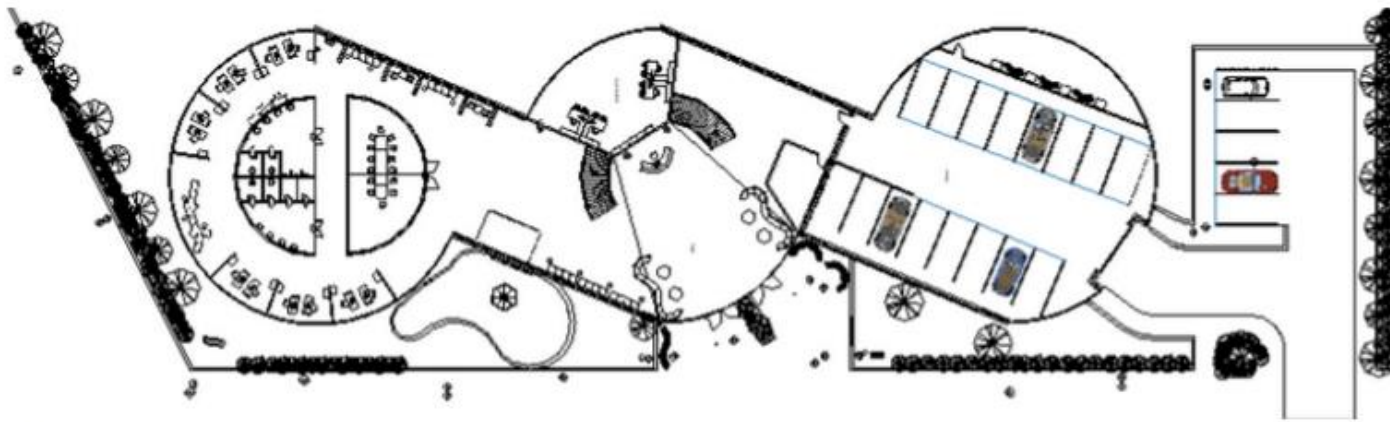
Interior Views



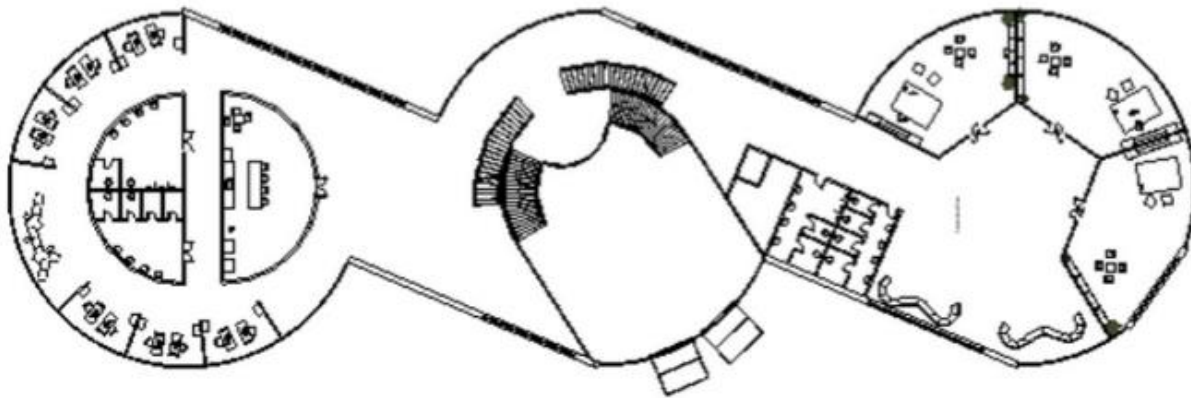
PROJECT 06- Commercial IT Building Using Green Building Technology

This was a project assigned in the "Capstone" culmination course of the BS in Design degree. The scope of this project was to create a commercial building to fit in a specific lot size in Silicon Valley. The building was for an IT office, so it had to be designed as such. Elements of Silicon Valley's vast innovation and green building strategies were implemented.

1st Floor Plan



2nd Floor Plan



3rd Floor Plan

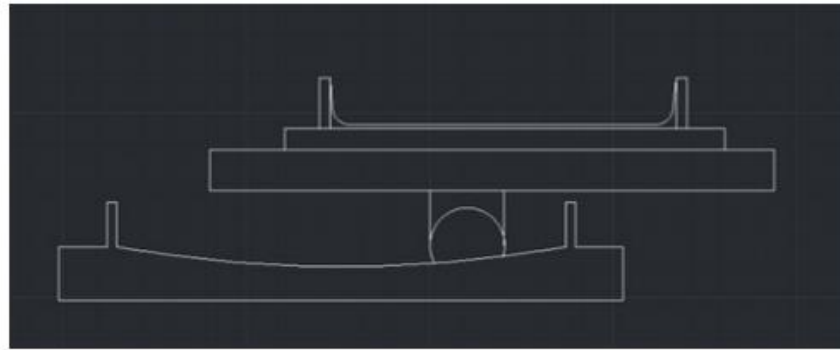


PROJECT 06 3D MODEL SNAPSHOTS

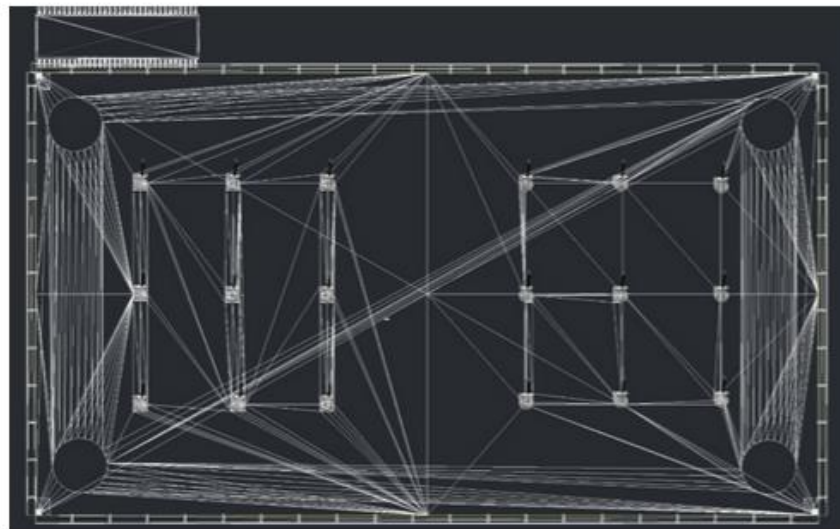


PROJECT 06

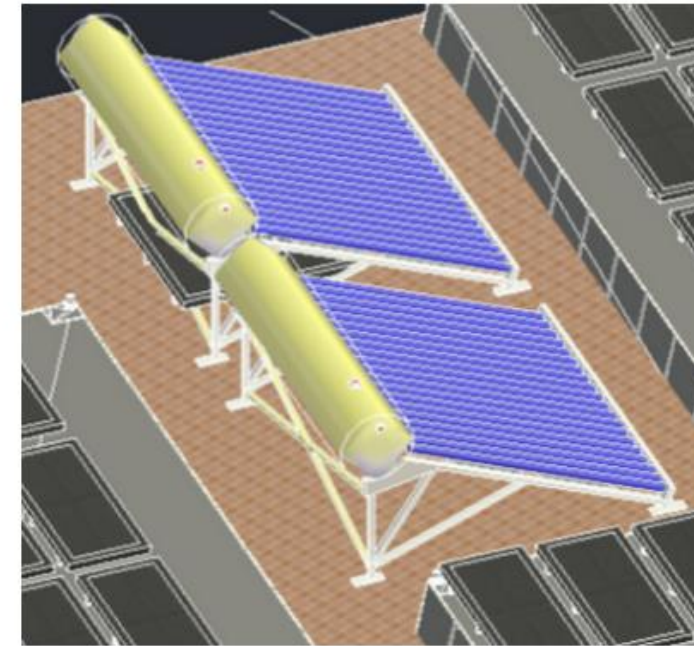
IMPLEMENTATION OF NOVEL GREEN BUILDING TECHNOLOGIES



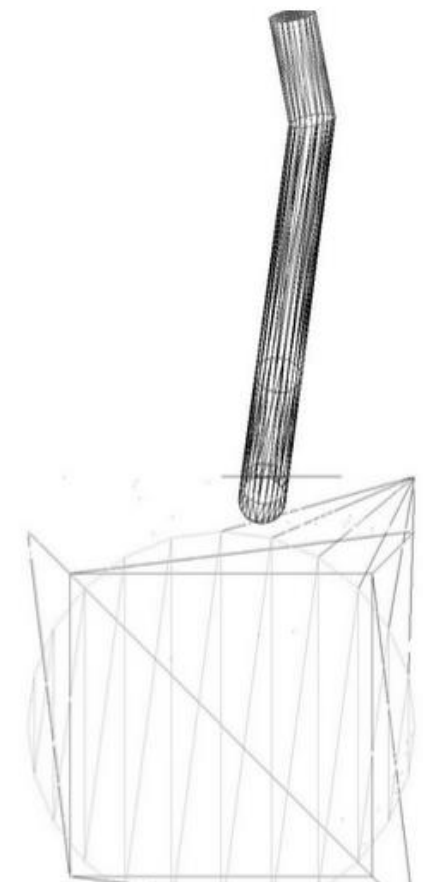
BASE ISOLATION TECHNOLOGY:
Embedded into foundation so that when there is an earthquake, the whole building shifts with it. This protects the building from earthquake damage and daily operations may continue.



PIEZOELECTRIC SOLAR PANEL:
Principle: using the high seismic activity in Silicon Valley for renewable energy.
Combine photovoltaic cells with piezoelectric materials, allowing them to generate electricity from both sunlight and mechanical stress (such as wind, rain, or vibrations), enhancing energy efficiency in varying environmental conditions.



SOLAR THERMAL WATER HEATER:
Uses solar energy to heat water through a collector system, reducing the need for electricity or gas.



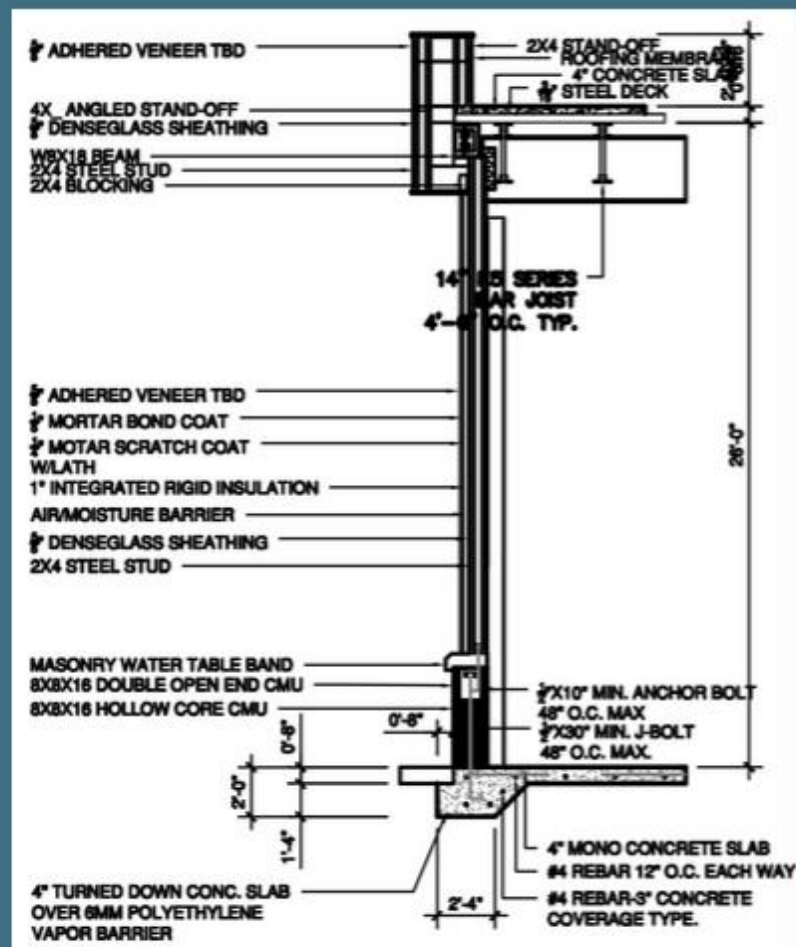
PART 3
SKETCHUP
MODELS

PROJECT 07- SKETCHUP COMMERCIAL BUILDING

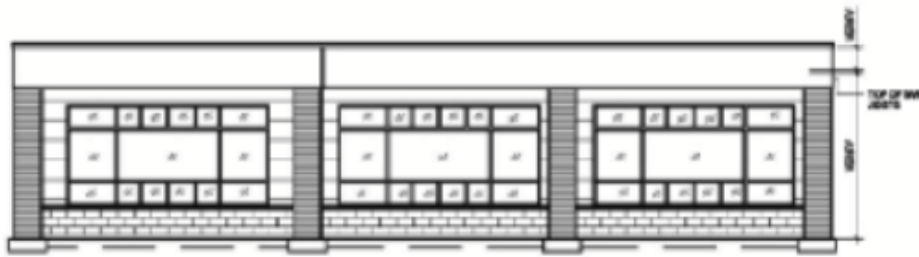
STEEL FRAMED STRUCTURE



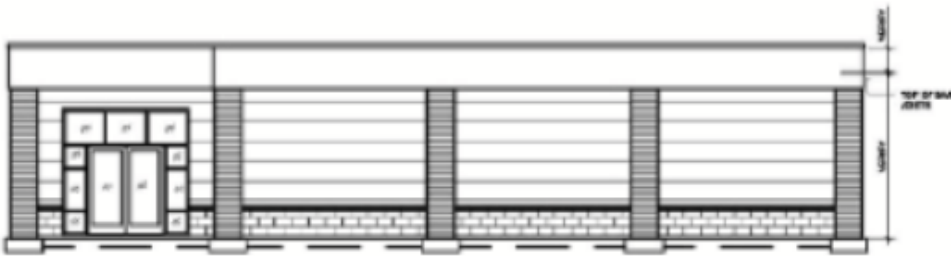
Wall Section



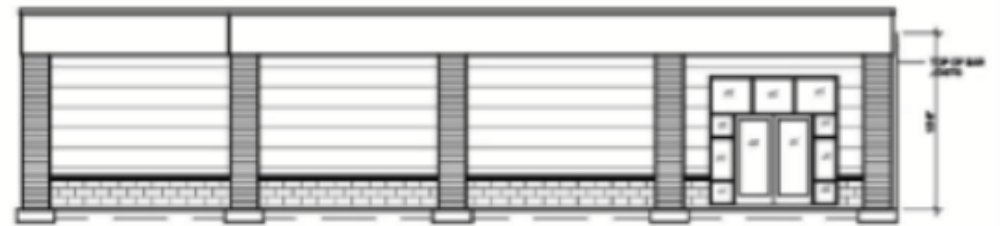
PROJECT 07- ELEVATION VIEWS



WEST ELEVATION
P-100



SOUTH ELEVATION
P-100



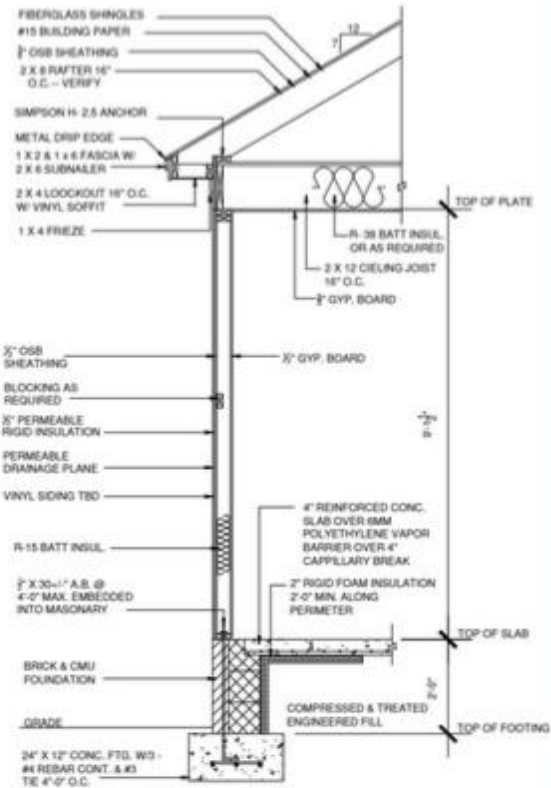
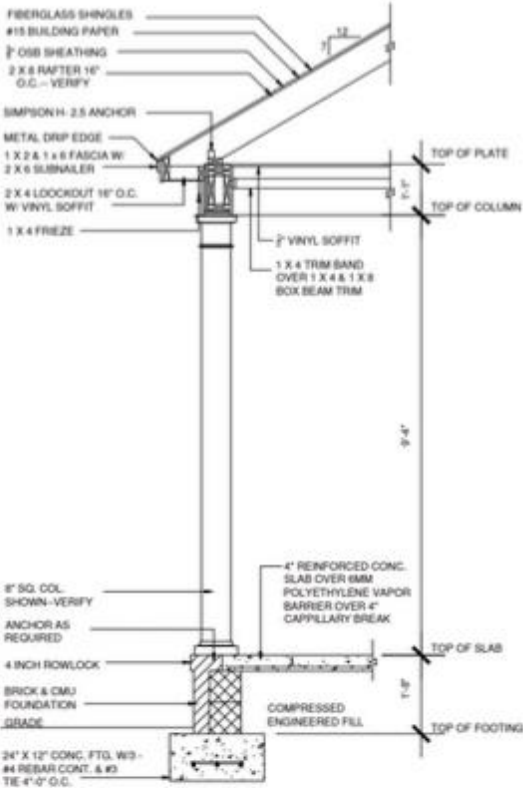
NORTH ELEVATION
P-100



EAST ELEVATION
P-100

PROJECT 08 - SKETCHUP RESIDENTIAL DESIGN

3D Model

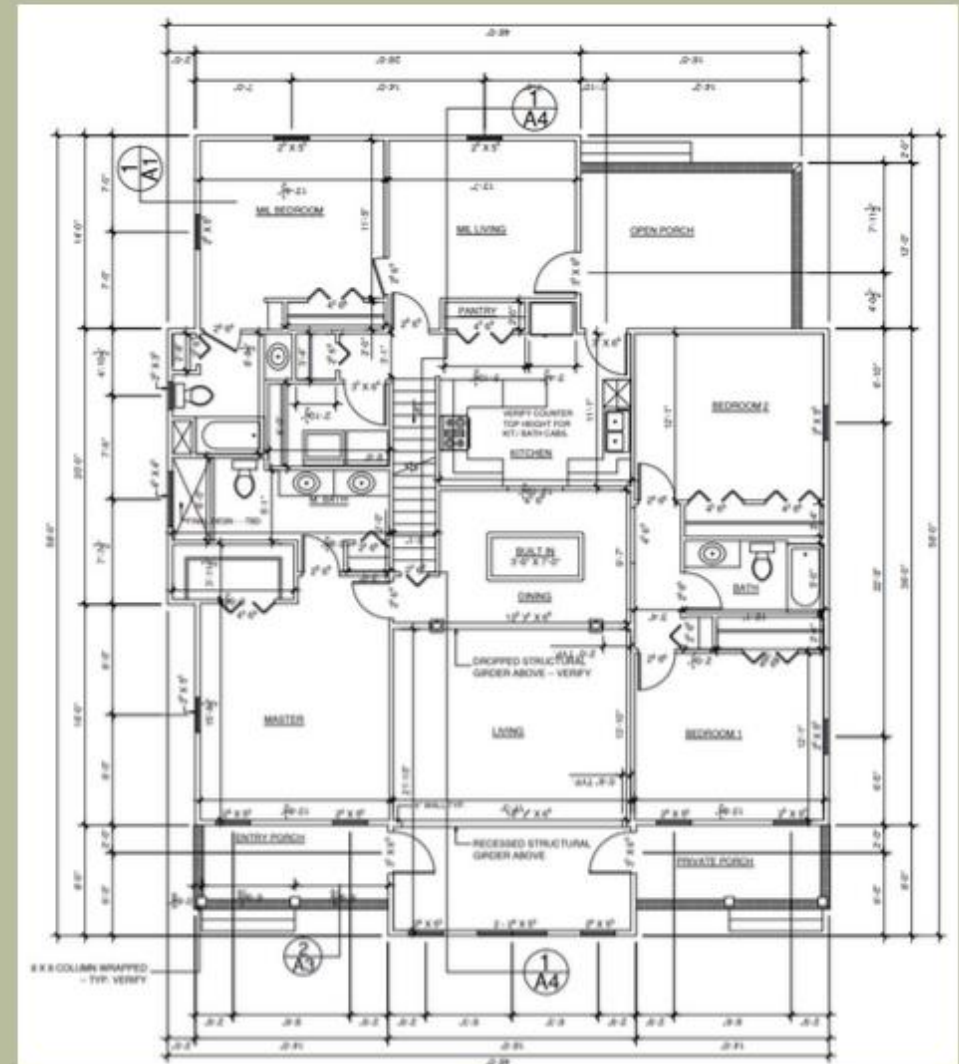


X
XX
1/4" = 1'-0"

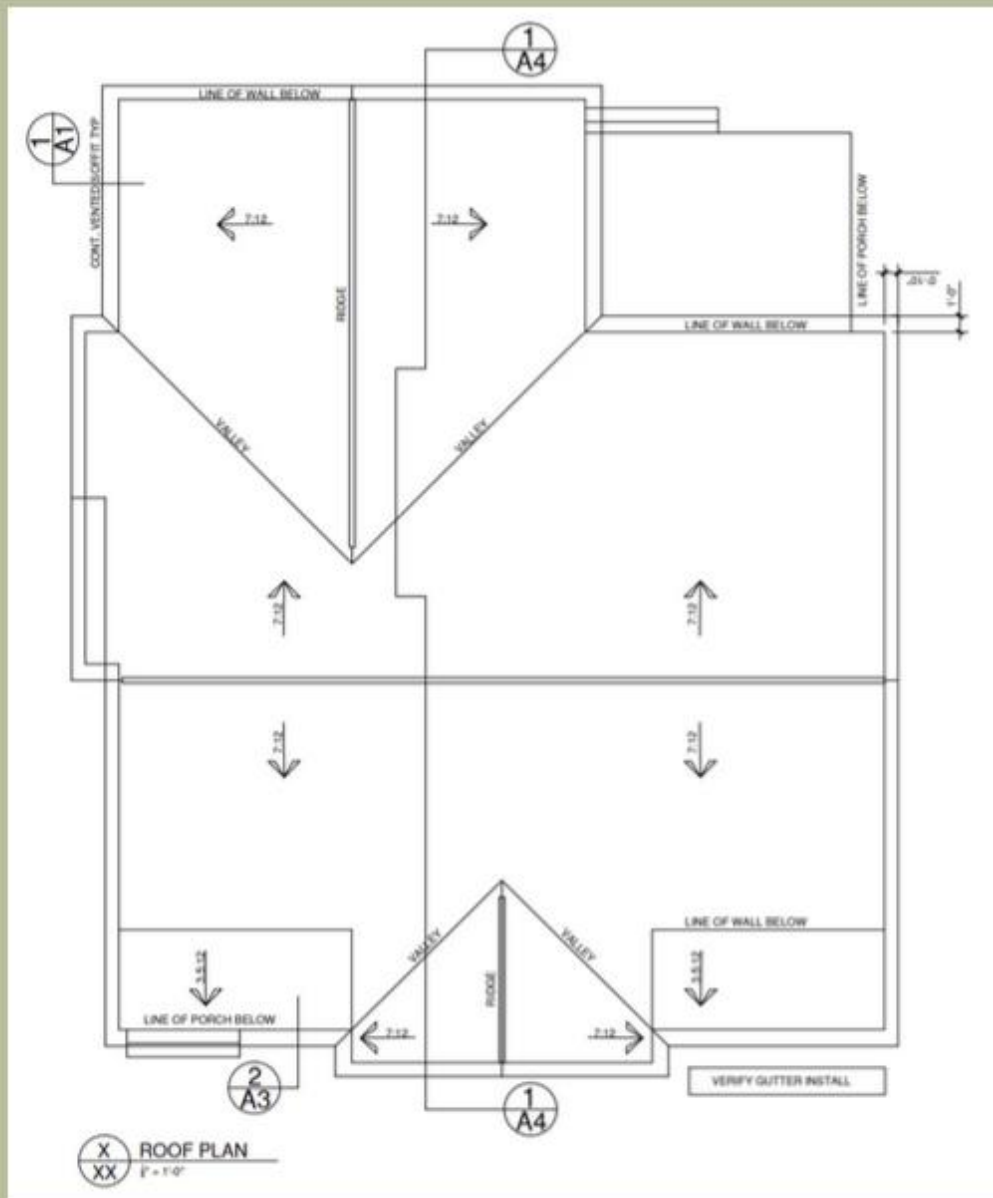
Wall Sections

PROJECT 08 PLANS

Floor Plan



Roof Plan



PART 4
FINAL CAPSTONE
PROJECT

ISLAND RESORT PROJECT

USED:

- SKETCHUP
- REVIT
- AUTOCAD
- LUMION
- TWINMOTION



PROJECT OVERVIEW

LUXURIOUS ISLAND RESORT
WITH RESIDENTIAL UNITS:

- STUDIO APARTMENTS
- 1 BEDROOM UNITS
- SMALL BOUTIQUE HOTEL
WITH 1 BEDROOMS
- 2 BEDROOM UNITS
- 3 BEDROOM SUITES

FEATURED AMENITIES

- BEACH RESORT WITH CABANAS
AND OUTDOOR BAR
- RIVER, POND, WATERFALL, AND
OTHER WATER FEATURES
- KAYAK AND BOAT RENTAL
- HIKING TRAILS, ZIPLINE
- OPEN AMPHITHEATER
- LOCAL ISLAND TRANSIT

CONCEPT DESIGN:

This island resort was designed with a specific theme in mind: The Ocean Floor. Various structures on the island reflect this theme, such as residential areas and commons building.

PROJECT TIMELINES:

This project was a month long endeavor. The first week was spent sketching various ideas. The second week was spent 3D modeling the buildings using Sketchup, AutoCAD, and Revit. The third week was spent creating the site and adding landscape features. The fourth and final week was spent working on rendering and animating the island resort and its different features.

LUXURY BEACH CABANAS



WATER FEATURES



WATERFALL WITH WALKING TRAIL

INFINITY POOL

BOATING DOCK

RIVER FOR FISHING AND KAYAKING



NATURE AND WILDLIFE ACTIVITIES



HIKING TRAILS



WILDLIFE VIEWING AREA AND POND



FLOWER GARDEN

ADVENTURE AND ATHLETICS



ZIPLINE AND JUNGLE GYM

SPORTS CENTRE WITH
SOCCER FIELD,
TENNIS/PICKLEBALL
COURTS, SWIMMING
POOL, MINIGOLF, AND
RUNNING TRACK



OTHER AMENITIES

WELCOME CENTER AT
ENTRANCE OF ISLAND FOR
TOURIST INFORMATION, TOUR
BOOKINGS, ETC.



24 HOUR ISLAND BUS
TRANSIT SERVICE FOR
FREE EASY ACCESS
AROUND ISLAND

LUXE RESORT & SPA COMMONS BUILDING

This luxury commons building serves as a vibrant hub of activity and relaxation for the island's guests. It features a full suite of high-end amenities, including a spa, pool, fitness center, and a serene yoga room offering guided classes. Guests can also enjoy a lively game room, refined dining experiences, and access to well-appointed conference rooms and work lounges designed for both productivity and comfort.

The main building embraces the island's "Ocean Floor" theme with a striking design that mimics the form of a wave, creating a dynamic and immersive architectural statement.



STARFISH HOTEL

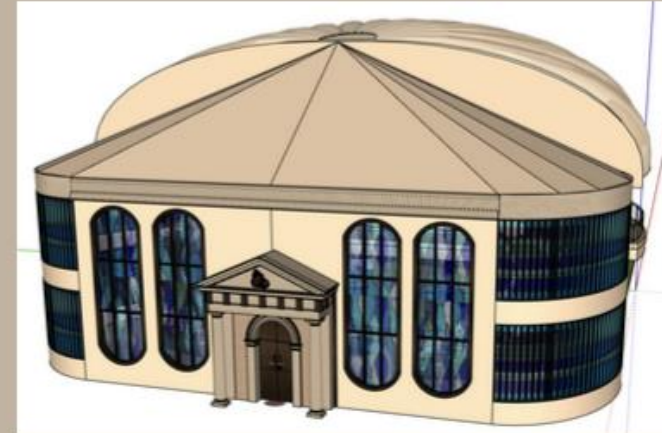
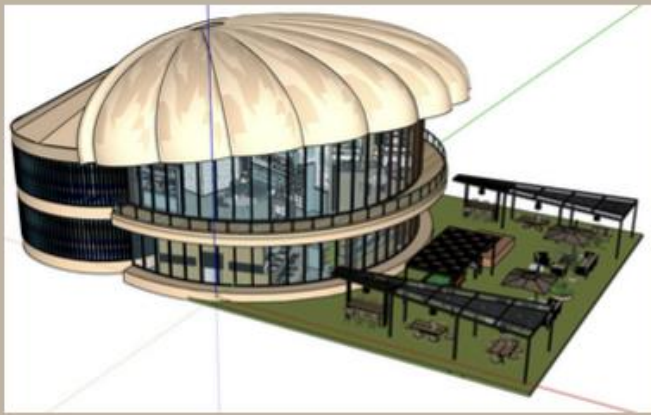
This starfish-shaped hotel brings the “Ocean Floor” theme to life with a design that’s both playful and luxurious. Each of the five arms contains a one-bedroom suite—three with two queen beds and two with a king. The first floor features a spacious lobby and a variety of amenities in each arm, including a game room, gym, pool, restaurant, and a bar/lounge. A massive central fishtank stretches through all floors, filling the space with vibrant saltwater life. On the second floor, guest rooms offer fishtank views from the hallway, while the third floor includes guest amenities like a laundry room.



3 BEDROOM SUITE - CLAM SHELL

The most luxurious accommodation on the island is the three-bedroom Clam Shell Suite, designed to capture the feeling of being under the sea. Upstairs, it features three king bedrooms, each with a private bathroom, minibar, desk, seating area, and balcony.

On the first floor, guests are greeted by a foyer with blue stained glass windows that cast a serene, oceanic light. This level includes a full kitchen and dining area, a spacious living room with a conversation pit, and a laundry area. Outside, the private backyard offers outdoor dining, a hot tub, pool table, and fire pit—ideal for unwinding in comfort and style.



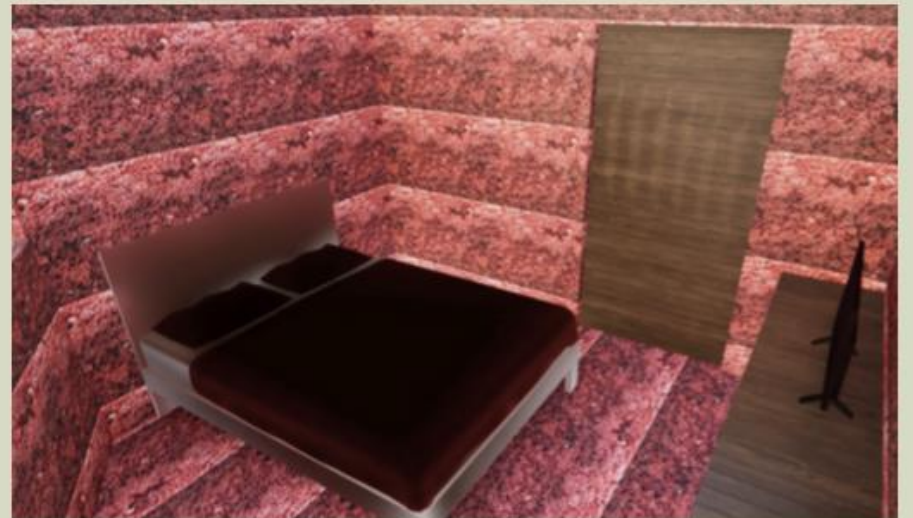
SNAIL SHELL STUDIO APARTMENT



OYSTER SHELL 1-BEDROOM UNIT



CORAL 2-BEDROOM UNIT



THANK YOU!



Link to view Island Resort Animation

Video:

[https://youtu.be/qXCQ5Sww_1E?](https://youtu.be/qXCQ5Sww_1E?si=Yf_BQgL2vPBXaey-)
[si=Yf_BQgL2vPBXaey-](https://youtu.be/qXCQ5Sww_1E?si=Yf_BQgL2vPBXaey-)