

THE ROOTS



the **ROOTS** is a **transitional residential safe haven for foster teens** between the ages of 14-18. These teens are often placed in various foster homes with 40% of these children being moved to 4 different homes between the ages of 13-18. These children suffer from many different **mental health issues** and often lack the resources needed to improve their physical and mental situations. These health issues can stem from the instability of a place to call home and the changing environments of schools and friendships.

the building is to act as a **bridge between different social classes by promoting mental health** for all male and female teenagers in Atlanta and the greater area. the ROOTS will provide a safe environment for the residents and other youth to express themselves and grow mentally strong with varying basic life skill building programs.

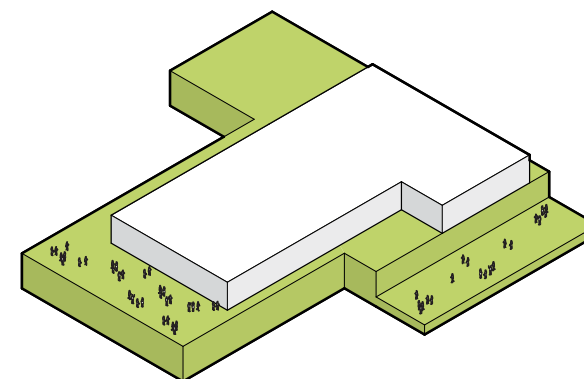
THROUGH 'MOVEMENT' AND THE ARTS, CAN ONE EXPERIENCE LIBERATION FROM DISORDER WITHIN THEIR DAILY LIFE AND SPACES IN THEY INHABIT



**FOSTER TEENS
(AGE: 14-18)**

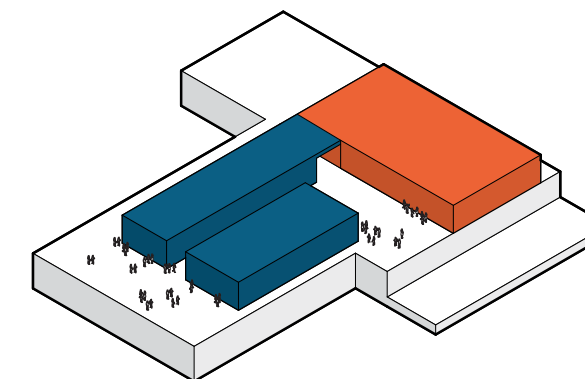


**TEENS with
MENTAL HEALTH
PROBLEMS**



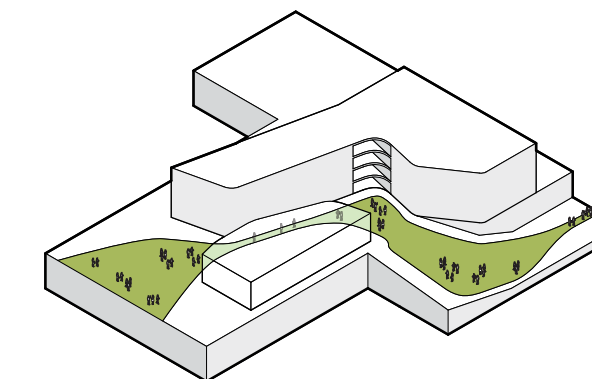
SITE ANALYSIS

LOCATED IN BUCKHEAD, THE SITE PROVIDES A UNIQUE TOPOGRAPHY LOCATED WITHIN A DENSE, URBAN ENVIRONMENT. A 14' TALL RETAINING WALL ON THE SOUTHERN EDGE OF THE SITE DIVIDES IT INTO A LARGE UPPER AREA AND A SMALLER LOW PORTION.



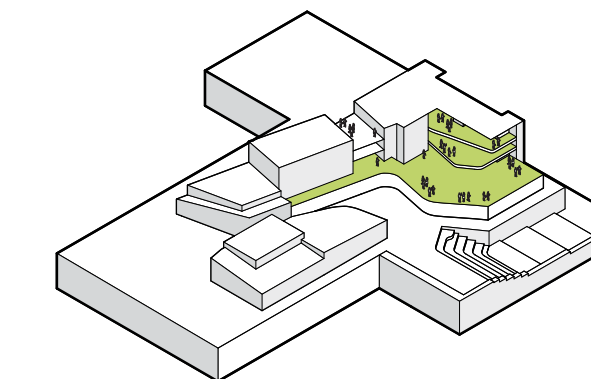
PROGRAMMATIC DISTRIBUTION

IN AN EFFORT TO PROMOTE PRIVACY, CARE, AND COMMUNITY WITHIN THE RESIDENTS, THE MAIN LIVING AREAS HAVE BEEN PUSHED TOWARDS THE EASTERN BORDER OF THE SITE. AN EMPHASIS ON YOUTH REPRESENTATION WITHIN THE CREATIVE ARTS IS STRENGTHENED THROUGH THE PROGRAMMATIC POSITION OF THE BLACK BOX THEATER, ART GALLERY, AND STUDIOS BEING SITUATED ON THE WESTERN, MORE PUBLIC FACING SIDE.



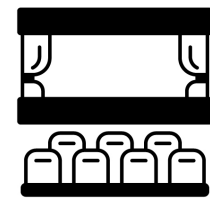
PATH+

THE SITE'S LOCATION FUNCTIONS AS A BARRIER BETWEEN LENOX MALL AND MARIE SIMS PARK. WITH THE CITY'S FUTURE MASTER PLAN INCLUDING A CULTURAL LOOP ON THE WEST EDGE OF THE SITE, AN ORGANIC PATH HAS BEEN CARVED FORMING A NATURAL RELATIONSHIP BETWEEN THE LOOP, MALL, AND ONLY PARK WITHIN THE CITY.

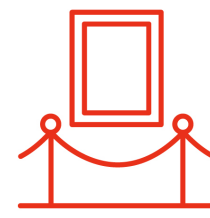


GREEN-SPACE CREATION

THE PUBLIC PATH HAS BECOME A PARK CONTAINING POCKET GARDENS, OUTDOOR GALLERY SPACE, AND A LARGE, SHADED AMPHITHEATER. SIMILARLY TO THE PATH, THE RESIDENTIAL PORTION IS CARVED AWAY REVEALING 3 TIERS OF PRIVATE GARDENS.



BLACK BOX THEATER



ART GALLERY



EXTENSION OF CULTURAL LOOP

In order to integrate our youth not just with their peers we have created a bridge between the public and private by using the **cultural loop extension and arts initiative of Buckhead**. The goal of emphasizing the creative arts program is to provide a sense of self expression for our students and for them to be able to physically and emotionally connect and interact with the community.

Keeping that in mind our main programs we provided our users include **art studios, a rehearsal and performance space, and multiple flexible community and green space** in order for them to connect with nature and other residents. Our building also serves the local residents and students of Buckhead with a counseling, health, and tutoring center.



DRAMA & SET DESIGN



ART STUDIOS



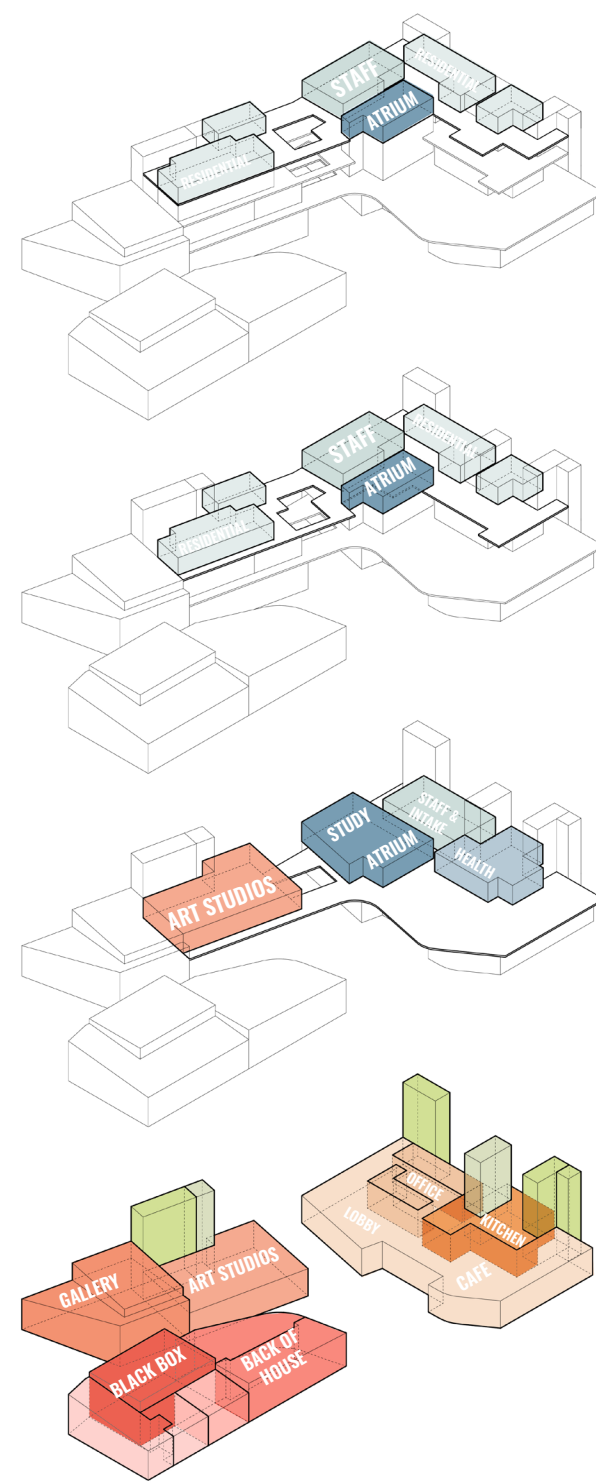
COUNSELING & TUTORING CENTER



COOKING



GARDENING

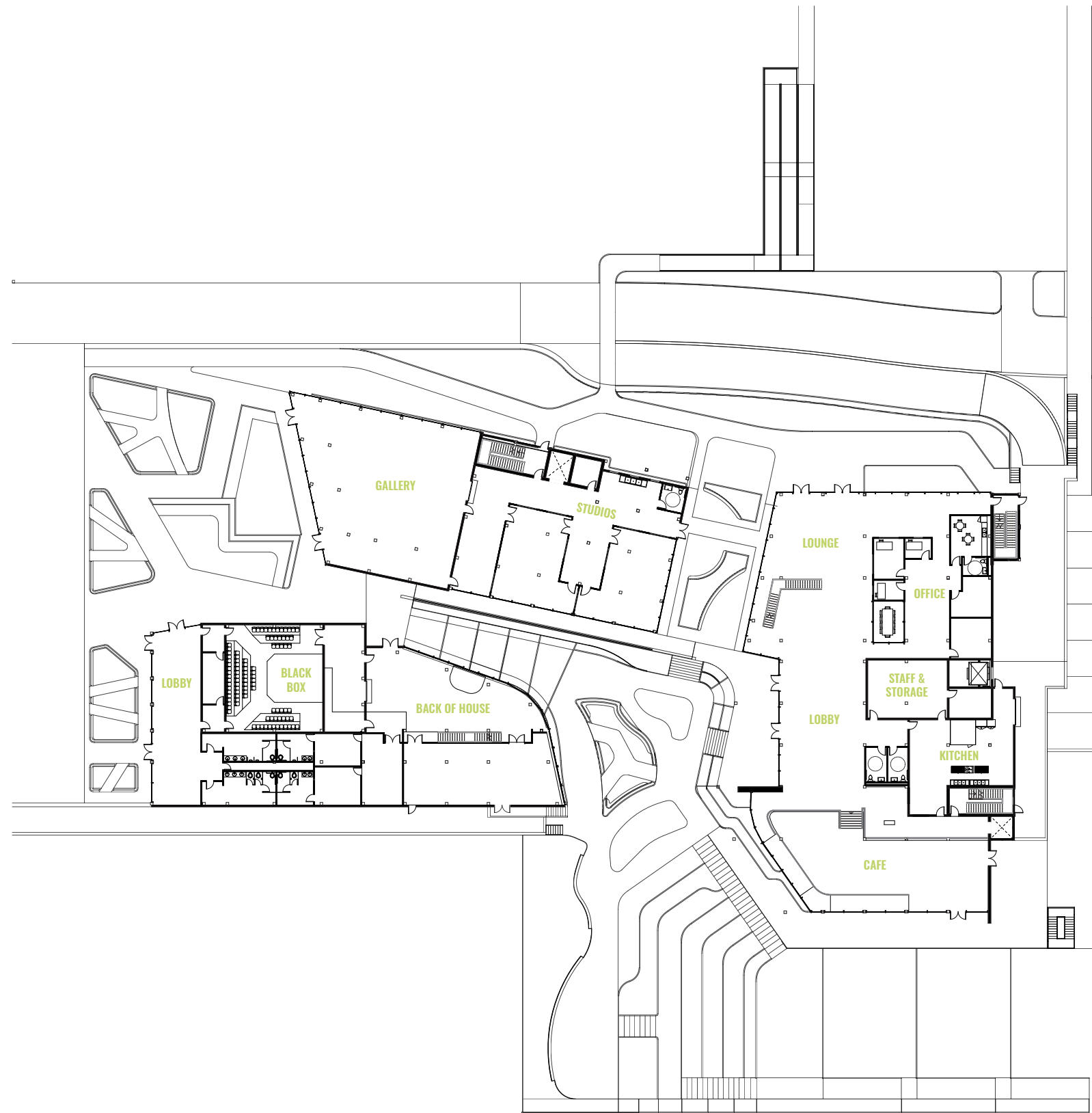


Our building is divided into **two main forms** with the living and art programs located in one mass and the black box and performance art support spaces located in the other. The programs on the first floor is divided into three different masses with the **eastern building allocated strictly for students**. The second, third, and fourth floors have **exterior circulation paths** and each program is connected through a series of **exterior porches used for flexible gathering spaces**. The residents floors also are all vertically connected through a large **atrium** for studying and lounging. The buildings are all unified along the **green path** that eventually becomes a large **amphitheater and park space for the community and residents**.

PLAN_01

AREAS

- CAFE | 3,600 SQ. FT.
- KITCHEN | 2,000 SQ. FT.
- LOBBY/ LOUNGE | 5,100 SQ. FT.
- OFFICES | 1,400 SQ. FT.
- ART STUDIO | 4,150 SQ. FT.
- ART GALLERY | 3,900 SQ. FT.
- BACK OF HOUSE | 4,250 SQ. FT.
- BLACK BOX | 1,600 SQ. FT.
- THEATER FRONT LOBBY | 1,400 SQ. FT.



PLAN_02

AREAS

- STAFF | 1,100 SQ. FT.
- IN-TAKE | 800 SQ. FT.
- LOUNGE/ STUDY | 2,850 SQ. FT.
- HEALTH SUITE | 2,350 SQ. FT.
- ART STUDIO | 3,800 SQ. FT.



PLAN_03

AREAS

- X2-3 BEDROOM SUITE | 800 SQ. FT.
- X5-2 BEDROOM SUITE | 650-750 SQ. FT.
- STAFF | 1,200 SQ. FT.
- LOUNGE | 400 SQ. FT.



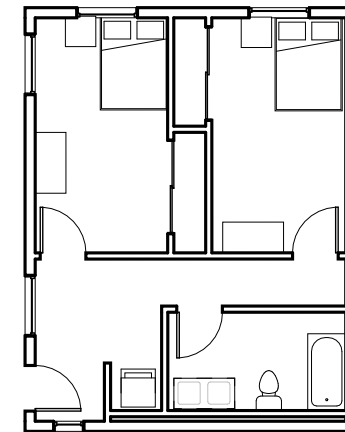
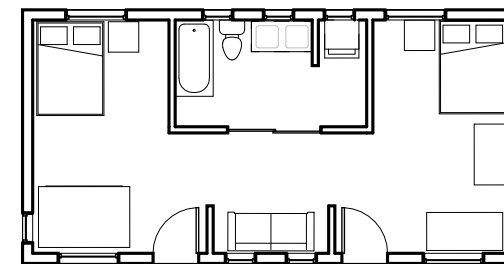
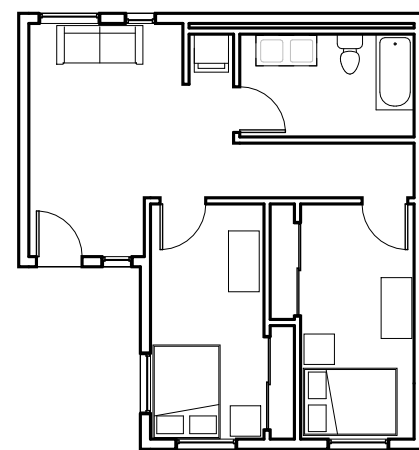
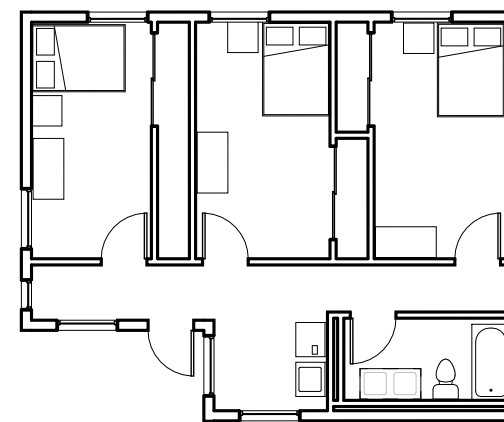
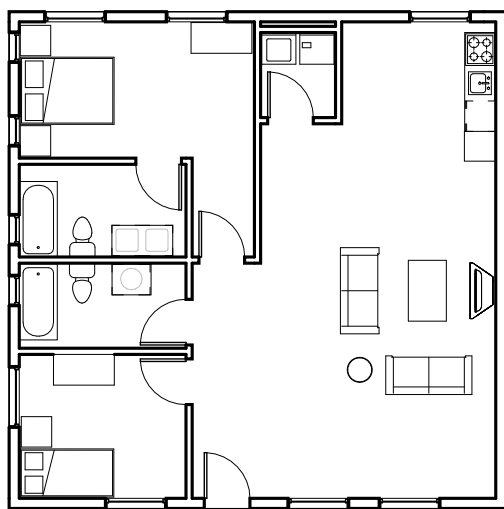
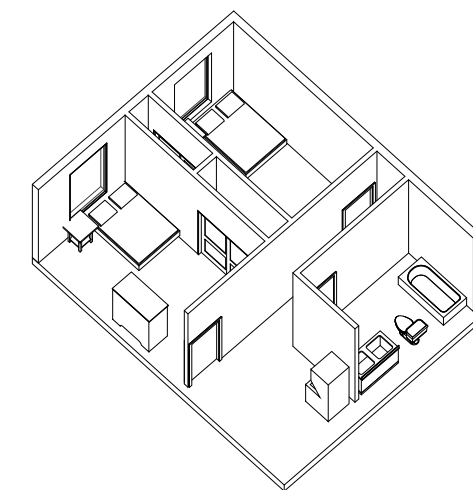
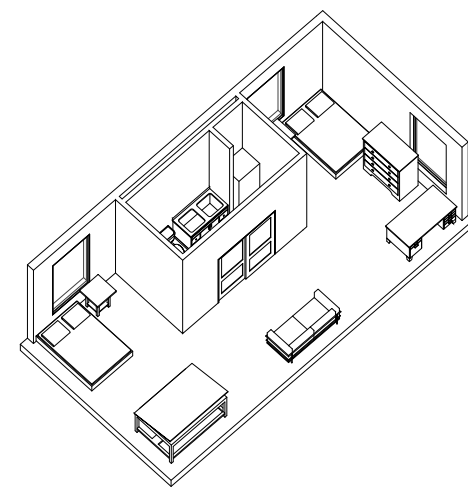
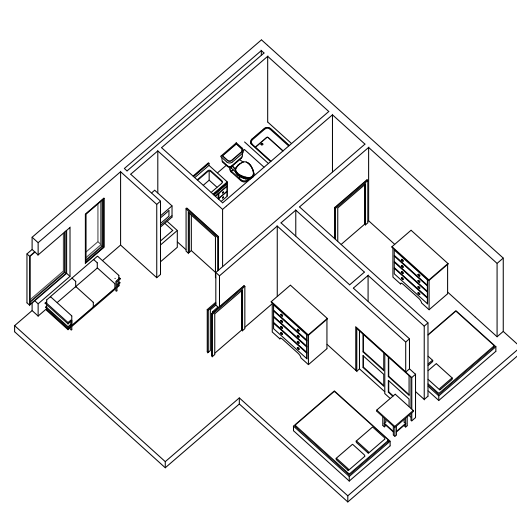
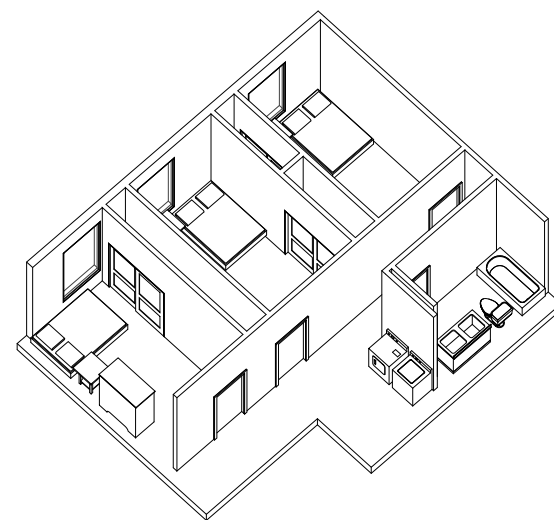
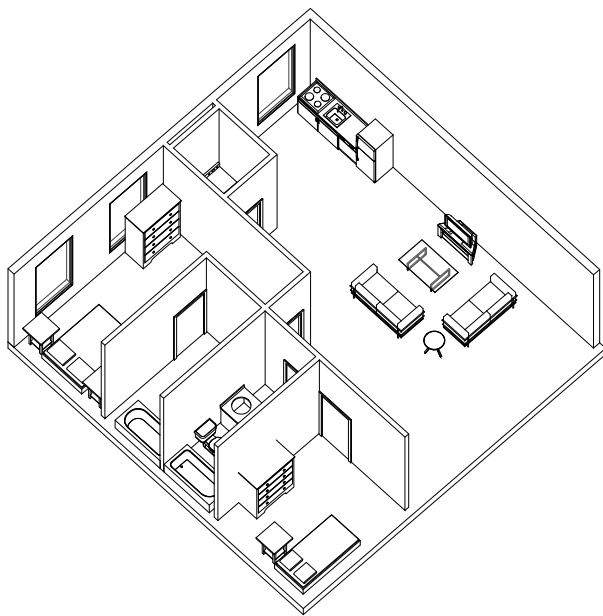
PLAN_04

AREAS

- X2-3 BEDROOM SUITE | 800 SQ. FT.
- X5-2 BEDROOM SUITE | 650-750 SQ. FT.
- STAFF | 1,200 SQ. FT.
- LOUNGE | 800 SQ. FT.



UNIT TYPES



STAFF

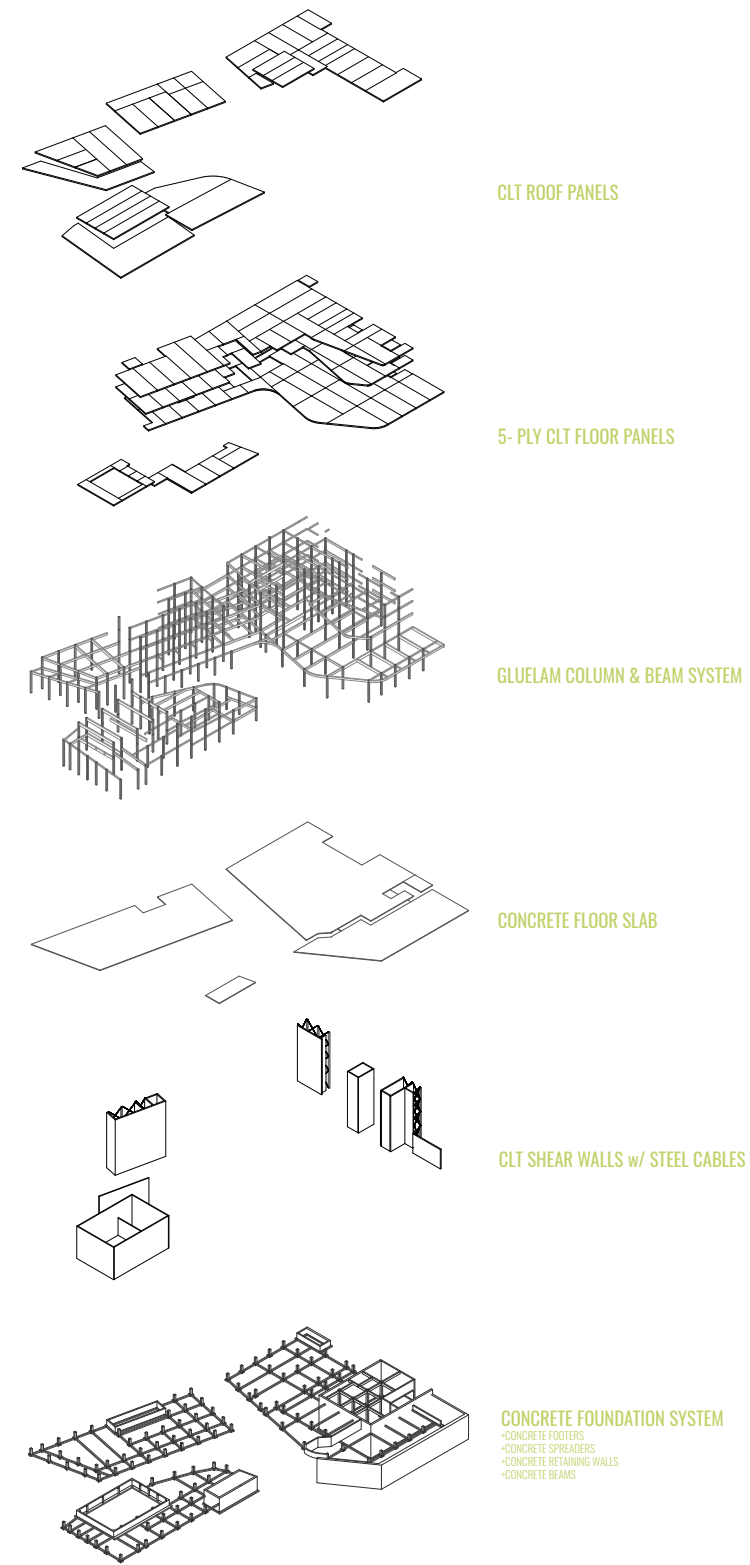
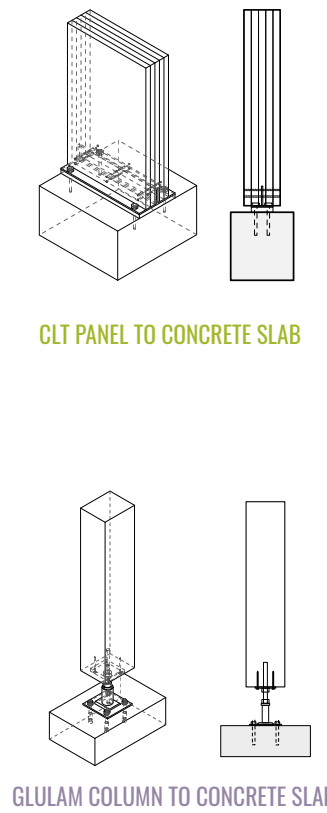
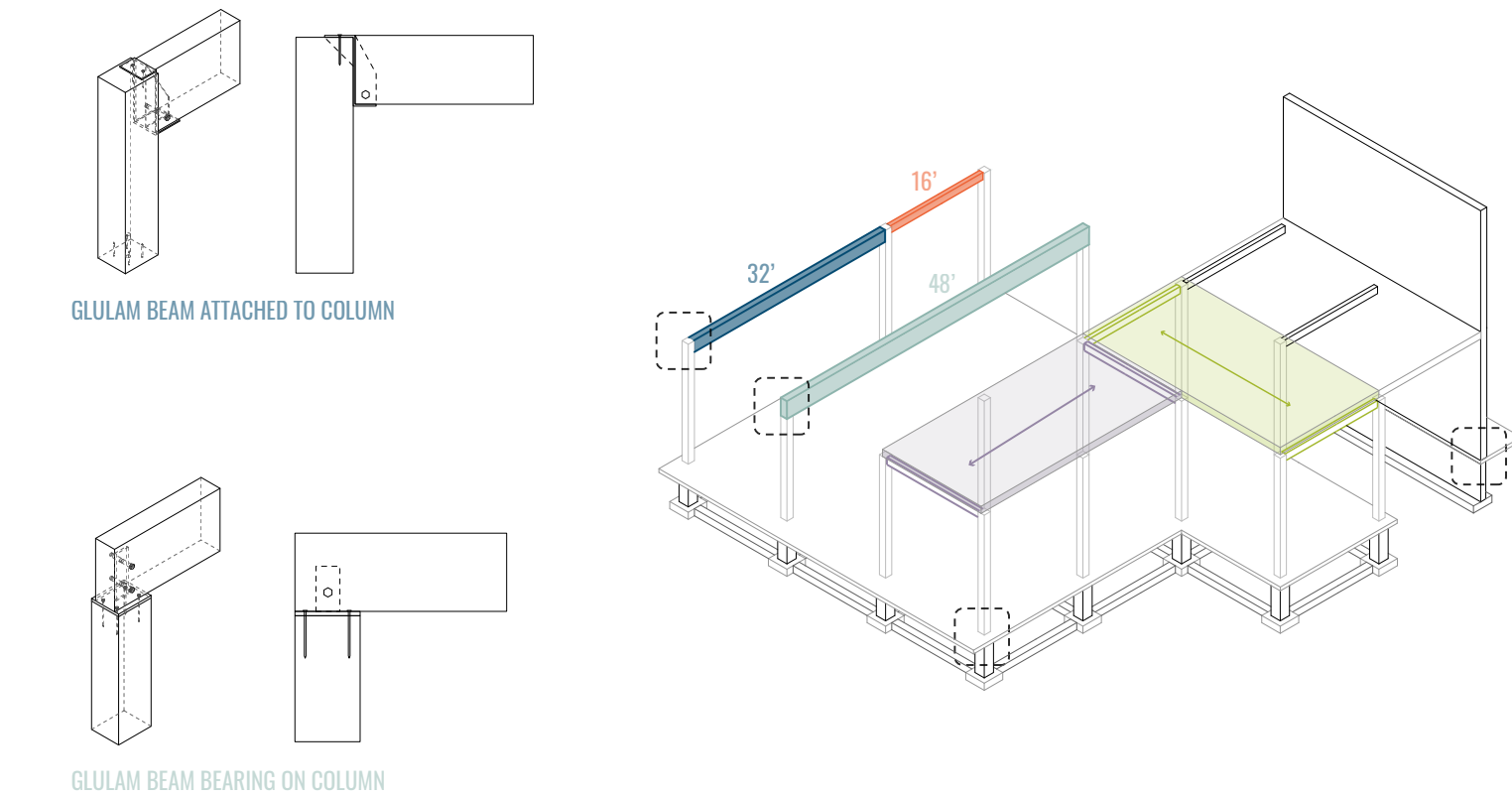
THREE BEDROOM

TWO BEDROOM



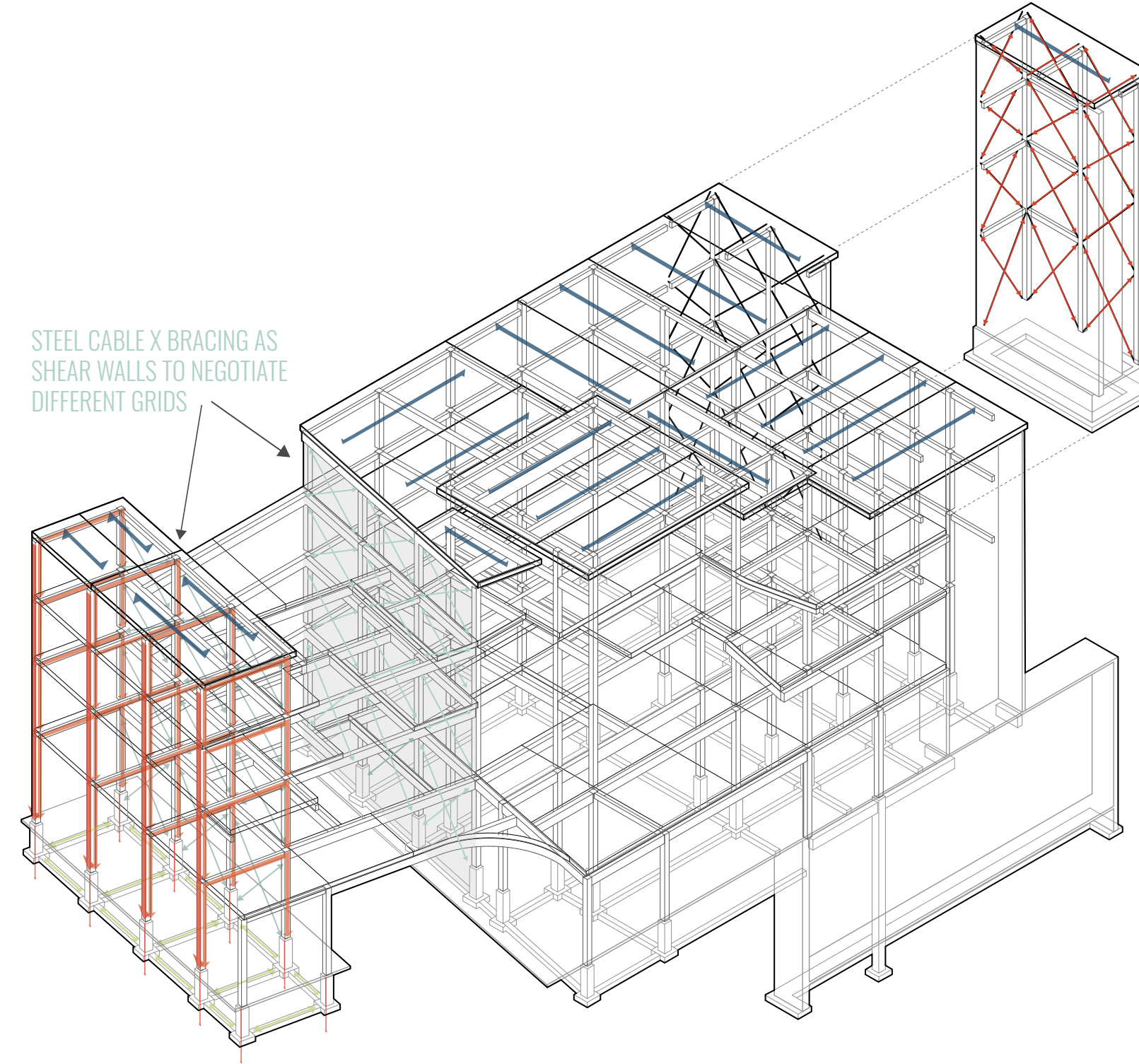
STRUCTURAL SYSTEMS

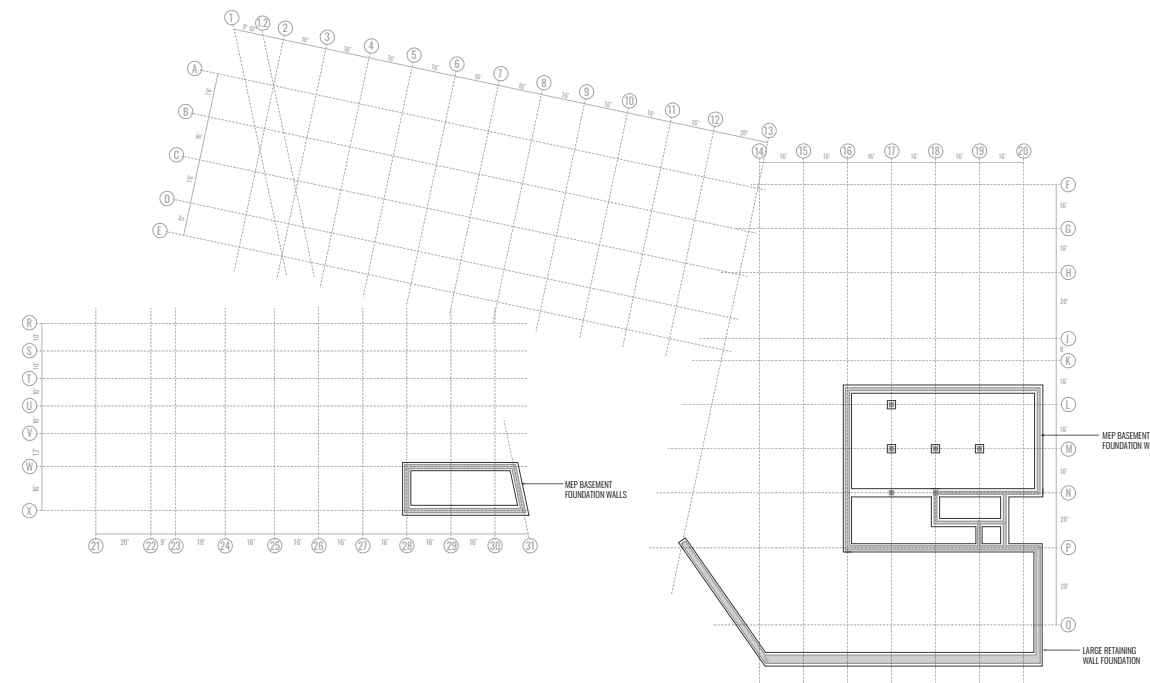
Our building is constructed of **mass timber** using **glulam columns and beams**, and **CLT flooring**. We established a **16' grid system** with glulam beams that reach a depth of 3' and a length of 48'. Our first floor is a poured concrete foundation system and our wooden columns are lifted on knife plates to be able to attach to the ground level. We chose CLT paneling system for their inherent strength in the long direction and the ability for them to be prefabricated for our cantilevered porches. The **prefabrication** qualities of mass timber buildings also **cut down on construction time and cost**.



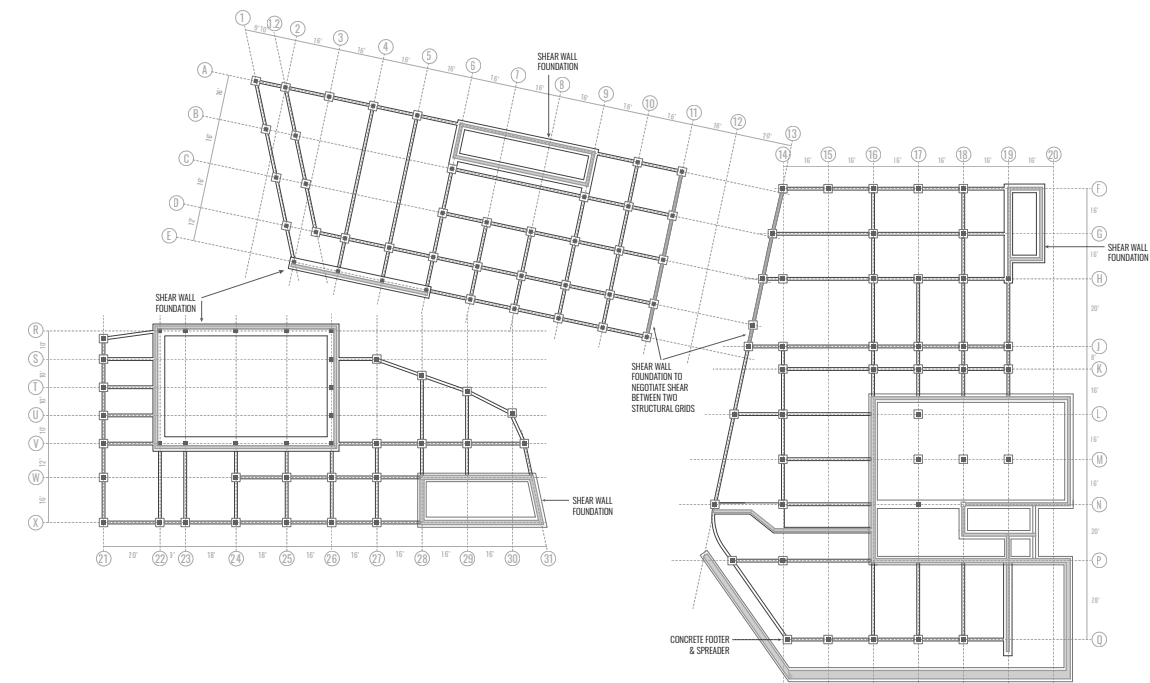
EXPLODED STRUCTURAL AXON

LOAD TRACING

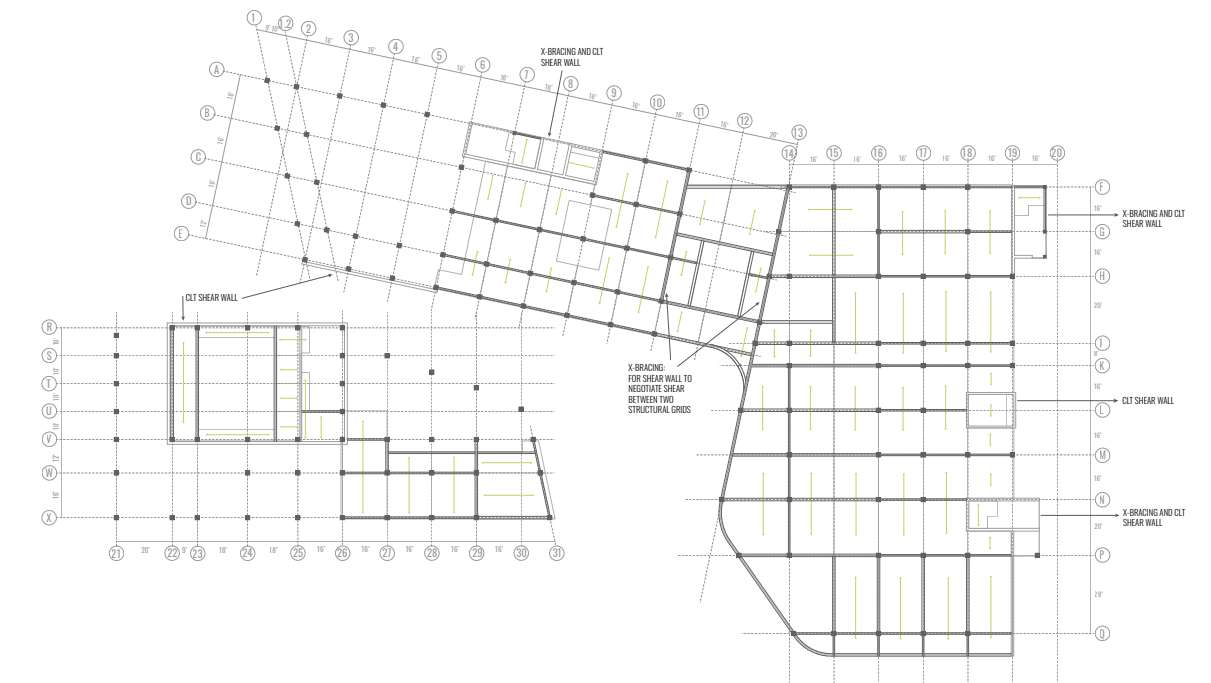




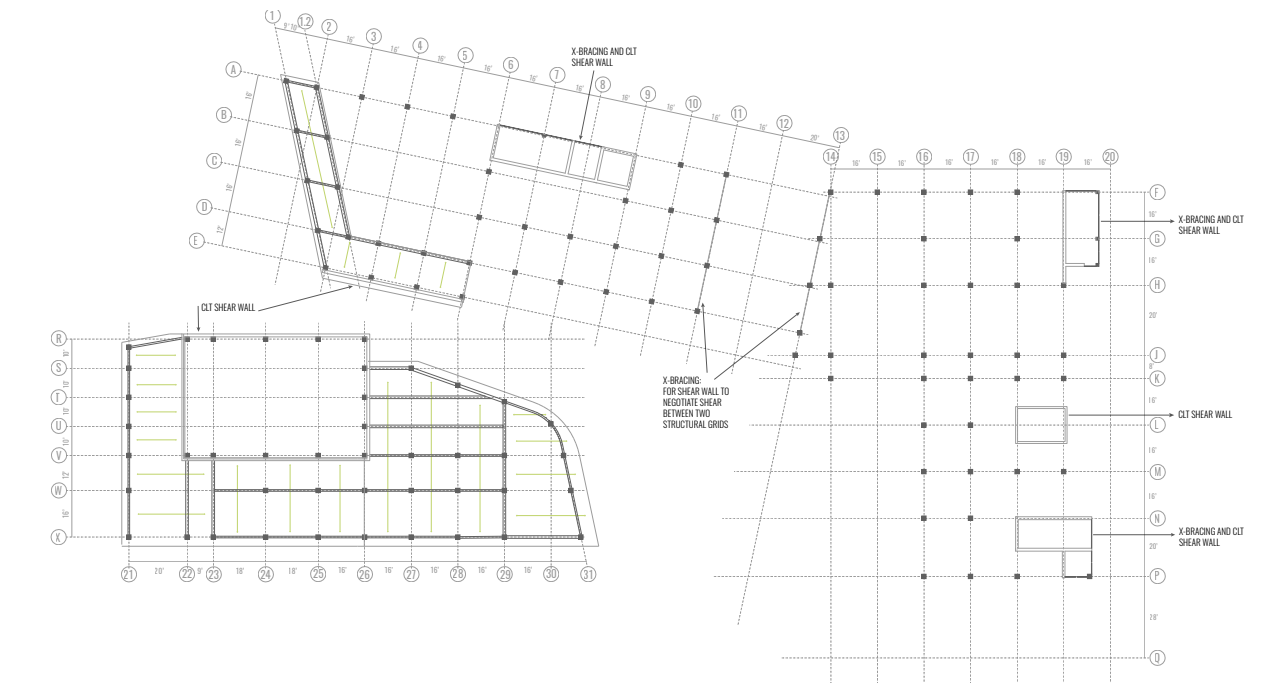
FOUNDATION FRAMING PLAN 1



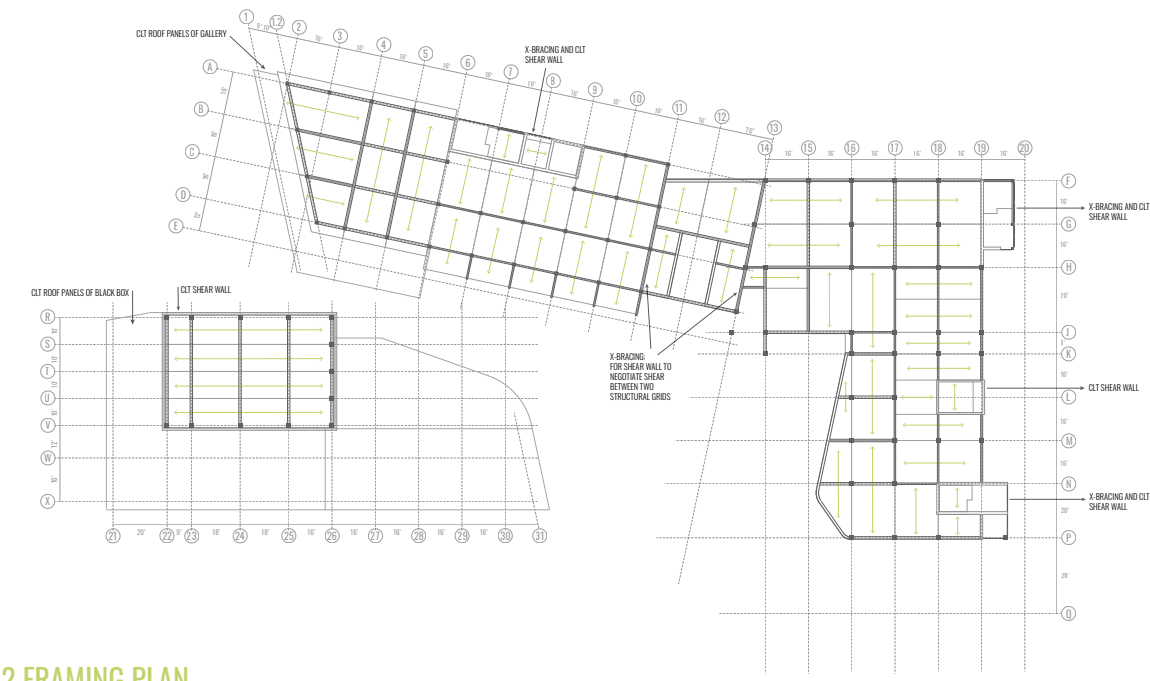
FOUNDATION FRAMING PLAN 2



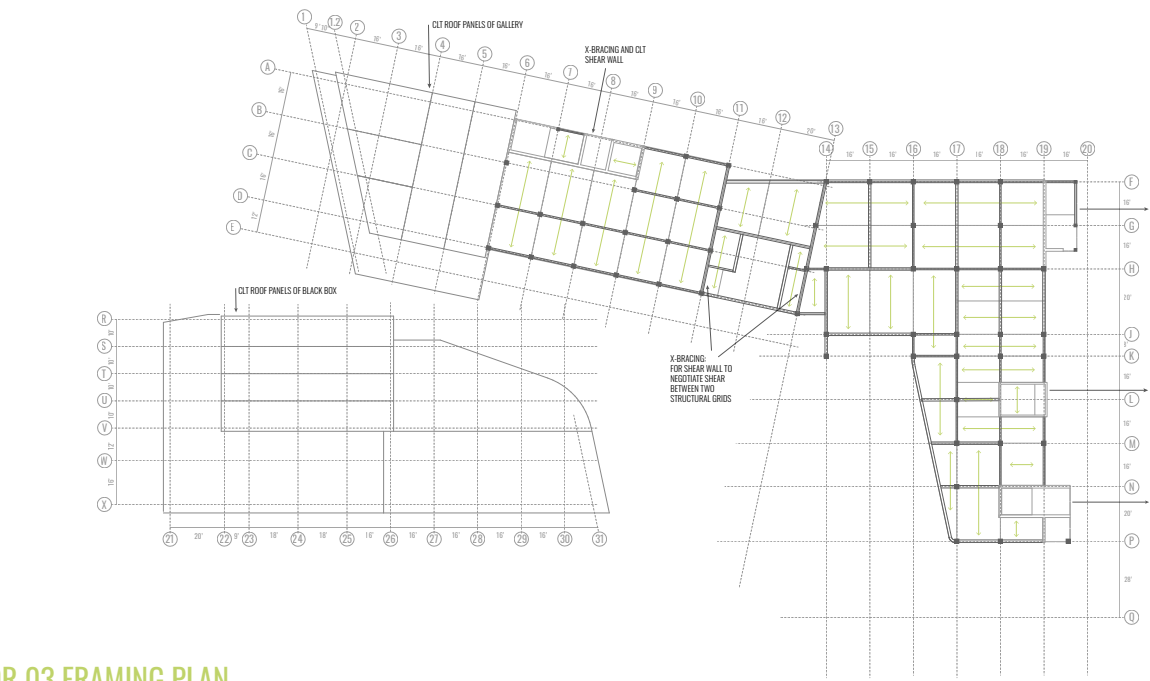
FLOOR 01 FRAMING PLAN



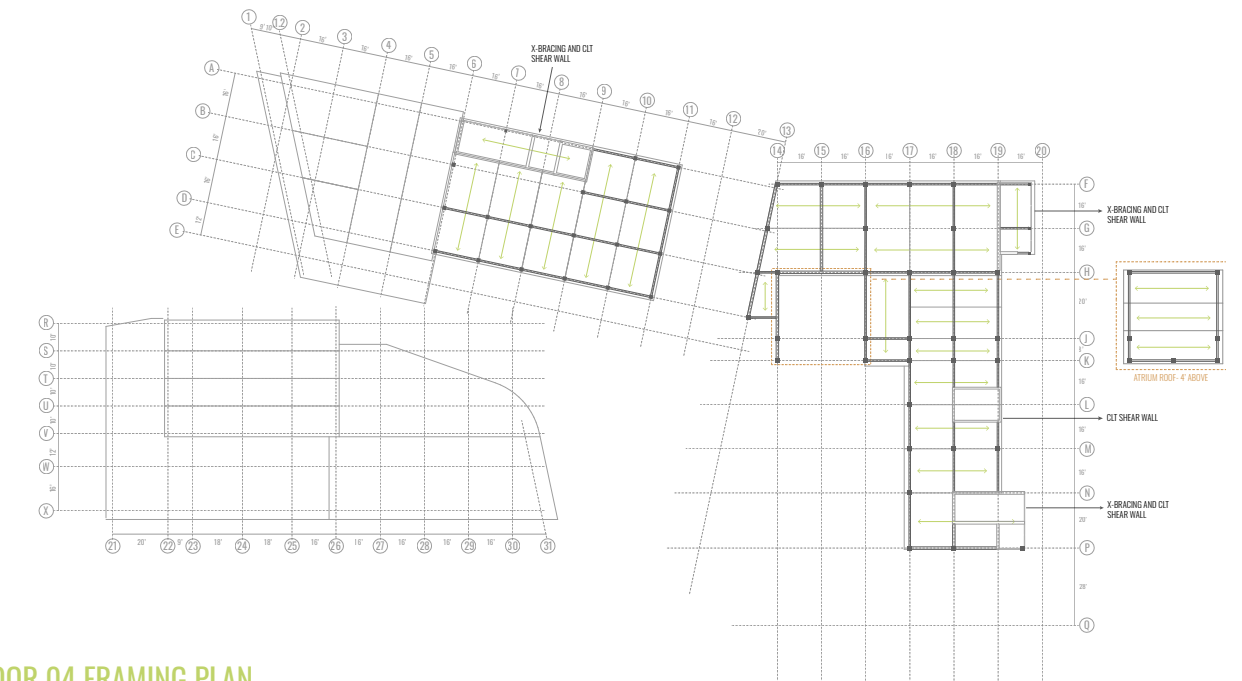
FLOOR 1.5 FRAMING PLAN



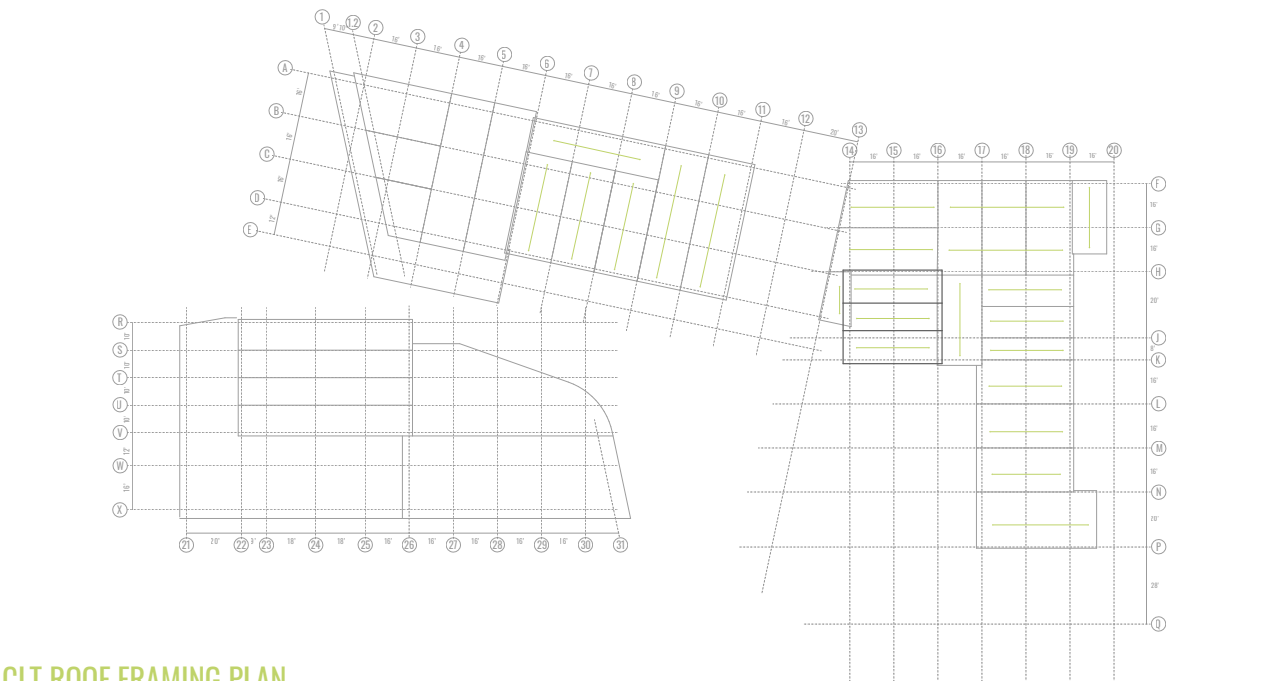
FLOOR 02 FRAMING PLAN



FLOOR 03 FRAMING PLAN



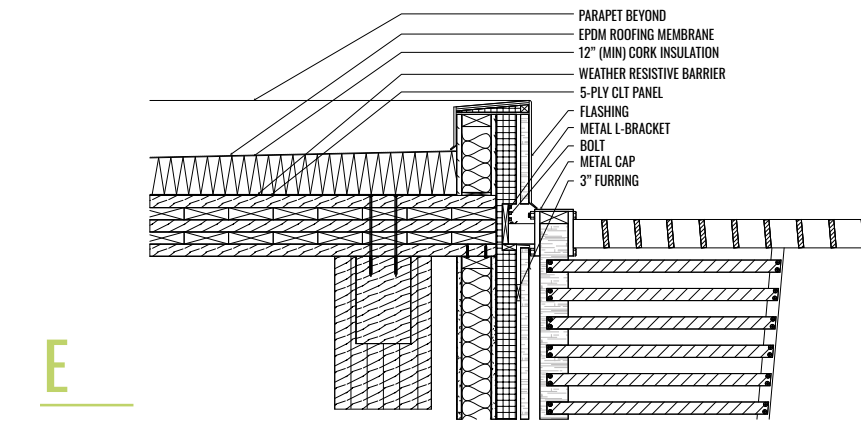
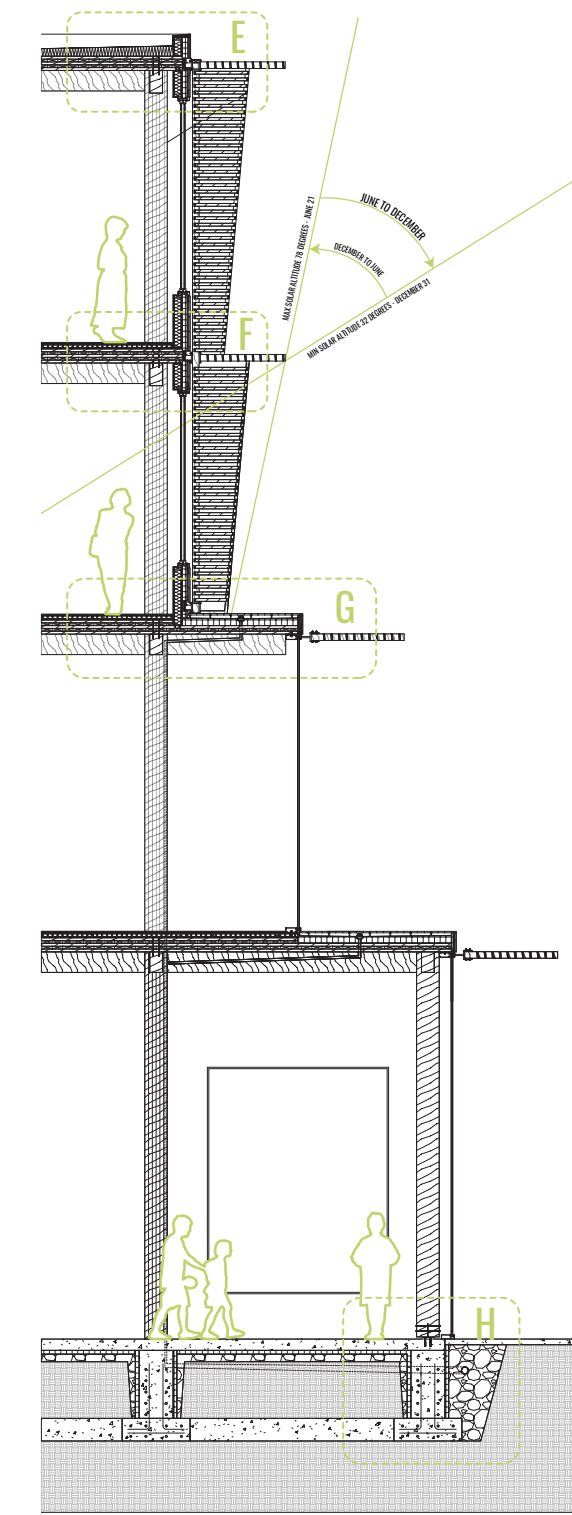
FLOOR 04 FRAMING PLAN



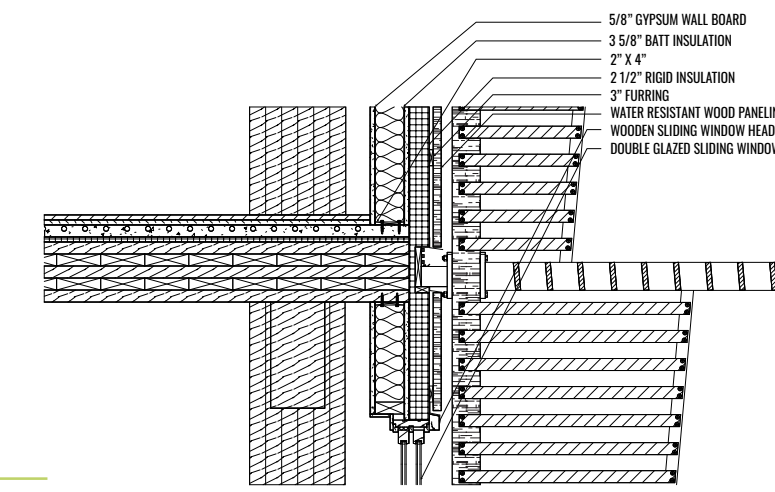
CLT ROOF FRAMING PLAN



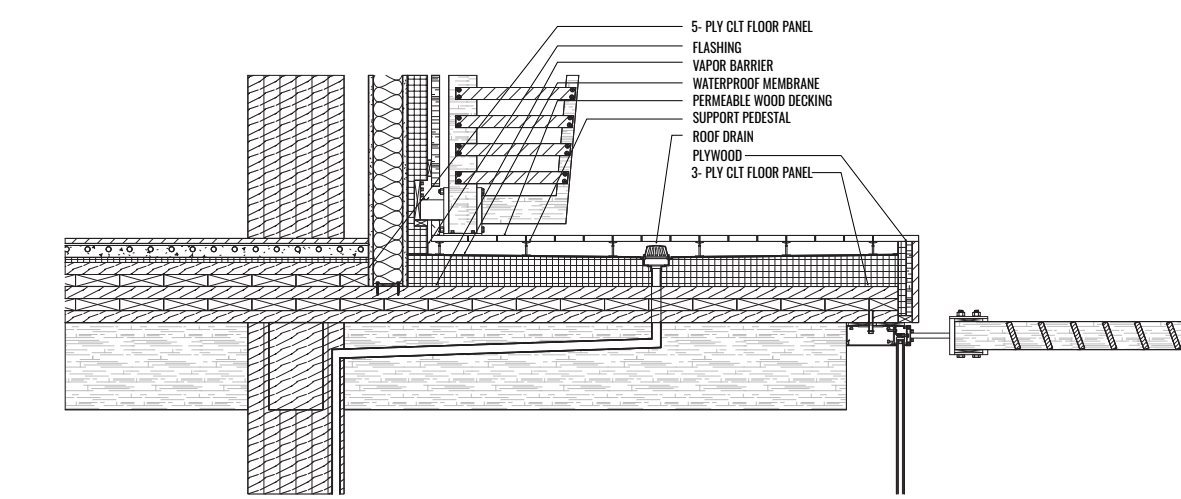
UNIT & STUDIOS



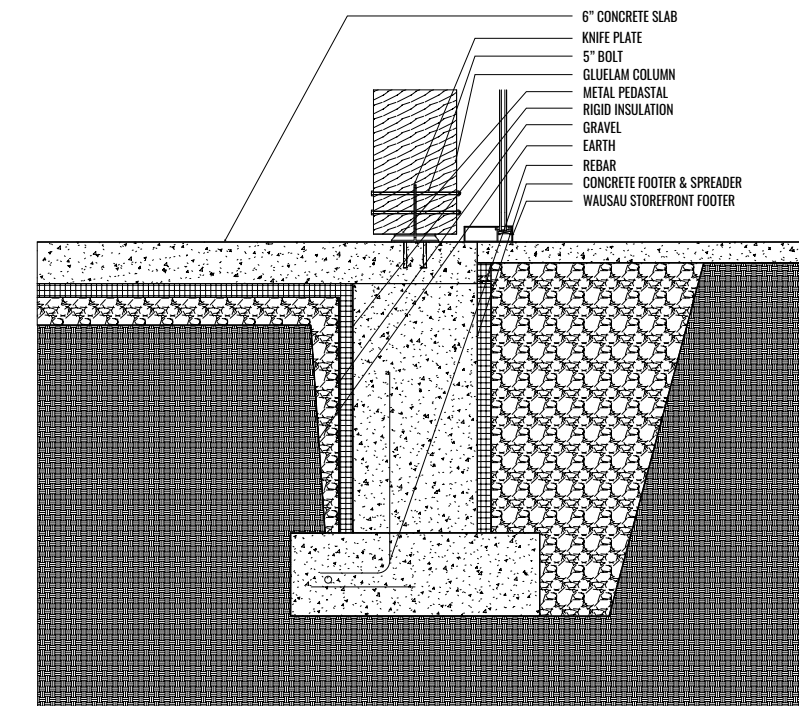
E



F

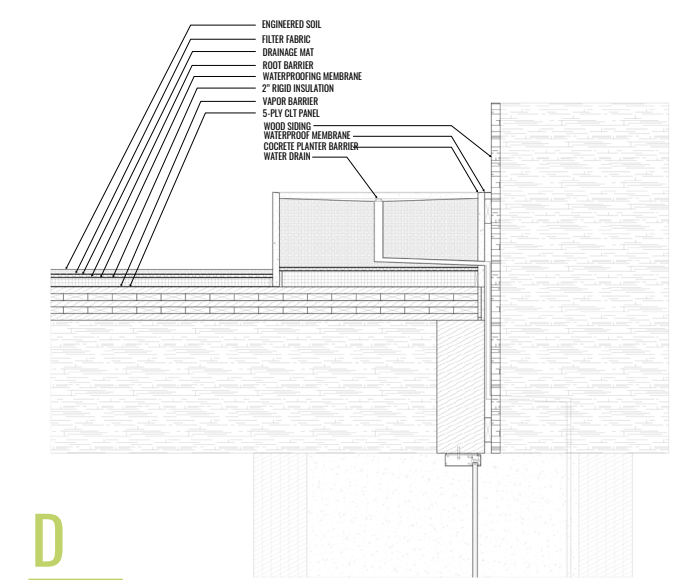
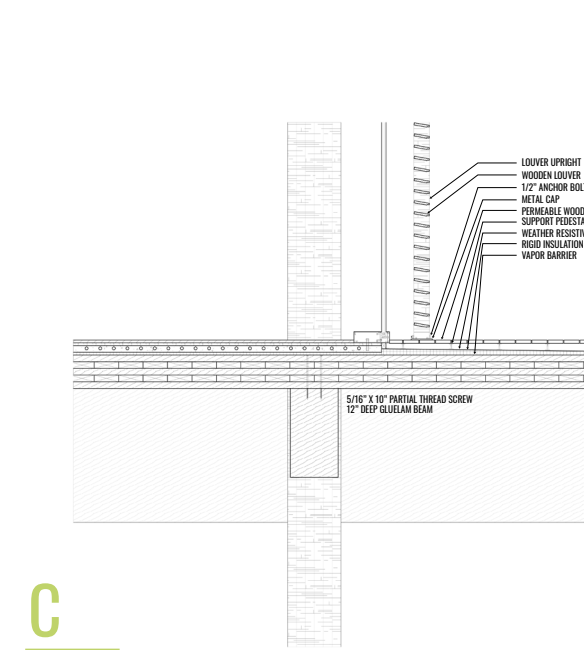
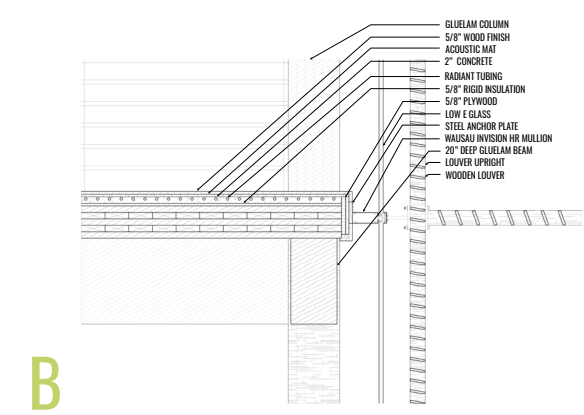
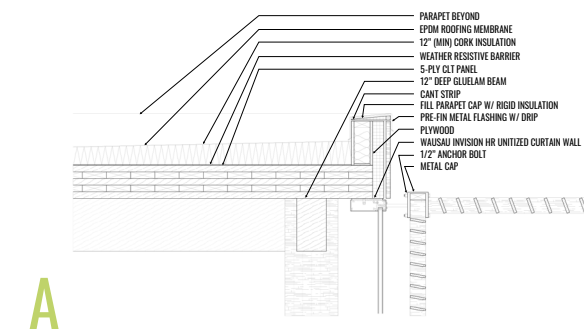
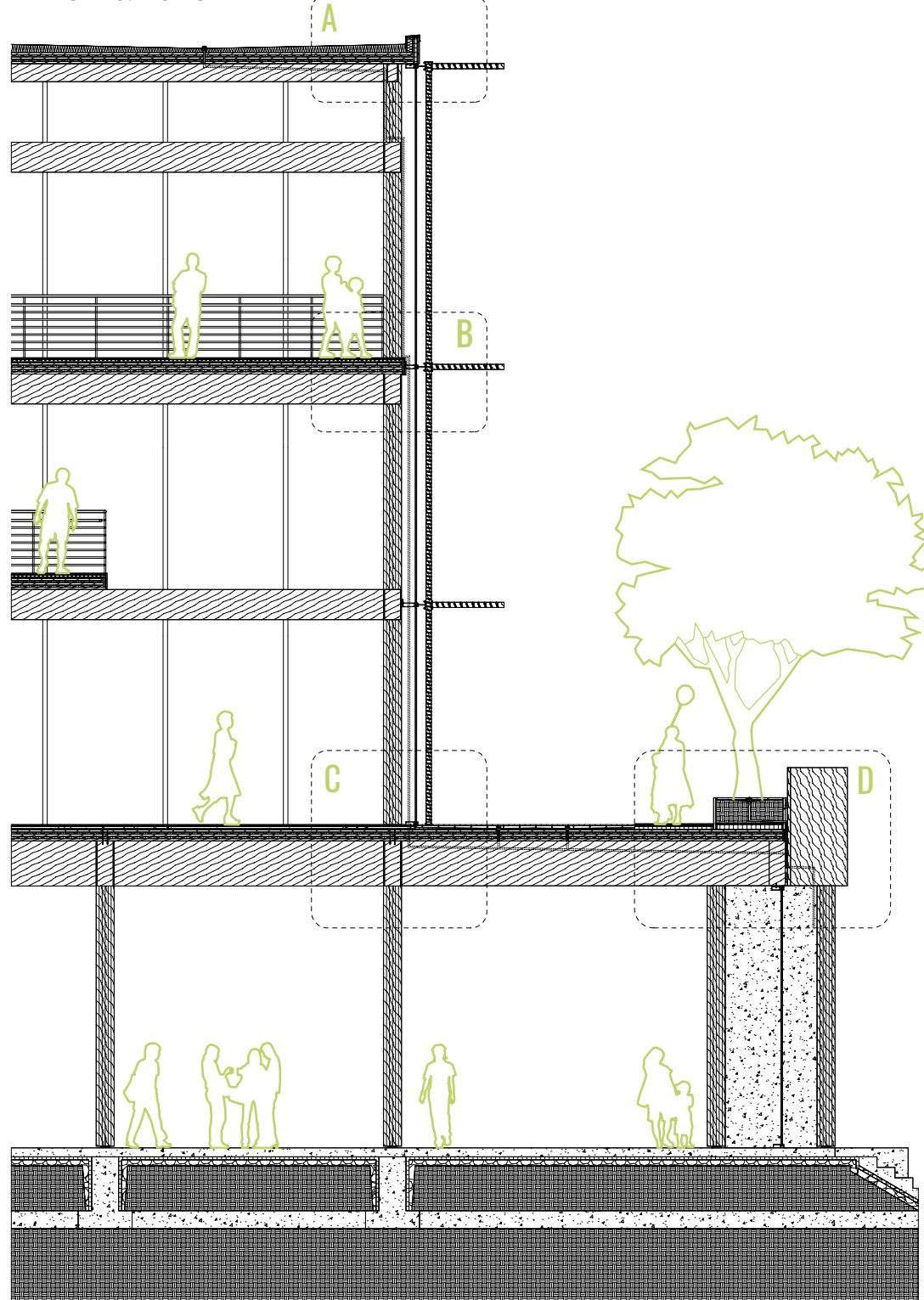


G



H

ATRIUM & PORCH



SOLAR
 12,300 SQ. FT. OF SOLAR PANELS
 20 DEGREE TILT, 220 DEGREE AZIMUTH
 5,539 KWH A YEAR

PASSIVE VENTILATION & VEGETATION
 THE DESIGN DECISION OF EXTERIOR CIRCULATION ALLOWS FOR OPERABLE AND AUTOMATED WINDOWS TO BE PLACED ON ALL WALLS AND ON THE ATRIUM. THIS ALLOWS FOR PASSIVE COOLING AND VENTILATION. VEGETATION IS BROUGHT TO THE PRIVATE RESIDENT FLOOR LEVEL TO PROVIDE FOR SHADE AND COOLING DURING THE SUMMER MONTHS.

WATER
 37,300 SQ. FT. OF RAINWATER ROOF COLLECTION
 47.8 INCHES OF RAIN ANNUALLY
 1,110,700 TOTAL GALLONS OF RAINFALL COLLECTION

GEOTHERMAL ENERGY SOURCE

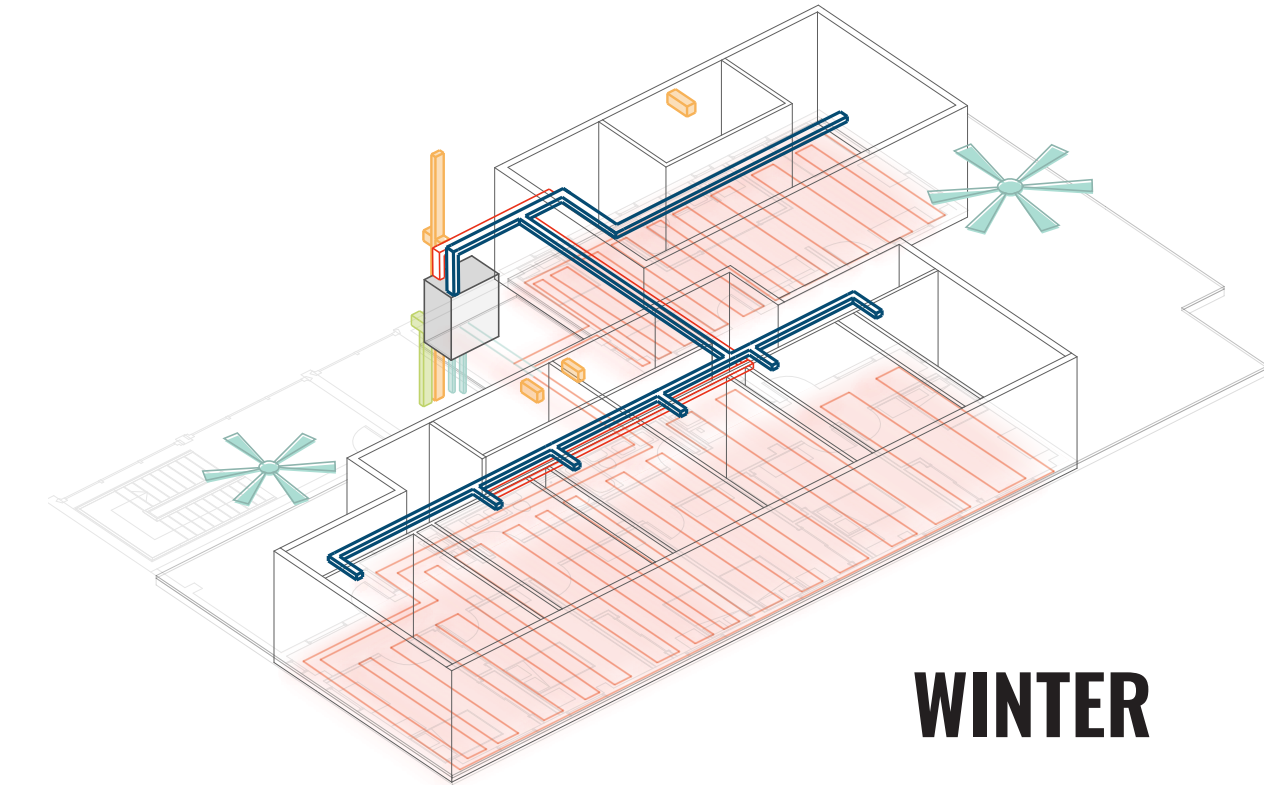
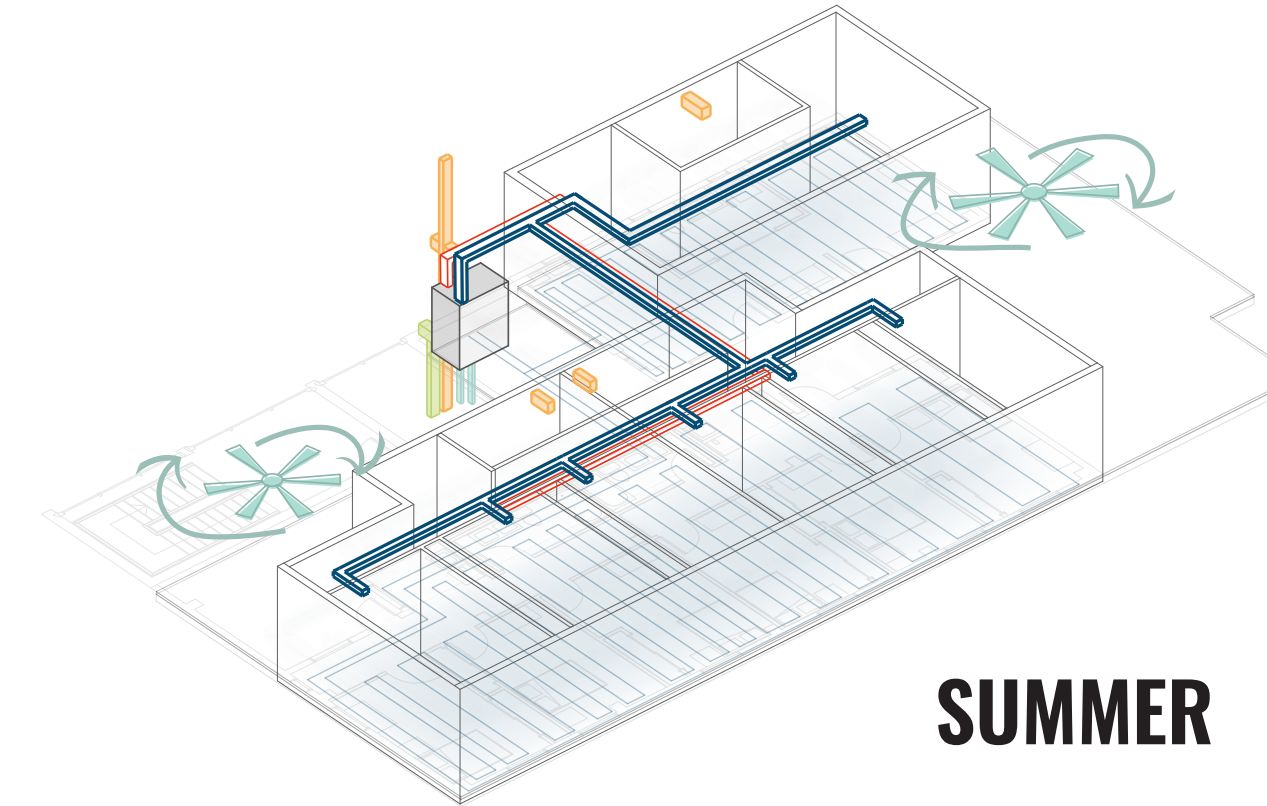


SUSTAINABILITY , PASSIVE TECHNIQUES, AND MEP

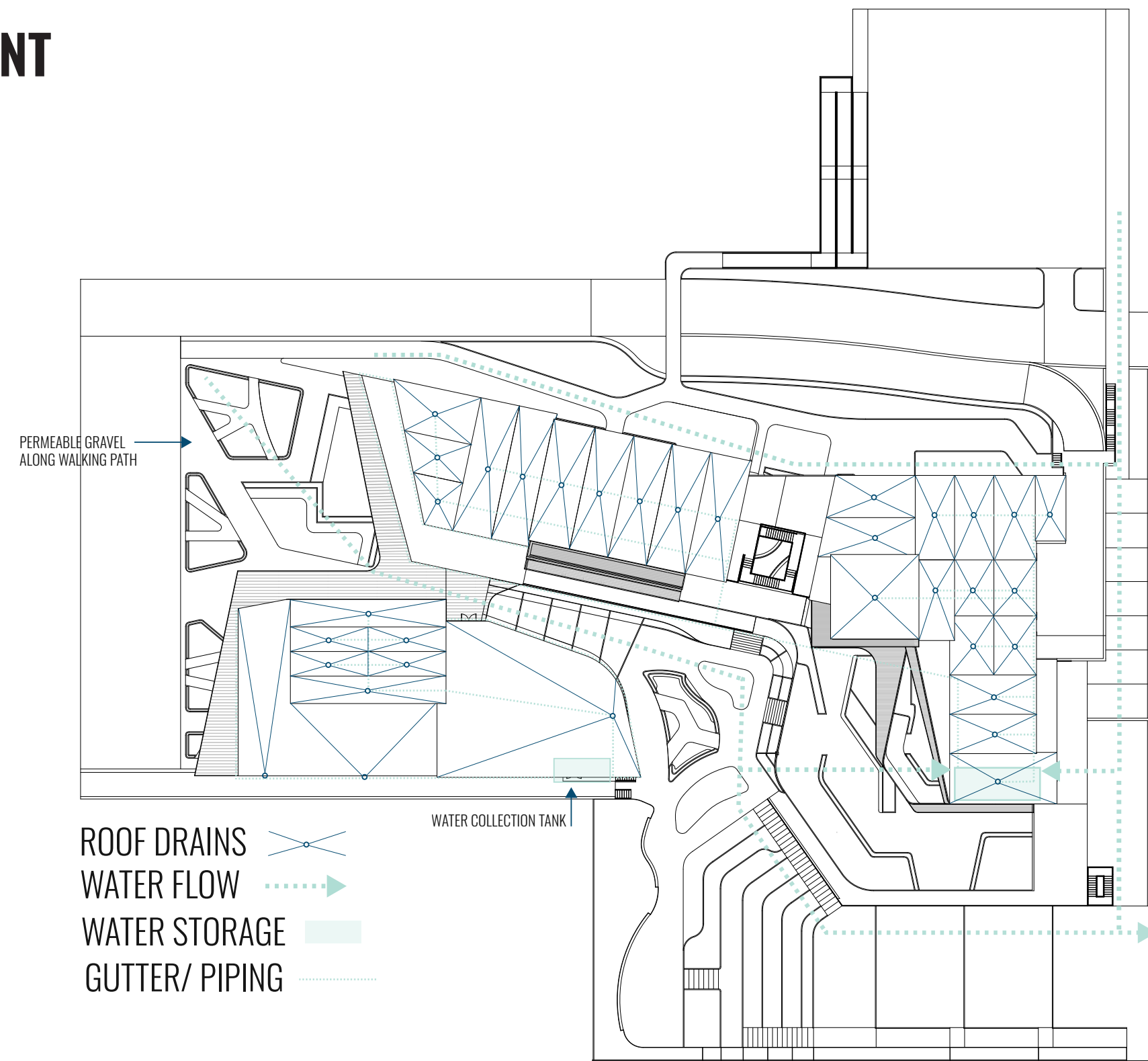
Our building is located on a 28' sloped lot and located in an urban area with little trees, shade, or protection from the sun. Our landscape design and vegetation implementation was a prioritized aspect in order to counteract the heat island effect and provide shade and cool air through the building. Our exterior circulation and large central atrium enabled us to use passive cooling and ventilation during non extreme times of the year. It is assisted by a floor by floor fan room that is supplied energy from our solar panels and geothermal energy system. Our radiant heating and cooling system also enables us to control each section of the building with ease and avoid heating and cooling the corridors. It is also powered from the geothermal systems.

Our mechanical systems and passive strategies are treated differently during different parts of the year. In the summer the circulation path ceiling fans, unit fans, and atrium fans are turned on to push air through the building. During the winter the radiant tubing will be heated and overhead air fans are no longer running.

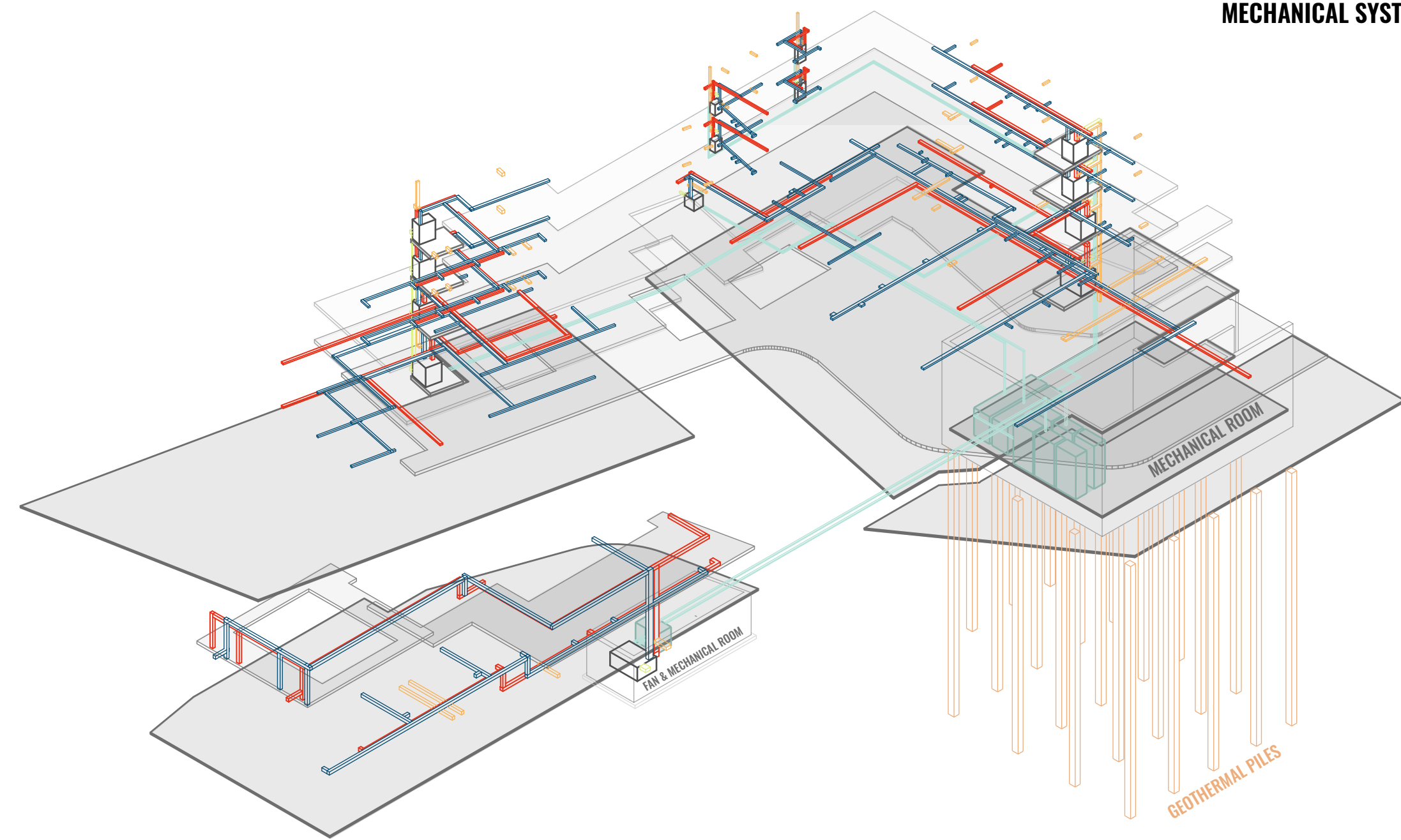
Water is collected from the roofs and porches and stored in several large underground cisterns. There are pipes that run back through the building into the ground and can also be used in the landscaping sprinkling system. The steep topography of our site provides us a large basement area to store all of our needed mechanical and storage systems. There is a large retaining wall at the edge of the building for the foundation to avoid sliding and shifting of the topography and elevated building.



WATER MANAGEMENT



VERTICAL DISTRIBUTION OF MEP SYSTEM



ENERGY SOURCE: GEOTHERMAL

MECHANICAL SYSTEM: RADIANT SLAB HEATING & COOLING
W/ NATURAL VENTILATION ASSISTED BY
VENTILATION SYSTEM FOR EXTREME
TEMPATURS & MOISTURE CONTROL

MECHANICAL ROOM COMPONENTS:

- +GEOTHERMAL PUMPS- COLD AND HOT
- +HOT AND COLD WATER TANKS
- +MIXER
- +VERTICAL DISTRIBUTION TUBING

MECHANICAL ROOM COMPONENTS:

- +GEOTHERMAL PUMPS- COLD AND HOT
- +HOT (150 DEGREES) & COLD (40 DEGREES)
WATER TANKS
- +MIXER
- +VERTICAL DISTRIBUTION FOR RADIANT TUBES

DISTRIBUTION COMPONENTS:

- +SUPPLY
- +RETURN
- +EXHAUST
- +INTAKE
- +RADIANT TUBING/ MIXERS
- +FAN ROOM AND UNIT

PLAN_01

AREAS

CAFE	3,600 SQ. FT.
KITCHEN	2,000 SQ. FT.
LOBBY/ LOUNGE	5,100 SQ. FT.
OFFICES	1,400 SQ. FT.
ART STUDIO	4,150 SQ. FT.
ART GALLERY	3,900 SQ. FT.
BACK OF HOUSE	4,250 SQ. FT.
BLACK BOX	1,600 SQ. FT.
THEATER FRONT LOBBY	1,400 SQ. FT.

BATHROOM FIXTURES

5 MENS
4 WOMENS
4 PRIVATE

DISTRIBUTION COMPONENTS:

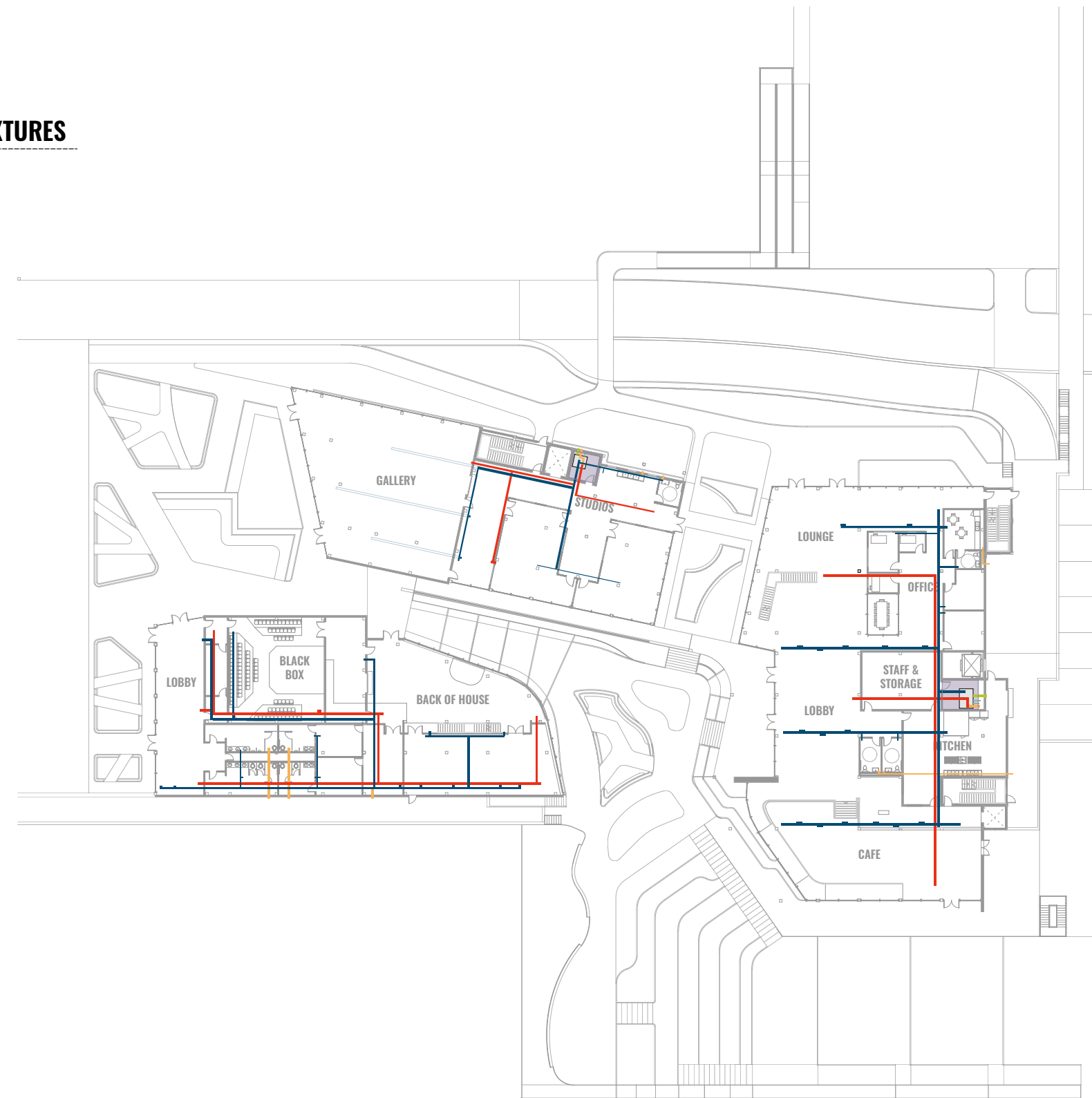
- +SUPPLY
- +RETURN
- +EXHAUST
- +INTAKE
- +RADIANT TUBING/ MIXERS
- +FAN ROOM AND UNIT

SQ FOOTAGE MEP:

FAN ROOMS:
THEATER: 650 SQ. FT.

ART GALLERY/ RESIDENTIAL:
FLOOR 01: 250 SQ. FT.
FLOOR 02: 300 SQ. FT.
FLOOR 03 300 SQ. FT.
FLOOR 04: 300 SQ. FT.

MECHANICAL ROOM:
3400 SQ. FT. (2,000 MIN- 3,000)



PLAN_02

AREAS

STAFF	1,100 SQ. FT.
IN-TAKE	800 SQ. FT.
LOUNGE/ STUDY	2,850 SQ. FT.
HEALTH SUITE	2,350 SQ. FT.
ART STUDIO	3,800 SQ. FT.

BATHROOM FIXTURES

4 PRIVATE
2 RESIDENTIAL FB

DISTRIBUTION COMPONENTS:

- +SUPPLY
- +RETURN
- +EXHAUST
- +INTAKE
- +RADIANT TUBING/ MIXERS
- +FAN ROOM AND UNIT

SQ FOOTAGE MEP:

FAN ROOMS:
THEATER: 650 SQ. FT.

ART GALLERY/ RESIDENTIAL:
FLOOR 01: 250 SQ. FT.
FLOOR 02: 300 SQ. FT.
FLOOR 03 300 SQ. FT.
FLOOR 04: 300 SQ. FT.

MECHANICAL ROOM:
3400 SQ. FT. (2,000 MIN- 3,000)



PLAN_03

AREAS

- X2-3 BEDROOM SUITE | 800 SQ. FT.
- X5-2 BEDROOM SUITE | 650-750 SQ. FT.
- STAFF | 1,200 SQ. FT.
- LOUNGE | 400 SQ. FT.

BATHROOM FIXTURES

9 RESIDENTIAL FB |

DISTRIBUTION COMPONENTS:

- +SUPPLY
- +RETURN
- +EXHAUST
- +INTAKE
- +RADIANT TUBING/ MIXERS
- +FAN ROOM AND UNIT

SQ FOOTAGE MEP:

FAN ROOMS:
THEATER: 650 SQ. FT.

ART GALLERY/ RESIDENTIAL:
FLOOR 01: 250 SQ. FT.
FLOOR 02: 300 SQ. FT.
FLOOR 03 300 SQ. FT.
FLOOR 04: 300 SQ. FT.

MECHANICAL ROOM:
3400 SQ. FT. (2,000 MIN- 3,000)



PLAN_04

AREAS

- X2-3 BEDROOM SUITE | 800 SQ. FT.
- X5-2 BEDROOM SUITE | 650-750 SQ. FT.
- STAFF | 1,200 SQ. FT.
- LOUNGE | 800 SQ. FT.

BATHROOM FIXTURES

9 RESIDENTIAL FB |

DISTRIBUTION COMPONENTS:

- +SUPPLY
- +RETURN
- +EXHAUST
- +INTAKE
- +RADIANT TUBING/ MIXERS
- +FAN ROOM AND UNIT

SQ FOOTAGE MEP:

FAN ROOMS:
THEATER: 650 SQ. FT.

ART GALLERY/ RESIDENTIAL:
FLOOR 01: 250 SQ. FT.
FLOOR 02: 300 SQ. FT.
FLOOR 03 300 SQ. FT.
FLOOR 04: 300 SQ. FT.

MECHANICAL ROOM:
3400 SQ. FT. (2,000 MIN- 3,000)











