

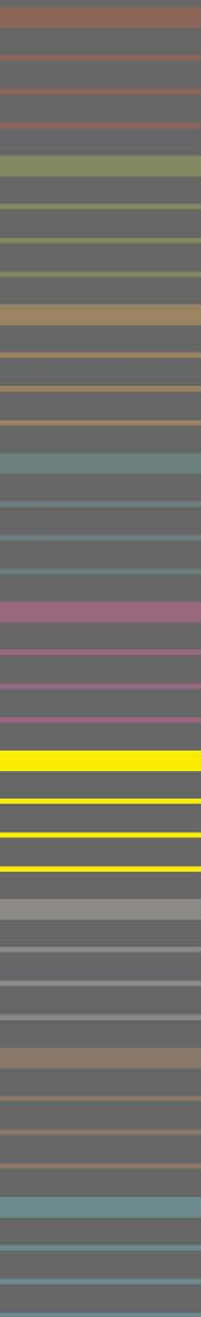
MELVIN MCCLURE

www.melvinmcclure.com

mcclure@melvinmcclure.com

1.270.331.1577



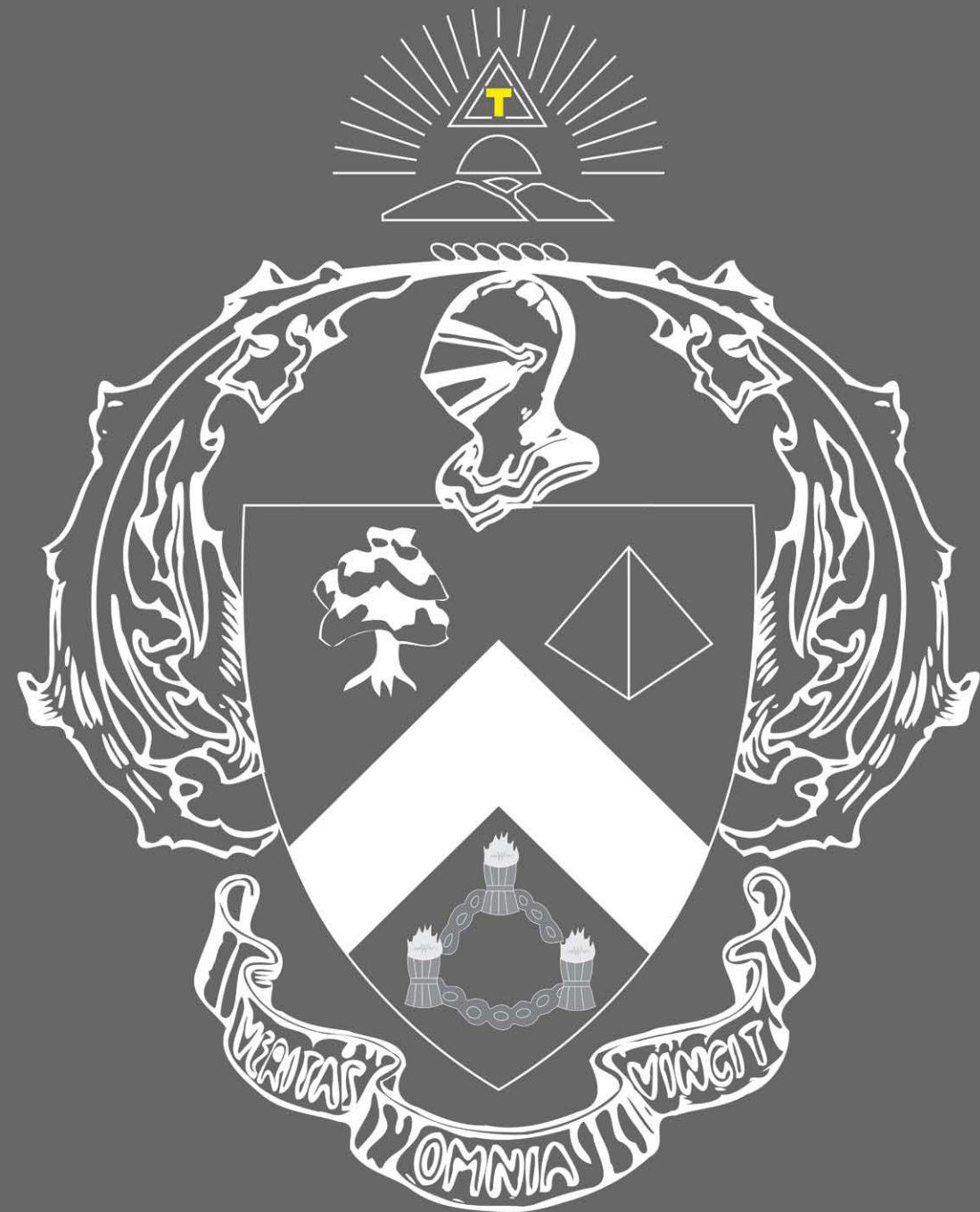


NET-ZERO FRATERNITY HOUSE

INTRODUCTION

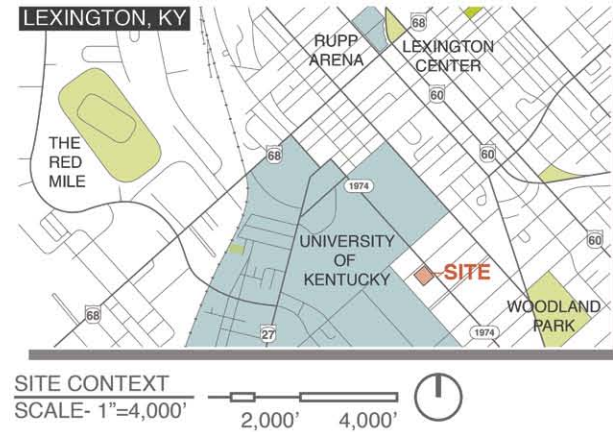
DESIGN INNOVATION

DESIGN



NET-ZERO FRATERNITY HOUSE

SITE:

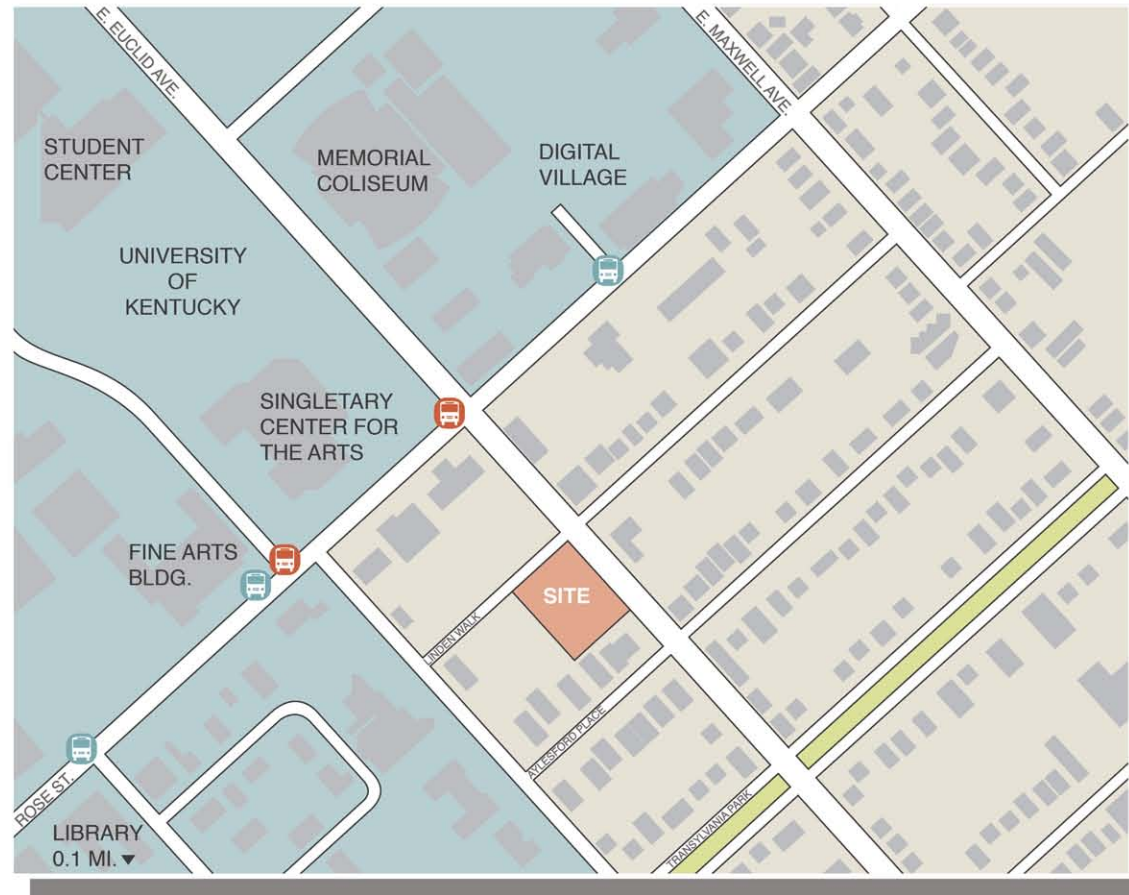


CONTEXT:

ADJACENT TO THE UNIVERSITY OF KENTUCKY CAMPUS, THE SITE IS WOVEN INTO THE CAMPUS COMMUNITY ON EUCLID AVENUE, A MAJOR PEDESTRIAN THOROUGHFARE. IMPORTANT FOR A FRATERNITY OF ENGINEERS, ARCHITECTS, AND SCIENCE MAJORS, THE SITE IS CENTRALLY LOCATED NEAR THE STUDENT CENTER AND MAIN LIBRARY. FURTHERMORE, THE ENGINEERING COMPLEX, ARCHITECTURE BUILDING, AND CHEMISTRY/PHYSICS BUILDING ARE ALSO WITHIN WALKING DISTANCE. THE PROMINENT AND VISIBLE LOCATION WILL ALSO PROVIDE OPPORTUNITIES FOR THE DISPLAY OF STUDENT RESEARCH AND PROJECTS.

OBJECTIVES:

THIS DESIGN+RESEARCH PROJECT CENTERS ON THE DESIGN OF A NET-ZERO ENERGY RESIDENCE HALL TO HOUSE 40 MEMBERS OF THE TRIANGLE ACADEMIC FRATERNITY OF ENGINEERING, ARCHITECTURE, AND SCIENCE STUDENTS. THE BUILDING SHOULD ACT AS A LIVING LABORATORY IN WHICH RESEARCH CAN BE CONDUCTED ON ENERGY AND CONSERVATION.



PROGRAM:

PUBLIC SPACES:

- PUBLIC ATRIUM+LOUNGE
- LIVING ROOM
- DINING FACILITY
- GARAGE+LAB SPACE
- RESEARCH SPACE
- MEETING SPACE FOR 50
- DISPLAY SPACE

PRIVATE SPACES:

- BEDDING FOR 40 MEMBERS
- PRIVATE RESTROOMS
- PRIVATE SHOWERS
- SOCIAL SPACES
- STUDY SPACES
- 2 PRIVATE APARTMENTS

- BUS STOP-RED
- BUS STOP-BLUE
- RAIL LINE
- PUBLIC PARK
- LANDMARK



SITE PLAN
SCALE- 1"=500'

250' 500'

NET-ZERO FRATERNITY HOUSE

CONCEPT:

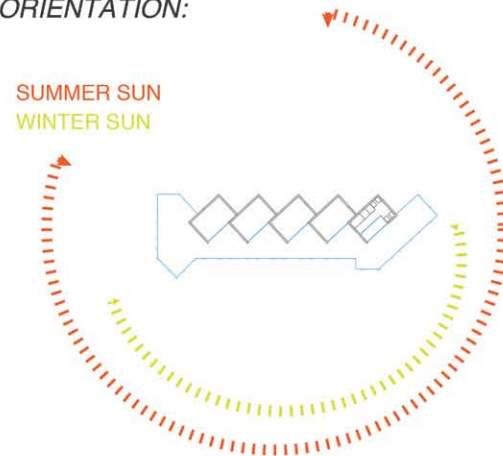
// **NET-ZERO ENERGY USE:** BUILDING ORIENTATION, FACADE DESIGN, AND MECHANICAL ADAPTATIONS CONTRIBUTE TOWARD DECREASED DEPENDENCE.

// **MODULAR DESIGN:** EACH UNIFORM RESIDENTIAL UNIT HOUSES EITHER 1, 2, OR 4 BEDS AND MAY BE MODIFIED TO REFLECT HOUSING DEMAND.

// **LIVING LABORATORY:** UPPER FLOORS HOUSE RESIDENTIAL SPACES, WHILE GROUND FLOOR HOSTS GARAGE LABORATORY WITH SPACE FOR ENGINEERING PROJECTS AND RESEARCH.

// **PUBLIC DISPLAY:** EXHIBITION SPACES FRONTING EUCLID AVE. DISPLAY PROJECTS / ACHIEVEMENTS TO RAISE PUBLIC PROFILE OF THE FRATERNITY.

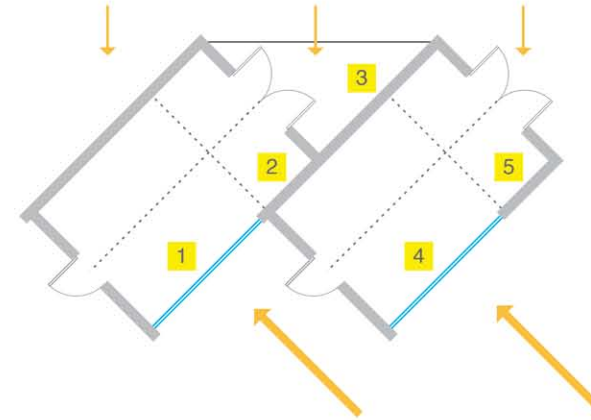
ORIENTATION:



NET-ZERO ENERGY USE:

- // SPACES IN UPPER FLOORS ORIENTED TO MAXIMIZE INTERACTION WITH SUN PATHS.
- // SOUTH FACADE OUTFITTED WITH PERFORATED METAL SKIN TO SHADE INTERIOR SPACES.
- // METAL SKIN SPECIALLY DESIGNED TO ABSORB HEAT AND TO ACCOMMODATE CONCEALED PIPING TO PASSIVELY HEAT WATER.

MODULAR DESIGN:

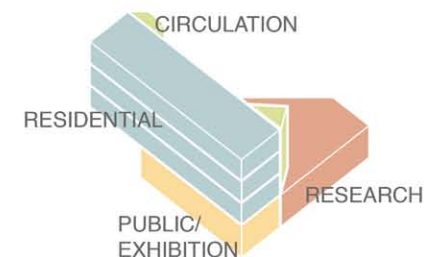


- 1 14' SECTION OF WALL FACED WITH SEMI-TRANSLUCENT GLASS- ALLOWS FOR DAY-LIGHTING WHILE AFFORDING PRIVACY.
- 2 6' SOLID WALL WHERE UNITS INTERSECT- PROVIDES SPACE OF CONTROLLED LIGHTING.
- 3 SPACES FORMED BETWEEN UNITS, FACING NORTH, BECOMES PRIVATE OUTDOOR BALCONY.
- 4 QUADRANTS FACING GLASS WALL CONTAIN DESKS AND/OR DRESSERS DEPENDING ON CHOSEN LAYOUT.
- 5 QUADRANTS BEHIND SOLID WALL ARE PRIVATE, BLOCKED FROM SUNLIGHT, USED FOR BEDS.

- EACH UNIT DIVIDED INTO FOUR QUADRANTS- EACH MAY BE UTILIZED ACCORDING TO OCCUPANTS' NEEDS.
- UNITS ROTATED 45 DEGREES TO MAXIMIZE SUNLIGHT EXPOSURE.
- NORTHERN GLOW PENETRATES THROUGH GLASS BALCONY DOORS AND CLEARSTORY WINDOWS.
- SOUTHERN EXPOSURE INTO SEMI-TRANSLUCENT FACADE OF EACH UNIT.
- ALL MODULES OF UNIFORM DIMENSIONS, REGARDLESS OF OCCUPANCY.

LIVING LABORATORY:

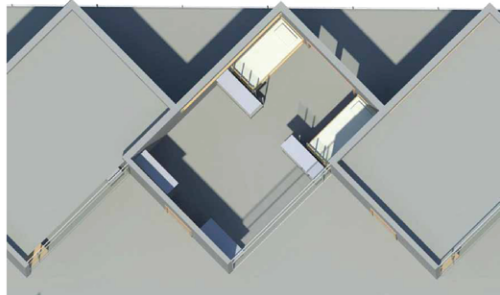
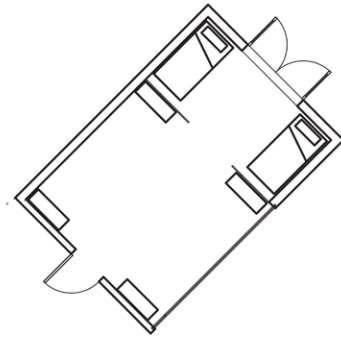
- // FORM ENABLES FUNCTIONS: **RESIDENTIAL + PUBLIC + RESEARCH + EXHIBITION.**
- // FORM FACILITATES VISUAL SEPARATION OF PROGRAM: **BASE [PUBLIC] + CANTILEVER [PRIVATE].**
- // CANTILEVER ALONG EUCLID AVE. FACADE ALLOWS FOR MAXIMUM EXPOSURE BESIDE A MAJOR PEDESTRIAN AND VEHICULAR THOROUGHFARE.



NET-ZERO FRATERNITY HOUSE

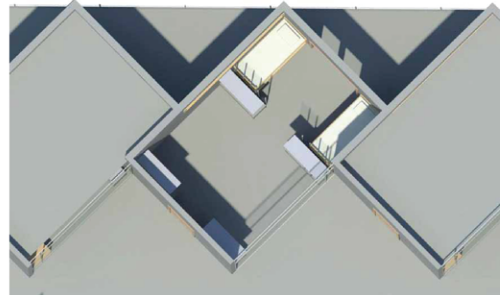
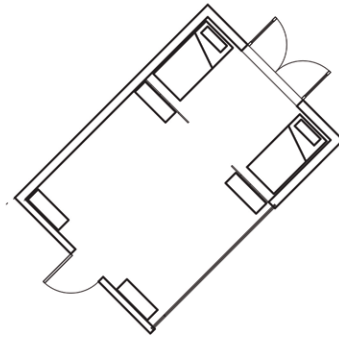
FOUR BED MODULE:

- // BUNKED BEDS MAINTAIN OPEN FLOOR PLAN.
- // SEMI-TRANSLUCENT ROOM DIVIDERS PROVIDE PRIVACY AND HELP TO ORGANIZE ROOM; FURNITURE PLACED AGAINST BARRIERS AND FORM SPACES OF UNIT.
- // ORIENTED TOWARD SOUTH FOR DAYLIGHTING.
- // BEDS PLACED IN AREA BLOCKED FROM SUNLIGHT.



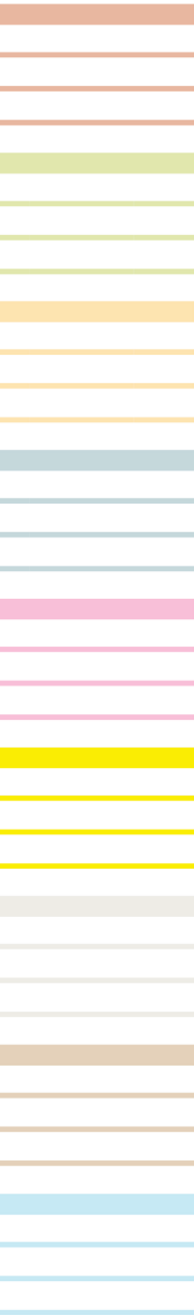
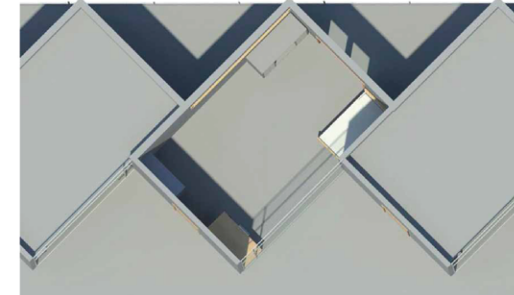
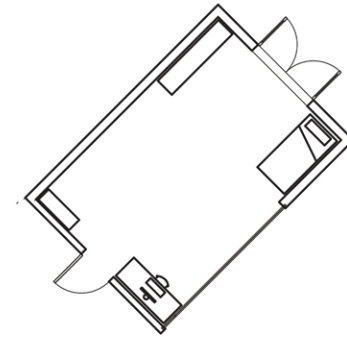
TWO BED MODULE:

- // SEMI-TRANSLUCENT ROOM DIVIDERS PROVIDE PERSONAL SPACES FOR EACH OCCUPANT, WHILE STILL MAINTAINING UNITY OF SPACE.
- // GLASS ORIENTED SOUTH FOR DAYLIGHTING, WHICH IS DIRECTED TO STUDY AREA OF THE UNIT.
- // BEDS PLACED IN AREA BLOCKED FROM SUNLIGHT.



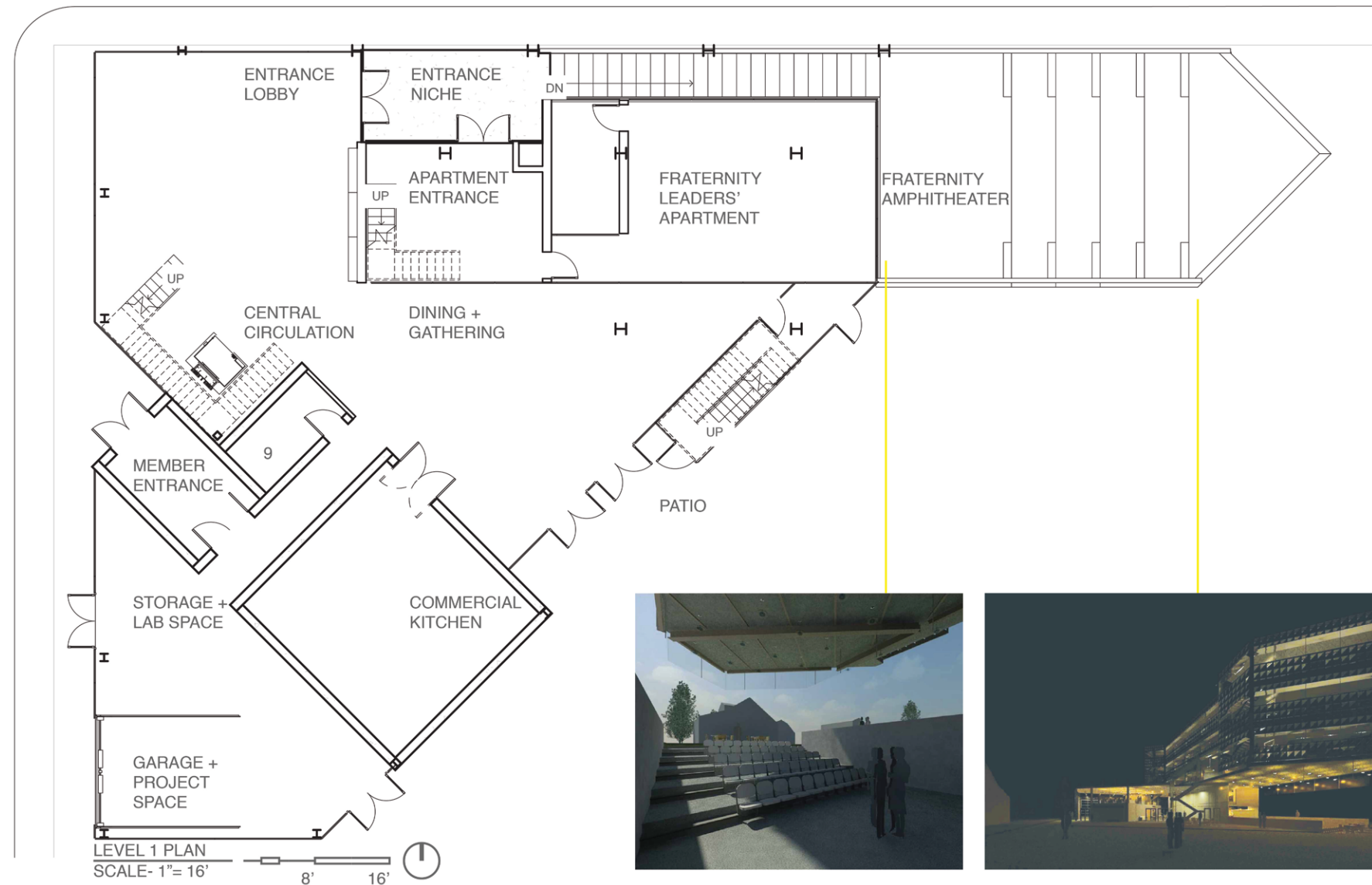
ONE BED MODULE:

- // GLASS ORIENTED TOWARD SOUTH TO LIGHT DESK AREA OF UNIT.
- // BED PLACED IN AREA BLOCKED FROM SUN LIGHT.
- // UNIFORM DIMENSIONS ALLOW THAT UNIT IS INTERCHANGEABLE WITH OTHER MODULES TO ACCOMMODATE MORE RESIDENTS.



NET-ZERO FRATERNITY HOUSE

GROUND LEVEL:



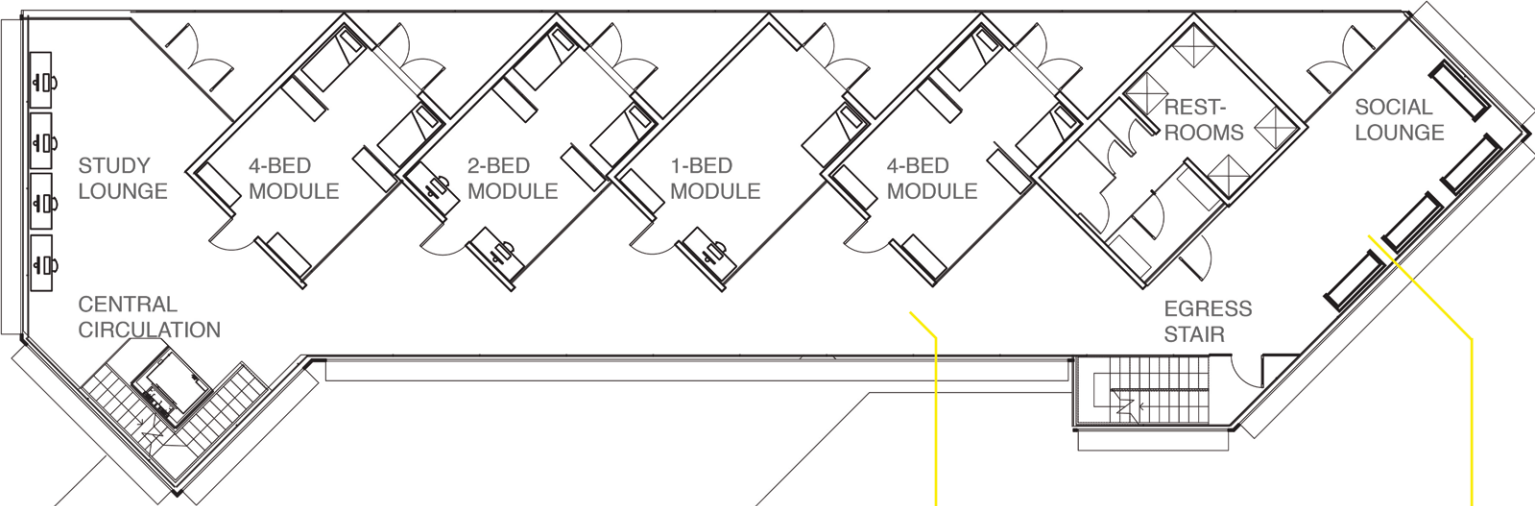
NET-ZERO FRATERNITY HOUSE

RESIDENTIAL FLOORS:

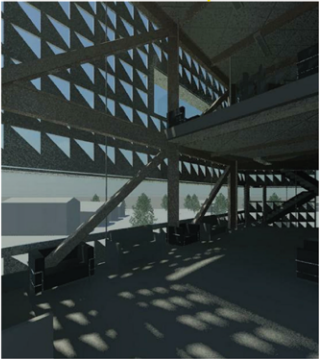
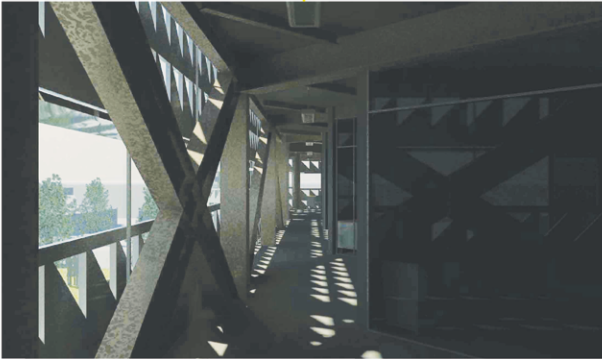
STUDY LOUNGE
// LOCATED ON EACH RESIDENTIAL FLOOR.
// DESKS, COMPUTERS, QUIET STUDY SPACES.
// SHAPED BY INTERSECTION OF RESIDENTIAL
UNITS AND MAIN STAIR.

SOCIAL LOUNGE
// LOCATED ON EACH RESIDENTIAL FLOOR.
// COUCHES, CHAIRS, TABLES.
// SHAPED BY EAST CORNER OF BUILDING
AND PROCESSION TO EGRESS STAIR.

FRATERNITY AMPHITHEATER
// LOCATED IN SPACE UNDER
CANTILEVERING TOWER.
// GATHERING + SOCIAL
SPACE FOR MEMBERS.



LEVEL 2/3/4 PLAN
SCALE- 1"= 16'



NET-ZERO FRATERNITY HOUSE

3-D MODEL:



PUBLIC ENTRY NICHE

REAR PATIO SPACE

RESIDENTIAL STUDY LOUNGE



NET-ZERO FRATERNITY HOUSE

3-D MODEL:



SOUTH FACADE + LAB SPACE

AMPHITHEATER + CANTILEVER

PATIO + GREEN SPACE

