



CRASH LOAD LAUNDRY CAFE



LOVE, HONOR, LIVE COMMUNITY ROOM



LOHI STREETVIEW FROM [AVE]

LOHI

LoHi is a unique student residence concept at the intersection of Low Energy and High Performance design. As an off-campus residential community, LoHi fills a void in housing options for the graduate and nontraditional student demographic at in. Multiple unit sizes serve the individual needs of these students of varied backgrounds and family structures, while efficiently planned common areas promote water and energy conservation, interaction and development of community.

LoHi makes a big impact with a small footprint as its compact form yields higher density housing than the norm in its neighborhood. By meeting DOE Zero Energy Ready Home requirements and following Passive House design best practices, the project enables students to actively participate in a net zero energy living-learning community with a lower energy and carbon footprint.

ENERGY ANALYSIS

REM RATE

AVERAGE HERS INDEX

9 HERS One bedroom units with PV	2 HERS Two Bedroom units with PV	21 HERS Studio units with PV
-------------------------------------	-------------------------------------	---------------------------------

52 HERS One bedroom units without PV	51 HERS Two Bedroom units without PV	53 HERS Studio units without PV
---	---	------------------------------------

286 PANELS

The areas of the roof and wall photovoltaic arrays were apportioned to each unit on a square foot basis.

AVERAGE UNIT HERS INDEX WITH PV BY FLOOR			
9.5	9.3	9.5	9.4
Ground Floor	First Floor	Second Floor	Average

PERFORMANCE STRATEGIES

PHOTOVOLTAICS & VERTICAL SOLAR THERMAL SYSTEM

- Panel size 61.3" x 41.2" totaling 17.5 sq. ft. of surface exposure
- Av. 4-4.5 peak hours per day
- 5,005 sq. ft. of PV on both roofs combined
- 960 sq. ft. of wall mounted PV units across four exterior vertical sections
- Roof Panels tilted 33.5° South
- Vertical Solar Thermal System at 411 sq. ft. serves the community laundry cafe
- Use of solar thermal instead of electricity is estimated to reduce emissions of the building by 3 tons/year

ON SITE STORM WATER MANAGEMENT CISTERN

- Green roof storm water filtration system
- Water flows at bay from roof and is fed to under ground cisterns
- Once at capacity, embedded valves sways the direction and path of the flowing water to exit into rain gardens located on NE & SW corners of both North and South towers
- Rain Gardens slows the influx of water on site into the city storm water drain located 20 ft away from our NE corner

ENERGY RECOVERY VENTILATOR (ERV)

- ERVe-35 by Greenheck 2,200 - 3,400 CFM
- Allows fresh air to enter each unit
- Lowers energy costs for the interior environmental quality
- One unit is mounted on the roof of each residential tower and serves all three floors
- Supply & return air ducted (10" round, 12" x 12") through vertical chases in mechanical rooms on each floor

HYPER-EFFICIENT GEOTHERMAL PUMP STATION

- Vertical ground source heat pump provides all of LoHi's heating and cooling needs
- Helps maintain a building temperature of 70° F in the winter & 65° F in the summer
- Building designed to Passive House standards of 68° F in the winter & 77° F max in the summer
- 20 Wells Spaced 20 ft. apart & placed 500 ft. deep surrounded by 5" graphite grouting
- Each well emits 2.25 tons of heating
- A reverse-return layout reduces the amount of energy needed to extract energy from the wells
- Wells constructed of 3/4" Aquatherm Blue Pipe

PRODUCTION TIMELINE



TECHNICAL SPECIFICATIONS + SITE PLAN

Climate Zone: 5A
Total Lot Area: 39,840 sq. ft.
Buildable Area: 25,637 sq. ft.
Building Area: 35,929 sq. ft.
Maximum Occupants: 88 persons
Zoning Setbacks: 30 ft. Curbsides 15 ft. Rear/Side
Height Restriction: 3 ft.
Building Stats: 3 stories with 38 units (6) Studios (20) 1-Bedroom Units (12) 2-Bedroom Units
EUI Estimate: 15 kBtu Annual
HERS Index: Av. of 38 Units 52 w/o PV
HERS Index: Av. of 38 Units 9 with PV
Slab on Grade: R24.5
Floor Between Basement: R32.2
Basement Floor: R9
Window Performance: U-0.14 (R7)
Exterior Wall Assembly: R31.3
Basement Wall Assembly: R24.5
Roof: R60

NORTH TOWER + UNIT FLOORPLANS

