



"LINKoln Locale"

Project Summary

Team LINKoln plans to convert an existing 16-unit landmark student housing building in Urbana, IL, into an eight-unit configuration. The project targets university students as the major market and adopts modern and sustainable design strategies for student housing while maintaining affordability and durability. One of Team LINKoln’s goals is to develop a design that would be applicable and adaptable to old masonry buildings of this type across the nation. Challenges to this project include maintaining the historical vernacular of the structure while enhancing building enclosure performance as well as allowing maximum sunlight penetration into the interior spaces.



Relevance of Project to the Goals of the Competition

The competition encourages designs to meet the prescriptive and performance path requirements required for a DOE Zero Energy Ready Home. It also seeks to develop the next generation of building specialists to creatively tackle real world problems. Outdated residential buildings make up a significant portion of the U.S. building stock. Creating retrofit solutions for buildings such as this serves as a model for integrating sustainable design features into aged buildings while utilizing the building features that are still valuable, reducing unnecessary waste.

Design Strategy and Key Points

The project focuses on providing better living conditions for university students while encouraging a sustainable lifestyle at an affordable price. This is achieved by updating the mechanical systems, lighting design, appliances, and building envelope to significantly reduce energy consumption from inefficient technologies and design strategies. Creating a common space to encourage sociability was also emphasized in our design. Furthermore, Team LINKoln plans to raise awareness and inspire the public about sustainable and healthy living. By renovating the program layout and incorporating high performance systems, the project will create a new standard of efficient, affordable, healthy and harmonious homes for university students.

Project Data

- Location: Urbana, Illinois
- Climate zone: IECC 5A, BA climate zone “Cold”
- Square footage: 889, 1346, and 1510 sq. ft per unit
- Number of Bedrooms: 2, 3, and 4 bedrooms per unit, 8 units total
- Number of Stories: 3 stories above grade
- Home Energy Rating (HERS) score: 35 w/o PV; 12 w/PV
- Estimated Monthly Energy Cost (Whole Building): \$307.60 w/o PV; \$81.80 w/PV

Technical Specifications

- Wall Insulation: R-19
- Foundation Insulation: R-19
- Slab Insulation: R-12
- Roof Insulation: R-66
- Window Performance: Triple-pane, argon filled, low-e, U=0.22 SHGC₁=0.24, SHGC₂=0.40
- HVAC specification: Conditioning Energy Recovery Ventilator (CERV™); SEER: 17/HSPF: 13.0
- Geo-Boost Connected to Geothermal Loop