



# Team Woodridge

## Forest Refuge Home



Ball State University  
Single Family Suburban

### Project Summary

Nestled into the suburban fringe east of Bloomington, IN, this ultra-efficient home is a comfortable refuge for its owners, offering spaces for relaxing, entertaining, and working from home. Intended for a professional couple without children or a retired couple, the home takes advantage



of a sloping site with beautiful southern views through the forest. The prime location offers easy access to groceries, shopping, IU campus, and the soon to be built IU medical center.

### Relevance of Project to the Goals of the Competition

Industry partner Loren Wood Builders brought to the table a schematic design created specifically for a lot he owns. His original intention was to build this home on spec to fill in gaps in work for his crew during the slow times of winter 2017-2018. When the student team leader met with Loren, it was determined that this would be the perfect project for the team to work with to bring into alignment with the goals of the Zero Energy Ready Home program. This creates value for both the student team, who gains experience working with real-life constraints on a project that will be built, as well as for Loren Wood Builders, who will be able to add ultra-efficiency to the list of benefits when offering the home for sale.

### Design Strategy and Key Points

As a result of the small buildable area of the lot, the team's focus was on working with the existing footprint to optimize envelope design and bring the home into compliance with the Zero Energy Ready Home program. The team also analyzed the additional effort required to achieve a LEED v4 for Homes rating. This took place within the constraint set by Loren Wood Builders that the construction methods be executable "in-house" by his own crews, meaning a focus on stick-framing.

### Project Data

- Bloomington, IN
- Climate Zone 4
- 1,600 sf
- 2 bedrooms, 2.5 baths
- HERS: 41 w/o PV
- Est. monthly energy cost: \$56 w/o PV

### Technical Specifications

- Wall Insulation = R-23.1 cavity, R-12.6 continuous
- Foundation Insulation = R-22
- Roof Insulation = R-60
- Window Performance = U-0.123
- HVAC specs = mini-split, HSPF 9.5, SEER 15
- ERV, sensible recovery 65%, total recovery 43%