

straw-bale building system

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Ball State Straw Bale Project

Ball State University’s straw bale project is located on the Cooper-Skinner property in Muncie, Indiana. Land use goals for the property include educational activities that are compatible with the concept of the area as an outdoor laboratory. Research, field trips, class projects, workshops, and interpretive presentations are encouraged for students in grades K-12 of schools in surrounding communities and Ball State students. In accordance with these goals, the straw bale project would be the first immersion/demonstration/research project on the site. This project aims to connect people to sustainable relationships among buildings, sites, people, prosperity, and the planet. The straw bale project also seeks to build on the research and land use plan that is already in place for the property.

Building Site Adaptations

Indiana’s climate creates construction techniques that must address a warm or cold climate. Designing a straw bale building in central Indiana must address the buildings orientation, weatherization, shading, and ventilation.

- Orientation-** The building longest wall should face due south with the majority of the windows facing south to obtain optimum winter heating. The least amount of windows should be on the east and west side. The south facing windows should also overhangs to keep out the high summer sun.
- Weatherization-** Weather-stripping all of the doors and windows will help reduce the unwanted heat and cooling loss. Open windows in the summer will allow for the building to cool in the summer.
- Shading-** Overhangs and arbors will help keep the high summer sun out of the building while still allowing a low winter sun to penetrate and help warm the building. Using natural shades such as trees is a great way to help reduce the suns heat on the east and west sides of the building.
- Ventilation-** Careful window placement and interior design can capture cool breezes in the summer. High ceilings and interior courtyard are also great ways to improve ventilation.

Adaptation Diagrams

