

Building with Straw

Why Build with Straw?

Building with straw saves energy. Plastered straw bale buildings insulate three times over typical dry-wall buildings. The energy savings accrue for the building's life span.

Straw buildings are fire resistant. Densely packed into bales, panels or even thatch, it is remarkably fire resistant. Plastered straw bale structures are considerably more fire resistant than conventional buildings. If the roof and exposed wood elements are made fireproof, a straw bale building can survive firestorms that would consume other structures.

Straw buildings are personal. Similar to a barn raising, a group of people can build the walls and have the satisfaction of living in a structure they helped build themselves.

Straw buildings use inexpensive and renewable materials. 140 million tons of straw are produced as waste annually in North America. It is usually burned, creating carbon monoxide. Wood has a longer cycle and is more expensive. Using straw could decrease logging in old-growth forests and scenic recreational areas.

Building with straw reduces pollution and health hazards. Substitution of straw for the raw materials of most wall insulation saves processing energy and reduces oil-based fuel use. Straw is produced in many locales, reducing fossil fuel use in transport. Using straw instead of fiberglass insulation eliminates health hazards for workers involved in the manufacture and placement of the fiberglass.

What are Straw Buildings?

Straw Bale

Load Bearing: Uses straw bales as the main structural support and usually has a simple design. Bales are stacked on a poured concrete wall foundation, with wooden frames for windows and doors. Steel, wood or bamboo pins join the bales and reinforce the walls.

Non-Load Bearing: Uses a wood, steel or masonry/concrete structural system to carry the roof load. Straw bales are insulating fill within the structure. This style permits a greater variety of roof designs, complex floor plans and multi-story buildings.

Straw Panels: Uses manufactured panels of compressed straw as a structural form, which can bear the weight of the building.

Straw Thatch: Creates roofing material by weaving straw or other fibrous material in layers.

Straw Insulation: Uses loose or bundled straw to fill cavities in walls or roofing.

Source:

Wilson, Alex. "Straw: The Next Great Building Material?" Environmental Building News. 4:3.
King, Bruce. Buildings of Earth and Straw. Ecological Design