

Building GREEN in Greensburg

Silo Eco-Home



Courtesy of Joah Bussert, Greensburg GreenTown

After a tornado destroyed 95% of Greensburg in 2007, residents saw the grain silo standing tall on the northern horizon. The silo became a symbol of strength and history for the town, and is a primary feature of the Silo Eco-Home with its 6-inch-thick precast concrete walls and cylindrical form built to withstand the high winds of a tornado. The Silo Eco-Home is part of a series of green houses that will serve as “living laboratories” featuring green building techniques, energy efficiency components, and green living products. Each home will become an information center and eco-lodge where people can experience green living first-hand. The Silo Eco-Home is owned by Greensburg GreenTown, a nonprofit organization helping to rebuild Greensburg into a model green community.

ENERGY EFFICIENCY FEATURES

- **Well-insulated roof** with an R-value of R-49 prevents heat loss and maintains cooler temperatures in summer
- **Concrete walls with EPS foam** provide insulation and thermal mass for solar heating and cooling
- A **centralized skylight** provides lots of natural light to reduce electricity use during the day
- **Light-colored exterior** walls and roof reflect heat away from the building in summer
- **Large south-facing windows** maximize solar heat gain in winter to reduce heating bills
- **Window overhangs** block summer sun to reduce cooling loads
- **Energy-efficient windows and doors** reduce heat loss in winter and keep the building cool in summer
- **ENERGY STAR®** refrigerators and freezers in the kitchen save energy
- **Energy-efficient washing machines** save energy
- An **LED lighting system** saves energy.

RENEWABLE ENERGY FEATURES

- A **2-kilowatt solar array** on the roof produces electricity for the building
- A **solar hot water heater** provides domestic hot water for the interior.

WATER EFFICIENCY

- **Low-flow toilets** and **water-efficient fixtures** use less water in the bathrooms
- **Rainwater** is collected and recycled for use on landscaping
- **Native plants** are used when possible for landscaping, because they require less water
- A **unique green roof** collects rainwater while growing vegetables for sale at a local farmer’s market.

SUSTAINABLE CONSTRUCTION AND MATERIALS

- **Recycled materials** are used in the building such as high fly ash content cement, recycled aggregate for the concrete, and recycled glass countertops
- **Sustainably harvested wood** certified by the Forest Stewardship Council (FSC) and rapidly renewable bamboo are used in the interior
- **Job site recycling** and **minimal transportation of materials** were incorporated into construction
- **Low-maintenance, durable products**, such as composite decking reduce the frequency of replacing building components
- **Reusable building materials** allow for reuse at the end of the component’s life.

INDOOR AIR QUALITY AND ENVIRONMENT

- **Nontoxic building products**, such as paints with low levels of volatile organic compounds and woods not treated with formaldehyde, minimize indoor pollutants
- A **natural ventilation system** reduces the need for a conventional ventilation system.

EXPECTED HOME ENERGY RATING: 45

- More than **50% energy efficient** than a standard home