

# Building GREEN in Greensburg



Courtesy of Steven Learner Studio

# Meadowlark House

Greensburg GreenTown is a nonprofit organization helping to rebuild Greensburg as a model green community following a devastating tornado in May 2007. In 2009, in partnership with FreeGreen.com, a competition was held to seek the next design for GreenTown's Chain of Eco-Homes project. Architects and designers were invited to submit ideas, and more than 250 teams from 38 states and 13 countries entered. With the help of a panel of local residents and renowned judges, a design was chosen that was deemed most appropriate for the local community. The winning design, Meadowlark House, was submitted by New York City-based Steven Learner Studio, and incorporates many exciting and innovative products and building techniques into a one-of-a-kind demonstration home. The home was built to Passive House Standards—a very well-insulated, virtually air-tight structure primarily heated by solar gain and internal gains from occupants and electrical equipment—as well as LEED for Homes. Meadowlark is designed to be an educational facility open to the public for tours and overnight lodging.

## ENERGY EFFICIENCY FEATURES

- **Large windows and open floor plan** in main living area provide natural daylight
- **LED light bulbs** reduce energy consumption
- **East-west orientation** optimizes natural lighting and passive heating
- **Energy recovery ventilator** reduces energy requirements for interior heating and cooling
- **Air-tight building envelope** prevents air leakage and moisture infiltration
- **Superinsulation** in walls, ceilings, and floor slab with R-value for walls (R-40), foundation floor slab (R-50), and roof assembly (R-60)
- **Metal roof** reflects sun and reduces heat gain
- **High-performance windows and doors** minimize air leakage and improve overall performance
- **Mini-split heat pump and electric baseboard heating** provide supplemental heating and cooling as needed
- **ENERGY STAR® appliances** reduce energy consumption

## RENEWABLE ENERGY FEATURES

- **Solar panels** on roof provide electricity for the home
- **Solar car-port** charges electric vehicles

## WATER EFFICIENCY

- **Native, drought-resistant landscaping** reduces watering and maintenance needs
- **Permeable paving** used for all exterior pavement allows movement of water and air into soil

- **Rainwater collection system** used to water landscape
- **Low-flow water fixtures and dual-flush toilets** conserve water

## SUSTAINABLE CONSTRUCTION AND MATERIALS

- **Recycled and rapidly renewable materials** used
- **Innovative prefabricated wood block wall system** (HIB-System) stands up to southwestern Kansas' high winds, provides plenty of room for insulation, and saves money and time by easily locking together without the need for heavy lifting devices
- **Job site recycling program** incorporated for construction waste
- **Regionally sourced labor and materials** used
- **Compact house size** uses less land space, reducing site impact and carbon footprint

## INDOOR AIR QUALITY AND ENVIRONMENT

- **Operable windows and ceiling fans** provide natural ventilation and promote air circulation
- **Non-toxic products** used, including low-, or no-VOC finishes and green cleaning products

## EXPECTED HOME ENERGY RATING: 10-15

- Through the use of Passive House Standards energy consumption is expected to be reduced by up to 90% compared to a newly constructed home. The remaining 10% of energy needs will be covered by solar panels. With the application of these features, it's anticipated the home will use less energy than it produces.