

Kickapoo Nature Center

Oregon, Illinois, USA



A nature conservancy visitor center demonstrates top notch energy-efficient design

Building green was never considered optional for Kent and Kathy Lawrence. As the founders of Kickapoo/Mud Creek Nature Conservancy in Oregon, Ill., reducing the environmental footprint of their new Kickapoo Center was a priority from day one. The Lawrences wanted the center not only to serve as a meeting place and house educational displays for the conservancy, but also to set an example for cost-effective green home construction.

"We had a specific functional purpose from the beginning," said Kent Lawrence. "We wanted to get low energy usage and modern day ambient conditions at real market prices."

To design the 1,200-square-foot center, the Lawrences worked with fellow Oregon resident Victor Zaderaj of **Solar Homes, LLC**.

"What I've found is that a well insulated thermal envelope is really the most cost-efficient way to reduce energy use," said Zaderaj.

The thermal envelope begins below the ground with 8.5 inches of **PlastiSpan EPS insulation** beneath the center's concrete slab.

Advantage Insulating Concrete Forms (ICFs) were used for the below grade walls. Zaderaj then specified the 12-inch **Insulspan Structural Insulating Panel (SIP) system** for the walls and roof.

"The key was that we eliminated all the thermal shorts," said Zaderaj. "SIPs and ICFs also do a really good job of sealing the home and stopping heat loss through air infiltration."

Zaderaj used the center as a testing ground for several innovative techniques to reduce energy use. His patent-pending solar roof uses a fan system to transfer the warm air beneath the building's metal roof to a network of pipes in the concrete floor, where the heat is stored and slowly released. When combined with the efficiency of the **super insulated building envelope**, no furnace is needed, only a back up heat source powered by the center's water heater.