Pura Vida

Living the Pure Life

Although green and energy efficient homes have grown in popularity, they often carry a hefty price tag. When mechanical engineer Victor Zederej of Solar Homes, Inc. started work on his Pura Vida (Pure Life in Spanish) demonstration home, he wanted to show that he could build a home that was 60 percent more energy efficient without breaking the bank.

His initial research took him to Germany where he learned about the Passive House standard. Passive Homes use a super insulated building enclosure and passive solar heating to drastically reduce the energy needed to heat the home. Back in Oregon, IL, Zaderej applied the same principles to the Pura Vida. He used Advantage ICFs for the home's basement level and the Insulspan Structurally Insulating Panel (SIP) system for the walls and roof.

"SIPs play three key roles," said Zaderej. "They are highly insulated so they minimize heat loss due to conduction, there are no thermal short circuits in the walls because SIPs don't require structural elements, and there is literally no air infiltration through the wall because SIPs are sealed very well."

Windows on the south-facing wall allow sunlight to heat the home's concrete slab. The concrete absorbs and slowly releases the heat during the night. Zaderej also installed a fan system that circulates air heated beneath the metal roof to a concrete wall inside the home, with the same effect.

A small windmill and many other energy improvements were installed on the home, but the cost of all the energy saving measures was only 10 percent more than an average home. When spread out over a 30 year mortgage, Zaderej claims the price is reasonable, considering that the total heating and cooling cost averaged only $33.00 a month for the 4500 sq. ft. home.

"What we've found is that the thermal envelope of the building is what makes it really efficient," said Zaderej. "This is where we need to put our money to dramatically reduce our energy use."

The Pura Vida is now serving as a model home for builders, architects, and homeowners who are looking to build similar energy efficient homes.

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