

# THE NATION'S GREENEST HOUSE

## THREE YEARS LATER

In 2009, the Chicago home that Michael Yannell moved into was heralded as the most energy smart in the country. But some of its features didn't turn out as planned. Here's what worked—and what didn't

BY STEVE HENDERSHOT

**ON WARM MORNINGS, MICHAEL** Yannell moves methodically through his Ravenswood house and, one by one, cranks closed 30 south-facing windows. That can be a hassle if he's in a hurry to catch the train to the Loop. Yannell, a pharmacist, could have installed a system that would open and close the windows at the touch of a button. But, he says, "I was not going to waste electricity on something I can do myself."

That's because Yannell wanted not just a place with a manageable carbon footprint. He wanted no footprint at all. In April 2009, when he moved into the \$2.2 million home—designed by Jonathan Boyer of Farr Associates—it was the nation's greenest: certified LEED Platinum by the U.S. Green Building Council's Leadership in Energy and Environmental Design program (the country's premier green-building ratings system) and with the highest score in the LEED database.

But not every feature of a new home always works as planned. As Yannell was closing in on three years there, *Chicago* visited him to discover which green elements were home runs and which were not (see captions at right for details).

Such extreme-green homes still represent a small share of the housing market. At the beginning of the year, only 16,000 nationwide had been LEED certified—about 30 of them in the Chicago area—with another 70,000 registered for the designation. Cost may be one barrier: In 2009, according to Midwest Real Estate Data, the average single-family home in Yannell's neighborhood sold for about 70 percent less than what he paid for his place (which sits on a double lot and is unusually large).

Though real-estate agents say that green houses seem to sell at a premium compared with traditional homes, there's not enough data to quantify the specific increase in value. But Yannell didn't do it for the money. And that hasn't stopped other homeowners from going green: A year ago, Yannell lost the LEED-points crown to a residence in Edgebrook that sports a wind turbine on its roof.

**The feature:** A V-shaped butterfly roof with 52 solar panels that power the house and hot-water system

**The result:** An incorrectly set equipment-room valve kept the solar system from working properly unless the air conditioning was running—resulting in the house operating at 80 percent efficiency in year one. After the valve was reset, efficiency hit the 95 percent mark in year two.

**The feature:** A heat pump that transfers energy from the solar panels to geothermal wells that extend 350 feet below ground, banking heat in summer and drawing it in winter

**The result:** A success

**The feature:** A wooden exterior coated with water-based sealer, which contains fewer harmful chemicals than traditional versions

**The result:** The sealer performed so poorly that the wood on the house's western wall has faded and looks weather-beaten.

**The feature:** Ninety-six windows, which help flood the home with daylight

**The result:** Even when closed, all those windows let noise drift in from passing Metra trains, forcing Yannell to use a noise-generation machine in his bedroom to sleep.



PHOTOGRAPHY: CHRISTOPHER BARRETT

PHOTOGRAPHY: (YANNELL) JACOB HAND;  
(KITCHEN) CHRISTOPHER BARRETT

**The feature:** Seven different heating zones and five different cooling zones that minimize heating or cooling unused spaces

**The result:** A success—though Yannell (right) also keeps the house at no more than 63 degrees in winter and no less than 78 in summer to hit his goal: for the home to generate more energy than it consumes.



**The feature:** Heat-absorbing clay walls and a “building envelope” that reduce the need for heating and cooling  
**The result:** Works well

**The feature:** A kitchen countertop made of recycled newspaper that resembles manufactured stone  
**The result:** It scratches too easily. (A similar product proved more effective in the bathrooms, where it isn't exposed to chopping knives.)



**The feature:** Long-lasting porcelain floor tiles adhered with mastic that's low in unhealthy volatile organic compounds (VOCs)  
**The result:** The mastic wasn't strong enough, and some of the tiles popped loose.



**The feature:** A graywater system that uses recycled water from the washing machine to flush the toilets  
**The result:** Particles of lint that slipped past the system's filter clogged the pipes, saddling Yannell with unexpected plumbing bills.

**The feature:** A radiant-heating system in the floors, intended to warm the house efficiently on winter evenings  
**The result:** It consumed more energy than the furnace required to do the same job in a few minutes. Now Yannell also turns on the furnace when he gets home.

**The feature:** A fence made of environmentally friendly recycled plastic and pressed wheat  
**The result:** It's flimsy—and one of Yannell's biggest gripes. ●