

A photograph of two men standing in a room with large, multi-paned windows. The man on the left is wearing a white button-down shirt with a logo that says "ERIK'S" and dark trousers. The man on the right is wearing a blue button-down shirt and khaki trousers. They are both looking towards the camera. The room has a patterned armchair, a potted plant, and a clock on the wall. The text "An Energy Star Is Born" is overlaid in large white letters.

An Energy Star Is Born

How to have a comfortable house and save a lot of money

BY **RICHARD NORMAN**
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You've probably heard about an Energy Star this and an Energy Star that — a refrigerator, a furnace, a house. But do you know what that designation means?

Marketplace asked builder Erik Kudlis, owner of Erik's Design-Build Associates in Lisbon, who has long been active in the Energy Star program and has won many awards for his energy-efficient homes, to answer our questions. We began by going to a home that Kudlis built, part of his Esther Pond Lane development in East Lyme, the handsome new home of Alan and Jessica Wrobel.

We sit down, look around, talk about the house. It dawns on us that there are a couple of things missing here — cold spots, for one, and noise, for another.

Alan tells a story to illustrate how well this house is insulated.

"A while ago there was an amazing blizzard," he begins. "I was sitting over here by the north wall in the family room — which is mostly glass. There were 60-mile-an-hour winds that day. And I didn't know it was doing anything at all outside."

Jessica points out the comfortable uniform temperature in the house — no drafts, no hot and cold spots.

"I love it when my guests feel comfortable in my house," she says. "They stay around. They don't want to leave."

Not only does little sound come in from outside, but very little noise travels within the house. The Wrobel's sons might be downstairs making a ruckus, or upstairs with music blaring, but hardly a peep carries around the house.

See page **12**



LEFT BUILDER ERIK KUDLIS, IN WHITE SHIRT, TALKS ABOUT THE STEPS TAKEN TO MAKE THE EAST LYME HOME OF JESSICA AND ALAN WROBEL AS ENERGY EFFICIENT AS POSSIBLE. SPECIAL INSULATION THAT WRAPS THE OUTSIDE OF THE HOME COMPLEMENTS THE USUAL TYPE FOUND INSIDE THE FRAMING OF THE EXTERIOR WALLS. ENERGY-EFFICIENT GLASS WAS USED FOR THE WINDOWS, AND THE FURNACE AND HEATING SYSTEM INCLUDE SOME OF THE LATEST METHODS OF CIRCULATING HEAT AND WARMING A HOME. **PHOTOS JEFF EVANS**



ERIK KUDLIS, OF ERIK'S DESIGN-BUILD ASSOCIATES IN USHON, DISCUSSES THE BENEFITS OF CONSTRUCTING A HOME THAT MEETS ENERGY STAR STANDARDS FOR EFFICIENCY. THE MEASURES ADD ONLY ABOUT \$3,000 TO THE COST OF BUILDING A HOME, HE SAYS, AND PAY OFF WITH LOWER UTILITY BILLS FOR YEARS TO COME. PHOTO JEFF EVANS

From 11

The secret to this kind of energy efficiency, as you might guess, is good insulation and high-quality windows. We pop the big question: all these high-quality building materials must cost a lot of money, right? Is this kind of quality affordable?

Kudlis's answer is stunning: building this kind of energy efficiency into a house adds only about \$3,000 to the cost. The homeowner surely earns that money back, in the form of lower utility bills, in a couple of years.

We tour the house to get a closer look. The sunroom, for instance, with all its glass, was a concern for Kudlis.

In this house he used windows made to Canadian specifications, which is 50 percent thicker than American glass. It is "low-E" glass — low emissivity. It has a micro metallic film, which reflects heat away from the house in the summer and reflects heat back into the house in the winter, when the furnace is running.

Even on a cloudy day, the house is filled

with light because of the many skylights. The skylights contain high-efficiency glass, and the wallboard around them contains extra insulation; there isn't that condensation on the skylights that tells you energy is leaking in or out.

The insulation Kudlis uses is ¾-inch Styrofoam boards, in all the interior and exterior walls. Kudlis carefully insulates the headers around doors and windows, where many houses lose energy.

Moisture control is another important factor: In this house Kudlis has used a quality humidifier made by April Air.

It minimizes mold and mildew growth in the house and even helps to stabilize the evaporative process of the skin, making the inhabitants more comfortable.

"One of our sons has a lot of allergies," Alan points out, "and he does amazingly well here."

In the kitchen we glance at the dishwasher, refrigerator and microwave, all of which are Energy Star-rated.

"They cost a little more," explains Kudlis,

"but consumers are becoming more educated, and they realize they can save \$10 a month or so on their power bill.

And they work better, too. The refrigerator, for instance, really will keep food the temperature you want it."

In a sense, he adds, the Energy Star rating is "a lot of little things."

Kudlis discusses the heavy insulation in the attic and floors. He takes the minimum requirement for floor insulation and "we double it up in our homes."

The Kenmore washer and dryer are Energy Star-rated; they use less water and less detergent, reducing pollution. Down in the basement, we see the controls for the home's three-zone temperature control system and the oil-fired, high-efficiency Buderus furnace, known for its reliability.

The Energy Star program is financed by a load management fee collected from all customers of Connecticut's two utility companies, Connecticut Light and Power and United Illuminating. In Connecticut, Energy Star



testing is performed by a third-party verifier, a Wallingford company called Competitive Resources.

As the company did at the Wrobels' house, it first conducts an insulation air-sealing inspection during construction, then a final inspection after the house is finished. During the final inspection, the efficiency of appliances, furnace, air conditioning and lighting is checked.

A blower door test is performed, wherein a blower is placed in a doorway pumping air out in order to test air leakage into the house, which is an indication of how tightly the home is sealed.

If the house passes inspection — meaning it is 30 percent more energy efficient than the state model energy code — then it receives an Energy Star rating.

There are modest financial incentives for builders to build up to Energy Star standards. But, says Robert Matto, senior program coordinator at Competitive Resources, who has worked often with Kudlis, "even if there were no Energy Star program, even if there were no financial incentives, contractors like Erik would still be building efficient homes. That's how much they believe in energy conservation."



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