

Looking for Savings

A Newsday reporter thought his house was energy efficient until the auditor came

By BILL BLEYER
STAFF WRITER

When I rebuilt my house in Bayville from the ground up in 1987, I used thick fiberglass insulation. I installed a coal stove to reduce my dependence on natural gas. And I recently shelled out more than \$20,000 to purchase an energy-efficient refrigerator and have solar panels installed on my roof that should generate all of my electricity.

So I was hoping that when I signed up for a new free state energy audit program — Home Performance with Energy Star sponsored by the Long Island Power Authority — I would fare better than most homeowners.

Fat chance.

Despite my efforts to be energy efficient, I had energy-efficiency Achilles' heels: my natural gas burner and water heater. Not only were they installed during the renovation 19 years ago and unlikely to be energy-efficient by current standards, they were partially submerged in saltwater and rebuilt after nor'easters in 1992 and 1993. I could see the external rusting, and who knew what was going on inside?

The auditor, Michelle Knaszak of GreenHomes America, the only energy audit company in Nassau or Suffolk currently part of the state program, had a pretty good idea. She recommended a new burner and water heater. But she didn't stop there.

Efficiency and safety

Buffalo-based GreenHomes America has been poking around 30 to 40 Nassau and Suffolk homes a week since the audit program expanded to Long Island in November. Knaszak, whose upstate company recently opened an Islandia office, said, "We'll go through your home from top to bottom to try to make it more energy-efficient and give you recommendations on what you can do to conserve energy. A big part of what we do is health and safety; we want to make sure appliances are venting safely and there's no carbon monoxide leaking."



Alan Raia / Newsday

Green Homes' Michelle Knaszak inspects the basement for leaks and inefficiencies.

The company will do any of the work it recommends other than buy appliances such as washers, dryers and dehumidifiers, because you can do that yourself through the Energy Star program and get a 10 percent rebate. Those who didn't sign up in time to get a free audit, as I did, will have the fee — usually up to \$250 — subtracted from the cost of improvements made.

"Our guarantee is that we will save you at least 20 percent on energy consumption," Knaszak said. "I've been doing this 20-plus years, and we've been saving most people anywhere between 25 and 45 percent on their energy costs."

She said the payback period on improved insulation is usually less than four years. New heating systems take longer. Windows are rarely recommended because, she said, the payback is 30-plus years.

In addition, the money you spend can be a good investment toward resale of a home. "It depends on the package you do, but you definitely get the money back in resale value," Knaszak said. Efficient insulation is a good selling point, she said, and "a big thing in home sales these days is the heating system."

Improvements based on the audit are eligible for a 10 percent rebate from LIPA or under certain circumstances 5.9 percent financing. And new this year is a 10 percent federal tax credit up to \$500 for heating equipment, insulation and appliances.

Starting at the top

After warming up with a list of questions, Knaszak started nosing around. "Good for you!" she remarked when I said I had begun switching over to energy-saving lightbulbs. "We're big proponents

of changing out any incandescents to compact fluorescents,” she said, adding they can save 25 to 40 percent on the cost of lighting.

But she scowled when she saw the house had been built with a lot of high-hat, or can, lighting fixtures. “High hats are a very big place for air leakage in homes,” she said. Later, she proved it.

Knaszak began her detailed inspection in the unheated attic, checking insulation under the floor and in the walls. She pointed out the uncovered fiberglass insulation on the wall wasn’t doing much good because there was no air-seal barrier over it. “All that fiberglass does is filter the air that is going through it,” Knaszak said cheerily.

Because it wouldn’t make financial sense to rip out the insulation to install an air barrier under it, Knaszak said a 1-inch foam board could be placed over it and the seams taped or caulked.

Knaszak wasn’t thrilled about the attic fan because it breaks the thermal barrier. “We usually have them removed,” she said. But there was no way I was giving up my fan because it serves as air-conditioning in the summer. Her compromise was to recommend a foam-board enclosure for the winter.

Beware the backdraft

Moving to the basement, Knaszak observed with displeasure the battens of pink fiberglass insulation hanging down between the ceiling beams.

The house’s perimeter should be insulated, not the basement ceiling, she said. Putting Sheetrock over the insulation to reduce the airflow was an option.

We moved into the utility room. Knaszak closed the doors on rooms without openings to the outside and turned on the dryer and all the exhaust fans. “We want to make sure that there isn’t any backdraft” with exhaust gas from the burner and water heater being sucked back inside through the flues. She detected some backdraft, but it was within safety limits.

“You have some corrosion where they were underwater,” she said of the units. “Having been underwater, the burners definitely aren’t burning as efficiently as they once did because of the rust. They have seen their day. They make them much more energy-efficient now.”

I winced as Knaszak drilled a hole — later covered by duct tape — in the burner flue to test the unit’s efficiency, which turned out to be 74 percent. “Twenty-six cents out of every dollar goes right here,” she said, tapping on the exhaust pipe. “There’s incomplete combustion,” she added, so unburned gas can leak into the house, “which isn’t a good thing.” A new burner, she said, would be more than 90 percent efficient.

Moving on up

Knaszak moved to the first floor, opened the front door and installed a nylon curtain with a round hole in it into the opening. She attached a large exhaust fan in the hole and when she switched it on, the reduced pressure inside the house simulated a 20 mph wind blowing on all four sides of the house at the same time. Then Knaszak held up a smoke device that showed outside air being sucked in through gaps in the exterior walls and coming into the living space through the light fixtures. She said the high hats in the finished areas could be insulated and those in the attic floor boxed in with foam.

Knaszak turned on her infrared camera again and reminded me that “black is cold; white is warm.”

It was black along the tops of windows, around the light switches on exterior walls and around ceiling beams. But she said nothing could be done now cost-effectively; these areas need to be caulked during construction.

After two hours, Knaszak was done. She said she would e-mail me a report and if her firm did any of the recommended work, GreenHomes would do another audit to make sure the problems were resolved.

The bottom line

The six pages of recommendations and charts suggested replacing the heater and water heater, improving the attic insulation from R-16 to at least R-60, or making it roughly four times more efficient, by installing 1-inch foam boards over the existing fiberglass, sealing the attic, insulating the high hats and covering the attic fan and its vents with foam-board boxes for the winter. They would also provide a dozen energy-efficient fluorescent lightbulbs.

The price: \$13,500 — minus a \$1,350 LIPA rebate — for a total of \$12,150. That would save me \$679 a year in energy with a payback over almost 18 years, not counting the federal tax credit and future energy cost increases.

Another option was only doing the insulation improvements. That would cost \$3,700 minus the \$370 LIPA rebate with an annual savings of \$304 and a payback period of 10.8 years not counting the federal tax credit.

I was surprised by the length of the payback periods, so I called Knaszak for an explanation. “It’s your coal stove,” she said. “With your natural gas consumption being as minimal as it is, the payback is longer.” She said the coal stove, while not being as clean as a natural gas burner (I need to deal with that issue down the road), was reducing my natural gas consumption by 20 to 25 percent. And because I only spent \$245

for a ton of coal to supply most of the heat for my house for the entire winter, it’s a great money-saver.

The decision

Doing the insulation upgrade was a no-brainer because the cost was not substantial and the payback was quicker than the burner and water heater.

Replacing those two units was thornier. With the long payback — I could be more than 70 years old before the replacements paid for themselves — the key question became how much longer the old ones would run. Replacing them down the road instead of now meant I would be that much older and less likely to still be in the house when the savings paid off. And not replacing them now would mean I wouldn’t get the full \$500 federal tax credit or possibly the LIPA rebate.

“They could last another 20 years, or they could go tomorrow,” Knaszak said when I asked her opinion.

Ultimately, I shrugged and decided to do the entire recommended package, which would cut my energy use by an estimated 24 percent. After all, I figured on two more advantages — reducing the capital gains if I ever sold my house and making my house easier to sell if I had top-of-the-line utilities.

I gave Knaszak the go-ahead, and she scheduled the two days of work within two weeks so I could start my savings before the weather began to warm up.

The experience was fascinating, but finding my house needed so much work was also somewhat depressing. Knaszak cheered me up a bit by assuring me I wasn’t alone. “Your house could have been built yesterday and still be done this way, unfortunately,” she said.



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