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## Energy makeover winners bask in cozier home

By [Patricia Daddona](#) Day Staff Writer

### Stemming heat loss, contractors help contest winners save energy, money

Andria and Colin Fraser's kitchen has never been a hub of family activity. Last winter, it was barely warm enough for breakfast.

"If I could be warm in my kitchen I'd be happy," said Andria Fraser this spring, thinking back to colder months as thousands of dollars worth of work to her historic home began. "It's always miserable coming in here in the mornings and making coffee. I'd have to wear a scarf and hat and wool socks."

In April, the Frasers won a \$25,000 Home Energy Makeover Contest for their home, the 1874 Brandagee Cottage of Pequot Colony in New London. The contest was presented by The Day and Zerodraft of Connecticut, which specializes building insulation. Chelsea Groton and The Connecticut Energy Fund also were sponsors.

Besides Zerodraft, companies donating products and services included Dependable Contracting Services of New London, which installed the windows supplied by Waltham, Mass.-based Harvey Building Products, and Marvel Home Decorating of New London, which supplied energy-efficient shades.

By reducing drafts, the new insulation in the walls and the highly energy-efficient windows and shades are expected to cut the family's energy bills and heat loss dramatically this winter. The value of the work came to closer to \$35,000, with contractors absorbing the excess costs.

"We wanted people that were in actual dire need of the help," said Zerodraft's managing member, Paul Paris Jr., who was in charge of conducting energy audits and choosing the five finalists that the public selected by vote in April. "The house and homeowner needed to have very high energy usage."

This month, after most of the work was done, testing showed just how much cost and energy savings the Frasers are likely to get next winter. In May, the air leakage in the house, which had virtually no insulation, was a substantial 9,000 cubic feet per minute, according to a blower-door test that depressurizes the structure so workers can measure the rate of air flow.

"In her particular case, it's very drastic," Paris said at the time. His goal was a 65-percent reduction in air leakage, to about 3,000 cubic feet per minute.

In early July, after insulating the house but before the new windows were installed, Zerodraft measured air leakage at 5,796 cubic feet per minute. Once the windows were done the following week, with retesting, the reduction was expected to drop even further, approaching or exceeding 65 percent, Paris said.

### Reducing drafts to cut costs

#### About the contest

It all started with a conversation.

David Geller, sales development manager for The Day, and Paul Paris Jr., a managing member for Zerodraft of Connecticut, which insulates all types of buildings, were brainstorming one day earlier this year when the idea for a home energy makeover hit.

They were talking about the successful "Ugly Bathroom" makeover contest held in the fall when talk turned to energy, Geller and Paris said.

Geller found sponsors and companies to donate products and services and crafted a competition where the winning homeowners would get up to \$25,000 worth of home energy improvements that included a home energy audit, energy-efficient shades, vinyl energy-efficient windows and retro-fitted insulation.

In March, said Jennifer Sammons, The Day's digital news director, 68 entrants submitted photos of their homes, the year their houses were built, square footage, type of heating, monthly units used, price per unit and a write-up of why they deserved an energy makeover.

ZeroDraft judged the entries, narrowed it down to 10, then did a quick walk-through audit of each home, Sammons said.

In the second phase of the contest, ZeroDraft selected five finalists and did full energy audits, which included an infrared thermal imaging inspection, a blower-door test, combustion-efficiency analysis and more. These audits were posted online, along with the other items the entrants submitted, Sammons said.

In the final round, in April, she added, the public voted. With 2,678 votes submitted, Andria and Colin Fraser earned 1,236 votes and were declared the winners. Work began in late April.

Andria said she discovered the contest online after Colin had explored the contest rules on [theday.com](http://theday.com) and left it open on their computer without filling out the required information. Without ever discussing it, Andria completed the submission and turned it in.

"I wrote about how much money

Last winter, the Frasers said they used a wood stove and still spent as much as \$800 a month on oil, or an estimated \$550 on average throughout the year. Using today's dollars to calculate the price of oil, the blower door test results, and other data, Zerodraft estimates the family will spend on average approximately \$211 a month to heat their home.

With a 6-year-old son, Zion, and a second child on the way, keeping the house warm without spending a fortune will be invaluable, Andria Fraser said.

"It feels better than Christmas," she exclaimed as contractors and the media came and went. "We've just been so excited. It's, like, the ultimate gift, because it's all the stuff we talk about doing, but it's overwhelming (to do yourself)."

The disruptions to home life at 57 Chapel Drive in the south end of town were "not a big deal," she added. "I just think about what we're getting."

To insulate the house, Zerodraft sprayed the sprawling, three-bedroom home's attic and basement with expansion foam, and filled the finished walls with injection foam to help insulate the structure. "People aren't buying new homes right now," observed Paris. "They're taking their existing homes and converting it to save energy. These two products, combining the two, you get the 'Mercedes-Benz' of home retrofitting."

Zerodraft also completed specialized testing using Building Air Tightness Standards to make sure the house isn't sealed up too tight, Paris said.

After the insulation work was done, Dependable Contracting replaced 15 of the 37 windows in the house with vinyl energy-efficient windows donated by Harvey Building Products.

#### **'Filling air pockets'**

Ken Bird, the owner of Dependable Contracting, used insulation to fill air pockets in window frames. If you don't, particularly in older homes, the windows are almost as leaky as when you started, Bird said.

The cottage "is a very difficult house because nothing's level," he added. "It's balloon-framed, which means there are more voids to fill than you'd fill" in a contemporary home.

Installed, the top-of-the-line windows are worth nearly \$1,000 each, and have a U factor of .2 - even better than the .3 U factor associated with Energy Star products, Matt Samson, Harvey's vice president of marketing, said. The U factor is the rate of heat loss in a window assembly.

"Most energy-efficient windows have two of panes of glass, these have three," said Samson.

Between the panes of glass, Krypton, a thick, heavy gas, helps prevent heat loss.

The U.S. Department of Energy has determined that Energy Star windows cut down heat loss by 20 percent and save as much in energy costs, Samson said. He estimated his higher-rated product would yield 30-percent savings or better.

The windows also have a "low E" coating that blocks not only the ultraviolet rays that penetrate the skin but UV rays that fade materials like rugs and furniture, Samson said.

With this donation, "We definitely went with the bells and whistles," he added. "It was a way to put our best foot forward and show off a window that we're quite proud of."

Marvel Home Decorating of New London donated up to \$2,500 worth of energy saving shades, said owner Gail Grillo. Manufactured by Hunter Douglas, the product is part of the Duette Architella collection, she said.

"They're the only blinds on the market that qualify on their own for the federal energy tax credit," Grillo said.

The cellular honeycomb construction carries an R-value of as much as 7.73, preventing more than 75 percent of heat loss, she added. The R-value is a measurement of the product's ability to keep heat in and cold air out. Within a range of 3 to 8, the higher R-value provides the greater the insulation, she said.

As the work was completed, Fraser said she and her husband are thankful for the improvements.

"All the contractors were genuinely excited for us and that felt really good," she said. "It's one of the greatest gifts we could have won, because there's no way we could have done all this in one

we spend per month on heat and I said my olive oil is solid in the winter months; I have to throw it on the kitchen stove before I can use it," Andria wrote.

As for choosing the Fraser's historic home, Paris said he picked a house "where we can actually see some savings," adding, "This one's way overboard" in terms of heat loss and air leakage.

— Patricia Daddona

fell swoop, and I think it's going to make a really big difference."  
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