

## Keeping winter out will seal in savings

Sunday, November 18, 2007

By MARY ANN D'URSO  
SPECIAL TO THE RECORD

As first-time homeowners, newlyweds Nicole and Joseph Breslin settled into their two-bedroom, 1950s ranch home and thought it was cool. Really cool.

During the summer, they didn't need to rely on the central air conditioning.

But the house grew chillier along with the weather, even with the heat on.

"We knew there might be a problem come the cool weather," said Nicole Breslin, a teacher at the Jackson Avenue School in Hackensack, on a recent afternoon as her West Caldwell home was being prepared for an energy audit. An audit determines how much energy a house uses and loses, and ways to waste less.

Hot air rises and gravitates toward cold. In a leaky or under-insulated house, this is akin to throwing money out an open window in winter.

Staring at their first winter in their own home, the Breslins decided it was worth \$295 to see what shape their house was in and determine their options for keeping out the cold.

Chris **Burrows**, owner of **CM Burrows Inc.**, a Cliffside Park business that conducts home inspections and energy audits, said his goal was to "seal the envelope (the livable space), getting her a savings of between 20 percent and 30 percent on bills. Most of the houses I do, I'm pretty confident of at least getting that."

**Burrows**, whose audits average between \$295 and \$395, was trained using Home Energy Tune-uP, a program developed by CMC Energy Services of Bethesda, Md.

**Burrows**, 31, sees the audits as part of the whole Green Movement and that all of it – from using compact fluorescent light bulbs and buying energy efficient appliances to sealing leaks and insulating – has cumulative benefits that begin with an individual homeowner and spread to neighborhoods and beyond.

As more people are educated about energy issues, including the cost-savings relationship for their own homes, "people can see they can make a difference, go green and help save the environment for an affordable price," said **Burrows**. "It all adds up." In the cold weather months, he said, he averages between 10 and 20 audits a month.

"People are trying to do the right thing for themselves and the added

benefit of doing something for the environment is a driving factor," said Saby Carrea, owner of ATCO Custom Home Services, energy efficiency specialists in Midland Park.

Carrea, one of a few Bergen County accredited contractors on the [njcleanenergy.com](http://njcleanenergy.com) Web site, said he is getting more calls from people interested in home audits, and that there isn't a specific demographic. "It's a wide gamut. It fits every profile," said Carrea, noting he's heard from retirees to prospective parents. "It's the most interesting thing about this."

**Burrows** slid a red tarp into a metal frame to cover the open front doorway. A fan known as the "blower door" sat at the bottom of the cloaked opening. The fan depressurizes a house, pulling air from the house toward the doorway.

Air leaks often happen around the "envelope," where the ceiling meets the attic or the first floor meets the basement or crawl space foundation. The goal is sealing the envelope. On audit day, **Burrows** compiles information, including photos, and offers some initial feedback. Within a few days of the audit, he'll deliver a detailed report and recommendations to improve energy efficiency.

**Burrows**, whose family comes from a construction background, also provides estimates of what it will cost to have the work done, as well as savings estimates. In some cases, homeowners can do the work themselves.

Generally, attic insulation is not up to snuff in older homes -- homes built through about 1990. By the mid 1990s, **Burrows** said, building code compliance became more energy efficient. Today, standard insulation is 12 inches, with an R value of 38, which refers to the efficiency of insulation.

It is also not uncommon, with a basement or crawl space, to find air leaking at the point where the sill plate meets the rim joists (where the foundation meets the first-floor flooring). Surprisingly, even new construction can lack caulking or sealing here.

Initially, **Burrows** inspects houses from top to bottom before turning on the fan. In the Breslin home, he evaluated the attic, basement, crawl space and livable space. He assessed the insulation and air leaks and looked at the energy efficiency of equipment, including the boiler, water heater, appliances and air-conditioning system. **Burrows** prowled for problems like the cool spot in the middle of the Breslins' living room which, turns out, fell directly under a gap in insulation in the attic.

Once the fan is turned on, the tour concentrates on the living space. The blower door locates air leaks and measures the amount of air exchanges -- outside to inside -- in the home. The cold air will come in from these spots and the hot air will escape. "Air leakage is one of the major deficiencies in a home that goes unnoticed," **Burrows** said in an e-mail message after the

audit. Solving the problem of leaks will stop drafts and save on bills.

**Burrows** found some good things at the Breslin home: All the windows, even the 4-by-8 bay window in the living room, were double-paned and well-sealed around the molding. The washer and dryer were energy-efficient.

Here are some problems he found, along with suggested fixes.

The previous owners had added blown insulation – a cellulose material -- to the original batt insulation (the pink stuff), bringing it to about 6 inches. The solution: add more blown insulation to meet today's standard.

The basement and crawl space were not sealed at the sill plate and rim joists. The crawl space underneath the master bedroom had no insulation. Seal the foundation. Caulk the windows. Insulate the crawl space with batt insulation.

Cold air from the basement came up through the gap in the base molding along the hardwood floors in the living room. Seal under molding and possibly add more round molding.

Cold air blew in from the electrical outlets. Put outlet filters behind the plates.

Under the kitchen sink, the discharge pipe opening was not sealed, causing a significant draft. Seal the pipe opening.

The kitchen door that leads to a window-enclosed porch was very drafty. Install a door sweep on the kitchen side and discontinue using the porch, where the Breslins ate dinner, during cold weather months.

The furnace was one of the least efficient, coming in at an 80 on an energy guide ranging from 78 to 96.6. When feasible, replace.

Breslin said she was encouraged that many of the fixes involved sealing and insulating – easy jobs, especially for both of their handy fathers. She looked forward to **Burrows'** detailed report, knowing that if they call a contractor, they'll have a sense of whether someone is suggesting unnecessary things.

"I'm so happy we had this done. It's very enlightening. It's nice to have people out there for you [the homeowner]," she said. "You spend money initially, but you're saving the money ultimately."