



# THERMAL IMAGING

STORY BY Yael Goldman · PHOTOS BY SHARON CASTRO AND PROVIDED

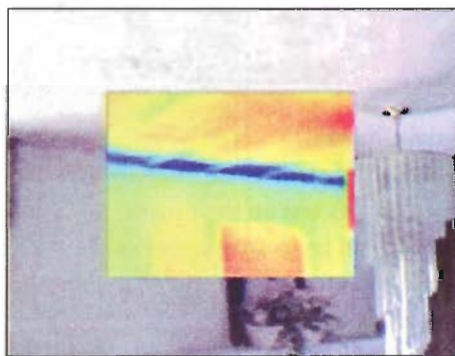
We followed Anita Henry, of New York Energy Auditors, and Allen P. Tanner, of Capital District Home Inspectors, through a complete and fully certified home energy efficiency and safety inspection.

According to Henry, there are many reasons to get a home inspection: to check for major problems prior to purchasing a home, to investigate air quality issues and moisture, to improve your home's energy efficiency, or even to identify a problem before it becomes too expensive.

"Right now, with the price of oil and natural gas going up, you want to tighten up your house. It's like your car: if you repair a leak in your gas tank you will use less gas; it's the same thing with your house, if you tighten up the air leaks you'll use less energy," Tanner said.

The team met up with a homeowner who recently purchased a 60-year-old home, and wanted to check for air leaks that could possibly explain her unusually high energy bill.

In order to provide the most thorough and accurate inspection, the team conducted three essential tests. First, the team systematically scanned the entire perimeter of the home (every room, every corner, every inch) using a high-tech thermal camera.



Thermal imaging visually translates hot and cold spots that are otherwise invisible to the eye. When looking at the camera's screen, Henry and Tanner easily identified blue spots as areas leaking heat and drawing in the cold.

"With the thermal camera, we can find

a roof leak early, turning a \$10,000 job into a \$500 solution," he said."

When scanning the living room with the thermal camera, Tanner noticed large blue spots specifically around a bay window.

"Windows are typically the biggest leaks. Not because the window is poor [quality], but because they weren't properly sealed or caulked when installed," Tanner said.

Although Tanner rarely recommends window replacement, homeowners looking to install new windows should make sure they have a low "E" value, which indicates the amount of sunlight reflected by the window.

"You want your windows to absorb sunlight," Tanner said.

Next, using a smoke-puffing device, Tanner found exactly where the cold air was leaking around the window.

"The smoke blows away from the wall when there's an air leak. It's an easy repair. All you have to do is purchase 50-year caulk and just seal any tiny spot where the



smoke moves.”

According to Tanner, homeowners can even do this test on their own.

“You can go to an arts and crafts store, get cheap incense, and check it yourself,” he said.

Tanner and Henry also tested the air for moisture which can cause structural problems and pose serious health risks if not detected.

“Moisture is the biggest problem for homes. It can lead to rotten material, deterioration of organic matter and, of course, mold,” Tanner said.

“It’s especially important if you have kids. Kids are most susceptible to illnesses caused by mold and radon exposure,” Henry said.

Air moisture above 50 percent is an invitation for mold growth, which causes

health problems such as allergies, asthma attacks, eye and skin irritation, chronic lung disease, and even mold infections of the lungs.

Mold growth is concealed by drywall, wallpaper, paneling, carpets, and ceiling tiles, and is therefore hard to detect. Although 35 percent of homes are damaged due to water or moisture yearly, according to Bureau of the Census statistics, most cases go unnoticed.

During the inspection, mold growth red-flags (musty smell, visible water stains, and complaints of allergic reactions) aroused their suspicions; Tanner and Henry used a moisture meter to detect microbes in the air. Finding no mold or radon issues, the team proceeded with the blower-door test.

“We won’t use the blower door if mold

is identified because it will pull the mold through the house," Tanner said.

The Blower door is a fan device that is attached to the front door of the home. After measuring the total volume of air in the home, calculating the number of air exchanges, minimums and maximums; the blower door is used to depressurize the house, allowing the team to identify changes in pressure and therefore major air leaks or circulation problems. Depending on the results, this test will tell whether a home is too leaky or if it needs to have mechanical ventilation installed to increase circulation.

According to Henry, newer homes are often too "tight," which is also a problem. Without adequate circulation, toxins such as radon can build up.

"You don't want radon in your home; it's a leading cause of lung cancer," she said.

The blower door indicated major air leaks for the homeowner. Tanner and

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Allen Tanner,  
Capital District Home Inspectors

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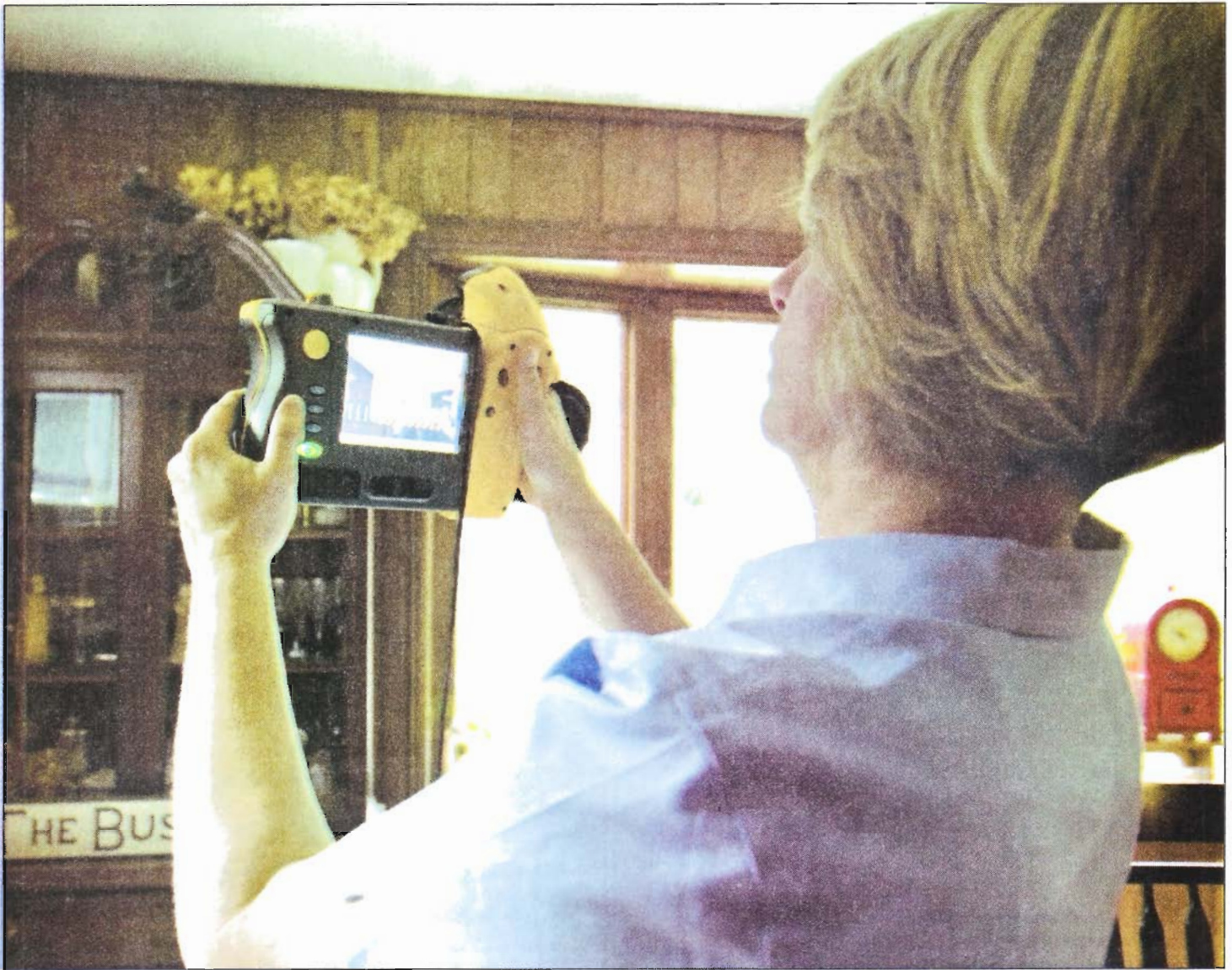
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**“It’s especially important if you have kids. Kids are most susceptible to illnesses caused by mold and radon exposure.”**

Anita Henry,  
 New York Energy Auditors

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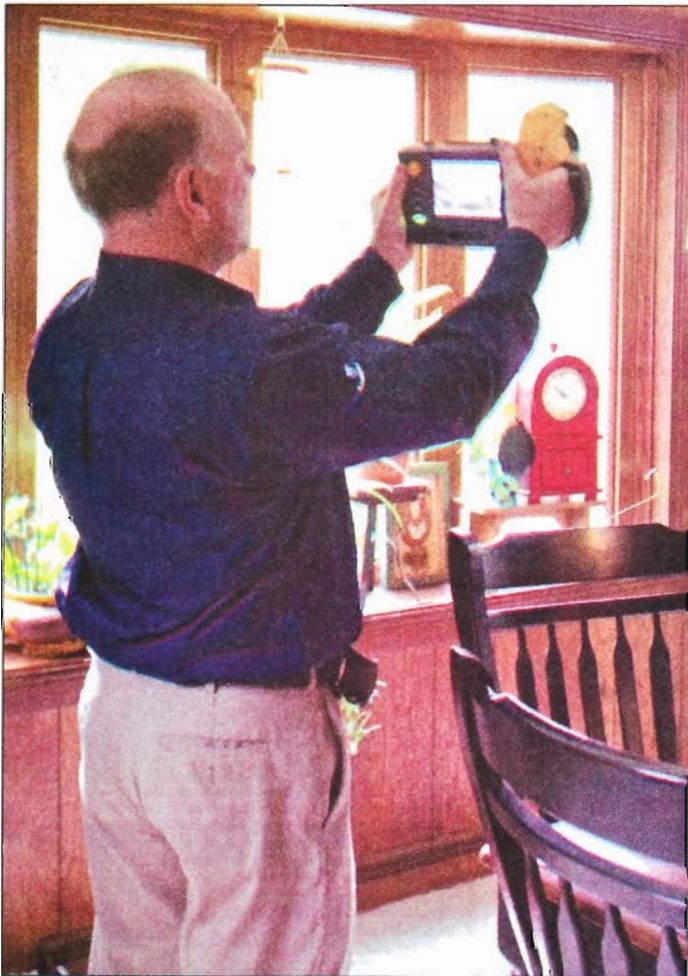
Henry made retro-fit recommendations, explaining to the homeowner how to fix the problem in the least expensive way, and with the quickest return.

"There's a lot of our heat loss right there in the front door. All you need is a storm door. Storm doors are the best investment," Tanner said.

Using a high-tech thermal camera, a blower door, and air quality assessing tools, the home inspection team was able to locate the homeowner's problem spots, and recommend the most cost effective solutions.

To schedule an inspection visit [www.capitaldistricthomeinspectors.com](http://www.capitaldistricthomeinspectors.com) and [energyauditors.com](http://energyauditors.com), or call Allen Tanner at (518) 526-5167 and Anita Henry at (518) 429-9531.

Homeowners can also receive tax incentives up to \$1500 for conducting an energy audit. For more information, visit [www.nyscrda.org](http://www.nyscrda.org).



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