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Finding the leaks: Energy audits can result in savings

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Some examinations are simple checks to see whether there is a draft by a window.

Others involve sucking the air out of a house with what is called a blower door. Both aim at the same benefit: saving money.

Home energy auditors throughout Western Pennsylvania say examinations of homes could result in thousands of dollars in improvements, but also could pay for themselves in a few years.

"We recently did this examination in an Aspinwall home, and it will result in about \$7,000 (of) work," says Joe Morinville from Robinson's Energy Independent Solutions. "But it will pay for itself in less than four years."

"Then it starts making money," adds Tim Carryer from Highland Park's Green Over Green, a firm that does energy-related renovations.

Carryer is president and Morinville a member of the Diagnostic Energy Auditors of Western Pennsylvania, a consortium of auditors who test homes and some who even do improvements.

They are far from alone in their advocacy of energy audits.

- The U.S. Department of Energy offers tips on simple, do-it-yourself checks and lists of energy auditors.
- Conservation Consultants, in the South Side, a group focused on helping low-income people with energy issues, provides free, walk-through examinations for the needy, but also is urging more thorough -- and costly -- checkups for middle- and higher income homeowners.
- Utilities and home-improvement firms sometimes offer their own examinations, often centered on their areas of specialty. "It makes sense, doesn't it, that a window company would take a look at your windows," says Chris Kielich, spokeswoman for the Department of Energy. "But it can be a place to start."

Morinville is a little suspicious of audits done by utilities or home-repair companies, but admits they can point to specific areas of need. "You just have to keep that in mind," he says, adding there can be bigger matters involved.

Diagnosing the problem

"Our expertise in these matters is that we're generalists," Carryer says, talking about the audits his group provides.

He and Morinville say their actions "diagnose" problem areas and come up with ways of handling them. Along with examination of heating and ventilation equipment, auditors inspect homes for mold, wasteful use of lighting and insulation.

One of the most dramatic checks is to measure home air leakage through the use of a blower door. After the house has been sealed, a unit is placed in a doorway and a fan sucks air from the house. Devices on the contraption can measure how quickly air is replaced in the home, and cracks can be seen with an infrared camera.

In the home of Richard Rothhaar, director of business development for Conservation Consultants, small pieces of cloth danced across the hearth of a leaky fireplace during the blower door test.

The Department of Energy and home builders say the air inside a home should be replaced about once every three hours. If it happens faster than that, the home is leaky; if slower, ventilation needs to be considered because of issues of toxicity.

"Indoor air is about nine times worse than outside air," Carryer says, citing paints and chemicals as a cause.

Diagnostic measurements of that nature are costly, because of the expense of the equipment and the training of auditors. Carryer and Morinville say their groups' audits generally cost between \$500 and \$700, the price naturally increasing with the size of the home and any structural issues.

Rothhaar's group charges \$450, he says.

The examinations result in a report that can suggest "many inexpensive, do-it-yourself-type projects that can make a major impact on energy consumption and comfort," Morinville says.

For instance, the audit at the Rothhaar home recommended purchasing a fireplace chimney draft-stop balloon to seal leaks in the wood-burning fireplaces, insulating an access door into the attic and sealing box ends of basement joists where leaks were observed.

Conservation Consultants audits sometimes refer homeowners to contractors who can do the work. Carryer and Morinville say some of their clients are suspicious of having an examination done by a contractor who could be looking for work. They will refer other contractors and also file their reports with PA Home Energy, a private organization that tries to help consumers with their energy needs.

PA Home Energy works within Energy Star guidelines that were set up by the Department of Energy and the U.S. Environmental Protection Agency.

Morinville says PA Home Energy's evaluation of the audits acts as a "third party" overseeing the recommendations.

Simpler ways of testing

Trying to get a handle on home energy efficiency does not have to be that complicated.

The Department of Energy, for instance, recommends what they call walk-throughs in which a homeowner can go room to room, checking for air leaks at doors, windows, mail slots or at holes where electric cable or water lines pass through walls.

The department's Kielich says it is possible for a homeowner to see trouble spots by checking amounts of insulation and examining maintenance records for heating and air-conditioning units.

Information on those topics or on how to hire an audit professional is available at energysavers.gov.

In the same way, some utilities offer hints on their own. Duquesne Light, for instance, has a walk-through energy audit at its duquesnelight.com/wattchoices Web site in which a homeowner fills out a questionnaire with features of the home, and then appropriate tips are supplied.

Joseph Vallarian, a utility spokesman, says information on help for low-income users is available at duquesnelight.com/universalservices.pdf.

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