

The Real Energy Detective

Slowly the mini-video cam snaked its way down the metal ductwork. As Detective Pat Garrett continued to feed the cable down the shaft, he kept his eyes on the hand-held monitor.

Slowly...slowly...there! Just as Garrett suspected; the culprit lay at the junction of two of the metal panels.

Pat Garrett isn't an FBI agent. He isn't a law enforcement officer of any kind. And the culprit in our ductwork scenario isn't a bank robber or an escaped convict. The culprit is a split seam allowing conditioned air to escape from the house. Pat Garrett is a home energy audit specialist for Duck River Electric Membership Corporation. Pat is a real energy detective.

Like many of the electric cooperatives across Tennessee, Duck River Electric Membership Corporation provides its customers with free home energy audits. During a home energy audit, the specialist comes out to your home and hunts for clues of energy waste and inefficiency. In the Duck River service area of south central Tennessee, Pat is the man to see.

For over five years, Pat has been helping his customers save energy and money. "Most people think I am just going to give them some brochures or pamphlets about energy efficiency," Pat says. But after he spends over two hours covering the entire house from attic to crawl space, "the customers are really impressed with how much we do."

Pat actually starts his investigation of each target home before he ever leaves his office. He begins by researching the age and construction type of the house. This information will help him know what problems to expect when he is in the field.

When he arrives at a house, Pat begins with a complete surveillance of the house's exterior. As he circles the home, Pat charts all of the house's windows and doors. He also looks for clues of energy waste, such as broken windows, peeling weather stripping and loose caulking, and signs of moisture that could create wet and inefficient insulation. He also inspects any exterior heating and cooling units, and checks out the electric meter.

Once inside, he will examine the attic and make sure there is a sufficient amount of insulation. He'll get out his smoke pen to track air flow to be sure the warm air in winter, or cool air in summer, are not escaping through any cracks. He may use his mini-video cam to take a closer look at the ductwork if he suspects there may be leaks.

Another special tool Pat has in his arsenal is a velometer. The velometer is a special device that measure how fast the air is flowing. "If the air is moving too fast," Pat explains, "the condenser coil on air conditioner can't do its job efficiently. That's a big waste of energy."

“If the air is moving too slowly,” he adds, “the house isn’t breathing properly. Without proper airflow, you won’t have the desired temperature change across the evaporator. That will make the unit work harder.” Again, a big waste of energy.

Of course, a home energy audit wouldn’t be complete without a visit to the crawl space. Many people forget about insulating under their homes and a lot of energy escapes that way. It can be a dirty job, and a tight fit for the five foot, ten inch Garrett. Checking out the crawl space can also add an unexpected twist to the job. “I’ve seen some pretty big snakes down there,” Pat laughs.

Even the smallest details don’t escape Pat’s investigation. He looks at air filters, hot water heaters, thermostats, refrigerators, and freezers. According to Pat, “A lot of people plug in an old freezer out on their porch, then don’t fill it up. They waste a lot of money that way. A full freezer uses a lot less electricity than an empty one does.”

After completing the investigation, Pat prepares a written report for the homeowner. In the report Pat details his findings and makes recommendations on how the owner can help improve their energy efficiency and cut down on energy waste.

As far as Pat is concerned, that is the best part of being an energy detective, helping the customers and showing them that their energy cooperative really cares.