

The Energy Audit at My House

As we reported in our last issue, OUE arranged for Michael Fisher of Solair Energy, Inc to make energy audits in August at the homes of two area families. OUE paid for these audits as part of our on-going alternative energy/conservation initiative. During the same week, at my own expense, I arranged for Michael do an audit at my house. We chose Solair to do the audit because they did an excellent job installing solar energy projects that we had financed at the Warrior Run School District and Greenwood Friends School. Further, their crew is prepared to do all the work their audit indicates as necessary for energy efficiency.

Below, I have described the process and results of the audit at my house in order to make the whole process more familiar and, hopefully, to encourage some of our readers to having an audit of their own homes. Here's what happened.

The day Michael came to my house, which is a small, two story building built in the 1950s, he spent about three hours doing the audit. He started in the basement with a small, bright flashlight and checked out every nook and cranny there, and then in other parts of the house for holes, cracks, and fissures. In the basement, he found nothing blocking his view when he pointed the light up between the walls, meaning there was nothing inside the walls. Like no insulation, something typical for homes built in those days when fuel was plentiful and cheap.

Then, Michael installed a "blower door," a powerful fan that mounts into the frame of an exterior door. The fan pulls air out of the house, lowering the air pressure inside. The higher outside air pressure then flows in through all unsealed cracks and openings, and a monitor on the blower measures the air infiltration rate of a building. He followed that procedure with "video thermography," the use of an infrared video camera that records the temperature variations of the building's skin, ranging from white for warm regions to black for cooler areas. The resulting images help the auditor determine where sealing and insulation is needed. In a word, Michael and his machines found air escaping from my house from the windows, the doors, the garage, exhaust outlets in the basement, the fireplace, the attic, and many, many other places. He left me with a CD of the infrared imaging allowing me to see for myself places where my house was open to the weather.

Three weeks later, Michael sent me a twenty two page report that identified each of these leakages, its proportion of the total, and an estimate of how much it would cost to bring the house up to the EPA standards for top efficiency. The cost for this audit, the CD, and the report was \$260 (and the cost of an audit depends principally on the size of the house).

The audit indicated that I needed two separate kinds of work, the first of them "air sealing" of all the leaks revealed by the audit. This did not, of course, solve the problem of the absence of insulation in the walls and too little of it in the attic. I suspected that the insulation would be the mostly costly of Michael's recommendation and his estimate bore out my prediction: the house could be "sealed" for about \$1,900, but the insulation would

cost about \$7,500, the bulk of that for the empty walls. He also estimated that, at current fuel prices, both of these would pay for themselves in about ten years.

What to do? I decided to begin with the sealing, and Michael and his co-worker, Chris, did that in October. I have also contracted with Solair to add insulation to the part of the attic that is atop living spaces in the house, and that will cost about \$1,300. After that, I suppose that I will remain in denial about the walls until I come to my senses and fork up the \$5,500 for the job. A carpenter friend told me that if I decide to sell the house its being fully insulated will allow for a sales prices that will take care of the cost of packing the walls with cellulose. For now, though, I'm hanging around hoping that something will happen – though I can't imagine what – that will stop all that heat from escaping through my walls in the winter.

Anyway, that is what happened at my house when I had an energy audit, and I hope that the information is helpful to at least some of our readers. Charles Sackrey, Editor