

ENERGIZE MISSOURI HOMES

MISSOURI DEPARTMENT OF NATURAL RESOURCES



HOMEOWNER UPGRADES and GEOTHERMAL

HOME ENERGY AUDITS FACT SHEET

What is a home energy audit?

A home energy audit is an inspection, survey and analysis of energy usage in your home with the objective of identifying opportunities to reduce your home's energy use, enhance the comfort of your home, and maintain or improve the health and safety of the occupants. A home energy audit should cover all fundamental building elements and identify cost-effective energy efficiency upgrades such as sealing air leaks, adding insulation, improving heating and cooling systems, and upgrading inefficient lighting and appliances.

What happens during a home energy audit?

Some of the activities and procedures you should expect during an energy audit include:

- An initial interview with the homeowner to determine if there are any existing comfort and energy problems, identify goals or priorities, and gather information on the homeowner's energy usage behaviors.
- A walk through inspection of the home.
- The use of diagnostic tools to evaluate energy use within the home and conduct safety testing.
- A prioritized list of recommended cost-effective upgrades and improvements for health, safety and energy conservation.

What should I expect from an energy audit conducted by an *Energize Missouri Homes* qualified auditor?

An *Energize Missouri Homes* qualified auditor is trained to understand the Homeowner Upgrades and Geothermal Program rebate levels, eligibility requirements, procedures and all applicable requirements. An *Energize Missouri Homes* qualified auditor will use REM/Design™ modeling software to establish a baseline energy use for the home and identify the energy saving potential of the upgrades that have been selected by the homeowner. Finally, *Energize Missouri Homes* qualified auditors are encouraged to use standard industry best practices when conducting an energy audit. For more on best practices, see the backside of this fact sheet.

How can I contact an *Energize Missouri Homes* qualified energy auditor?

Homeowners wishing to participate in the Homeowner Upgrades and Geothermal Program must schedule an energy audit with an *Energize Missouri Homes* qualified auditor. A directory of qualified energy auditors and other program information is available at <http://www.dnr.mo.gov/transform/energizemissourihomes.htm>.



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HOME ENERGY AUDITING BEST PRACTICES

Exterior and Interior Inspections

A general inspection of your home may be conducted to evaluate the condition of the construction and check for any safety issues that may exist.

Combustion Safety Testing

A home energy audit should include combustion safety test, to protect the health and safety of occupants from poor air quality, natural gas leakage from appliances and potential carbon monoxide poisonings.

Upgrading Heating and Cooling Equipment

Furnaces, air conditioners and hot water heaters are large energy consuming systems that deserve special attention. Regular furnace maintenance, such as replacing the air filter every month or two, can greatly improve its efficiency. Replacing old equipment with energy efficient equipment can also result in significant savings. An auditor should inspect these pieces of equipment thoroughly and evaluate older equipment using a combustion analyzer tool which will help determine the efficiency of any existing gas powered equipment.

Locating Air Leaks

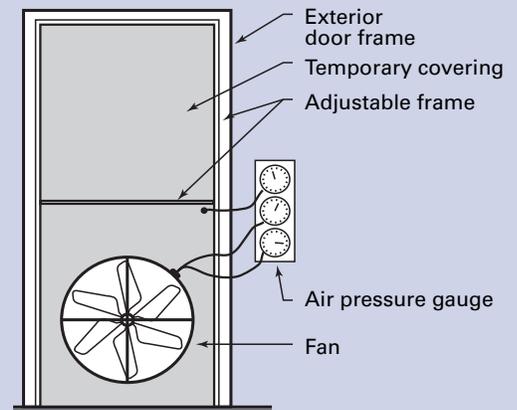
Energy can be lost as air flows through gaps along baseboards, walls and ceilings junctures, and around pipes, wires, windows, doors, and outlets. To determine how much air is leaking, auditors should perform blower door tests. This test uses a powerful door-mounted fan to draw air out of a building, while all other doors and windows are closed, in order to measure the building's air infiltration rate. Smoke pencils can also be used to locate the leaking areas which can be sealed to improve building efficiency.

Improving Insulation

Insufficient insulation allows heat to pass through ceilings and walls, requiring more energy to cool or heat a home. A home energy audit should include an insulation review to determine the condition of the building's insulation. This may include a check for moisture, continuity of insulation, and R-Value of the insulating materials (R-Value is a measure of thermal resistance; the higher the better). More advanced energy audits also include the use of thermal imaging cameras to detect insufficient insulation.

Diagnostic Tools

Testing the airtightness of a home using a special fan called a blower door can help to ensure that air sealing work is effective. Often, energy efficiency incentive programs, such as the DOE/ EPA ENERGY STAR Program, require a blower door test (usually performed in less than an hour) to confirm the tightness of the house.



BLOWER DOOR TEST

Source: U.S. Department of Energy
http://www.energysavers.gov/your_home/energy_audits/index.cfm/mytopic=11190

Duct Sealing

Leaks in the ducts running through your home may cause some rooms to be warmer or colder than others, leading to inefficient heating or cooling. Auditors should use duct blasters to check ducts for leaks. Similar to the blower door test, this piece of equipment uses a fan to force air in or out of the ductwork while taking pressure measurements to gauge air tightness.

Evaluating Lighting

Inefficient light bulbs can often be replaced with more efficient equipment without affecting their usefulness. A simple inspection of wattages on light bulbs will normally be enough to identify energy saving opportunities.