



HOME ENERGY AUDIT:

A BRIEF SUMMARY OF WHAT TO EXPECT

What is a home energy audit:

A thorough inspection of the building, to
find out how efficiently it uses energy
identify cost-effective ways to improve that efficiency
ensure a healthy indoor environment
ensure the building's durability
save energy, money, and the environment
while keeping you **comfortable**

What is involved:

We interview the home's occupants to learn as much as possible about the home, its comfort level and its energy use. We use the information to guide us as we perform the audit.

We inspect the home's heated areas, the basement, the attic and the building's energy using equipment.

We record the indoor and outdoor temperatures, indoor relative humidity, wind conditions, the temperature of domestic hot water.

We determine the solar orientation and projects of the home and the insulation level of the building's various components.

We take measurements and calculate the floor area, volume, and surface area of the home's heated space, the surface area of walls, floors, ceilings, roofs, windows and doors.

We record the building's energy consumption using at least one year's of fuel and electric power bills.

We perform a blower door test of the heated area of the building.

We walk through the building and pinpoint all areas of air leakage while the blower is running..

This inspection, depending on the complexity of the home, will last 2-3 hours.

Based on data collected, we perform a number of calculations to determine heat losses through the building's various components and the level of air leaks into and out of the structure.

We develop strategies to up-grade the home's energy performance.

We develop a detailed report for the homeowner, including detailed recommendations and an estimate of energy and cost savings, provided the recommendations are implemented. All recommendations will pay for themselves from energy-cost-savings in seven years or less, based on current energy prices. If prices rise, as expected, payback periods will shorten.

We invoice you when we deliver our report.

How much can I expect to save if I follow the auditors' recommendations?

The answer obviously depends on each individual house. Each house is unique and even the occupants behave differently, have different habits. However we can share with you a few interesting statistics based on our energy audits this winter:

The average heated floor area of all houses audited	2,318 square feet
Average total (fuel+electricity) energy consumption	114,318,861 Btu/year
Average amount of #2 fuel oil (or equivalent) consumed	867 gallons

Our recommendations, *on average*, will result in
a 40% reduction in energy consumption
a saving of \$1,333 per year (more if fuel prices rise)
a reduction in carbon emissions of 3.75 tons of CO₂ per house per year

Miscellaneous observations:

Most Maine houses leak far more air than the owners expect; we are finding houses with leaks totaling the equivalent of a hole as large as 4-7 square feet

Most electrical outlets, especially on outside walls, leak. These are good examples of problems anyone can inexpensively fix: gaskets are available for pennies in any hardware store. Similarly a lot of leaks can be fixed by caulking and sealing almost anyone can do.

Recessed light fixtures protruding into the attic are heavy air leakers/ heat losers. Most older recessed fixtures can not be sealed or insulated against due to the fire hazard. Consider zero-clearance replacements — or track lighting. Another frequent heat and air loser is the area around the chimney. Such leaks are fairly easy to fix using sheet metal and high temperature caulk.

Most Maine houses do not have insulation under the ground floor over an unheated basement. People often say that their basements are heated by the furnace or boiler, not realizing that it is the heat losses from the heated rooms above that heat their basement. Insulating the basement ceiling, including a sheet plastic vapor barrier on the warm side, is one sure low cost way to reduce heat losses by a lot — and do not worry: the basement will not freeze.

Most attics have insufficient insulation, a situation easily remedied.

Most basement and attic access doors, including attic hatches, leak and/or are uninsulated. A piece of board insulation mounted on the cold side and some weather-stripping can do wonders here.

Too many homeowners consider investing in some renewable energy system — solar heating, earth-coupled heat-pump, a geothermal system, etc. — before considering sealing leaks, and adding insulation and a vapor/air barrier. Yet what would be the point in investing in an expensive energy system only to waste 40% or more of its energy in a poorly insulated, leaky house? Renewable energy systems become cost effective only once all possible energy conservation measures have been taken.

For more information and to request a home energy audit go to <http://www.midcoastgreencollaborative.org/>