

Energy Savings strategies

A small investment now can mean a big return later

Joe Kelly of Advanced Home Inspections

Energy tips you can do yourself;

1. Insulate the attic hatch
2. Install insulated foam boxes over IC-Rated recessed lights
3. Install foam gaskets behind receptacle & switch covers
4. Install programmable thermostats
5. Seal registers and ducts
6. Add insulated duct sleeves to bare metal ducts
7. Caulk penetrations through the siding
8. Door seals, especially garage
9. Install energy efficient lighting
10. Insulate heated water pipes (domestic & heating)
11. Change all filters often, vacuum fans and registers
12. Insulate Rim joists, or basement ceilings in unheated areas
13. Make sure furniture is not blocking air flow. Keep flammables and wires away from electric baseboard Heaters
14. Insulate the garage door

Other relatively inexpensive things you should get professional help with;

- Adding blown-in attic insulation
- Install wind blocks (Styro-vent) in eaves
- Flush water heater and set temperature below 120 degrees

Most of these repairs, maintenance items, will cost less than \$100 and will easily pay for themselves rapidly. Most of us are looking for a big return on little investment, and if your relatively handy, these ideas can get you the most bang for your buck. Most can be accomplished in less than a weekend.

Of course there are more detailed analysis that can be performed for you, such as energy audits, that give specific lists of suggested repairs. Many utility companies will provide a basic evaluation for free, or at a small cost. Other much more detailed evaluations that include Blower door testing, Thermal imaging photography, and heat loss calculations can be very helpful, but come at an increased price. Whatever avenue you choose, only detailed record keeping, and the test of time, will reveal the actual savings or benefits in your pocket.

Here's the tough part with any project, Stay Focused and complete the job at hand. Start by doing a thorough inspection, take lots of notes, and generate a list of materials. I, or most other Home Inspectors can assist in this process, but of course there will be a fee involved.

Lets start in the Attic, remember basic physics "Heat Rises". Your attic can be a dark and dangerous place and most homeowners rarely, if ever, look up there? Some of these tips

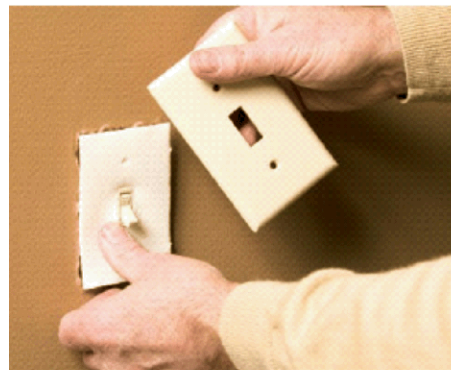
are easy and safe to do, but others should be left to the professionals. Often there is no light, walkways, or enough room to move around. If you can't see where to walk, you probably shouldn't. Stepping through the ceiling can not only be dangerous, but costly to repair, and best left to professionals.

Pop your head through the hatch, usually located in a closet ceiling. As you do, take note of the amount of air that passes by you, this hatch can act like a chimney, sucking your conditioned air right out the roof. Sometimes the last person up there put insulation over the door cover, sometimes not, this is one of the major heat loss areas and easily fixed by gluing several layers of rigid foam insulation to the top of the cover. Take your flashlight and look around from the hatch. How thick is the insulation, and what kind is it? If your not sure, take a sample to your local building supply store, along with the thickness measurement. Different types have different R-values (insulating quality) in general it should be from 12 to 20 inches thick. If your not comfortable, stop there and hire a professional! Attic ventilation is critical for a healthy attic environment, I know, it is tempting to seal it up trying to save heat, but the best option is to keep the heat from getting there in the first place. Every penetration through the ceiling from the heated area is a potential heat loss point that should be addressed, Recessed lighting, Bathroom fans, and plumbing vents, are just a few that need special attention.

In the **Living space** there are lots of little things that can add up fast. The most visible energy robbers are doors and windows. But how do you know where to start? Obviously, if you can see daylight, or feel a draft, they need attention. Other more subtle leaks can be detected on a breezy day by holding an incense stick, or other safer smoke discharge products, near the edges of doors and windows. If the smoke moves, there's leakage and its time for new weather stripping, caulking, or maybe replacement.

How many receptacles and switches are in your home? How many are on the outside walls? While your there, do the smoke test on them also. It's not just the ones on the exterior walls that leak air, wires in the walls often penetrate the attic or basement. Most of us have removed cover plates for painting, but if you're the least bit concerned, hire a professional, and always use insulated tools keeping them away from the wires. If there is a gap around the box, caulk it, then install a foam backer to the cover plate, and your done.

If you have forced air heating and cooling there are literally hundreds of places for air leaks. Duct tape is no longer for ducts, it only lasts a few years at best. The latest is now foil tape, but even that is only good for about 7 to 10 years, how old is your house? The best sealer is mastic paste that will probably outlast the average homeownership. Sealing leaks and insulating bare metal ducts will not only save money, but improve indoor air quality.





Commonly, on forced air systems, the supply ducts are on the floor and return air chases on the walls. Most times the floor registers are just sitting there and not attached, this makes it easy to repair and clean. Remove a register and check it out. You might want to take a mirror and look down the duct for obstructions, but don't create one

by dropping the mirror. If it's dirty, vacuum it out, if it's blocked, call a professional. Often times the ducts are not attached to the floor allowing precious air to escape. Seal the ducts with foil tape, or mastic, and replace the register. Return air is a different animal all together and there is not much you can do other than vacuum the grills and keep the furnace clean. Often, there is no ductwork, rather the wall cavity is used, this is another whole article and can be a costly remedy.

Unfinished basements are common and since cold is drawn to heated areas this is where you can make a big difference. When was the last time you had your furnace cleaned and serviced, if you can't

remember, or it's been more than a few years, it's time. Generally, the only maintenance of a forced air system the homeowner should tackle is changing the filter, leave the rest to a professional. The filter is your first line of defense in keeping your indoor air quality healthy. Since heat rises, most times the ducting above the furnace is the supply, and the ducting entering the side, or bottom is the return. There is an arrow on most filters and it should point toward the furnace, cleaning the air as it returns.

Insulating heated water pipes will not only save money, but get the heated water to the faucets quicker. Installing an insulated blanket over the water heater can also help, but be careful to leave access to control panels and keep it away from the burner access if it is gas.



The rim joists, or outer edges of floor framing should be insulated also. This can be as easy as measuring, cutting, and installing fiberglass bat insulation.

Attached Garages are generally unheated areas against, or under, living space. Hopefully the walls are insulated, but

you don't really know. Avoiding air leakage around the garage door can be accomplished by adjusting, or replacing, the side and bottom weather stripping. Consider insulating the door with foil or foam insulation. Check the weather stripping around the door into the house.



Exterior penetrations through the siding need to be sealed periodically. Such as hose bibs, electrical wires, gas lines, and any place outside air can get in. Window and door caulking should be checked and repaired or replaced yearly.

Other simple measures. Now that you have identified most of the energy robbers don't forget to upgrade your thermostats to a programmable type that reduce usage when your sleeping, or away. Replace incandescent lights with compact florescent lamps (CFLs). Even small repairs can add up in the long term, and in the mean time, you'll enjoy a more comfortable home.

Feel free to contact Joe Kelly of Advanced Home Inspections with questions at 610-562-5384, email; joe@advancedhi.com, or on the web at <http://www.advancedhi.com/>