

Tales from the Crawlspace

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Propertyexam

Energy Efficiency vs. Energy Conservation?

As we slip past the holidays, we all give a silent sigh of relief as we get back to “normal” life and work as we let out our belts a notch. In the great Pacific Northwest, we’re set to go through the bulk of our winter season without the distraction of the holidays. This brings many of us to consider the reality of our seemingly ever increasing heat and energy costs. Cutting down energy use is the only thing that most of us can do about energy costs. Some may wish to consider making substantial changes to curb or control these costs. Others want to do what they can to operate what they have in more energy conservative ways. These 2 approaches are the basis different strategies and terms.

Energy Efficiency is about equipment, construction, insulation, design, things like that. Energy conservation is about behavior. At 1st look, most people think efficiency is hardest, conservation is easiest. It also seems that hardest measures produce the best results. The truth is much different. The best results for reduction of energy use are a combination or marriage of both efficiency and conservation. Updating equipment and efficiency of a building is easy if you can “write the check” or obtain financing. Changing behavior is an ongoing struggle. My “point of view” for this subject comes from my experience as do most things. I am a Home Performance Trade Ally with the Energy Trust and a Building Performance Institute, Building Analyst & Weatherization Trainer. I’ve been doing “Energy Audits” and “Energy Surveys” of different types for years. I am also an Energy Star Verifier, which has to do with new construction and is quite interesting. However, my real interest is in making existing buildings more efficient. New construction will take generations to have a real impact nationally on our energy use as a country. Making our existing homes and buildings will make a difference now. For me that’s pretty powerful and a driving force.

Making an existing building or home more energy efficient involves looking at all the aspects and systems of a building and developing a complete plan, based upon a hierarchy of energy savings to return of improvements. This is called a SIR or Savings to Investment Return Ratio. Caulk is king. Caulk is the cheapest thing you can buy for your house and it will usually do more to cut energy loss than any other single thing. The added benefit of protecting the building from moisture intrusion is just gravy (to the energy saving enthusiast in us). Better insulation in the attic floor or ceiling, crawlspace, these come next. Although wall insulation is important and can be dramatic (going from none to fully insulated), the high cost of insulating and repairing uninsulated walls, lowers the SIR. Duct sealing of leaking HVAC ducting can be the single most universal and significant energy saving repair. Duct sealing is also very cost effective and therefore has a very favorable SIR. Many people want new windows, and although newer, more energy efficient windows do help in seal the building, insulate and cut down on solar heat gain (the latter not our big issue here), The high cost makes for a long return and therefore usually not high on the list of recommendations. Here, I part ways with “conventional” energy programs and audit standards. There is more here than just the gas bill. This is a home, loved by the present owners and an investment for the future, based upon the next owner’s perceived value. Under most conditions, all new windows add value to the home. Therefore, I believe you should consider the increase in value or equity in a decision to replace windows and not just the energy savings. If that is done, new windows would score high in recommended upgrades. I’ll get off that particular soap box now...

New HVAC is a major upgrade and if it is needed, a newer more efficient unit can make a substantial difference in energy use. However, if it isn’t truly needed (i.e. the existing unit near or at the end of its useful service life) HVAC replacement is costly and other improvements more effective. Going to a tankless water heater is actually a huge savings and gets a terrific SIR rating (in spite of the high cost of a tankless vs. tank water heater unit).

Planning energy efficiency can be a complicated process on your own. You can get help from the energy trust who will give you a basic walk through audit at no charge. Most Home Performance Trade allies can perform a Building

Performance Institute standard energy audit and may credit the cost of the audit towards improvements you hire them to do. There are a few, independent building science analysts around like myself, who can perform a BPI audit, including Infrared diagnostics. This should also mean ongoing support as you implement improvements. There is a lot of sometimes confusing information out there and it's hard sometimes to figure out what may actually produce the best results. Every building is different, and every approach should be as well.

Next month, I will tackle Energy Conservation or Behavior. I will try to discuss, people's behavior and education without offending anyone. I'm not really sure I think that's possible (for me) but I promise to try...