

The Energy Efficient Home

Now that we have all taken steps to make our houses cozy, let's talk about what we can do to save some money. Before getting to deep into this subject, there is one question you should ask yourself. How long will I be in this home? Why? To realize savings on big ticket items like furnaces and windows you will need to stay in your house for 8-10 years.

For example, say you put a new furnace in your home and the cost is \$5,000. After putting the new furnace in, your energy bills drop an average of \$50 per month. In 100 months or 8.3 years you will have saved \$5,000 and the furnace has paid for itself. So, if you plan to sell in a couple of years a new furnace is not the answer.

Ok, now that we have touched on that, let's talk about heat loss mitigation. The number one place that houses lose heat is through the roof. Climb up into your attic and take a look. Is it insulated? Is the insulation old or matted down? If so the first thing on your to-do list should be insulate the attic. The best insulation is blown in. There are several companies locally that provide blown insulation. The goal: R-36

Second, take a look around your house. Are the doors and windows tight? What about other penetrations? A leaky house is a drafty house. It is worth every penny to spend a Saturday afternoon sealing up your house. Is your basement unheated? If so, take a walk down to the basement and look up. Is there bat insulation between the floor joists above? This is another quick fix that will make the house feel a lot better and save some money. Purchase some bats at the hardware store and staple them between the floor joists. Minimum: R-13

Third on your to-do list: call a local heating and cooling company and have them inspect your current system. Does it provide the correct amount of heating for your home? Is it installed correctly? How old is it? How efficient is it? Are you ducts size to supply the air needed to each space? These are all questions that impact your energy consumption. A high efficiency (95% or higher) furnace sized to meet the loads of the house will save the most on energy costs. If you plan to stay in your house for the long haul and have an old furnace, replace it now to realize the long term savings.

Now to windows. Are you living in a house with single pain windows? Burrrrrrr! At least get some storm windows. The second greatest place for heat loss is through the windows. You may recall that we discussed windows a few months back. If you remember I compared them to cars. The bottom line; buy good windows. Look for the following: U-value \sim .3, SHGC .4-.5, Low-E, argon filled, and a good warranty. I usually don't recommend vinyl windows and I will tell you why. The coefficient of thermal expansion (COTE) for vinyl is very different than that of glass. This results in broken seals and structural problems within the window. Also, vinyl is slowly broken down by UV rays and can't be repaired. One of my favorite windows is Integrity by Marvin. It is a really good mid-grade window built out of pulltruded fiberglass. Pulltruded fiberglass is extremely strong and resists the elements in every way. It also has a COTE that is nearly identical to glass. Wood clad windows are also great, but a little more expensive. Replacement windows are a must if you plan to stay in your home and will generally pay for themselves within 10 years.

Last but not least let's talk about the walls. If you live in a house that is more than 60 years old chances are good that your walls aren't insulated. There are options to improve this situation. In fact there are companies that specialize in filling wall cavities. Generally they cut openings near the ceiling and fill the walls with a cellulose type insulation. The walls are then patched and refinished. I put this at the end of the list because walls are not the greatest source of heat loss and the installation is more invasive.

The architect in me says do all of these things right away. The homeowner says this could get expensive. So, do what you can! Even if you only address the attic, the floor, and exterior penetrations you will realize cost savings and be more comfortable in your home.