



If you own a home that you sometimes find draughty and expensive to heat - then you could benefit from carrying out energy efficient home improvements. An energy efficient home is not only more environmentally responsible, it is also much more economical in the long run. When you take steps to stop air leaks and improve the insulation in your attic, basement and walls, these steps can mean your house stays warmer and you are more comfortable through the winter months when those cold winds seem to seep in from the outside.

Be assured, steps taken to improve energy efficiency is likely to be far more beneficial than you realize particularly in an older home. Indeed, effects are likely to be as far reaching as helping to create a viable home performance industry while improving our environment.

### **What is energy efficient home improvement?**

Energy efficient home improvement is about creating a home that is comfortable and uses less energy to heat and cool, because it is well sealed against air leaks and well insulated against heat transfer. When a home is poorly insulated, the use of a heating system can be undermined by loss of heat through lack of insulation in the walls and attic, poorly fitted windows and doors that let in draughts and so on. By taking measures to correct these problems, you'll be able to improve the energy efficiency of your home - and that can mean significant savings on energy bills. The following are some of the ways in which you can improve the energy efficiency of your home:

**Diagnostic Tools** The best way to address problems in older homes or homes that have few energy efficiency measures taken during construction is through running some diagnostic tests to find the home's 'weak points' when it comes to energy efficiency. These tests can assess how tightly the home is sealed and pinpoint the locations where hot air is escaping from the home. These tests examined areas such as ductwork systems, attics/roofs, basements, exterior wall cavities, utilities entry points and so on. Ultimately, the tests will determine how efficient or inefficient for that matter your home is; whether you have drafts that is allowed to come in unhindered, whether or not you have insulation in your attic or walls and whether you have insulating windows and well sealed doors etc.

**Window insulations** - When you have windows that are not insulated, you can experience loss of heat in two ways. First, if your windows are older (such as on a traditional, character home) then you may get heat loss via gaps or spaces around the window. Second, the home may have single glazed windows which lose heat via heat transfer. The Repairing or replacing of older windows with energy efficient ones can help to prevent further loss of heat; which in turn can improve the comfort of your home. To address the second issue, you may opt to have the windows double or triple glazed (using heat reflecting glass), or have polythene insulation installed to help minimise heat transfer and keep the maximum amount of heat inside your home. Other applications such as heavy drapes across the windows during the winter can also further reduce heat loss to the outside.

**Door insulations** - If you have glass doors, then many of the same principles apply to insulating these as you would your windows. Additionally, draft proofing or weather stripping is one of the

simple things you may want to consider when air sealing your homes; Preventing draughts from entering rooms also means preventing heat from escaping. These applications are quick and simple to install and they can make a big difference to your home. It is also possible to carry out improvements to your home by having insulated outer doors installed by a professional. Some of these doors are solid, sturdy doors that will help to reduce heat loss because they contain insulation within their core.

**Air sealing** - This process refers to the sealing of the less obvious draft spots in the home. If you have a draft under a door, you may be able to stop it with a weather strip, but a significant amount of heat loss can take place via gaps and holes in basements, crawl spaces and attics or lofts. In order to eliminate heat loss in these locations, it is worthwhile to hire a contractor to assess your home for leakage, carry out sealing around areas where leaks are identified is very essential to improving the home's energy performance. A professional can seal your home quite tightly to improve energy efficiency and prevent loss of heat from these locations.

**Duct sealing** - If you have reverse cycle air conditioning ducted system in your home, there is a possibility that you will experience issues of heat loss via poorly sealed openings, gaps around the seals of the ducts and so on. If you have an older home that is prone to be draughty, then chances are you are letting a lot of money slip through your fingers, heating a home that is releasing a large proportion of that heat outside conditioned space. The long-term cost of this could be significant when compared to the ease of sealing leaky ducts. A professional home performance improvement contractor can help you assess the loss via the ducts and other areas and can help you to correct these problems without inhibiting the function of the system.

**Roof/Attic** - Insulation in the attic is one of the most effective insulation procedure; helping to keep the warmth in during the cold months and the heat out in the hot months. If you insulate your attic you would be creating one of the most important cost savers for an energy efficient home, for heat loss through the attic can account for up to 20% of the loss of heat from the home. Insulation products for the roof can include traditional fiber glass or you may opt for a more environmentally friendly option such as cellulose which is pulverized recycled newspaper treated with fire and mold spores retardants. This works more efficiently than the regular fiberglass insulation when dense pack, in addition its production is less damaging to the environment as it is biodegradable.

**Wall insulation** - Wall cavities in your house can act in a similar way to double glazing, dense packed these cavities with blown-in cellulose insulation and boost the energy efficiency of your home. Some new homes may have been built with energy saving measure already in place, however older (existing) homes all across the country may have to have this done to achieve desired energy efficiency.

### **Why energy efficiency matters?**

Home energy efficiency improvement matters and should be aggressively pursued because of its obvious job creating potentials, its long-term viability as an emerging building performance industry and its increasing importance in the drive to reduce green house gases. The current job market is clearly in need of a 'shot in the arm.' There is little doubt that energy-efficient building improvement has the explosive job creating potential that is needed now to help right this economy. Indeed, low-income communities all across this country are full of unemployed people who could easily be trained in the relatively low skilled weatherizing techniques. The construction industry, for example, which has lost over 20 percent of its workforce since 2008 would find the strong commitment to energy retrofit a welcome development. In addition, inner city neighborhoods where older in-

efficient buildings are often the dominant building stock provide a perfect 'ecosystem' of desirable buildings and worker pool. Cities such as Boston in the Northeast United States has gotten the message and has embark on the quest to find how to best capitalize on this opportunity.

The long-term viability of energy efficiency as a building performance service is attractively promising because of two main reasons. One, to achieve any plausible reform in our national energy policy, this has to be a fundamental piece of the equation. It is becoming clearer that the government recognizes this and is inching its way forward. Cities across the country are brainstorming for creative programs to solve this building energy in-efficiency problem. The city of Boston has a proposal on the table to infrared scan all the buildings in the city to test for heat loss. Two, The national building stock, residential and commercial, is woefully energy in-efficient and must be improve or we will continue to throw money out the window and pollute the environment, clearly, unsustainable options.

Beyond the considerable potential for immediate job creation and the creation of a new industry with all the social benefits attached, reducing climate pollution is an important bi-product of energy efficiency improvement. According to the Pew Center on Global Climate Change, buildings account for about 43% of the total carbon dioxide emissions in the U.S., compared to transportation 32% and industrial 25%. The interesting fact is that activities to improve building energy efficiency are among the most cost effective among alternatives to lower green house gases. The truth is, a homeowner choosing to improve his/her home energy efficiency is in fact contributing to solving the fundamental environmental, social and economic issues of our time.

### ***Why should homeowners care about energy efficiency?***

As a homeowner, carrying out improvements to ensure energy efficiency can quickly start to return the money you've out-laid. When you air seal,insulate and improve the envelope of your home correctly to prevent the loss of heat, it is effectively cutting out wastage. You wouldn't go to a store for basics like bread and milk then throw 20% of it out. The fact is you're 'throwing out' a huge amount of your heat Without weatherization and other energy efficient home improvements. If you don't like the idea of wastage and you don't want to continue throwing away your money, then you should give serious consideration to having your home weatherize. The correct installation of energy saving insulation in your attic and basement alone can reduce your energy bill by around 20 percent or more; add that to the money you will save by having air sealed, and installed insulated windows and you'll quickly see that those savings stacking up. A simple way to get started with making energy efficient improvements to your home is to contact a professional. An experienced home performance improvement contractor can run a series of diagnostic tests to measure your home's efficiency and how tightly it is sealed. Armed with this information, you can then take the steps you must to improve your home's energy efficiency in order to start saving the maximum amount of money while enjoying a more comfortable, healthy home.

## **The Effects of Energy Efficiency Home Improvement**