

Common Problems

Air-Leaks:

The majority of homes throughout the United States leak enough air to fill 3-4 Goodyear blimps each hour! Although it may not seem like it, all the air leaks around the windows and around the doors, through the recessed lights and the attic access are the major cause for high energy bills. How many windows are drafty in your home? How many recessed lights do you have?



Basements:

The rim joist is the area of the home that is the root of all evils when it comes to a drafty home. As hot air generated by your boiler or furnace rises up through the house and into the attic through leaks, cold outside air gets drawn in through the rim joist in your basement to replace the displaced air. This makes a home feel drafty and contributes to high energy bills. Rim joist air sealing is especially important at bump out areas such as bay windows that hang over the foundation.



Cellar Doors:

Whether you call it a basement door, a bulkhead, a cellar door, or a Bilco door these are major culprits for moisture in basements, and a major contributor to the "stack effect" in your home. Is the room or floor above this entrance cold in your home?



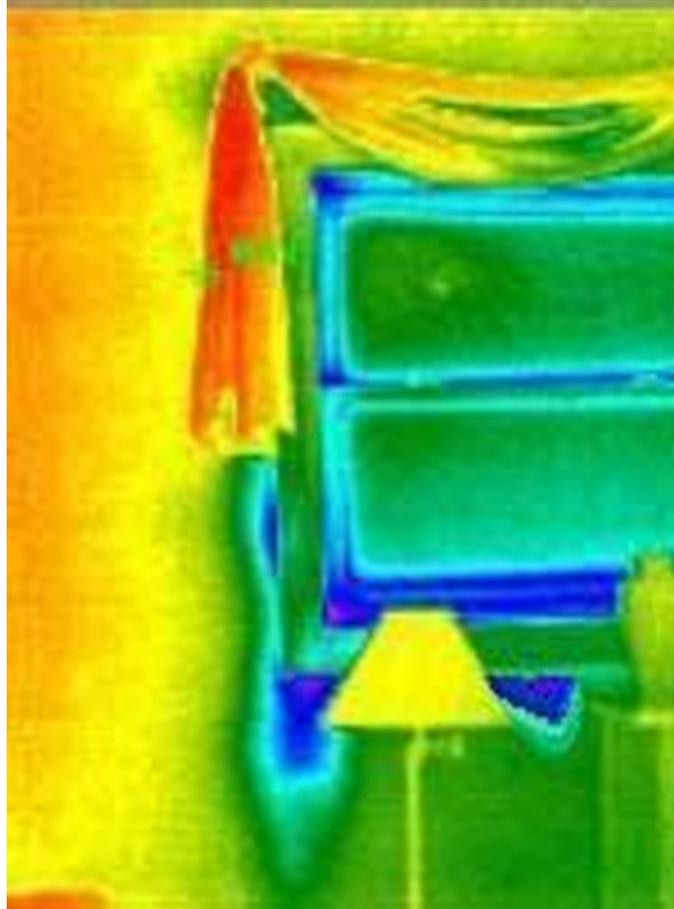
Crawlspaces:

This is an area that homeowners don't like to venture into very often. However, this area constantly ventures into your home in the form of cold air, moisture, mold, and mildew. The rim joist is leaky; the vents that were once installed as old building codes do nothing but allow warm air in during the summer causing moisture and cold air in during the winter causing discomfort and high energy bills. Do you notice what this has done to the fiberglass insulation?



Drafty Windows and Doors:

Windows and doors are inherently deficient in their R-values. A single pane of glass has an R-value of 1, wood doors have an R-value of 2.5, and insulated metal doors have R-values that range from 6-10. The real trouble with windows and doors is not the material they are made of, but how carelessly they were installed in the framed rough opening. The gaps that are left around windows and doors at installation and never properly air sealed, then covered with trim molding are the real culprits for your windows feeling "drafty."



Plumbing Penetrations:

These plumbing penetrations that weren't properly fitted in the existing wall are a perfect example of the types of holes that further exaggerate the stack effect from the rim joist in the basement below into the living space.



Chimney/Flue Chase:

From the vantage point in this photo, one can look into the chimney chase and down into the house. When this cavity is heated, the air rises into the attic, turning the shaft into a chimney for the home's conditioned air.



Recessed Lights:

Recessed lights are attractive additions to your home, and according to the US Census Bureau almost 300 million recessed light fixtures have been installed in American homes, but they are serious subtractions to your home's energy efficiency. The average home has the equivalent of a 2 foot-square hole in the ceiling from recessed lights that allow warm air to leak out through the attic. In dollars and cents, this leakage accounts for anywhere from one-quarter to one-third of your annual heating bill!



Attic Access:

Attic access doors/hatches are not insulated nor are they air tight. This lack of insulation and air sealing allows heat to escape up into the attic in the winter and brings hot air into the home in the summer.



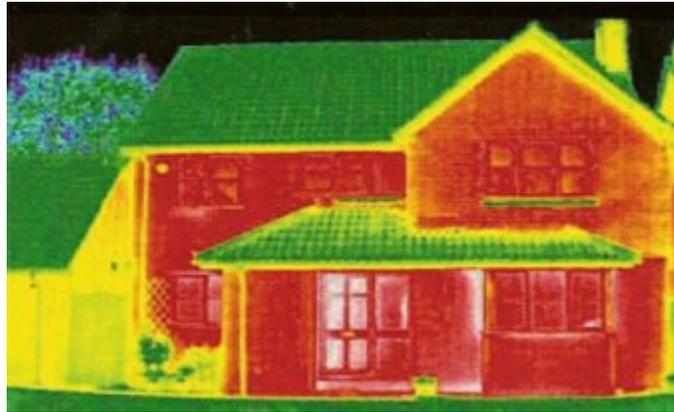
Dirty Insulation:

Take note of how the fiberglass around this pipe is turning grey. Insulation with dark coloration is an indication of air movement due to the dirt collected by the insulation as air passes through it. This photo also illustrates how it isn't necessarily the obvious ports of entry in the attic that can cause heat loss or heat gain throughout your home. Take note of how the fiberglass around this pipe is turning grey. Insulation with dark coloration is an indication of air



Missing Insulation:

Inadequately insulated or completely un-insulated areas of your home lead to cold rooms in winter, hot rooms in the summer, and extremely high energy bills. The easiest and most cost-effective way to insulate your home is in the attic. However, if you own an older home that has no insulation in the walls you are losing half of the heated or cooled air you produce from your mechanicals.



Air Handlers in Attics:

Would you put an air conditioner in your oven in order for it to cool off your home? Air handlers installed in attics that typically reach 140 degrees Fahrenheit put a strain on your air conditioning unit, result in higher electric bills and shorten the life of your equipment.



Heating Systems:

Residential heating systems in the United States have a heat capacity between 1.5 to 2 times larger than that needed to maintain room temperature even on extremely cold days. Due to this over sizing of the heating system, the burner will cycle on and off repeatedly to prevent overheating of the system during any call for heat from your thermostat. This equates to driving your car in "stop-and-go" traffic; which is the least efficient gas mileage one can achieve from their car.



Inductive Motor Loads/Electricity:

Your electric provider sells you 3.2 kilowatt hours of energy for you to effectively use 1 kilowatt-hour in your home. This loss is attributed to the resistance and heat that is generated as electricity travels over transmission lines and into inductive motors in our homes. Pools, hot tubs, air compressors, forced air heating/cooling units, refrigerators and freezers are all examples of inductive motor loads in our homes. These motors contain coils of copper wire that receive an electrical current to produce an electro-magnetic field to turn the shaft inside the motor. This coil of wire inside of these motors further exacerbates the line loss that is produced from the delivery of your electricity from the power company.

