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White Paper

How to Kill Six Common Air Leak Monsters That Wreak Havoc on Your Home

It goes without saying that building a continuous air barrier is much easier with new construction than in older homes. That's because with new construction you're starting from scratch, and well-established practices can create a tight building from the get-go that's practically air impermeable. In older homes, however, you're not constructing an air barrier from scratch so much as you are trying to find air leaks that already exist and then fixing them.

Back in the day, constructing "breathable" homes were the norm; the exchange of air in and out of the building envelope was considered the best way to build sustainable houses and healthy indoor environments.

But little did those old-school builders and remodelers know the health issue associated with mold and mildew, or comprehend the science behind such things as stack effect, heat transfer, and thermal radiation. Nor could they be expected to be able to foretell that gas prices would sky-rocket.

Air crawls around your home unseen and pops up where you least expect it, creating unhealthy living conditions. Kind of like tiny bugs. Or perhaps more like little monsters, especially when you open your utility bill and get the fright of your life.

If you live in an older building (or a poorly constructed new one), don't let air leak monsters wreak havoc on your life– or your utility bill. Kill them dead before they do more damage.

Here are six common places to find air leak monsters in your home and how to get rid of them for good.

1. **Windows and doors** ï Perhaps the most obvious place to find air leaksð and the first place you should lookð is around windows and doors. After all, holes were intentionally placed in the walls of your home to let in light and air (and humans) so naturally there might be drafts. Weather stripping and/or caulk can often fix minor problems, but if you have older windows or doors warped from years of use, all the weather stripping in the world may not be enough. In such cases, investing in good quality replacement windows or doors may be the next (albeit more expensive) step.
2. **Chimney Chase**s ï Just like for windows and doors, holes were intentionally made in your home to accommodate a chimney. Therefore, you might expect to find gaps between a brick chimney and the wood framing, sometimes from the basement all the way up to the attic. A chimney chase represents a perfect place to find ñstack effect,ò in which warm air floats up and out of the house and cold air is pulled in to replace it. If the gaps are small enough, fortunately this is a quick fix using foam sealant or other fire-rated material.
3. **Plumbing Chases, Light Fixtures and other Penetrations** ï Yet another place to find stack effect in action is around plumbing chases, HVAC ductwork, light fixtures, wiring penetrations and bath fans. Air will move through the rooms of your home, looking for the path of least resistance to your attic. In most cases that path includes the cracks and crevices around electrical boxes and piping and ductwork. Again, this represents an easy fix using spray foam or foam inserts.
4. **Attic Door or Hatch** ï In general thereôs more air moving around in your basement and attic than anywhere else in your home, so drafts around attic doors and hatches are very commonð and easily fixed. Weatherstripping around the attic access can get that door tight, and an attic stairway insulator can close the insulation gap created by attic stairway access.
5. **Basement Sill and Band Board/Band Joist** ï The meeting point in the basement where brick or block foundation walls meet the wood framing (sill) is an often-overlooked area of the home. But it shouldnôt be ignored because this area accounts for a lot of air leakage--especially in older homes, where oftentimes the wood sits directly on top of the block, forming gaps and cracks between the two materials. Similarly, the area between the floor joists at the top of the sill (called a band board or band joist) is also a significant source of air leaks. Both the sill and the band joist can easily be insulated with spray foam to seal the areas and block air infiltration.
6. **Wall Cavities** ï If you live in an older home, chances are your exterior walls were never insulated when the house was built. And if they were, more than likely that insulation has since settled, deteriorated, and lost its thermal value. But before you undertake an insulation upgrade to your exterior walls (which can be costly and messy depending on the method used), make sure youôve taken care of the other air leaks in your home. If youôve done this and air infiltration problems persist, then itôs possible your walls may be a culprit. The best way to determine this is by having an energy audit but if cost is a factor, consider a simpler method. On a cold day, hold the back of your hand or a lit match up to an unused register or crack in the drywall and feel for a breeze. If you feel a cold breeze, it might be time to call in an insulation contractor.

There are other sources of air leakage in your home, but the above six are some of the biggies. If taken care of properly, these little monsters that wreak havoc on your home will be a thing of the past. Killing them in their tracks will not only make for a more comfortable living environment, but will result in less costly utility bills.

Ace Resources, Inc. installs commercial and residential insulation, soundproofing, fireproofing and intumescent coatings. For more information or to schedule an Insulation or Fireproofing Audit contact the company.

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