Draughts Versus Ventilation!

Draughts are uncontrolled and mainly unwanted, whereas **ventilation** should be at your discretion.

This month we will see just how much energy we can save by draught proofing; at the same time we have to accept that adequate ventilation is essential for the wellbeing of buildings and their occupants. Let's look at ways we can get this delicate balance right.

Draughts:



Draughts in buildings are particularly wasteful of energy because they not only allow heated air to escape, but also make the occupants of the building feel cold. Occupants of draughty buildings often turn up thermostats to compensate for this discomfort, which wastes even more energy.

In older buildings a huge amount of heat can be lost through poor air tightness. Did you know that up to 75% of heat can be lost from a room with an open flue? Older sash windows were inherently draughty and ill-fitting timber doors can let in a huge amount of cold air. There are many other sources of cold air, some of which can be hard to find. I hope that these few paragraphs can help you to identify, and remedy some of these.

Windows and doors

Original windows and doors are a key part of the character and interest of older buildings and should be retained where possible. Draught-proofing is one of the cheapest and least intrusive methods of cutting down on heat lost through windows and doors, and the costs can be quickly recovered by the energy savings.

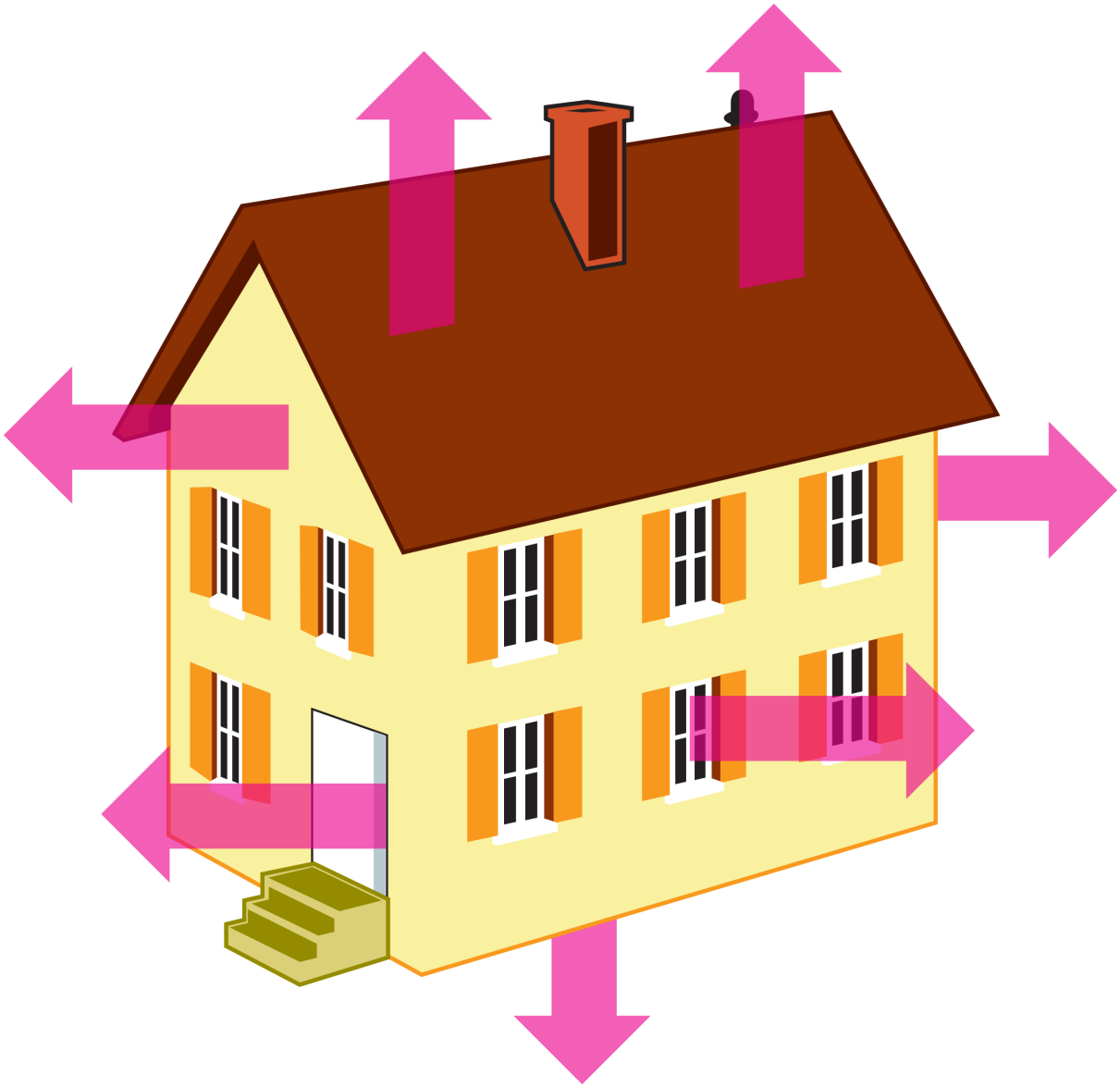
Older windows and doors often warp, and the sills, particularly of doors, are susceptible to wet rot. Check first to see if repairs are necessary, as these may help cut down on draughts.

About one fifth of a home's heating is lost through windows.

A lot of this escapes through air gaps rather than through the glass. Research has shown that air infiltration through a sash window in good condition can be reduced by as much as 86% by adding draught-proofing. And this has the added advantage of reducing noise and dust.

Wiper seals can be effective at keeping out draughts, especially along the base of doors, even if there is some warping. Compression seals are particularly well suited to external doors as the initial 3mm of the draught-stripping allows for seasonal movement of the timber.

Another very effective form of draught prevention is secondary glazing. This lets you keep your historic windows in place while improving their overall efficiency. If well designed, secondary glazing can be discreet and reversible.



Four main sources of heat loss in the home

Chimneys

Chimneys can be a considerable source of draughts. Dampers can reduce draughts when flues are not in use. However, they should not be a complete fit as some air is needed to ventilate the chimney.

A cheap and effective temporary alternative is a **chimney balloon**, which inflates to block up the chimney. You mustn't block the flow of air altogether or permanently, however, as this could lead to a build-up of dampness in the flue.

For further information on chimney balloons follow the link below:
https://www.chimneyballoon.co.uk



An illustration of how a chimney balloon works

Sneaky Draughts!

The above are a few of the more obvious examples of draughts, particularly those found in older buildings. We will now look at some of the sneakier routes for air infiltration and these can be found equally in modern houses. Almost all houses whether ancient or modern will have a surprising amount of these. Here are some which I found in my own home: -

Floors are not an obvious source of draughts but there are many places where cold air can infiltrate and can have a significant effect on the general efficiency of a home. Most homes which are over 25 years old will have had some significant alterations, usually the

replacement of kitchens and bathrooms. It is important, therefore, to look carefully at places where the floor has been penetrated by pipes and cables.

Kitchen units can hide large holes where water and waste pipes have been moved. It is a relatively easy matter to remove the plinths from under your kitchen units and have a look. Construction foam is a quick and easy remedy.

Large holes in the floor can hide under bath panels and behind pedestal washbasins.



This is a corner of my bathroom which looked ok, but then I looked behind the washbasin pedestal.....



.....and found a gaping hole leading direct to the sub floor! (and some cobwebs !). The whole is about 100mm x 75mm! "x3")



Then I removed the bath panel. The plumber had done his best to fill the holes in the floor with construction foam, but left gaps here and there again allowing cold air to enter our bathroom (and chill the bath water).

Turning back carpets can reveal more areas where cold air can infiltrate.



Pipes, cables and heating components all usually penetrate floors, and most have holes much bigger than required. These can be filled with silicone sealant, which remains flexible and allows for expansion and contraction.

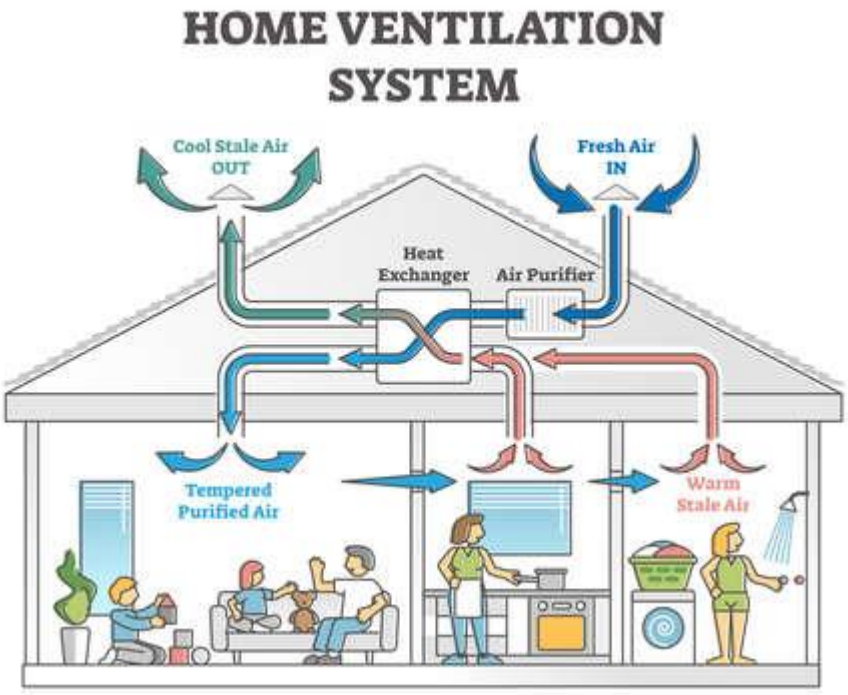


Most homes have gaps of varying sizes between floors and skirting boards. Sometimes cold air can be felt along these edges. When we consider that these gaps run for a considerable length round our rooms a significant amount of heat is being lost. These gaps can be sealed with either silicone sealant or decorators' calk.

Other common, but hidden places are, meter cupboards where cables and gas pipes enter the property, and under and around boilers. Sometimes when a boiler has been replaced holes are left where the previous boiler has been removed.

A good detective wheeze is to use an incense stick to see which way the air moves when searching for hidden draughts.

Ventilation:



Now that you have made your home airtight, we now need to ventilate! Now hang on a minute, I can hear you saying, “Now we have to let all that cold air in again!!”

The difference is that **draughts** are uncontrolled and mainly unwanted, whereas **ventilation** should be controllable.

Ventilation is essential if we are to avoid excessive humidity which can lead to dampness and mould growth. These in turn can cause or exacerbate respiratory problems. The dampness can cause walls to lose more heat and thus waste more fuel as occupants again turn up the thermostat in order to feel comfortable.

- We have to look at ways to get this balance right.
- Careful use of extractor fans in kitchens and bathroom is essential. Bathroom fans should run for at least 20 minutes after having a shower.
- Use the kitchen extractor even when boiling a kettle, moisture can build up quickly in a well sealed home.
- If you tend to forget to switch on the fan, a humistat can be fitted which switches on the fan when humidity is raised.
- Wherever possible avoid drying washing in the house. If this is unavoidable do it all in one room with the door closed and the window open and the heating on. This seems a bit wasteful but saves a lot of problems with humidity and mould growth.
- Ensure that bathroom doors have a gap at the bottom of at least 12mm (Half an inch). This is so that the extractor can work efficiently and drag air in from other areas.

- Where possible sleep with a window which has a trickle vent open, and/the bedroom door at least slightly ajar. We give off between half a litre to a full litre of water when asleep mainly in our breath. This moisture is then in the air and will condense on any cold surface. If you don't believe me, just weigh yourself before going to bed and when you get up. You will have lost weight!
- Leave air gaps between furniture, particularly beds and cold external walls to prevent mould growth.
- Don't be afraid to open a few windows, if only for a short while, the breeze can purge the house of excessive humidity. Windows can then be closed, or openings reduced to prevent too much heat loss.
- Warm air can hold more moisture than cold air, if there is too much moisture in the air and your home is toasty warm, moisture will condense on any cold surface. When you see condensation streaming down your windows, this is probably not a fault of the windows, your home is simply too humid.

There are so many technical devices, such as heat recovery fans and dehumidifiers which can help reduce moisture, but usually some trial-and-error experimentation with some of the above strategies, and above all an awareness of the problem can achieve the correct degree of ventilation without too much heat loss.

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