

# Effective Ventilation throughout Your Home

## A Guide



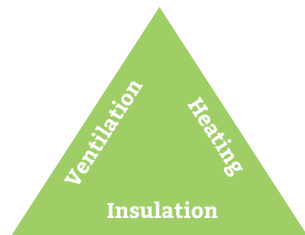
MY HEALTH  MY HOME

# The Balanced Healthy Home Environment

An ideal indoor environment for a home is one which is air-tight and well insulated, with consistent heating, when required, matched with a ventilation system that removes moist and stale air to keep you healthy.

However, a number of professional bodies and studies indicate that between 20% and 40% of UK homes are affected by poor indoor air quality, which is impacting on our health. The primary causes of poor indoor air quality are condensation and mould. There are many factors which contribute to this; such as poor insulation, inadequate heating and ventilation, and the lifestyles of the occupants. The critical challenge for a householder is to strike the balance between insulation, heating and ventilation; but it is ventilation that is often forgotten as we invest in our heating and building fabric improvements.

## The Healthy Balanced Home Environment



# Why Ventilate?

Most people spend 90% of their time indoors, 70% of which is at home, where we lead our everyday lives with cooking, bathing, cleaning and where we adjust the heating periodically to maintain a comfortable temperature. All of these activities can lead to the creation of Volatile Organic Compounds (VOCs) or moisture within the air. For example, the average family of four produces sixteen litres of moisture per week. This moisture, coupled with VOCs, can in turn lead to mould growth, the creation of mould spores and a growth in the population of dust mites. Going beyond what we generate ourselves, the home itself can increase moisture levels through condensation, as we either heat our homes or through inadequate ventilation to remove the moist and/or stale air.

Many, particularly old buildings, ventilate naturally by air passing through the building fabric. They also may have a ventilation system of some sort, but the question is "is it used?"

Most people air their homes by opening their windows. However, indoor air quality deteriorates very quickly when windows are closed again, e.g. when cooking or taking a shower, so we advise you to use whatever ventilation system you have in your home proactively.

The importance of ventilation is clearly recognised within Government backed building regulations that

state the minimum levels of ventilation performance required in each home. However, awareness of regulations and ventilation requirements in the UK remains very low and many homes will show evidence of the health damaging side effects of poor ventilation.

If your home has evidence of mould (usually black/discoloured patches on the walls) or if any of the occupants are suffering from respiratory or allergy problems, you should take a good look at the 'healthy balance' of your home:

### Heating

Maintain the main room temperature between 18°C and 21°C – if your heating bills are too high you might wish to consider changing your heating system to something more efficient and affordable.

### Insulation

Insulate your home, where possible, to reduce heat loss.

### Ventilation

If you can heat your home affordably and comfortably then look at your ventilation system to ensure it is working hard enough to improve the air quality in your home. If you don't have any ventilation system installed, then look at the options below and consider an installation to suit your requirements.



# Ventilation Options

## Local Extract Ventilation

The most common method of ventilation in UK homes is a mix of natural and mechanical ventilation, for example trickle vents in the windows and intermittently running extractor fans in wet rooms, the kitchen, bathroom and toilet. Make sure that the trickle vents are open and unblocked and that extractor fans are clean and operating properly. Don't shy away from using the boost function if it is available at times when excessive moisture is being produced, e.g. when cooking or taking a shower. If your cooker hood or extractor fan is not working, buy one straight away to prevent further damage to your home and potential damage to your health.

## Continuous Mechanical Extract Ventilation

If you have renovated your home with insulation and methods of reducing air leakage through the building fabric, you may find that the Local Extract Ventilation route is not effectively ventilating due to the larger amount of stale air and moisture that is created. In this situation it is best to invest in continuous ventilation which is either in the form of a central box system with ducts to applicable rooms or low level continuous running local extractor fans in the wet rooms. The latter approach is mostly applicable in existing homes where it is difficult to run ducted systems. Please note that although such fans run continuously, they can cost less than £5 per year to run so this is a tiny investment for such an important gain in your home, your personal comfort and your health.

## Positive Input Ventilation (PIV)

These are central box systems (usually located in the loft in a house, or on a wall in a flat) with a duct that supplies fresh, filtered air into a landing area or hallway to ventilate the whole property. Rather than extracting air out, this method delivers air into the home to dilute, displace and replace high humidity levels to control condensation.

## Mechanical Ventilation with Heat Recovery (MVHR)

MVHR is often applied in new, very air-tight and well-insulated buildings. Like Mechanical Extract Ventilation, they ventilate homes continuously but they give the added benefit of recovering heat from the extracted air and warming up the fresh air supplied to the building. In the future, it is expected that most new homes will be sold with these ventilation systems.

Please bear in mind that MVHR may not be the best solution if your home is poorly insulated and/or you leave your windows open.

