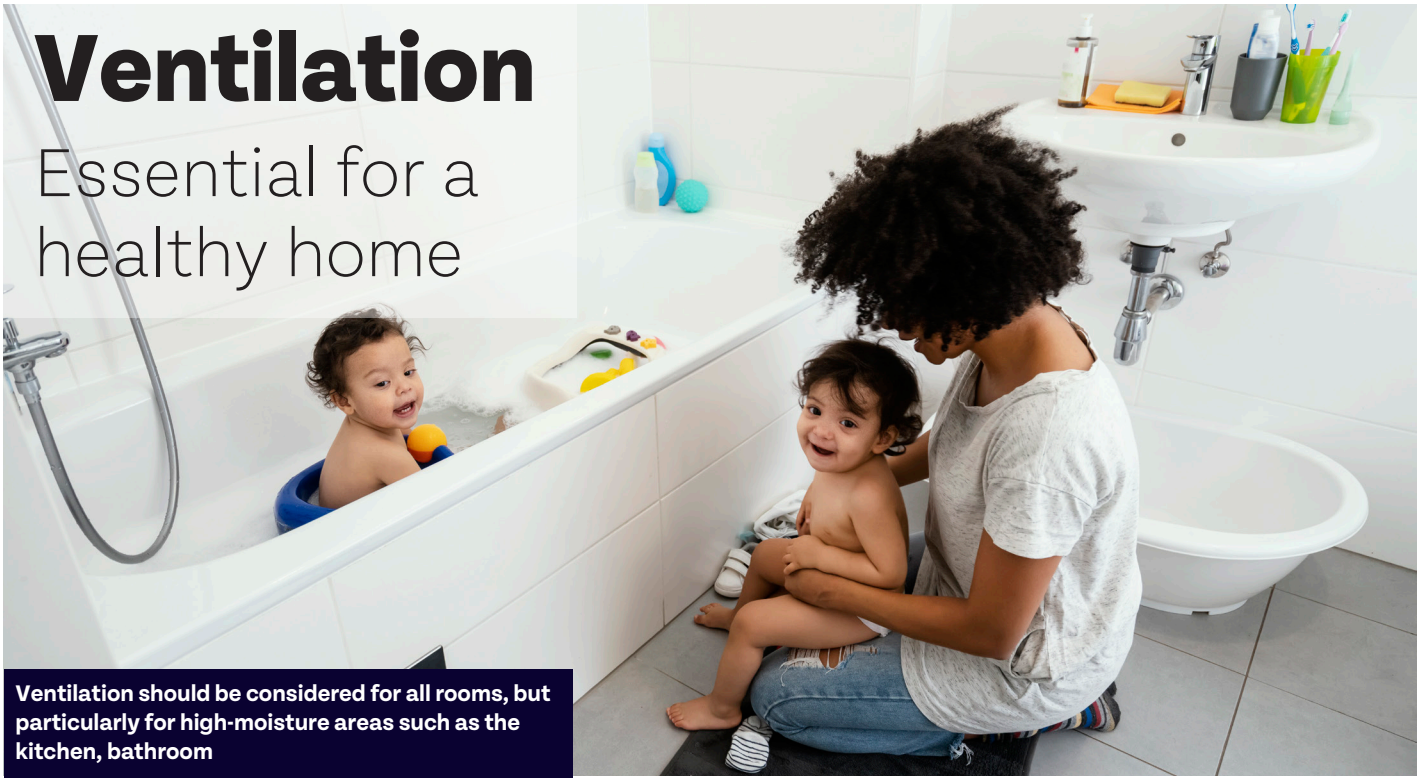
Ventilation

Essential for a healthy home



Ventilation should be considered for all rooms, but particularly for high-moisture areas such as the kitchen, bathroom

We spend most of our time inside buildings, so making them healthy places to live and work is very important.

Key to this is ventilation. This leaflet tells you more about different types of ventilation and what your options are.

The job of ventilation is is to supply fresh air to the home and to remove stale air. It stops the build-up of carbon-dioxide and harmful pollutants such as radon.

Ventilation also regulates humidity levels by removing the moisture produced by bathing, cooking and drying clothes. This is important because it reduces the risk of damp and mould. **Click here** to go to our webpage on tackling condensation, damp and mould.

In different parts of the home, the ventilation will be done differently.

In places where lots of moisture is produced – kitchens, bathrooms and utility rooms – extractor fans are required to remove the excess moisture. If you don't have an extractor fan, opening a window will help. It's also a good idea to keep bathroom or kitchen doors closed while they're in use to prevent steam and moist air reaching other areas of the house.

In drier spaces, for example bedrooms and living rooms, ventilation can be achieved through trickle vents on windows and by opening the windows themselves. Gaps under the doors will allow fresh air to circulate throughout the property and the stale air in the rooms to escape.

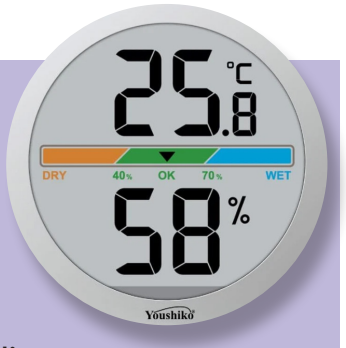
Ventilation is the planned exchange of air between the external and internal environment in order to provide fresh air, remove pollutants and regulate temperature. This is different to air infiltration (draughts), which is unplanned air movement through gaps in the building fabric.

Lofts and the spaces under wooden floors also need ventilating to prevent moisture build-up and to stop the timbers from rotting. This is particularly important if insulation is being added which may block existing ventilation points.

Air bricks help ventilate the void under suspended floors and work particularly well if placed on opposite walls.

Our **page on low-carbon retrofitting** has more information about this.

Additional ventilation is required for certain types of appliances like coal or gas fires or wood-burning stoves. A direct air feed or an air brick in an exterior wall may be needed to prevent the dangerous build-up of carbon monoxide. Ideally, a carbon monoxide monitor and alarm should be installed in homes with gas or solid fuel appliances.



Moisture in the air is measured by relative humidity, which describes how saturated with water vapour the air is, as a percentage. Ideally, internal relative humidity should be between 40-60%. You can pick up humidity meters like the one above for just a few pounds.

Different ventilation systems

Ventilation systems come in many shapes and sizes: they can be single room or whole house, passive or mechanical, and 'extract-only' or 'supply-and-extract'.

Below are seven common examples. When choosing a ventilation system, consider your budget, the airtightness of your house and how easy the ventilation system can be retrofitted.

More air-tight homes are more likely to need continuous and mechanically assisted ventilation; if your home isn't very airtight (most old homes aren't), then a less complex system might be more suitable.

Natural ventilation

The simplest way of ventilating a home is to open the windows! It's an obvious solution, but it's surprisingly easy to forget, and many of us don't like to open the windows when it's raining or for security – although window restrictors can solve this worry. However, there's no guarentee that the fresh air gets to places that need it, and opening windows in winter can also lead to significant heat loss.

Passive ventilation

Background ventilation can be provided by simple built-in features like trickle vents on windows or air bricks in walls. Trickle vents allow fresh air in, but on their own they don't provide sufficient ventilation. In kitchens and bathrooms they need the additional power of extractor fans and similar systems.

'Passive-stack' ventilation is where the steamy air in bathrooms and kitchens is removed via an outlet on or near the ceiling and a vertical duct

that leads to the outside usually via the roof. Being warmer, the moist air is drawn naturally up the duct and is replaced by fresh air from background ventilation. This system was often incorporated into a building's design and is difficult to retrofit.

Intermittant extract ventilation

This is the technical term for the the individual extractor fans found in bathrooms, kitchens and utility rooms and usually controlled by a light switch, a timer or humidity sensor. They're a relatively cheap to install and reasonably effective, but not always sufficient for very air-tight or damp-prone properties. Also, they aren't usually left on for long enough to regulate indoor air quality adequately.

Decentralised mechanical extract ventilation

This type of ventilation involves fans very like the extractor fans described above but with this difference: rather than being turned on or off via a light switch or similar, they run continuously. Is this way they provide constant low levels of ventilation, which is increased when the system senses that humidity levels are high.

They are more effective at regulating indoor air quality than basic extractor fans, and cheaper than centralised mechanical extract ventilation systems described below.

Centralised mechanical extract ventilation

These systems draw moist air from wet rooms like kitchens and bathrooms through ducts to a central unit, often in a loft, and then to the outside. Fresh air is supplied through background ventilation. The continuous extraction ensures a good background level of ventilation, and will increase automatically when humidity levels rise. However, the systems are complex and expensive to install, and only suitable where there is sufficient space for ductwork

Mechanical Ventilation with Heat Recovery (MVHR)

These systems extract warm, damp air from the home and also draw in fresh air from outside. Before being vented outside, the warm air is passed through a heat exchanger to recover the heat which is passed on to the incoming air so that the air entering the house is warm. This leads to improved energy efficiency and comfort. But they're not cheap and they require a lot of space. For this reason, MVHR systems are more commonly found in new-builds or whole-house retrofits. Small, decentralised MVHR systems can be installed in individual rooms. For more on MVHR systems, click here.

Positive Input Ventilation (PIV)

Instead of extracting air, this system, usually located in the loft, blows fresh air into the home, forcing stale, moist air out through background ventilation and the building fabric. The drawbacks of this system are that it can be cold directly under the fan, which is usually why it is installed on a landing; that it may not provide fresh air to the rooms that need it; and that forcing warm and moist air into the building fabric which can then lead to condensation and structural damage.

Eight tips for good indoor air quality

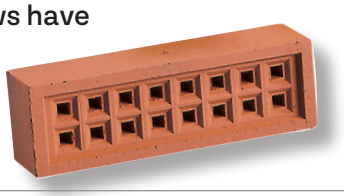
1. Check your existing extractor fans. Are they clean and working properly? Use a vacuum cleaner to remove dust.

2. Try to buy paints and furnishings low in volatile organic compounds.

3. Tackle moisture by drying clothes outside (or ventilating rooms where clothes are drying) and by putting lids on pans when cooking.

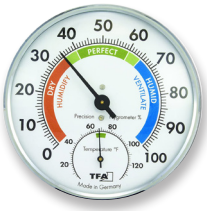
4. Get a carbon monoxide alarm, especially if you have a solid fuel or gas room heater.

5. If you have air bricks in the walls don't cover them. If your windows have trickle vents, keep them open.

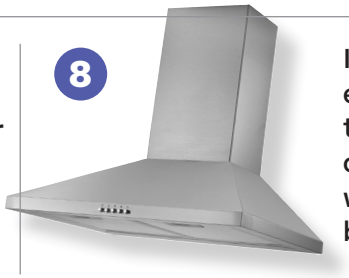


6. Check your property for signs of rising or penetrating damp, a survey may be required if you are unsure.

7. If you feel your home is too damp or too dry, get a hygrometer, which will monitor air temperature and relative humidity. Remember, relative humidity should be between 40 and 60%.



8. It's better if cooker hoods extract the air outside rather than simply vent it near the ceiling. Also clean the filter whenever it starts getting bunged up.



This factsheet was updated in August 2026.

The information on this leaflet is available as a webpage; scan the QR code or click the button.

Go to webpage

CSE

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