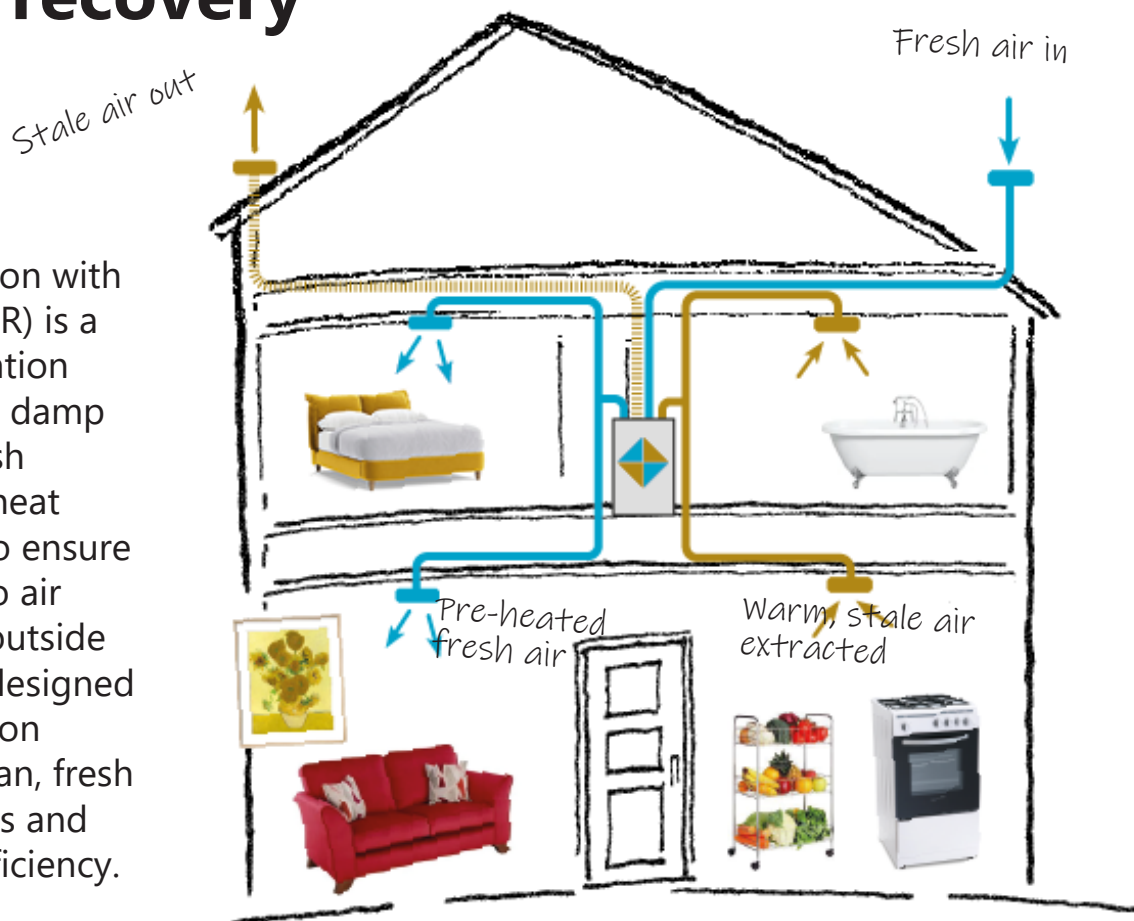


Mechanical ventilation with heat recovery

Mechanical ventilation with heat recovery (MVHR) is a whole-house ventilation system that extracts damp air and draws in fresh air from outside. A heat exchanger is used to ensure heat isn't lost due to air flowing inside and outside your home. A well-designed mechanical ventilation system provides clean, fresh air, reduces heat loss and improves energy efficiency.



Having adequate ventilation in your home is important for good health. It removes moisture and stale air along with odours and pollutants and replaces them with fresh air to breathe.

Most of the time, ventilation is achieved by simply opening windows and doors (known as 'natural' or 'passive' ventilation) and by using intermittent extractor fans in steamy rooms such as kitchens and bathrooms. Although this provides fairly effective ventilation, it can take a toll on your heating demand because a lot of warm air also flows outside. An average home can lose one third of their heating this way.

Draughts create a similar problem. While they serve to ventilate a home, they are a major source of heat loss and can make rooms feel uncomfortably chilly.

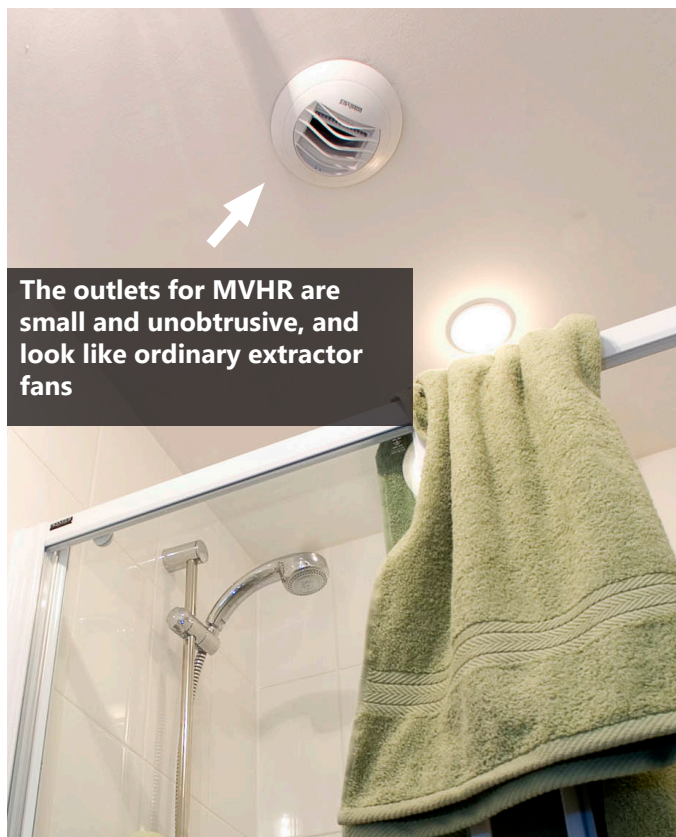
Modern energy efficient homes are more airtight (less draughty) than older buildings because they have to

Above: A mechanical ventilation heat recovery system at work. Stale moist air from the kitchen and bathroom is expelled from the home, but on the way its warmth is transferred in the heat exchanger to the fresh air being drawn in which is then circulated into the living room and bedroom.

follow specifications for air-tightness, set out in the Building Regulations. Because of this, modern homes are sometimes fitted with Mechanical Ventilation with Heat Recovery (MVHR) systems.

How do mechanical ventilation with heating recovery systems work?

Whole-house MVHR systems extract warm, damp air from the home and draw in fresh air from the outside. The warm, extracted air is passed through a heat exchanger to recover the heat before being expelled outside. The cool, fresh outside air is also passed through the heat



The outlets for MVHR are small and unobtrusive, and look like ordinary extractor fans

What are the costs and savings of a MVHR system?

MVHR systems do require servicing as all equipment such as filters and fans must be kept clean to ensure effective operation. MVHR systems start from around £3,000 but could cost well over £10,000, depending on the size and type of the system. It can be difficult to retrofit MVHR because of the space needed for ducting and the unit, as well as the challenge of achieving the level of airtightness needed for MVHR to work effectively.

Because the fresh air is pre-warmed, heat loss from ventilation is largely avoided. This means the householder can spend less on heating their property, reducing costs by around 25%, therefore saving money and ensuring a healthy, well-ventilated home.

Important things to note ...

MVHR works best in buildings that are relatively airtight, such as new-build homes or older properties that are being fully refurbished.

Retrofitting MVHR needs to follow a comprehensive airtightness strategy, including a series of airtightness tests.



For more technical information see the website of the BEAMA: www.beama.org.uk

And to find approved installers, see the website of the Federation of Environmental Trades Association and search for the Residential Ventilation Association: www.feta.co.uk

exchanger, without coming into direct contact with the pollutant air where it is pre-warmed before being pumped in to the property.

These systems tend to be made up of concealed ducting (piping) in ceiling cavities that lead to the heat exchanger unit in a cupboard or utility room (the loft is not recommended). Some units have an automatic or manual boost setting which can be used when generating excessive moisture, such as when cooking or washing. Air filtration is commonly built into MVHR systems to prevent pollen and other particles from entering the home, which provides a more comfortable environment for allergy sufferers. Systems typically run continually at 80% efficiency and are inaudible during normal use.

Contact us: