case study

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Independent Heat Recovery Ventilation Specialists

MVHR system eliminates condensation issues

A heat recovery with mechanical ventilation (MVHR) system has helped a self-build couple avoid increases in their heating bills, even when they built a house three times the size.

That has been a huge achievement as the owners of the 4000 square foot, award winning timber frame eco-home had previously lived in a two bedroom bungalow.

The MVHR system helped the couple avoid any increase in heating bills because it recovers over 90 per cent of the heat from the outgoing stale air. This recovered heat is fed back into the house as warm, fresh, filtered air.

The MVHR system is used in combination with an air source heat pump, which provides even greater levels of energy efficiency.

There have been other benefits to fitting the MVHR system, too. The property in York has large glass feature walls facing the garden and the owners discovered that the MVHR system prevents condensation forming on the glass. It does this be reducing relative humidity inside the house to below 60 per cent, which means perfect views onto the beautiful lawns.

"We have been delighted with the MVHR system because it has meant our heating bills stayed exactly the same even though we moved to a house that was three times the size," said Bill Heath, owner of the property. "It also stops condensation forming on our windows, which means we always have perfect views onto our garden as well as making the house feel much fresher and healthier."

The Heat Recovery Files:

Client:	Bill Heath
Project	Self build property in York
Ventilation:	Heat recovery with mechanical ventilation (MVHR) system
Heating system:	Air source heat pump
Construction:	Combination of timber frame construction and cavity wall
Local conditions:	The property was designed with two gable end glass walls looking onto the gardens. Without the MVHR system these may have been succeptable to condensation

" We have been delighted with the MVHR system because it has meant our heating bills stayed exactly the same even though we moved to a much larger house. It also prevents condensation giving us perfect views on to our garden"

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The MVHR system is used in combination with an air source heat pump to provide high levels of energy efficency.

The MVHR system provides a continuous low level of background ventilation, which has been designed to change all the air in the property approximately once every one and a half hours.

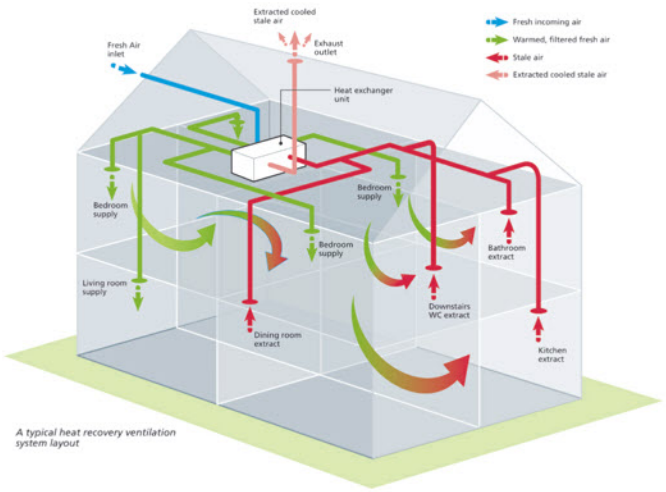
The homeowners are delighted that this constant circulation of air avoids any cold or warm spots inside the house. This is a huge benefit as it avoids uncomfortable draughts developing as cold and warm air has a tendency to constantly move around.

Filters on the MVHR system from ADM remove dust and other airborne particles from the incoming air such as pollen and suspended carbon pollution from car exhausts. This creates a much better indoor air quality and is particularly beneficial to hay fever sufferers as it means the windows can be kept shut whilst still benefiting from high levels of ventilation.

The MVHR system reduces relative humidity, which eliminates condensation and ensures perfect views on to the garden.

Lower relative humidity also provides health benefits to the couple. That's because house dust mites thrive where there is warmth and moisture - the airborne detritus that they produce has been shown to cause asthma and other bronchial conditions. The MVHR systems ability to reduce relative humidity, addresses the issue of condensation, eliminates dust mites and the problems they cause.

Heat recovery systems are able to help tackle condensation caused by high levels of relative humidity. A typical household of four people can produce up to 18 litres of moisture per day, simply by breathing, cooking and washing. When this moisture in the air comes into contact with a cooler surface, such as a wall of glass in a window, it condenses to form water droplets. This moisture can be a serious issue as it encourages mould growth as well as proliferation of dust mites. Mould growth causes unsightly markings on the walls, which requires regular and costly redecoration. Left unchecked, the moisture penetrates into the structure of the building leading to costly repair bills – a house smelling fusty'is one of the signs that you have a condensation and mould problem!



A typical heat recovery ventilation system layout

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