

# case study



Independent Heat Recovery  
Ventilation Specialists

## Heat Recovery and Heat Pump perfect combination



### The heat recovery files

Client:	Private Resident
Project:	Self Build Property
Location:	North Lincolnshire
Ventilation:	Mechanical Ventilation with Heat Recovery (MVHR)
Heating system:	Ground Source Heat Pump
Construction:	Brick and Block cavity wall

*"The MVHR system has improved the energy efficiency of our property, helping get the most for our heat pump."*

*The owner*

After carefully considering all of the alternatives, a homeowner in North Lincolnshire calculated that a heat recovery with mechanical ventilation (MVHR) system, combined with a Ground Source Heat Pump (GSHP) would provide optimum levels of energy efficiency and comfort.

The family of four completed their contemporary self build earlier this year. Sustainability and energy efficiency were driving principles on all aspects of the build.

After carrying out his own research and attending a number of self build shows, the owner felt that ADM Systems, one of the UK's leading suppliers of MVHR, offered the most comprehensive support and widest range of systems.

**"I was initially drawn to ADM Systems because they offer one of the widest ranges on the market," said the owner. "That meant they were completely independent of any manufacturer and could therefore offer me the MVHR system best suited to my requirements."**

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As it turned out, the family was looking for an MVHR system that would optimise the energy efficiency of their ground source heat pump by recovering any outgoing warm air and circulating it back into the property.

MVHR systems from ADM can be used in both refurbishments and new build properties. They are relatively straightforward to install in both project types. In the case of this family's contemporary new build project, installation was carried out by the team from ADM Systems.

"The MVHR system has made a huge difference to the comfort and energy efficiency of our home," added the owner. "As well as improving energy efficiency it has created a noticeably more comfortable internal living space by reducing condensation from areas such as the kitchen and bathroom."

The MVHR system is able to recover over 90 per cent of the heat from the outgoing stale air before feeding it back into the home as warm, fresh, filtered air. Reusing this heat, which would normally be lost to the outside air through passive ventilation, ensures that the heat pump is able to efficiently maintain the property at a comfortable temperature all year round.

**One of the first benefits noticed by the family is that the MVHR system eliminated condensation from everyday activities such as cooking and washing. It does this by reducing relative humidity to below 65 per cent, creating a much healthier indoor air quality.**

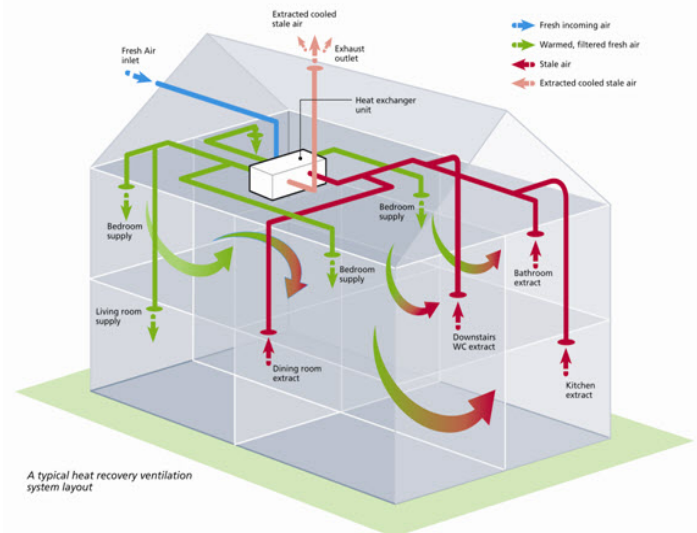
Lower relative humidity prevents the proliferation of house dust mites that thrive where there is warmth and moisture. The detritus from these organisms has been shown to cause asthma and other breathing related conditions, along with damp, fusty odours.

The MVHR system provides a continuous low level of background ventilation, which has been designed to regularly change all the air in the property.

This has again provided another benefit as it does this whilst the windows are closed, which is, again, essential to maintain the co-efficient of performance (CoP) of the ground source heat pump. This kind of heating system relies on maintaining a low but adequate and constant temperature to heat the property, along with high levels of insulation and air tightness.

**Another benefit of being able to keep the windows closed is that it offers welcome relief for hay fever sufferers on high-pollen days as the house remains comfortably ventilated, whilst keeping the windows closed prevents troublesome levels of pollen inside the house.**

The property has three bedrooms and has been built in a contemporary style.



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