

case study



Independent Heat Recovery
Ventilation Specialists

ADM helps create eco home

A homeowner in Preston, Lancashire, has specified a heat recovery ventilation (MVHR) system from ADM as part of achieving his eco home vision.

ADM supplied the MVHR system to John Blackledge, who had commissioned SIPS@Clays LLP to build his new house using a Structural Insulated Panel (SIP) system.



When combined with an MVHR system, this construction method is one of the most effective ways of creating an energy efficient building, and can significantly reduce heating and cooling requirements.

SIP's construction creates a virtually air tight building envelope, which improves its energy efficiency, but means moist air is unable to escape to the outside. This is possible in older properties that, for example, have poorly fitting doors and windows.

Moisture in the home is created by breathing, cooking and washing – a typical household of four people can produce up to 18 litres of moisture per day.



The heat recovery files

Client:	John Blackledge
Design & Build:	SIPS@Clays LLP
Project:	Eco home in Preston
Ventilation:	Heat recovery ventilation (MVHR) system.
Heating system:	Ground source heat pump
Construction:	Structural insulated panel to create a virtually air tight building.

“Installing the MVHR system was part of our vision of creating a super-energy efficient new home.”

John Blackledge, owner of the property

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Whilst an airtight building is essential to reduce heat loss, without a continuous flow of fresh air, the internal atmosphere will quickly become stale and heavily contaminated. If this stale air is not removed it will cause major problems with condensation, mould growth and aggravate breathing related health problems.

The MVHR system collects this stale moist air from areas such as the kitchen, laundry and bathrooms. At the same time, clean fresh air is drawn from the outside and as the two air streams pass each other within the HRV (Heat Recovery Ventilator) unit, the heat is transferred from the outgoing stale air to the fresh incoming air. There is no mixing of air streams.

“Installing the MVHR system was part of our vision of creating a super-energy efficient new home,” said John Blackledge, owner of the property.

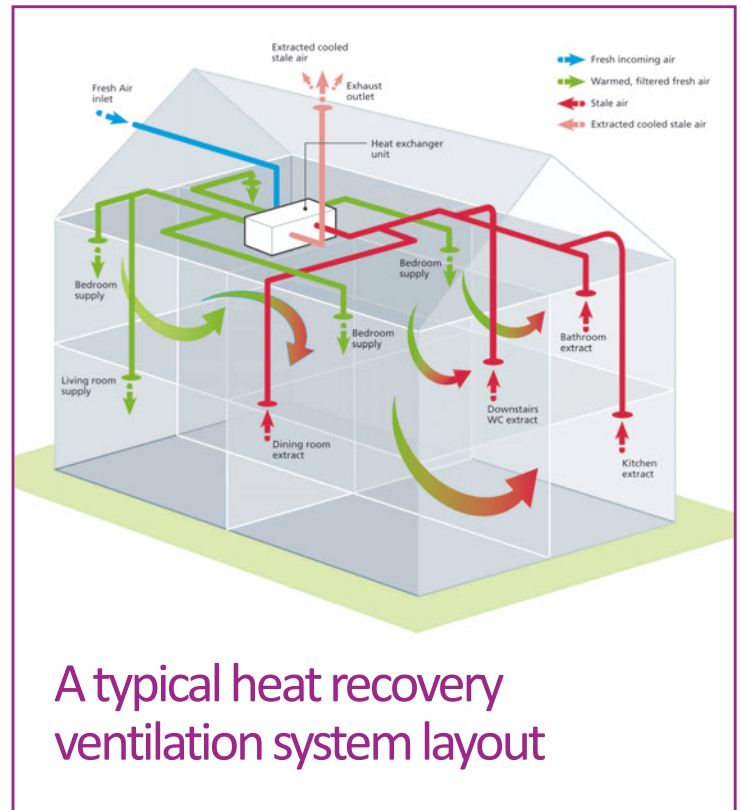
“The combination of SIP, ground source heat pump and solar panels creates a virtually carbon neutral, air tight building, which is complemented by the MVHR system’s ability to recover over 90 percent of the heat. We also liked the fact that the MVHR system provided a low carbon ventilation solution that met latest Building Regulation requirements.”

Mr Blackledge’s house is heated by a ground source heat pump, which uses electricity from solar panels on the roof.

The MVHR system circulates this warm, fresh, filtered air around the house through ducting installed in the void spaces of the property.

John added, “There is much less condensation in the home because the MVHR system reduces relative humidity even in troublesome areas such as bathrooms and kitchens. That makes the whole house feel much fresher and reduces the detrimental effect when this condenses to form moisture on surfaces throughout the house.”

Fitting an MVHR system is one of the most effective ways of reducing relative humidity to below 60 per cent, minimising condensation, whilst at the same time addressing the problems associated with mould growth and dust mites.



A typical heat recovery ventilation system layout



Photographs courtesy of SIPS@Clay LLP

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