

# case study



## MVHR System cuts heating bills by a quarter



There are few better examples of the benefits provided by an MVHR (Mechanical Ventilation with Heat Recovery) system than that of the Kwan household in Ipswich.

That's because the property illustrates many of the issues associated with modern homes which, despite being designed to current Building Regulations, often fail to live up to homeowner expectations.

In the case of the Kwan household, that meant minimum energy efficiency and ongoing issues associated with condensation caused by lack of ventilation.

Inadequate ventilation of certain areas such as the kitchen and cloakroom, were causing additional concerns over poor air quality. This is a problem in many modern homes where high levels of airtightness, for example around windows and roofline, means that air is effectively 'trapped' inside the property and quickly becomes stale and moisture-laden.

This is exacerbated by cooking, bathing and people breathing, which can create up to 18 litres of moisture per person, per day and left unchecked, leads to mould growth and fusty smells.

**An MVHR system can help because it reduces relative humidity to below 70 per cent, which means reduced condensation.**

An MVHR system also improves energy efficiency of a property by recovering over 90 per cent of the heat from the outgoing stale air, feeding it back into the house as warm, fresh, filtered air.

### The heat recovery files

Client:	Marcus Kwan, Ipswich
Project:	Improvements to existing private residence
Property age:	2005
Issues:	Condensation, stale air and lack of energy efficiency
Ventilation:	Mechanical Ventilation with Heat Recovery (MVHR)
Heating system:	Gas central heating
Local conditions:	Creating a kitchen/dining area resulting in food smells
Construction:	Brick and block

*"I would estimate a 20-25% improvement in my heating bills and the issue of condensation has been completely resolved."*

Mr Kwan contacted several companies offering MVHR systems and after evaluating all the proposals, chose ADM because they provided the most comprehensive, tailored response.

"From my initial enquiry to final sign off, the support from ADM was impeccable," said Mr Kwan.

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"ADM's approach to choosing the best solution for my property was extremely thorough and well thought out."

Mr Kwan was delighted that as soon as the MVHR system was installed it was "saving money and creating a much healthier environment".

**In fact, Mr Kwan estimates that he is saving around a quarter of his heating bills and has completely eradicated all the issues associated with lack of ventilation.**

Mr Kwan is happy to extol the benefits of an MVHR system from ADM, and explains: "About a year and a half ago, we started to look into improving the efficiency of our house with the cost of energy rising.

"This got me thinking about ventilation and ways to improve it. Living in a modern house that was built in 2005 meant we already had extractor fans in all bathrooms, along with a cooker hood in the kitchen and trickle vents in all windows.

"However, condensation remained a problem, not so much in the bathrooms, as we used the extractor fans, but in the bedrooms. Each morning over the winter period all the bedroom windows would have a considerable amount of condensation on the glass and the rooms felt stuffy."

Mr Kwan had a concern over the downstairs cloakroom too, which has no window and therefore lacked direct ventilation to the outside. This was far from an ideal situation considering that the space is used to store warm, often wet, items of clothing and footwear. The result was stale odours that were proving difficult to mitigate.

On top of all that, kitchen smells were creating a problem, even with the extractor hood, as they still tended to linger for hours after cooking. Improvements to the house, including the creation of a more open plan ground floor, meant that the problem of smells and moisture laden air from the kitchen needed to be resolved to get the full benefit from the new layout.

Installation of Mr Kwan's MVHR system was relatively simple and straight forward, which was helped by the fact that ADM Systems supplied all the necessary documentation.

"We really liked working with ADM because if we had any issues the company was always there to offer advice."

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Once installed, the MVHR system from ADM Systems was effective from the moment it was switched on. Due to the building work, much of the downstairs needed to dry out from all the plastering and new floors and, again, the MVHR system helped because it constantly circulates fresh, conditioned air, helping to dry out the plaster quicker.

"Once the engineers from ADM had commissioned and balanced the system it has run faultlessly ever since," added Mr Kwan. "One year on and things are as good as the day it was switched on. We no longer have any condensation problems, cooking smells are very quickly removed from our new open plan ground floor kitchen.



"The cloakroom with no window always smells fresh, stale smells are a thing of the past and now we have no noisy extractor fans in any of the bathrooms. The house generally feels much fresher to live in."

**Mr Kwan added: "I definitely notice how stuffy other people's houses are that do not have an MVHR system. I don't think that I could live in a property without it any more, having experienced the difference that it makes".**

Mr Kwan summed it up by saying: "Efficiency-wise, I would estimate 20 - 25 per cent improvement in my heating bills, so overall I am very pleased as we are saving money and have created a much healthier environment for my family."

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