

# case study



## MVHR dries out Settle Water Tower



ADM Systems has supplied a mechanical ventilation with heat recovery system (MVHR) to Settle Station Water Tower, one of the most unusual and desirable properties in North Yorkshire.

Mark and Pat Rand originally purchased the disused water tower in 2008 and then set about making it into a home. The restoration was featured on a number of television programmes including Channel 4's Restoration Man.

**One of the issues facing the owners was that the building had no opening windows and being Grade II\* listed it meant that they had to find another way of removing moisture laden air from the property.**

Lack of ventilation is one of the main causes of condensation in a building, with a typical family of four producing up to 18 litres of moisture per day simply through cooking, bathing and laundry activities.

After looking at various alternatives, the owners came to the conclusion that an MVHR system would be able to supply mechanical ventilation to all areas, along with recovering up to 90 per cent of the space heating in the process.

### The heat recovery files

Client:	Mark and Pat Rand Settle, North Yorkshire
Project:	Renovation of Grade II listed Water Tower, - as featured on Channel 4's Restoration Man
Ventilation:	Mechanical ventilation with heat recovery system (MVHR)
Local conditions:	Rural location and a goal of maximising energy efficiency.

*"ADM Systems demonstrated the best technical understanding of our requirements and immediately gave us the confidence that they could sort out all our ventilation and energy efficiency issues. I am delighted to say they did!"*

Research by Mr Rand confirmed this with an MVHR system being 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 unhealthy homes caused by mould growth and dust mites.

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**Mr Rand explains: "We chose North Yorkshire-based ADM Systems to design, specify and install the MVHR system because of their technical knowledge and wide range of products, which means they are not just tied to one manufacturer."**

The MVHR system now recovers over 90 per cent of the heat from the outgoing stale air, before feeding it back into the water tower as warm, fresh, filtered air. It also maintains a constant and comfortable temperature inside the property all year round, despite there being no opening windows.

Reusing this heat, which would normally be lost to the outside air by opening windows, not only reduces heating bills but creates a much healthier building.



Fitting an MVHR system also met the Rand's aim of making the building as environmentally friendly as possible. The tower has been designed to "be as green as an old building can be" with rainwater harvesting high levels of insulation, solar panels as well as the MVHR system.

"Fitting the MVHR system, along with all the other sustainable features, gives us a certain satisfaction that we are doing our bit for the planet," said Mark Rand. "However, the main reason for fitting the MVHR system is because we have no opening windows and we needed some form of ventilation to maintain a healthy indoor environment."

**Mark 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 our home feel much fresher and healthier."**

The MVHR system circulates warm, fresh, filtered air around the house through ducting installed in the void spaces between floor and above the ceiling level. ADM Systems uses a wide range of ducting on all their installations to maintain efficiency. Flexible (spiro) ducting of all types, is strongly advise against, because of its high air resistance (especially when kinked or restricted). Not only is it easily punctured or crushed but it will also lower the efficiency of any heat recovery unit.

Mark concluded: "ADM Systems demonstrated the best technical understanding of our requirements and immediately gave us the confidence that they could sort out all our ventilation and energy efficiency issues. I am delighted to say they did!"

The property is fitted with underfloor heating and a woodburning stove in the glazed 'roof room'.

For more information on ADM Systems, telephone: 01756 701051. Alternatively visit the website at: [www.admsystems.co.uk](http://www.admsystems.co.uk)

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