Solving Damp and Heat Loss...

in a one bedroom, stone built, detached house in Bradford on Avon. The house has a condensing, gas central heating boiler and a modern wood burning stove. The walls are 50cm thick. A small 2-storey extension, built possibly in the 1970s/80s, adds a bathroom and kitchen to the property. This has cavity wall insulation. All the house has double glazing – plastic to the rear and wood at the front.

Until the winter of 2025/26 the house was very difficult to heat to temperatures above 18C. A CHEESE survey (see below) revealed that there were many gaps through which draughts cooled the house – around beams, piping, below skirting boards and 3 brick sized holes behind the wood burner that let the heat escape up the chimney! Many of these draughts were then filled in. This resulted in black mould growing up to a height of 5ft in two corners of the living room and white mould on the opposite wall. As an asthmatic, I was very concerned about this and started to gather information as to how this mould could be overcome. Initially two dehumidifiers were used, one upstairs and one downstairs. A lot of moisture was removed from the air, but at a high electricity cost and the house was still hard to heat.

A survey was conducted by Rentokil that showed the property needed greater ventilation. Many professionals and friends visited the house to give their opinions and ideas.

These included:

- Installing humidity heat exchange systems that would have had large units in the bedroom and living room, plus even larger units hanging on the outside stone walls – not a good look in a Conservation Area. Also the whole central heating system would need to be removed and electric heaters installed in the kitchen and bathroom. The cost was prohibitive.
- A fan in the upstairs ceiling to draw outside air into the house – would this cool the house too much?
- Lining the dark mould walls with a paint containing crushed glass to keep them dry
- Installing 2 ‘humidity fans’, one in the kitchen and the other in the bathroom. These would run all the time and increase the extraction of air as the humidity rose.

This last option was suggested by the Energy Team of Climate Friendly as they carefully helped me sort through the options open to me.

The fans were fitted at the beginning of June 2025 and the results have been excellent, with the electricity and gas bills greatly reduced as the dehumidifiers are no longer in use. There has been no mould and the house is now warmer due to the fans and the following actions:

- The house is now heated during the winter to 15C overnight. Before this the thermostat was set at 12C and condensation, leading to mould would form on the cold walls as a dew point was reached. At 12C it took hours to get the property up to 17C in the morning and frequently was not reached.
- The house is now heated to 16C all day with an increase to 17C in the morning and evening, with the wood burning used on very cold nights.
- Radflek (thick foil) is fitted behind all the radiators on outside walls. This was completed some years ago and was tested for effectiveness using a thermal imaging camera. It is very effective and an easy DIY task.

- Clean radiators with a fine brush to remove dust between the grooves for greater heating efficiency.
- The house is 'burped' every morning for about 5 to 8 minutes to allow the humid air to escape and fresh air in. This means opening doors and windows to allow the movement and exchange of air throughout the house. As the house is now continually at a temperature of at least 15C this means any heat loss is quickly replaced as the building fabric is warm and it is only warm air that is lost.
- All washing is dried outside using wind and solar power, or in the bathroom using the 'drying clothes' setting on one of the dehumidifiers (much cheaper than a tumble drier). This greatly reduces humidity in the house.
- The bathroom window is open during showers to allow moisture to escape.
- After showers a Katcher is used to remove moisture from the tiles, glass and shower tray and then the surrounds wiped with a cloth. This removes at least 150ml or a quarter of a pint of moisture from the house.
- Insulation has been removed from around beams and some piping to make sure that there is a good air exchange for the humidity fans to work efficiently.
- The kitchen door is kept closed during cooking, with lids on pans and the window open if excessive moisture/condensation on windows is created, to again reduce moisture in the house.
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- **The energy bills are surprisingly much reduced – cheaper than the winter of 2024/25, even with the price rises.** This is due to the house being kept at a constant temperature, rather than it dropping low and then the central heating boiler having to work so hard to raise it.

I am very grateful to the energy group, especially Matthew Roake (who spent hours researching and talking to me about the different ideas) and Amy Starr who helped me through this baffling maze of ideas and suggestions.

References:

CHEESE survey = Cold Homes Energy Efficiency Survey Experts https://cheeseproject.co.uk

Greenwood Unity CV2.1 (decentralised mechanical extract ventilation) fans are designed to run quietly and continuously and cost the equivalent of a loaf of bread for the whole year. https://www.greenwood.co.uk/continuous-extract-dmev/unity-cv2.1

T & S Lux Electrical fitted the fans and I am happy to recommend them to you for an efficient and considerate service: enquiries@tandsluxelectrial.co.uk