

# Living with MVHR

Alan Clarke & Andrew Yeats

# Living with MVHR



or



# Noise

What is the problem?



# Problem

No one likes noise

→ Turn the vent down or off

→ Poor air quality

Solution: get rid of the 'off' switch?

# Sources of noise in MVHR

- Fans



- iRegeneratedi



- iCross talki





# Other sources of noise



# Now we see

- MVHR running in summer
  - Quieter than opening windows
- Broken MVHR not noticed

# Humidity

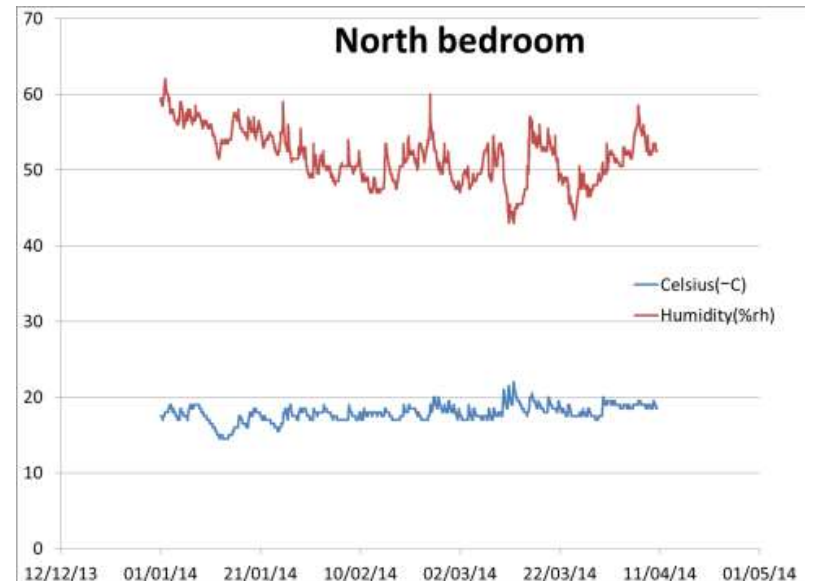
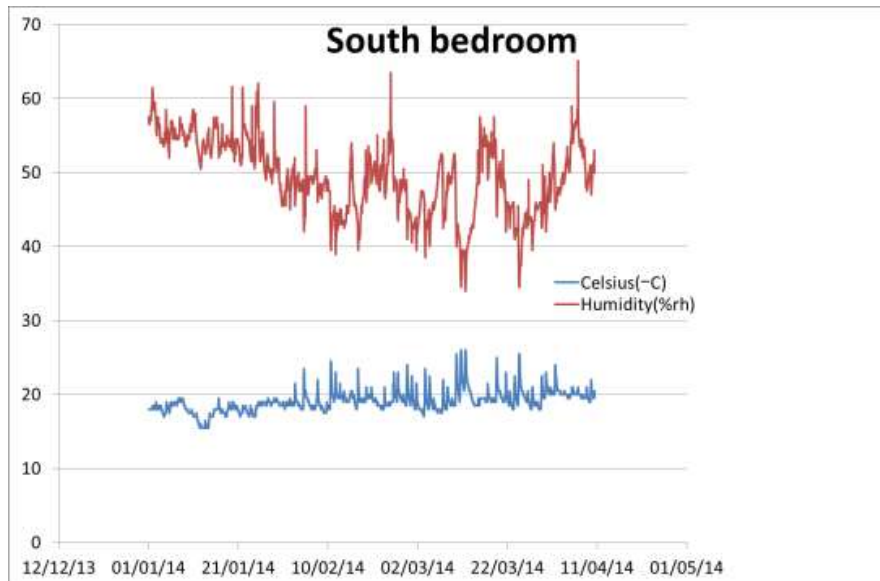
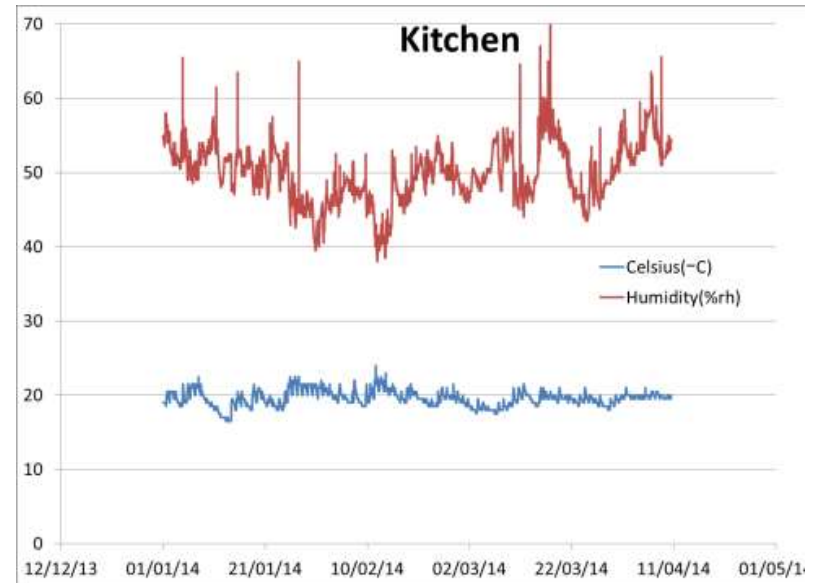




# Data!



# House 1: Low occupancy, Low vent rate





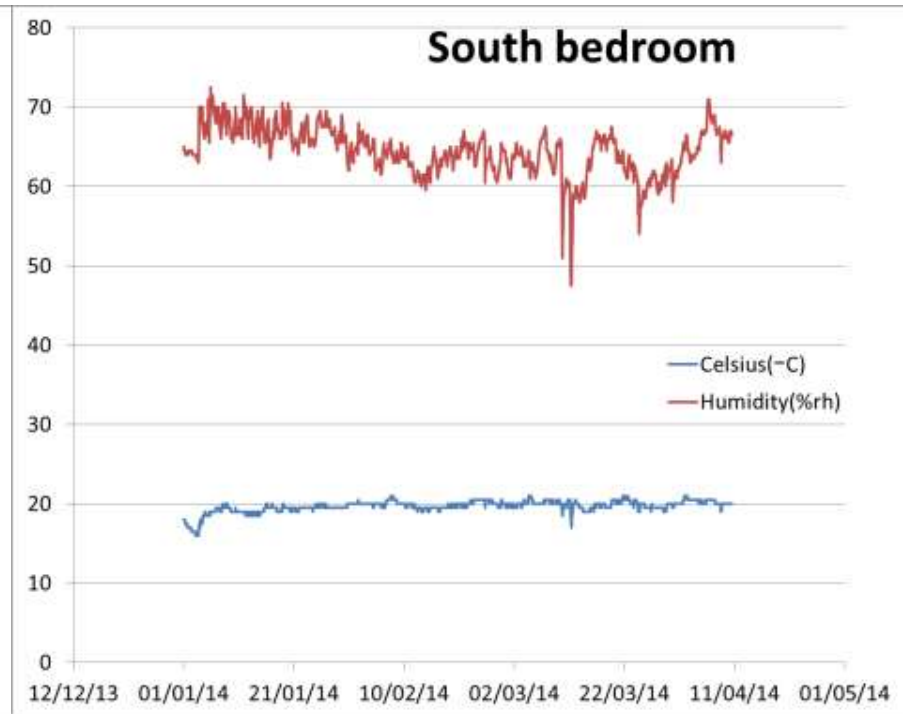
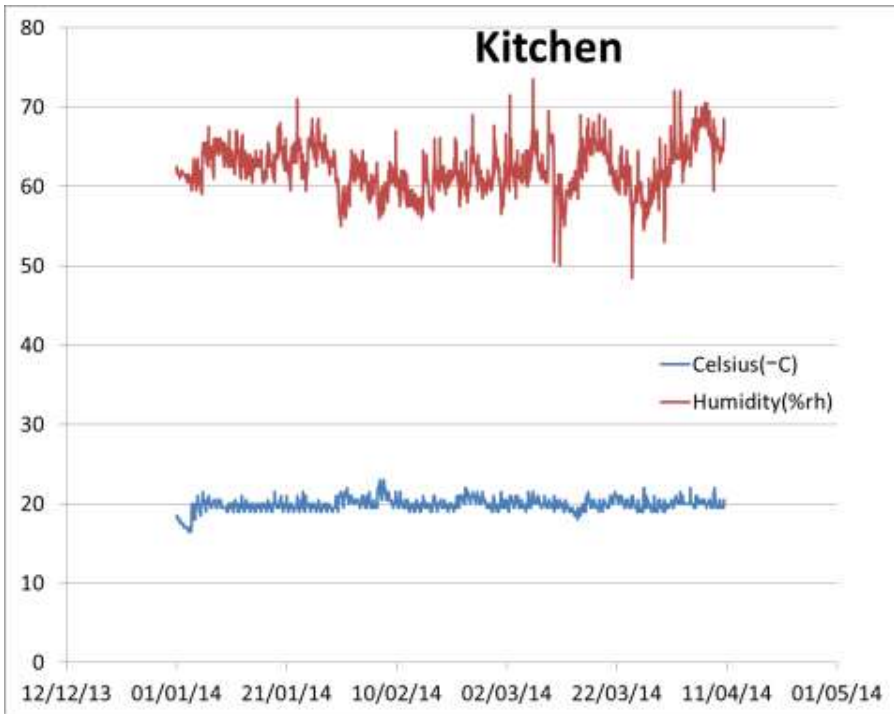
- Legend:
- heat
  - water vapour
  - gases and contaminants
  - odours



Humidity recovery  
heat exchanger.  
Also known as  
enthalpy recovery



# House 2: Family occupancy Enthalpy recovery Medium vent rate





# So is there a dry air problem?

UK: winter temp 5C, rain

Germany: winter temp 0C, snow

Sometimes a problem in UK

– But not often

# Health

Inadequate ventilation = high humidity



# Health

Some like it humidÖ



# Outdoor pollutants



Pollen filter



# LIVING WITH MVHR



Lancaster Cohousing Residents

The air smells clean and fresh.

Overall it'd be quite hard to live otherwise now.



My asthma is not so bad now, for me damp houses are more of a problem than dry houses, so I find it good.

Air quality is so good.

Quiet units, are excellent.

Its so much quieter than expected internally.

Some times your throat is dry in winter mornings and hoarse, as though you're about to get a sore throat, but you can counter this with plants; and leaving bath water in the bath. On the other hand I've only had one infection in 2 years!

No-one else I've spoken to in the other 40 houses seems to have had this experience.



Low humidity in winter means that it is easy to dry clothes naturally indoors overnight. Which is an unexpected welcome benefit. Sheila maid over stairs is a great idea.

Low humidity means that owners of musical instruments and old furniture need to take special care.



Shaving mirror doesn't steam up when trying to shave. People value quiet bathrooms with no extractor fan.

Kitchen or window doesn't steam up when cooking.







MVHR units are neatly and discretely installed in a built in cupboard in the downstairs WC.

On some of the early houses the cupboard doors had to be adjusted so you could actually get the filters out or maintain the unit correctly.

Installers struggled to mount units at correct angle - this sometimes leads to condensation leaking out of the bottom of unit which causes alarm.

Likewise, we eventually gave up trying to get the installers to insulate the extract and intake ducts insulation to a standard we were happy with.







Filters don't need changing or get changed as often as specified.

We vacuum ours to make them last longer!

Would prefer filters that were all card so we could compost them easily!

Handy place to store my Brompton under MVHR Unit in down stairs WC cupboard.

It would be better if controls gave some feedback on current performance of filters (rather than just No of days since last change)

If MVHR goes off and doesn't restart (e.g. due to power cut ) then the first people know about it is when they experience lots of condensation



# Occupant Feedback



## Building User Study

A TSB Building User Survey (BUS) was undertaken with 100 % return of questionnaires. **The results produced were excellent.**

Residents were very positive about how well it performs. Responses for all eight main categories: air quality, comfort, design, perceived health, lighting, needs, noise and temperature were all higher or better than the UK 2011 BUS Housing benchmark.

In five of the categories the project was either the highest or second highest performer when compared against other studies.

***"An exceptional achievement"*** Fionn Stevenson.

*"The Lancaster passive house I live in has exceeded all my expectations with regard to comfort, warmth and air quality. The utility bills are exceptionally low and the systems are easy to use. From my personal experience I would have no hesitation to recommending these Passive House Designs to others"*

Dr Jan Maskell Lancaster Cohousing Resident



Happy Home Owner Residents

## Further information

Lancaster Cohousing Web site

[www.lancastercohousing.org.uk](http://www.lancastercohousing.org.uk)

Lancaster Cohousing Blog

<http://lancastercohousing.blogspot.co.uk/2012/10/living-cohousing-for-real.html>

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