



F-rated home to near Passivhaus Standard: CB6

POLL

Which best describes your involvement?

- Looking to start own renovation project
- Builder / supplier / consultant
- Already completed own renovation project
- Just here for interest

Who are we?

Jake: previously worked in construction so some knowledge but mainly of groundworks.

Rachel: works in construction as a social value manager and some knowledge of passivhaus standards.

Not experts!

Both working full time so fitting into evenings and weekends. Lots of help from family and friends.



The house – January 2020



The house – January 2020







Our renovation journey

October 2020 – September 2021

Timeline

October

- Moved in 2 October 2020
- Architects plans 23 October 2020

November

- Structural engineer plans 4 November 2020
- Dug out footings for patio in preparation for rubble

December

- Roof off 3 December, woke up to snow on 4th!
- Steelwork up 5 December
- Roof structure finished 16 December at 11am and signed off by building control at 11.15 and membrane attached before rain at 3!

January

- Roof tiling completed 4 January
- Insulation
- Flooring
- Wood burning Stove
- Chimney removal
- Green Homes Grant approved

Timeline

February

- Air Source Heat Pump Installed
- Dig out front house floors to 900mm, MOT type 1 hardcore added and concrete
- End rafters for overhang and mortaring the verges
- Airtight membrane

March

- Plastering upstairs
- Airtight loft hatch installed
- 20 March: Juliet balcony steel installed
- 21 March: Leadwork for window sill in new opening
- 22 March: Windows installed

April

- Kitchen installed
- MVHR machine installed and ducting

May

- Screed removed from front of house, insulation laid, underfloor heating and new screed

Timeline

June

- Internal walls downstairs
- Bath valve, bath and toilets installed

July

- Ductwork fixed, airtight measures downstairs
- Sound insulation downstairs
- Decoupled ceilings with Isomass system

August

- Solar panels installed
- Plastering downstairs
- Painting

September

- MVHR Commissioned
- Flooring

Budget

Initially budgeted £50K for structural changes and the big ticket items such as heating and thought we would figure the rest out as we went along.

Big items:

- triple glazed, passivhaus standard timber windows and doors: £24K
- ASHP, cyclinder, buffer tank, underfloor heating manifold: £10k minus £5K green homes grant
- Solar panels and battery: £8k*
- Liquid screed: £2365
- MVHR system including design: £5850
- Wood stove and flue: £3K
- Airtightness products: £788
- Timber! (haven't separated out costs)

Current spend: £73K





































Q&A



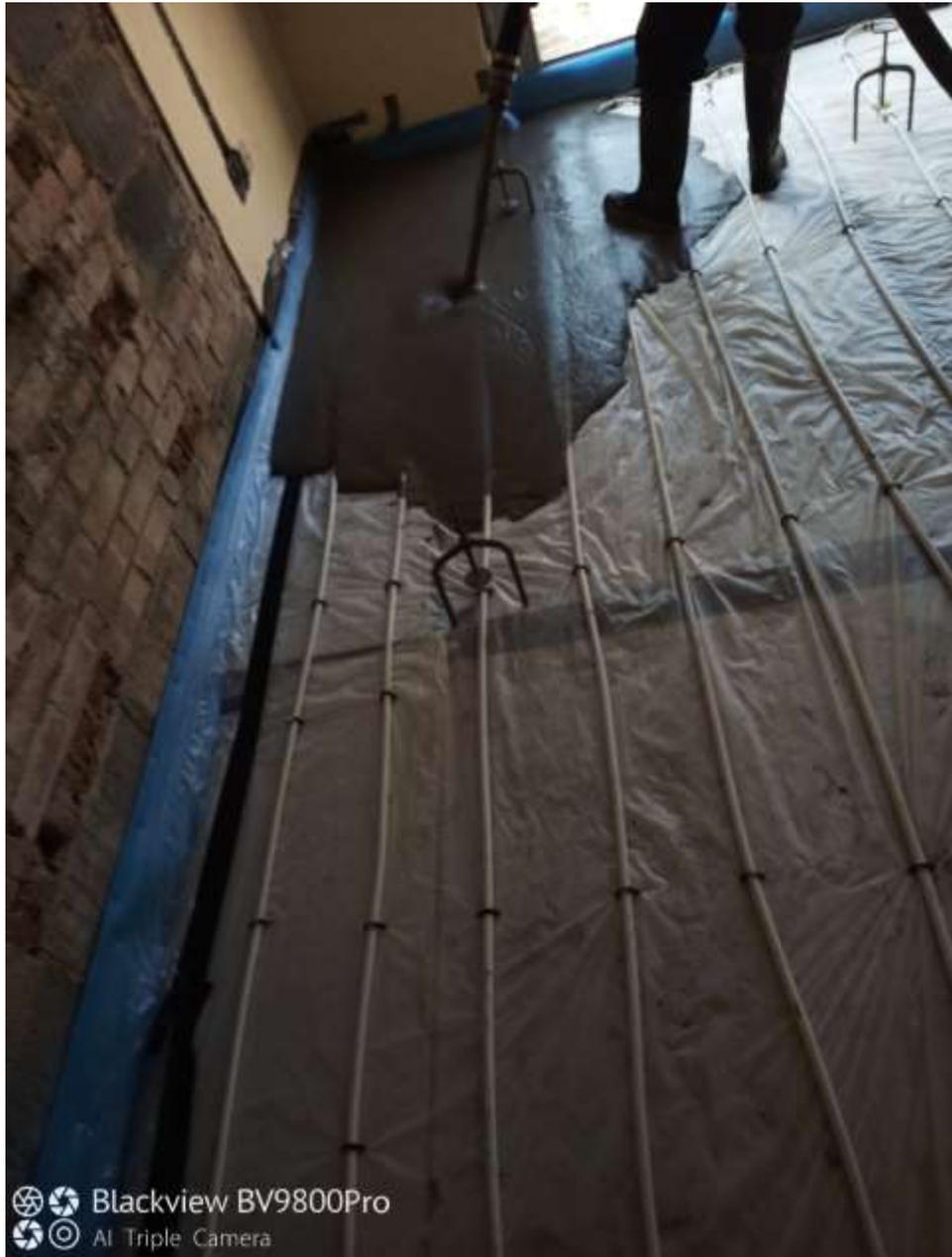






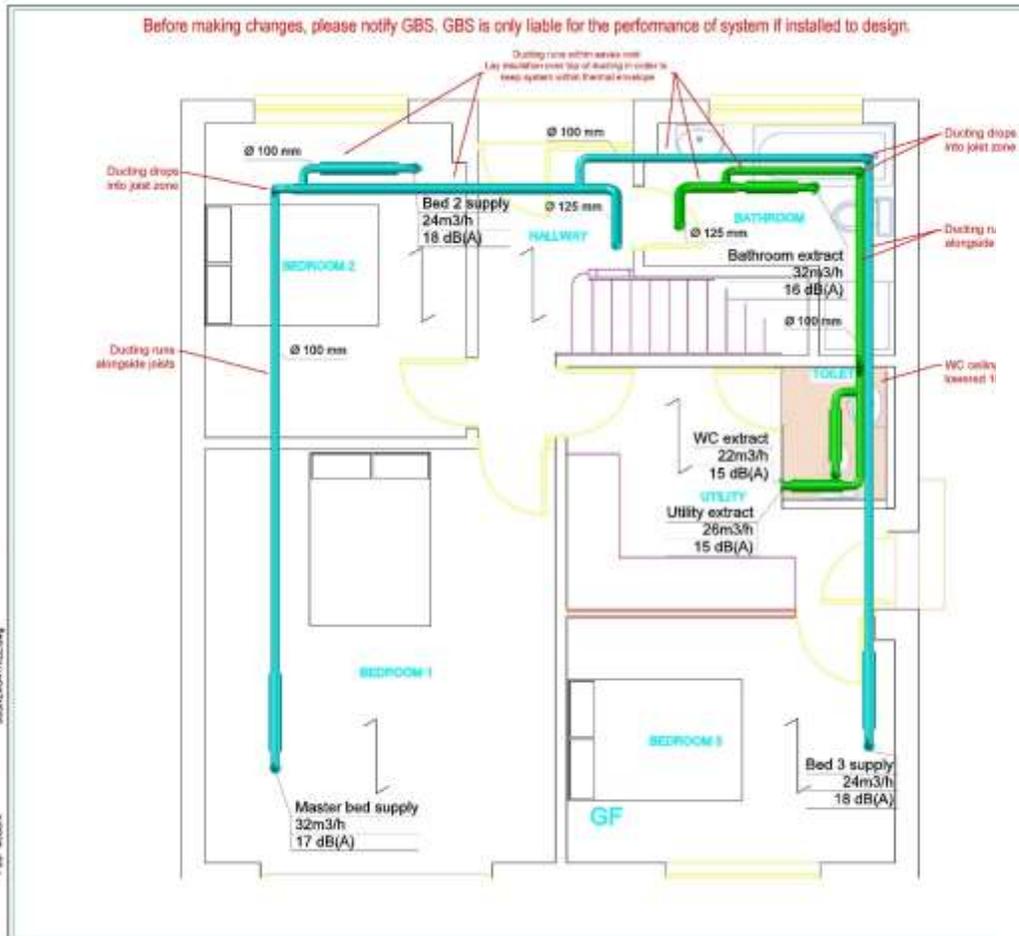






Blackview BV9800Pro
AI Triple Camera

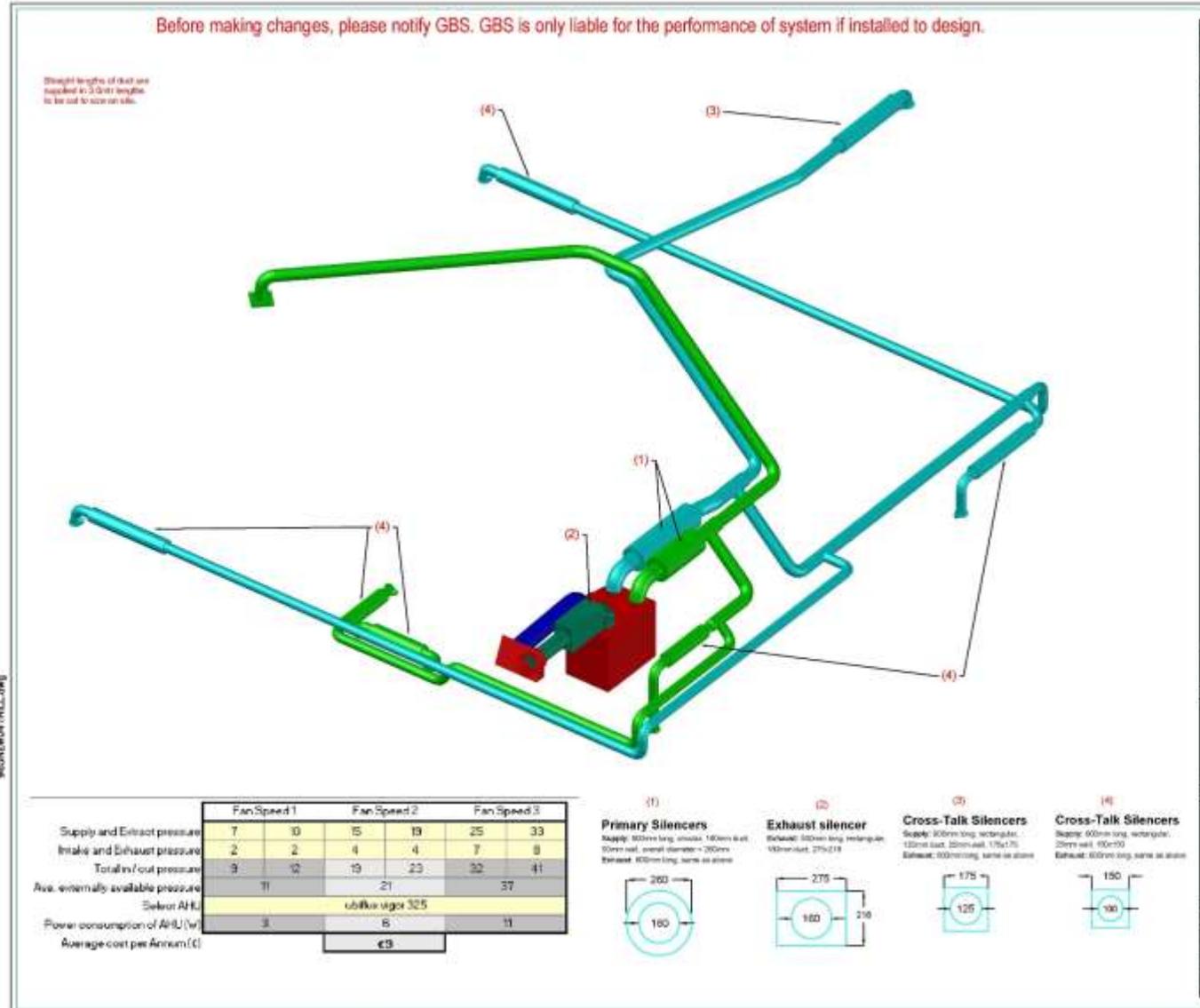




General notes

Key - plans & sections:

- Intake duct
- Supply duct
- Extract duct
- Exhaust duct



<https://www.youtube.com/watch?v=QIzoVzGJXW8>

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01

green buildings store

11.02.2020

Not to 5







Haddenham Partly Cloudy to Cloudy 11/20°C
 Sunshine 05:56-20:06 UTC+0:00



Day Month Year Total

< 25/08/2021 >

Generation 11.7kWh



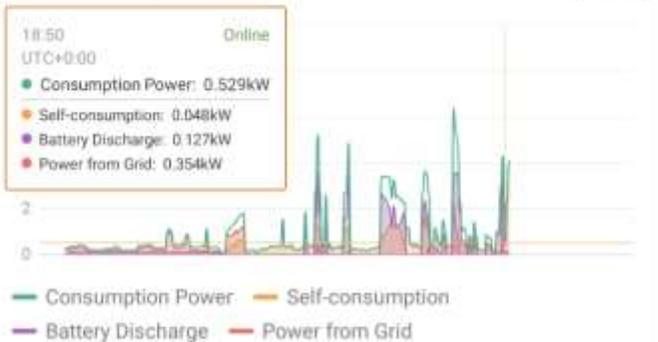
Generation 11.7kWh



Consumption 14.7kWh



— Generation Power — Self-consumption
 — Battery Charging — Power to Grid



Environmental Benefits

0.36 Equivalent Trees Planted
 30.683 kg CO2 Emission Saved



Did we achieve what we aimed to do?











DW

span
rma

TWO'S & GRASS
RIDGEONE

What's left

- Exterior cladding to cheeks
- Fascia and guttering
- Windowsills
- Cavity wall insulation upgrading
- Potential rain water harvesting tank
- Patio!













Key contacts, products and advice

Our renovation blog: <https://hillrow.blogspot.com/>

Architectural Technologist: Simon Ward (01480 301018)

Structural Engineer: Gawn Associates

Steelwork: Keith Collier Engineering

Plumber (ASHP): Clarity Heating

Electrician: JSL Electrical Services

Stove and flue: Stovefitters warehouse

Windows, doors, MVHR, Airtightness membrane, tapes & gunge: Green Building Store

Screed: Liquid Screed Pumping

Cedral cladding: AJW distribution

Concrete: Cardinalis

Timber, Insulation: Gibbs and Dandy, Jewson, Ridgeons

Questions?

Our renovation blog: <https://hillrow.blogspot.com/>



Next steps

- Please give quick feedback: form.jotform.com/211853362329052
- Make a donation: cambridgecarbonfootprint.org/donate/
- Share on social media: #OpenEcoHomes

Thank you for your support!



Further Resources

- Find out how you can [get started with your retrofit](#)
- [Book another tour or talk](#)
- [Case Studies](#): Research our past homes
- [Borrow a thermal imaging camera](#) and get training
- Use Transition Cambridge's [personalised home energy advice tool](#)

