GREEN OPEN HOMES WEEKEND

BRISTOL ENERGY NETWORK

FUNDED BY Retrofit West

Open Home Profile

Name:

George Mirams

Contact (optional)**:**

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Location:

82 Chessel St, BS3 3DN

Home Overview

Home Type (e.g., Detached, Semi-detached, Apartment, Bungalow)**:**

Mid-terrace

Year built (Approx)**:**

1900

Size (Square footage or number of bedrooms/bathrooms)**:**

~100m2 / 3 bed

Renovation History (Include any green renovation dates or milestones)**:**

2000s (previous owner) - small kitchen extension2014 (previous owner) - loft conversionNov 2023 - ASHP installation, induction hob installation, house becomes fossil fuel freeJun 2024 - PV / Battery installation

Green Features

Energy efficiency

Insulation (Type, areas insulated)**:**

Minimal. Solid brick walls. Suspended ground floor. Loft insulation to eaves (self-installed). Don't let anyone tell you you need to spend thousands of pounds on insulation for a heat pump to be viable!!!

Windows & Doors (Type, materials used, double/triple glazing)**:**

All double glazing apart from front door. Other than kitchen extension and loft conversion, windows are old (20-30 years).

Green Features

Energy efficiency

Heating System (Type, efficiency rating, and control system)**:**

Vaillant Arotherm Plus 5 kW Air Source Heat Pump supplying new radiators and 200L hot water cylinder. Vaillant thermostat. Weather compensated flow temperature (eg lower flow temperature when warmer outside). No smart controls (beyond myself!).

Cooling System (Type, efficiency, and control system)**:**

None, though theoretically ASHP can be run in cooling mode with cheap modification. House does not need it though.

Lighting (LED, smart controls, natural light)**:**

Generally LED lighting or halogen spots, replacing with LEDs as and when the bulbs go. But don't let anyone tell you LED lighting (on its own) is going to save the world!!!

Appliances (Energy Star rated, specific energy-efficient models)**:**

1no. 32" LCD TV (old). 1no. dishwasher (old - bought with house, not very efficient).
1no. washing machine (newish - secondhand off Facebook marketplace). 1no. induction hob (newish - secondhand off Facebook marketplace). 1no. electric oven (old - bought with house, no bells and whistles).

Smart Technologies (Smart meter Tariffs, integration tech)**:**

Import/export meter.

Energy efficiency

Solar Panels (Number, capacity, and type)**:**

5no. REC 405W panels, 2.02 kWp, south west facing, 3kW Fox Hybrid inverter.

Battery Storage (Type, capacity, and integration):

Fox ECS4800, total 9.32 kWh storage, expandable (though limited by space to probably 13.48 kWh.

Other Renewable Sources (Specify any additional renewable energy systems):

Green Features

Indoor Environmental Quality

Air Quality (air purifiers, low-VOC paints and materials):

Not monitored/controlled beyond temp/RH sensor.

Ventilation Systems (Trickle vents, wall vents, MHRV):

Some windows have trickle vents, some don't. Air bricks to suspended floor. Heat recovery extract fan in bathroom, through penetration for old boiler flue! Vent Axia Lo Carbon Tempra (as new, off eBay)

Natural Lighting (Skylights, sun tunnels, and window placement):

Pretty standard for a mid-terrace with loft conversion - windows front and back, 3no. rooflights to loft (PVs fitted around one of them), rooflight to kitchen extension.

Other useful information:

(Water Conservation, Waste Reduction, recycled materials, EV charging station, bike storage, carpooling initiatives):
Our approach is just not really buying stuff if possible! Then if needed, buying second hand. Would like to get an EV at some point, but Bedminster parking situation makes that difficult - plus current (small, petrol) car runs fine.

Performance & Savings

Energy Savings (Annual kWh saved, percentage reduction compared to previous years):

I now have a year of data of having both a heat pump and solar panels
Before having a heat pump and solar panels my energy consumption was as follows:
5,400 kWh gas
1,300 kWh electricity

Carbon Footprint Reduction (Estimate of CO2 reduction - this CO2 calculator can be a useful tool to use):

Financial Savings (Utility bill reductions, payback period for green investments):

Green Features

Challenges & Solutions

Heating System (Issues encountered during the renovation/work):

Solutions Implemented (How challenges were overcome, any innovative approaches):

- Use heatgeek website to find local installers- Use my own and colleagues' knowledge
□

Upcoming Projects (Planned upgrades, additional sustainability measures):

Nothing in the pipeline...

Long-term Goals (Goals for further reducing environmental impact):

Potentially replace windows, though is a high cost for a limited carbon saving - https://www.maxfordham.com/practice-people/journal/heat-pump-mythbusters-commentary-will-i-need-to-spend-a-lot-insulating-my-home-to-get-a-heat-pump

Any other information you'd like to share?

For the past year my energy consumption has been
0 kWh gas
3,600 kWh electricity

The electricity comes from both the grid and from solar panels and the split is given below:
2,600 kWh grid electricity
1,000 kWh solar panel electricity.

Therefore the total energy we take from the grid has reduced from 6,700 kWh to 2,600 kWh (60% reduction). We also export 1,000 kWh back to the grid, so our net grid use is 1,600 kWh. For context, a typical 3 bed house in the UK would use 2,700 kWh electricity and 11,500 kWh of gas (total energy consumption 14,200 kWh). So we are using one fifth of that.

In addition, the house has never been more comfortable in winter, e.g. we have achieved energy savings whilst also improving our comfort.

Challenges faced:

ASHP:
- Finding appropriate installers
- Requirement of Boiler Upgrade Scheme to use an MCS accredited installer
- Installation is a couple of weeks of upheaval (no worse than bathroom/kitchen/loft renovation/extension)
- Issue with circulation pump seizing in January and Vaillant not having enough engineers to come and fix it for ten days (:O)

PV:
- Space for inverter and batteries
- Recent recommendations to not install inverters and batteries in certain locations (PAS 63100:2024)

For Internal Use

Your Availability

What days/times can you do? (We'll be running the days from 11-4pm)**:**

Sun 11-4pm

How many volunteers would you like? (You can have up to 2)**:**

How would you like people to come to your home?

Drop-in ☒ Booking ☐ Hybrid ☐

Instructions

Please return this pack to communications@bristolenergynetwork.org. We will upload your open home profile to the Green Open Homes website so that potential attendees can learn more about your home.

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