

Modern Living in a Victorian Stable Block - Heydon



Property Overview

Property age: 1800s

Location: Within village Conservation Area

Project timescale: Completed Nov 2021

Type: Detached stable block conversion

Wall type: Solid

Floor area: 130m²

Occupants: 2 adults

Meet your hosts, Steve & Angela

Steve says: I am a graduate in Ecology and Botany, aware of the drivers of climate change long before such a title was invented, and wanting to do such a project for many years. My wife, Angela, and I looked for an opportunity to customise a single storey home by renovation, and surprisingly, stumbled across one in our home village. We worked closely with the seller of an old stable block to design and build our ideal home, and this is it.

Design, Financing & Construction

We bought our home in 2019 and spent the next 2 years or so renovating it. Although the finances needed to work, we were mainly driven by common sense, the desire for value for money, and an opportunity to renovate to our ideal specification. When we started, our aim was to create a comfortable, accessible, efficient and sustainable retirement home. It also needed to be in keeping with the local architecture and built form.

The design was researched using the internet, collaboration, common sense and through consultation with specialists. We made several visits to [BRE](#) in Hertfordshire, which was extremely helpful - well worth spending half a day! In addition to the planned renovation, we also re-configured the layout of the building, and added a garage (and car charger), and also created a new courtyard garden which had been the old farm yard. We then set about implementing our plans using local labour and DIY.

Key Features

Our new home features:

- 100mm Breathable [foam insulation](#) on external walls and roof, overlaid with 38mm of insulated plasterboard
- 100mm of Celotex insulation underneath all floors
- Expanding [draught exclusion tape](#) applied to window frames prior to fitting



Rear Extension



Spray foam insulation



Air Source Heat Pump

www.openecohomes.org

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Key Features (Continued)

- Custom-made hardwood framed double glazed windows & skylights (vacuum sealed with a 20mm gap)
- [Insulated aluminium triple doors](#) to kitchen
- LED lighting throughout
- Programmable range stove with ECO settings (night storage & time zoned used in lieu of heating)
- Underfloor heating (liquid system) zoned and programmable set on 100mm of Celotex insulation and concrete overlay used as heatsink: zoned by individual room with Heatmiser programme offering remote control capability
- Samsung [Air Source Heat Pump](#) plus a 2022 specification woodburner as a supplementary heating source
- Solar PV to main roof: low image impact [slate-design PV panels](#) This gives a maximum midday summer output of 3.5kW - a full summer day's generation is around 17kWh giving easy self sufficiency.
- Sonnen 5kWh [battery](#)
- Solar thermal panels to annex roof
- Full roof rainwater collection system serving garden and two WCs; 5,000 litre underwater tank

Reflections

I think it takes a lot of trust and hard work to project manage, which we did ourselves, so it's difficult to recommend specific professionals and trades as they all had to be carefully watched over and the expertise occasionally seemed narrow and in need of 'coaching'. If we were to take on a similar project today, we would probably employ a professional Project Manager. In terms of our design scheme, the only small change I would make would be to zone the bathroom heating so as to be separate from the bedrooms and allow full flexibility in controlling the different heating zones. We have, however, resolved this by installing programmable heated towel rails.

Performance

We are delighted that we've achieved what we set out to do. There are no cold spots in the house, so the space we thought we needed has been reduced as everywhere is warm and comfortable all year round without using the woodburner. The results have been truly excellent!

Our top tips:

- *Insulate first... and again and again*
- *Work to remove draughts*
- *Use visible monitoring to create consumption awareness*



Solar PV slates

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Key Specifications

Insulation & Glazing

- 100mm Breathable Icynene foam insulation + 38mm insulated plasterboard (25mm insulation) over Icynene
- 100mm Celotex insulation underneath all floors
- Draught exclusion tape to window frames
- Custom-made hardwood framed double-glazed windows & skylights
- Insulated aluminium triple doors

Heating & Energy

- Air Source Heat Pump
- 3.5kW Solar PV slate-design tiles
- Solar thermal panels
- 5kWh Storage battery
- Underfloor heating
- Programmable range stove with Eco settings
- Woodburner (supplementary heating)
- EV Charger

Energy	Energy kWh/m ² /pa		Carbon kgCO ₂ e/pa	
	Electricity	Total	/m ²	/person
Current use	63.8	63.8	12.3	803

Water, Garden & Natural Systems

- New courtyard garden
- Rainwater harvesting system

Key Contacts, Products & Advice:

Advice, guidance & build examples: [BRE](#)

Roofing & solar thermal installation: [Tanner and Hall](#)

Underfloor Heating & controls: [Joule](#), Irish Republic

Tank: Three zone Smartplumb 300/130

Hybrid 9.53 5kwh Battery: [Sonnen](#), Germany via Joule

ASHP: [Samsung](#) AE120JXYDEH/EU via Joule

Heating Controls: [Heatmiser Neo](#) (hardwired) via Joule

Solar PV Slates: [GB-SOL](#), Wales

Roof rainwater collection system:

Hydro store 2900 tank: [Harlequin](#)

Pump Series 3 model: [Hydroforce](#)

Spray foam insulation: [Icynene](#)

Aluminium patio windows & doors: [Art-on-Glass](#), March

Custom-made windows: EJ Croll, Brechin, Scotland
(artisan carpenters, no website)

