

People Exploring Low Energy Homes

North Street, CB4 3QN

Katharine and Andy moved into their newly built, mid-terrace house in August 2012. They were motivated to move into an eco-home as not only as it is of personal interest but it also links with Katharine's line of work. They had considered renovating but the opportunity of this new build came available saving them both time and the additional expense of renovating.

The build was and built by Cocksedge Building Contractors Ltd on behalf of CHS Group (Cambridge Housing Society) who manage and owns over 2,500 homes for rent and shared ownership in Cambridgeshire; North Street is an example of their selection of eco-homes.



Overview

Age, Type: **Built in 2012. Mid-terrace.**
 Wall Type: Filled Cavity Walls
 Floor area: 90m²

	Energy kWh/m ² /yr		Carbon kgCO ₂ /yr		2 adults
	Elec	Gas	/m ²	/person	
Before	4,226	15,257	267	9,741.5	73m ² Victorian mid- terrace
After	5,043	0	56	2,521.5	

Key features

- Solar thermal
- 1 kWp Solar PV
- Sedum roof
- Sun tubes
- LED and low energy lighting
- Thermal insulation
- Double glazing: No opening windows, only doors
- Under-floor heating throughout
- Air source heat pump
- Low flow taps
- Trickle vent ventilation
- Air permeability achieved 5.22m³/(h.m²)

Low Energy Measures

Insulation: The house is installed with thermal insulation in walls, roof and floor which has also improved the sound transmission between and within the property. Fixed, non-opening windows are also a contributor to the reduction of heat loss; using trickle vent ventilation and large full height glass opening doors as a means for air flow and access to the outside space.

There is also a sedum roof which reduces both the acoustic and the thermal transaction between the house and the sounding outside space whilst also providing a habitat for urban wildlife and sustainable drainage through reduced rainwater run-off.





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Heating: Heat is distributed by under-floor heating throughout, powered by the use of an air source heat pump which uses the heat from outside and transfers it to the inside space; thereby reducing the need for conventional heating methods. Hot water is supplied by solar thermal panels on the roof, this is supported by the heat pump and backed up by an electric immersion.



Lighting: LEDs and low energy lighting are used throughout the property to reduce the energy consumption further. In addition to this, sun tubes are strategically placed on the ground floor to bring in as much natural light as necessary in order to prevent the overuse of artificial lighting. Solar PVs are installed on the roof amongst the sedum, generating sufficient energy to power lighting.



Water: Low flow tap installation means that up to 50% less water than usual is used. By adding this into the whole scheme waste and costs are reduced significantly compared to the average home usage.

Performance

The house performs as designed to do so. All the features installed are working symbiotically to give the target results in low energy and water consumption, which can be seen in comparison to the previously owned house.

Wooden cladding, a sustainable building material, is found externally lining the outer walls. This is zero maintenance, reducing ongoing costs.

Environmentally-friendly behaviour is enabled through the strategic location of a bicycle shed next to the front door of the house, and the central location of the house within Cambridge city encourages Katharine and Andy to choose low-carbon methods of transportation.

Future Plans

Thinking forward, the next plan is to address the garden. Bringing gardening into the equation would complete the whole experience of living in North Street and enhance the biodiversity within the area.

Professional Contacts

Developer: Cambridge and County Developments Ltd.
Endurance House
Chivers Way
Histon
Cambridgeshire
CB24 9ZR
Phone: 0300 111 3555

<http://www.candcd.co.uk/page-view.php?pagename=Home>

Sedum Roof: Cambridge Flat Roofing Co. Ltd
Unit 7 The Dock Business Park
Ely
Cambridgeshire
CB7 4GS
Phone: 0300 111 3555

Heating System: Daikin Altherma
<http://www.daikin.co.uk/air-source-heat-pumps/>

Windows & Doors: Carey Glass.
Limerk Road
Nenagh
Co.Tipperary

Products and Costs

All suppliers were contacted by the building contractors, so we have no personal experience of them.