



## Quaker Community Bamford

The building was completed 1903, as the Derwent Water Board offices. One large room was the drawing office that planned the three upper Derwent dams. In 1988 the Quaker Community bought the buildings and land. Initially the community was a housing co-op with mainly families. But when it failed to attract enough new families, it converted to the present charity which has a much smaller core community and has a programme of retreats and welcomes other self-catering guests.

### Retrofit

Over the decades, there have been a large number of energy saving projects and about 10 years ago, at the time of the conversion from a housing co-op to the present community, a more major retrofit was done. Two **Energy surveys** for advice about retrofit have been obtained in 2009 and Feb 2020, (which focused on tackling draughts) both by Nick Parsons, and also a **thermal imaging** survey in Oct 2020.

**Loft insulation** A survey of in all our lofts found thicknesses varying from 50-200mm. Nick Parsons advised us that 270mm of mineral wool or similar is required to meet the requirements of the Building Regulations for a U value of 0.16W/m<sup>2</sup>K. One loft, with only a third of the current building standard of insulation, had flooring for storage, which we wanted to keep, as it is one that is easy to access. If you just put the flooring back over woolly type insulation, it squashes it and thereby reduces its effectiveness. One way of overcoming this is to use loft stilts to raise the level of the floor above the insulation. Instead Nick Parsons advised us as we had existing boarding to provide support, we could put sheets of PIR on the old flooring and added new boards on top, which was quicker, easier and overall cheaper than using loft stilts.

**Windows** Over the decades, a great variety of different types of secondary glazing and some old type double glazing has been installed. We were surprised when the recent thermal imaging survey found many of the secondary glazing windows saving as much heat as the double glazing.

**Walls** All the external walls were insulated on the inside with PIR sheets. This made a vast difference to the comfort level in winter.

**Boiler** An inefficient oil-fired boiler was replaced with seven small gas boilers to allow zoning so it is possible to have different boiler circuits on different time schedules.

**Radiators** All radiators fitted with thermostatic radiator valves to enable individual room temperature control. Some have radiator reflectors installed some time ago but when the external walls were insulated these were not all replaced.

**Cold Bathroom** In 2015 to tackle a very cold bathroom, we installed a humidity controlled ventilation fan with heat exchanger, a larger radiator and a wall mounted electric fan heater. The wall mounted fan heater is so successful and gives heat when it is needed, that we have now added them to several other bathrooms.

**Ventilation.** Nick recommended increasing the intentional ventilation before any draught proofing. However, his recommendations increased the cost and the difficulty of draught proofing to the point we didn't do anything for a few months as it all felt too difficult and too expensive. We decided that in an old building like ours even if we do our best to draught proof, there is probably still plenty of air still coming in.

**Air supply to wood burners** Nick recommended providing external air supply ducts boxed in at skirting-board level and through external wall to provide air to wood-burning stoves. **Ventilation Fans** He also recommended single-room heat recovery ventilation (SRHRV) units in rooms with un-flued appliances such as gas cookers to increase the intentional inflow to current building regs.

Our experience with the **humidity controlled heat recovery fan**, has been far from positive, because the fan stays on all the time and is noisy on its higher setting. In summer when the air outside is warmer and more humid than inside, it gets confused and starts fanning all of the time. So instead of a heat recovery fan we decided to put in cooker hoods in the kitchens. We were unable to find any cooker hoods with heat recovery. We also put in some CO<sub>2</sub> detectors

**Draught exclusion** The main-house hall was very draughty and we have done two things. See next page.



Quaker Community Front of House



Thermal imaging before draught exclusion



Draught exclusion - Completed



Draught exclusion - internal rear porch

**Front doors** When the outer front door is left open, for example when we are expecting guests to arrive, the inner doors on windy days would blow open. The inner doors now only open outwards, one has a catch so stays closed unless we need both open, battens and brush draught strip have been added all-round the edges of the doors.

**Back porch** We wanted to add a porch to the back door. Instead of an external porch which would need planning permission in the national park, we put in an internal door to block off the rear end of the corridor and create an internal porch.

### What We Are Planning To Do Next

We are putting in modern high spec double glazing to replace some draughty sash windows, and (in early Sept) are still awaiting our green homes grant to do some underfloor insulation. We also hope to do some DIY to improve the insulation in our worst loft.

### Garden and land

On our land, we have three main areas for growing vegetables, but we do not grow enough vegetables even for ourselves. What we do grow has no food miles. We make our own compost and avoid using pesticides. We have a variety of fruit including blackcurrants and apples, raspberries and wild blackberries. In a good year we have enough fruit in the freezer to supply desserts for our retreats and ourselves all year round. Each autumn we fell a large tree or coppice smaller ones to produce firewood for several wood burners. We have a wild flower meadow with a spiral walk, that we cut once a year using hand tools.



Quaker Community gardens



### Other Sustainable Interests

Of the eight people most recently living here, four of us are vegan, and one vegetarian. Three of us choose not to own a car. These proportions change as people come and go. One person uses a bicycle for all local shopping and other “valley bottom” journeys, and uses the train and bus to go to Sheffield and further afield. She also has a cycle trailer to avoid needing a car for going on camping holidays etc.

The community does not have or use a tumble dryer. Where possible we dry washing outside. When this is not possible we use the room the two main house boilers are in as a drying room.

We subscribe to Ethical Consumer, and use it to change our buying patterns. For example the brand of soya milk we were using scored badly on Ethical Consumers tables, so we switched to Oatly Barista edition oat milk. Some of us follow the Ethical Consumer recommendations for our personal spending, such as avoiding buying from Amazon.

### Ethical Suppliers

<p><b>Triodos Bank</b> for our current account and</p> <p>The <b>Ecology Building Society</b> for our mortgage and our savings account.</p> <p><b>Good Energy</b> for our Gas and Electricity 100% renewables tariff</p> <p><b>Gigapeak</b> Internet and land line. Local company. Gigapeak uses a mix of satelight and fibre-optic cables.</p>	<p><b>Lembas Wholefoods</b> in Sheffield, who are a workers co-op, provides all our groceries/ dry goods, some chilled items and most cleaning materials. Where possible we buy the organic version of a food item.</p> <p><b>What's the crap</b>, supplies bamboo toilet paper</p>
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### Overview

**Property age:** Built 1900-1910; renovated 1990 and 2010.

**Type:** Several Detached Buildings

**Wall type:** Stone walls, slate roofs

**Floor area:** House 220m<sup>2</sup>, plus basement 36m<sup>2</sup>. Outbuildings 100m<sup>2</sup> and garage 30m<sup>2</sup>

**Cost:** Renovation £139,280; Extension £43,179

**Heating:** Gas central heating, wood burning stoves in some members rooms, using wood from our own woodland, electric heating to top-up especially when the central heating is not on.

**Energy Use 2019:** Electric 14,700 kWh; Gas 80,500 kWh per year

Energy Performance Certificates	
Two buildings	C rated
Four buildings	D rated
TOTAL of 8 people resident plus guests	

### Recommended suppliers

**Advice on Retrofit:** [Nick Parsons](http://www.sustainablebuilding.org.uk) Sustainable Building, Training, Green building, Consultancy, Surveys. info@sustainablebuilding.org.uk 0794 107 2313

**General retrofit work** [Mike Haver](http://www.practicalpropertyservices.co.uk) did our loft insulation and cooker hoods. Excellent work. mike@practicalpropertyservices.co.uk www.practicalpropertyservices.co.uk 07768 681788

[G.A. Lazenby & Sons Ltd.](https://galazenby.co.uk/) This firm is not the cheapest, but is good for specialist jobs including roof work eg Victorian sky lantern that is inaccessible from ladders or a scaffold tower 0114 268 5556 info@galazenby.co.uk https://galazenby.co.uk/

[Richard Ellis Plumbing & Heating](http://www.richardellisplumbing.co.uk/) We use him to maintain all our gas combi boilers and he does an excellent job. 07800 805436 34

[P J Sears and Son Chimney Sweeps](http://www.pjschimney.com/) cheaper better and more thorough than our previous chimney sweep 07702 031957

[Paul Copley Electrician](mailto:paulcopley@btconnect.com) Local and reliable 01433 621669, 07768 263142 paulcopley@btconnect.com

[Darren, Derbyshire Dales Engineering](http://www.darrenderbyshire.co.uk/) Blacksmith and metal work. Really useful specialist work, e.g. to mend a gate and repair a fire escape. 01433 639374 info@derbyshiredalesengineering.co.uk