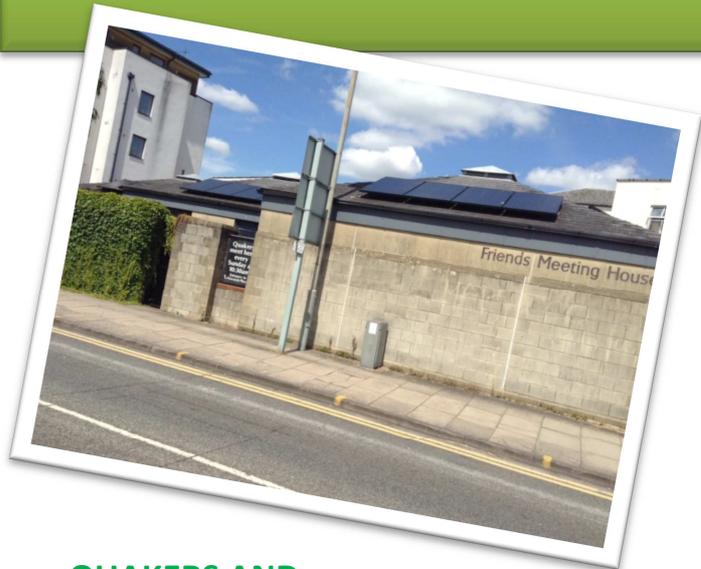


QUAKER MEETING HOUSE



BUILDING USE: A community building – a place of worship also used by a variety of hirers.

CONSTRUCTION: 1980s built with insulated cavity walls, roof insulation and double glazing.

KEY FEATURES: condensing boiler with 7 day programmer, solar pv, and LED lighting.

QUAKERS AND SUSTAINABILITY

In 2011, Quakers in Britain made a commitment to become a low-carbon, sustainable community. (The Canterbury Commitment) This is not a new thing for Quakers: John Woolman said in 1772 *“The produce of the earth is a gift from our gracious creator to the inhabitants, and to impoverish the earth now to support outward greatness appears to be an injury to the succeeding age.”*

Since 2011, Quakers in Britain have been looking at “Transforming ourselves, transforming the system”, and we intend to implement the Commitment in four key areas:

1. Strengthening our community
2. Changing our lifestyles
3. Making our core activities and property low-carbon and sustainable
4. Working for systemic and policy change

CLIMATE IMPACT CALCULATOR

A group of Quakers working for sustainability, the “Living Witness” Project, have produced a “Sustainability Toolkit” which includes climate impact calculators for Quaker Meetings and individuals.

Cheltenham Quakers were inspired to complete the climate impact calculator, and to make improvements to the Meeting House.

	CO2 equivalent
Travel to Meeting	2.2 tonnes
Energy use	5.5 tonnes
Waste	1.6 tonnes
Embedded costs of building	2.3 tonnes
Other goods and services	1.3 tonnes
Total	12.9 tonnes

4.3 tonnes can be attributed to room hirers, so Cheltenham Quakers’ carbon footprint is 8.6 tonnes per year.

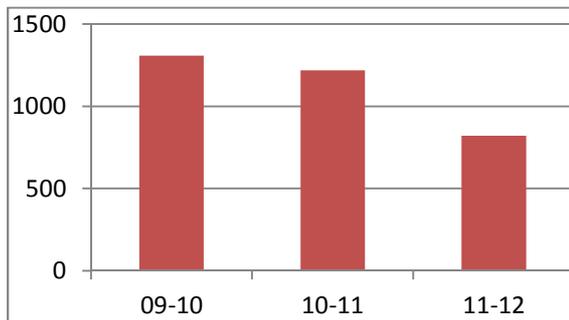
CENTRAL HEATING PROGRAMMER

We had a new boiler and central heating controls in 2008. Nobody was responsible for programming the central heating, so a number of changes were made and nobody noticed. Thus the boiler was sometimes on when the Meeting House was empty, and the thermostat sometimes set too high.

In 2010 the programmer was re-set so the central heating was on every day and evening, to a temperature of 20 degrees. The following year we got a programmer which could be set to come on at different times each day. The graph shows the

‘Quakers have made a commitment nationally to become a “low-carbon, sustainable community.” As our Meeting House is well insulated and has an efficient central heating system, it made sense for us to generate renewable electricity as one of our contributions to reducing carbon use. The solar panels should save 1.8 tonnes carbon dioxide each year.’

reduction in energy use just from setting the programmer to be most effective. Using the room hirers' timetable, the settings are checked weekly to ensure that the heating is on 2 hours before the Meeting House is in use, and goes off when the last user leaves the Meeting House.



Gas consumption 2009 - 2012

LED LIGHTS

LED (Light Emitting Diode) lighting is the most efficient and long lasting. The variety of bulbs and quality of light is improving all the time.

We got a small grant from Western Power Distribution (WPD) Community Chest to buy some LED lighting. This fund gives up to £1,000 for community buildings to improve their energy use. It is often available over the winter, and run by Centre for Sustainable Energy in Bristol (see www.cse.org.uk/projects/view/1166)

The lights in the foyer are 16 watts, which replaced around the same wattage of low energy lamps (CFLs). However, they are much brighter, which we wanted to provide a welcoming atmosphere to the Meeting House.

The lights in the centre of the main meeting room are



11 watts, which replaced six conventional 100 watts bulbs, thus saving 534 watts. The light emitted is equivalent to the replaced bulbs.

Bences sell a range of LED lighting, and they provided ours.

SOLAR PV

There are 16 panels in total, on the roofs facing SSW and ESE. Each panel is 250 watts, making the whole system 4 kWp.

The panels are predicted to generate 3,330 kWh electricity in a year, which if not used in the Meeting House as it is produced, is exported to the grid. In the first year we generated 3,404 kWh, and in the second, 3606 kWh. This is around the same amount of electricity as is used by a typical household.

Because we are in a Conservation Area, and visible from the road, we needed planning permission. The council's initial advice was that we wouldn't get permission, but we made the case that panels aren't out of place on a modern building, and the immediate area did not in any case have the character of a Conservation Area. The Council also have to take into account that the panels can be removed, and that they are in accordance with national and local climate change policy. In the end, we were granted permission without needing to go to the Planning Committee.

In our decisions, we took into account environmental and ethical, as well as aesthetic, considerations:

- We wanted to minimise the carbon embedded in the production of the panels for example by choosing panels that were manufactured in Europe rather than across the world, and ensuring that the manufacturer had a policy of recycling waste.
- We wanted to check that the manufacturer was not involved with unethical practices such as environmental degradation or poor working conditions.
- We wanted to support the local economy by choosing local installers. We used Roxon Electrical www.roxonelectrical.co.uk 01452 371840
- We chose black panels that would blend in with the colour of the roof. We used www.conergy.co.uk