

South Wiltshire Green Doors

Wilton Community Centre: converted Victorian school, with extensive energy retrofitting and solar PV panels.



Key features

- Double glazed sealed window units
- Condensing gas boiler
- Solar PV
- Cavity wall and ceiling insulation
- Low energy lighting
- Ceiling fans for air circulation.
- Compost bin, and newly planted hedgerow outside

Story

A converted Victorian school, the Wilton Community Centre has been at the heart of Wilton since 1985. The trustees wanted to ensure that the community facility, which is very well used and welcomes local groups and people of all ages, was fit for purpose and to keep the costs down. Thanks to a generous legacy from a local resident, together with capital grants and local fundraising, in 2002 the Wilton Community Centre embarked on a programme of energy saving improvements which have created a bright, popular facility, saved on energy bills and also generated an income which helps keep the Centre's running costs low. If your community is looking to improve your local hall or centre come and be inspired!

Introduction

The Wilton Community Centre was originally a single-storey school and has been constructed in solid brick walls in Flemish bond and, as such, had no wall insulation. In order to reduce the volume of the heated space, a suspended ceiling was introduced throughout the building with four inches of insulation above it.

A number of extensions have been added to the east and south elevations. Cavity wall insulation took place in 2012 within the walls of these extensions. The extension at the north east corner of the property (room 4) has been cavity wall insulated, internally insulated and dry lined.

Double glazing

The original large Victorian windows were single glazed and leaking heat. By 2005 a programme to change the windows to sealed double glazed units had been completed, dramatically improving energy efficiency.

Heating System

The property is centrally heated, with three different radiator loops served by a condensing gas boiler installed in 2009. Radiators have thermostatic radiator valves (TRVs) to enable efficient control.

Due to the high density of occupation at certain times, ceiling fans have been introduced to the underside of the ceiling in the largest space to aid circulation of warm air around the building.

Solar PV

Wilton Community Centre's electricity needs are met by the grid. Thirty-six photovoltaic (PV) panels located on the roof were installed in 2002. The system provides the grid with electricity and the building has a digital display panel that shows the carbon savings associated with the panels. One year's return on the 36 PV panels was about £2,000, based on the early (most favourable) Feed in Tariff for installations pre 2011-12.

Insulation

The walls of the original Victorian structure could not be insulated, but where possible cavity walls have been insulated in the later extensions. In 2009/10 the ceiling was lowered with four inches of insulation installed over new ceiling tiles in room 3, while retaining the full height of the north and west facing windows.

Lighting

The building is lit internally by a number of fluorescent tube fittings that are recessed within the suspended ceilings. All stand-alone bulbs and tubes are low energy.

Lifestyle

The Trustees and staff at the Wilton Community Centre are very keen to ensure that all the refuse generated at the Centre (including from the refreshment areas) is recycled where possible, including into the Centre's own compost bin. Meanwhile, there is a programme of work planned to improve the outside space, including volunteers landscaping the garden.

Energy Efficiency

In 2012, as part of the Wilton 'Great Green Challenge', the Wilton Community Centre was energy audited by the Building Research Establishment (BRE). The energy bills provided showed a total of £1,780 spent on gas and £1,953.77 on electricity over the past year. There was no data to show the price charged per unit of energy. However, based on current energy prices (assumed to be 4p/kWh for gas and 12p/kWh for electricity including climate change levy and VAT), the Centre's gas consumption is approximately 90 kWh/m² and the electricity consumption is approximately 31 kWh/m². This shows that the building's electricity use is above best practice and its gas use is between best practice and typical consumption – see below. (BRE: Wilton Community Partnership - Environmental Audit Report, March 2012).

The 'Typical' (average) and 'Good Practice' (upper quartile or best performing 25%) energy consumption for a similar building type (naturally ventilated, cellular plan office building) are set out within the table below:

Typical

| | Gas | Electricity | Total |
|----------------------------------|-------|-------------|-------|
| Energy use (kWh/m ²) | 151 | 54 | 205 |
| Energy spend (£/m ²) | £6.04 | £6.48 | £8.40 |

Best Practice

| | Gas | Electricity | Total |
|----------------------------------|-------|-------------|-------|
| Energy use (kWh/m ²) | 79 | 33 | 112 |
| Energy spend (£/m ²) | £3.16 | £3.96 | £4.40 |

Next steps

Usage of the building is particularly heavy in the evenings especially in the heating season and Wilton Community Centre is always trying to find innovative new ways to ensure energy efficiency, while maintaining comfort for the Centre's diverse users.