

The Eco Hub, Stocks Lane, Gamlingay SG19 3QP



Project Facilitator, Bridget Smith - Bridget says:

We realised we needed a new venue in Gamlingay around in 2004. We were trying to develop initiatives for young people in response to problems in the village with antisocial behaviour and drug abuse, but were being held back by a lack of suitable premises. The existing community centre had become too expensive to maintain and it was falling into disrepair.

The totally transformed and remodelled building is the result of a long and painstaking process of community consultation and partnership building.

The decision to commit to an **Eco Build** was made on several counts, and Gamlingay was already committed to adapting to **low carbon living**.

It also delivered an **ECOnomical facility**: we say that ECO means **economical as well as green** in that both the build and the running costs economical.

Overview

Age, Type: **Built around 1970s Community Centre**

Wall type, Floor area: **Timber frame, 893 sq m**

Project timescale: **Planning 1 yr, Build 1 yr**

Cost of works: **£1,250,000**

Energy usage

Figures not yet available - only renewable energy used to supply space and water heating

PV cells supply day time electricity

Key features

- + super-insulated throughout
- + air-sealed throughout
- + windows and roof lights, maximise daylight
- + passive ventilation
- + ground source heat pump system
- + solar thermal system, thermal store
- + solar photovoltaic cells 15.54 kW
- + natural light optimisation
- + high levels of insulation throughout
- + rainwater harvesting system for toilets

Low Energy Measures

The building is designed to maintain an **ambient temperature** throughout the year with **minimal energy usage**. As well as being **super-insulated** throughout, all the **windows and roof lights** can be opened to allow a flow fresh air into all spaces.

Space and water heating is by a combined system of a **ground source heat pump** and **solar thermal panels**. The pump extracts heat from the ground by means of thirty 100m long pipes buried 800 mm under the football pitch, and the sun provides heat for the solar thermal system by means of panels situated on a low level roof.

Heat from both systems is stored in a **2000 litre Oskar tank**. Water is drawn from different levels in the tank depending on what it is needed for, with the hottest being used to heat water for taps and showers by means of a heat exchanger. Water at lower temperatures is used for radiators (in old part of building) and underfloor heating (in new build).

Electricity is generated by means of a **15.54 kW photovoltaic system** on the high level roof, controlled by three inverters in the roof above the main hall. The PV system provides all the electricity needed during daylight hours, and more. The surplus is exported to the grid.

People Exploring Low Energy Homes



The use of electricity for lighting is minimised by **maximising natural light**, for example through the **light catcher** above the library and via **sun pipes and roof lights** in dark areas, and through the use of glass doors, which also allow the beautiful scenery to be appreciated.

Rainwater from on and around the Eco Hub is collected in an enormous tank under the car park and used to flush the toilets. It is automatically topped up from the mains if it runs dry.

Professional Contacts

Design Team: CIVIC architects, Dan Jones
www.civic.org.uk

Structural Engineers: Bidwells www.bidwells.co.uk

Quantity Surveyors: NTN Partnership www.ntn.co.uk

Builder: G & S Hutchinson of Potton
www.hutchinsonsbuiders.co.uk

M and E contractors: BSD
www.buildingservicesdesign.co.uk

Products and Costs

Insulation: Kingspan PLC. www.kingspan.com
kindly supplied at cost price

Ground source heat pump: Eonic
www.eonicres.com £51,918

Solar thermal system: Energyworx
www.energyworx.co.uk £17,721

Photovoltaic system: 15.54 kW PVsystems
www.pvsystems.com £77,926

Rainwater harvesting system; Cambridge Piped Services
www.cambridgepipedservices.co.uk
£30,000