

Case Study:

# Cliburn - New Homes



Photo credit <http://www.giraffephotography.co.uk/>

**Location:**

Cliburn Cumbria

**Number of homes:**

3 four bedroomed houses and  
1 three bedroomed house



**Drivers:** "To demonstrate that a sustainable speculative development could prove financially viable for developers and builders and that this could be incorporated into mainstream speculative house building."

**The Site:** The houses are located in Cliburn near Penrith, and are south facing over the open countryside.

**Construction:** Swedish Masonite system of construction, achieving levels of insulation that are twice that required by the current Building Regulations. The houses have been designed to an Eden Frame specification by local architect Stephen Crichton to achieve a 'zero heat' development.

The houses are built with re-claimed brick to first floor, complimented with larch or cedar cladding at first floor, under a re-claimed slate roof

**Walls - U value = 0.11**

(240mm cellulose insulation + thermoshield)

**Roof - U value = 0.10**

(350mm cellulose insulation)

**Ground Floor - U value = 0.16**

(200mm cellulose insulation)

**Technologies:** The Solartwin panel located on the garage roof will help provide adequate hot water at no cost to the owner. The hot water is stored in the insulated cylinder and continually primed whilst the sun shines. The Solartwin is self reliant with its own photo-voltaic panel to pump the water through the system.

Solar photovoltaic panels (Redland Solar Power System) are incorporated on the rear of the house roof. The array installed can produce up to 2.8 kWp of electricity. (Over 2000kW of electricity are produced annually by each household.)

Low energy lighting is fitted, and a full mechanical heat and ventilation recovery system (Stiebel Eltron) using only 16W – 120W of electricity and reclaiming over 90% of the households heat

A traditional wood burning stove is also provided with a back-boiler to assist in heating water This is the only source of heat provided, no central heating system has been installed. No gas is installed. An electric immersion heater is provided for use if required

Grants were received for the Photo-Voltaic cells only @ 50%

**For further information contact:**

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