

# Case Study

## Eco House



### Scale of development

Small

### Type of development

Single Dwelling

### Sustainability features



Design



Energy



Water Conservation



Water treatment & discharge



Health & Wellbeing



Materials



Maintenance



Waste

### Features

- ❖ A range of sustainable technology used to deal with all aspects of living
- ❖ Build cost relatively inexpensive at £1150 per sq. metre
- ❖ Use of local and reclaimed materials

### Introduction

Designed in 2004 by The Eco House company, this is the flagship building which launched the successful designers in 2005. The Eco House combines different approaches to sustainability including using local building materials, reclaiming slates for the roof and a range of energy generation and water saving devices.

### Construction and Materials

The timber frame making up the core of the house structure was manufactured off site. The main construction is stone and cedar cladding, both of which have been acquired from local sources, minimizing transport emissions associated with the build.

The walls utilise sheep's wool and hemp insulation materials at a 235mm depth, providing an effective thermal envelope for the structure.

### Energy Efficient Design and Technology

The Eco House uses a range of sustainable technology including a full mechanical heat recovery ventilation system to circulate air and re-use as much heat as possible. This helps to reduce the space heating requirements of the house whilst maintaining a pleasant atmosphere for the occupants.

There are solar thermal panels installed on the roof, providing energy for hot water. As well as this the house uses photovoltaic panels for energy generation. The running costs for the dwelling are roughly £200 PA heating and £300 PA hot water.

The house also deals with water use through rainwater harvesting and sewage treatment on site. Reducing the reliance on fresh water for grey water systems.

### Costs of the development

The house per metre cost is approximately £1150. Making this 100m<sup>2</sup> dwelling (3 bedroom, 1 ensuite) approximately £115,000 to build.