

## Information Paper

## Findings from the Penwithick Green Deal pilot scheme in Cornwall

Caroline Weeks

**Improving the energy efficiency of the existing building stock is one of the biggest challenges facing the UK. The Government's Green Deal programme has been put in place to offer a financial mechanism to facilitate cost-effective energy efficiency improvements to dwellings.**

**This Information Paper presents the key findings from research carried out over a 2-year period investigating the effectiveness and financial viability of a range of refurbishment measures. These include air source heat pumps (ASHPs), external wall insulation (EWI), top-up loft insulation, new energy efficient oil boilers, photovoltaic (PV) systems and single room heat recovery ventilation units.**

**It will be of interest to Green Deal providers, including installers/delivery partners, Green Deal assessors and providers of finance.**



External wall insulation applied to a timber hybrid dwelling (© Ocean Services)

## Background

The Green Deal is the Government's main delivery mechanism for the implementation of energy-efficiency improvements to the existing domestic building stock. For energy-saving retrofit measures such as loft or cavity wall insulation and boiler upgrades, the loan payback rates and periods are anticipated to be generally acceptable; these measures are well established and have been shown to be cost-effective (high return for relatively low capital cost).

However, the higher energy-consuming dwellings in the UK tend to be 'hard to heat and hard to treat', requiring more costly refurbishment interventions to bring about meaningful savings in running costs. This generally applies to dwellings of solid wall construction with no cavity (brick, stone, non-traditional system-built forms such as concrete panels) and/or properties not served by the mains gas network, which have to use more expensive, often inefficient heating systems. Addressing such

issues involves measures that are more costly (at least at the present time), such as external wall insulation (EWI). Heat pumps (air source or ground source) are an option for providing central heating systems in areas where mains gas is not available.

Recognising the potential of the Green Deal for the region, Cornwall Council was keen to identify the benefits that the scheme could offer to Cornish households and the carbon dioxide (CO<sub>2</sub>) emission reductions that could be subsequently realised. However, Cornwall Council also wanted to:

- establish which retrofit measures were suitable for typical property construction types in Cornwall
- determine whether these measures were likely to be viable under the Green Deal, and what factors were likely to be most influential
- explore to what extent occupancy and behavioural factors influence the savings made