

Cavity wall insulation for all

Summary

The Energy Audit Company (EAC) has managed a successful programme in which cavity wall insulation was installed free to all householders whose homes could benefit, in three districts of rural Northumberland. 1,700 cavity walls and 555 lofts were insulated through the programme.

This programme operated in the areas covered by Tynedale District, Alnwick District and Berwick Borough Councils. This impressively scenic area includes small towns, villages and isolated hamlets in an apparently idyllic setting. By contrast, the housing is largely old and much of it is off the gas grid so a high proportion is well below modern standards of heating. There is a large variation in local income levels, between people employed as farm labourers or seasonally in the tourist trade, and those commuting to better-paid work in Newcastle. Insulation companies are not enthusiastic about working in these areas: they have to drive long distances between each survey, often with a low level of take-up.

Many homes have been constructed with cavity walls in the North East for 100 years (longer than in the rest of the UK), and could benefit from cavity wall insulation. EAC set up a scheme, funded through Energy Efficiency Commitment (EEC) payments, where eligibility for free insulation is based on whether the property could benefit from cavity wall insulation, rather than on the financial means of the house-holder. They targeted one village at a time with a Council-backed publicity drive, offering free insulation. This was quickly followed by survey visits and installation achieving a very high take-up rate (over 80% of qualifying properties). The scheme brought the benefits of improved comfort, reduced energy bills and reduced carbon dioxide emissions.

The Ashden Award to the Energy Audit company recognises the highly effective programme which they have developed to allow all households to benefit from free insulation.

The organisation

The Energy Audit Company was established in 1992, and works on a range of programmes on energy efficiency and fuel poverty, mainly with local authorities. They are a limited company with offices in London and Northumberland.

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Technology and use

Standard rockwool cavity wall and loft insulation were used. Following agreement with the householder, Keeping Newcastle Warm (KNW), a not-for-profit insulation company, installed the cavity wall insulation in about two hours. This included drilling holes in the brickwork, blowing in the rockwool and filling in the holes. They put an emphasis on quality finishing – for instance, if the householder has the correct external paint, then KNW will paint over the filled installation holes before they leave the property.

The initial programme was to insulate 1,120 cavity wall and 120 lofts, but these targets were greatly exceeded, with a total of 1692 cavity walls and 555 lofts completed.

How users pay

The cavity wall insulation is installed free of charge in all qualifying, privately-owned housing (whether owner-occupied or privately rented) within the defined areas. This is applied irrespective of the householder's financial circumstances. In order to qualify for cavity wall insulation, the property must have standard thickness brick cavities, with no existing insulation. For free loft insulation, the property must have no more than 30 mm of existing insulation. In cases where the house already has a greater depth of insulation, EAC offer top-up loft insulation for about £100.

Training, support and quality control

KNW surveyors were trained in energy auditing as part of the programme, and also in the other measures which might be available to households, so they provided additional energy advice whilst carrying out the survey visit.

The insulation should last for 35 years. Householders are given a Home Energy Conservation Act (HECA) certificate which gives a 25-year guarantee against any problems arising in the property as a result of the installation.

Benefits and replicability

All involved like the simplicity of this scheme, which results from the detailed planning and preparation carried out by the EAC. Customers receive an initial letter, followed by a 20-30 minute survey and then, if they agree, the insulation is installed a week later. The paperwork is minimal which benefits all parties. For the householder, there is no means-testing, with the associated stigma of having to admit that they are receiving state benefits. For EAC, the installer and the councils, the scheme is simple and therefore cheap to administer. KNW estimates that a 'wasted' survey visit costs them at least £50, which is a significant fraction of the average installation cost of £280 per property. It is significant that many properties which were insulated under this scheme had previously been visited by one and sometimes two other insulation programmes, but had not taken up the measures offered to them.

The energy and carbon dioxide savings, and financial savings from this scheme are substantial. The Building Research Establishment and Ofgem have developed a formula for estimating these savings for different efficiency measures. For the EAC programme, this formula predicts about 2,000 tonnes of CO₂ saved per year from the cavity wall insulation, and 1,000 tonnes of CO₂ per year from the loft insulation. Savings are high because insulation is a very effective way of curbing energy demand, and because many of the homes are heated by carbon-intensive fuels. For the homes which have received cavity wall insulation about 37% heat with oil, 24% with coal and 13% with electricity.

The energy savings translate to significant financial savings for householders, estimated at about £194,000 per year for the cavity wall insulation (or £110/year per household) and £112,500 per year for the loft insulation (or £200/year per household), based on 2005 fuel prices. It is likely that

this insulation lifts some households out of fuel poverty and protects others from this in the future. The savings pay back the total project investment of about £670,000 within three years.

People tend to keep their homes warmer and, in consequence, drier when their fuel bills decrease so the project has provided more comfortable, and healthier living conditions. (The estimates of carbon and financial savings include a 30% reduction to take account of increased comfort).

KNW has been able to employ approximately five additional staff through the project, and upgrade staff skills. EAC estimates that householders may spend £180k of the money saved (due to the insulation) and this will indirectly create several additional jobs in the rural economy.

These improvements to rural housing should make it easier for people to remain in their villages, rather than having to migrate to towns. Often, people in small communities can feel isolated and forgotten but the EAC work has included them. It has also generated new interest in environmental issues. As a result of being offered free insulation, some householders have opted to pay for other energy efficiency measures, and some private landlords have been motivated to carry out other improvements to properties.

Management, finance and partnerships

EAC realised that householders give energy efficiency improvements a low priority and are put off by the inconvenience and mess. They therefore set up a scheme which effectively makes it easier to have insulation installed than to opt out. This resulted in a very high take-up level. 80% of eligible households in the project area (which is 53% of those contacted) went ahead with an installation.

The project is based on an effective partnership between EAC, the councils of Tynedale District, Alnwick District and Berwick Borough, and the insulation company KNW. In each community, a 'warm-up' phase was carried out, during which every property received a letter from the Council explaining the benefits of the scheme. This visible endorsement from the local council was essential in overcoming householders' scepticism. Local information sessions at village halls and in the local media reinforced the initial message and answered questions. Householders received an appointment letter from the installer to carry out a survey visit. If they choose to go ahead, then the installation was completed within two weeks.

The scheme is financed by Scottish Power (£670,000) under their mandatory Energy Efficiency Commitment (EEC), with additional funding of £90,000 from the Innovations Programme of the Energy Saving Trust. Costs were kept low by working systematically through the project area, community by community. This highly concentrated presence also encouraged residents who had initially been cautious to become involved.

The key people at EAC are Dr Bill Wilkinson, Director, who was responsible for creating and developing the project and Marion Hart, Project Manager.

Use of the Ashden Award

This project has demonstrated that offering 'free' insulation can be a cost-effective way of reducing carbon emissions. The EAC will use the Award to explain their approach to other organisations in the UK.

This report is based on information from the application submitted to the Ashden Awards by The Energy Audit Company, findings from a visit by one of the judges to see their work in Northumberland, on discussions between Marian Hart, Bill Wilkinson and the Ashden judges at interview, and on a presentation by Marian Hart at an Ashden Awards seminar.

Dr Anne Wheldon, Technical Director of the Ashden Awards Jeremy Rawlings, Technical Assistant July 2006.

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