eaga charitable trust

Evaluation of solid wall insulation in fuel poor households in the private sector

Research Summary

To date there has been little exploration of the human barriers to the uptake of solid wall insulation. This study evaluates the experiences of households receiving solid wall insulation through a pilot scheme in the south west. It considers issues associated with living on a low income in homes with poor fabric standards; the impact on comfort and lifestyle from installation; and experience of the installation process itself.

Background

The UK faces a major challenge over the next decade in tackling fuel poverty. Schemes to reduce fuel poverty and carbon emissions have typically been focused on cavity wall insulation as their main technical solution but, of the 24.5 million homes in the UK, almost nine million (36%) have no cavities.

Solid wall insulation (SWI) has previously been undertaken in the social housing sector, but there has been very little experience of promoting, funding or managing schemes for private housing, let alone evaluating their impact.

Aims

- Describe the impact that SWI can have on fuel poverty, home energy use and carbon reduction;
- Describe the experience of SWI schemes from the householders' perspective, identifying the issues and obstacles that will affect wider roll-out;
- Encourage other insulation scheme providers to learn and apply lessons from this scheme.

Objectives

- Assess the impact of SWI on interior temperatures, fuel costs and carbon emissions;
- Describe the impact of SWI on householders' behaviour, e.g. the use of heating systems and room occupancy;
- Assess the impact of the measures on the relative cost of fuel within household budgets (and therefore on fuel poverty status), taking account of any changes in coping strategies and other household needs;
- Describe the impact of the measures on householders' comfort, health and quality of life;

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- Describe householders' experience of, and attitudes to the measures (costs and benefits), before, during and after installation;
- Identify issues that may enable or inhibit wider delivery of SWI schemes;
- Collate, publicise and disseminate findings, promoting best practice in delivering grant schemes for SWI in private sector homes.

Methodology

In 2009 Bath and North East Somerset Council (B&NES) launched a new, pilot grant scheme - *Freedom from Fuel Poverty* (FFFP) - aimed at providing free solid wall insulation, solar hot water or solar photovoltaic systems to people living in fuel poverty. The scheme, managed by the Centre for Sustainable Energy (CSE), fully funded the installation of solid wall insulation measures in 11 eligible homes

To help further understanding of the human barriers to uptake and experiences of SWI, CSE, with funding from eaga Charitable Trust, undertook a detailed and thorough evaluation of the FFFP scheme. To ensure sufficient time to experience any impacts of the insulation on both thermal comfort within the home and on household energy bills, the evaluation was scheduled to run for at least one full heating season. Interviews were conducted with householders before, just after and at least one heating season after the insulation had been installed. In addition, questionnaires were completed and detailed data collated about the physical characteristics of the dwelling, energy requirements and spend on fuel.

Key findings and recommendations

Coping

Householders develop integrated clusters of habits, behaviours and beliefs in their efforts to maintain comfort. In homes with very poor fabric and control systems, some of these may be actively wasteful of energy. These modes of practice are supported by wider normative beliefs around what is expected, modern, desirable, etc. Consequently, policy makers should anticipate that SWI, an intervention having significant multiple impacts on the home's thermal performance, will not only make households warmer - it will have potentially transformative effects on many aspects of lifestyle and even the beliefs underpinning certain lifestyle and energy consuming habits. This is likely to be particularly evident in households adopting extreme comfort seeking behaviours as a result of living in under-heated homes.

Comfort

Unlike some energy efficiency and micro-generation measures, impacts of SWI on "liveability" and comfort in the home are noticed by householders and can be profound, especially where homes are under-heated prior to the measure. Scheme designers and policy makers should maximise awareness of these multiple benefits as part of social marketing strategies supporting mass rollout of SWI systems.

SWI and the Green Deal

In formulating Green Deal policy these findings highlight the importance of considering what constitutes a "saving" against the counterfactual case i.e. a situation where the household is either comfortable or is under-heated prior to the SWI measure. Given dramatically different rates of comfort taking amongst fuel poor groups the finding presents a case for deeming SWI savings and setting ECO subsidy rates accordingly. The occupancy assessment and duty of care is fundamental in ensuring that under-heated

households do not suffer fuel debt as a result of taking up Green Deal finance where savings are not going to be realised.

Advice

Because of a) unanticipated potential effects of SWI such as increased likelihood of condensation formation, and b) various maintenance aspects which differ from conventional external wall treatments e.g. painting and susceptibility to damage from point loads, it would be pertinent for SWI systems to come with a user guide, “living with your new insulation”, and/or a requirement to give verbal advice to the householder. This should mitigate potential issues and allow householders to get the best from the system.

Home improvement

Because of its impact on the appearance of a property, SWI lends itself to marketing as a ‘home improvement’ measure to a much greater extent than other energy efficiency measures which may be invisible. Branding it this way should enhance its appeal to householders and better portray the nature and cost of work involved, which can be extensive compared to other insulation measures.

Endorsement

One of the key challenges of this scheme was identifying and reaching the target audience (i.e. the fuel poor). Even once identified and targeted with the offer, the take up of measures was very slow. This was linked to the unusually high grants being offered – the ‘too good to be true’ notion – and the low income status of the target audience meant they were particularly risk averse. Having council endorsement of the scheme was important here, particularly in reassuring older customers about the scheme.

Marketing

Several different approaches were used in marketing the scheme, including advertising in local papers and taking referrals through the Energy Saving Trust advice centres. The most successful marketing technique, however, proved to be a doorstep flyer drop by a Bath and North East Somerset Council Officer. Thus, an area-based approach to future SWI could be effective. The high visibility of SWI could be exploited as a motivating and reassuring factor in promoting uptake.

Practicality

The FFFP scheme specifically set out to test the effectiveness of SWI and solar installations in helping hard-to-treat households in fuel poverty. However, it was fully acknowledged by scheme managers that these did not always represent the most cost-effective energy efficiency measures. Future schemes should be designed such that the most cost-effective measures are applied in sequence, and the householder is lifted out of fuel poverty at minimum cost, but from a practical standpoint (e.g. replace windows at the same time as external wall insulation).

Installation packages

In particular the FFFP scheme highlighted that there may be numerous unforeseen additional costs to SWI (structural or survey related). Green Deal providers should therefore consider the value of installing packages of measures in combination, to deliver additional savings/revenue (e.g. from FIT) to subsidise the costs of the more expensive measures that won't deliver the Golden Rule on their own.

Onsite management

Onsite management is a key factor in ensuring each stage of the installation process is delivered in a timely and orderly manner, and that the finish is to both the customer and contractors satisfaction. This is particularity relevant to SWI, which, much like cavity wall insulation in its early days, seems to create an uncertainty with customers who feel that the potential risks do not outweigh the benefits. Ensuring contractors have formal processes for onsite project management with a single point of contact for the SWI recipient will make a significant difference to the customer journey in many cases.

Disruption

The perceived level of disruption associated with SWI is considered a key barrier to its uptake. The findings from this study suggest this need not be the case. The experience of participants here suggest all were expecting and prepared for some level of disruption and their actual experience was well within these expectations.

Conclusions

This study found:

- Uniformly positive attitudes to both the installation process and the subsequent impacts of SWI on comfort and lifestyle;
- With the exception of one case, all participants said they would recommend SWI to others;
- Disruption entailed by the installation process need not be an undue restraint on mass rollout, if managed carefully.
- Customers reported clear and tangible benefits of having SWI installed, including notable improvements to comfort in the home; reduced requirements for heating or 'coping strategies' in the absence of heating; financial savings in reduced energy bills; health and social benefits; and the appearance and maintenance requirements of the home.

Although these findings exist in the context of a small-scale, pilot SWI scheme that was offered to a distinct group of householders for free, it is apparent that SWI offers multiple benefits and some third of the UK population who live in solid walled homes could stand to gain from this measure.

Project information

The full project report is available at:
www.cse.org.uk/projects/view/1200

and

http://www.eagacharitabletrust.org/index.php/projects

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