

Dumfries & Galloway

**AREA BASED SCHEMES
WALL INSULATION EVALUATION**

**2015 –
2017**

**Executive
Summary**
Retrospective
Study (Part II)

March 2018



AREA BASED SCHEMES WALL INSULATION EVALUATION



Retrospective Study (Part 2): Executive Summary

Introduction:

- This report summarises some of the initial findings of a wider evaluation project, the aim of which is to investigate the impacts of insulation upgrades administered through the **Home Energy Efficiency Programme for Scotland Scheme (HEEPS): Area Based Schemes (ABS)**.
- The project is a collaboration between the **Energy Agency**; **NHS Ayrshire and Arran (Public Health)**; **South Ayrshire Council**; **East Ayrshire Council** and **Dumfries & Galloway Council**.
- This part of the assessment (**Retrospective Study – Part 2**) was conducted on a sample of households, located throughout Dumfries and Galloway, who had received insulation upgrades prior to the winter of **2016/2017**.



Methods:

- A total of **42 households** were recruited as part of the study giving an overall response rate of approximately **12%**
- This included **21 properties** who had received **External Wall Insulation (EWI)** and **21 properties** who had received **Internal Wall Insulation (IWI)**.
- **The retrospective assessment** involved gathering data from:



Face-to-face
Interviews with
the householders



Energy
Performance
Certificates (EPCs)

Results:

Property Conditions

- The majority of households gave positive comments regarding improvements to their home with **92%** agreeing that the general condition of their home had improved
- Of those who received EWI, **90%** also stated that the **external appearance** of their home had 'improved a lot' while 78% of respondents felt that the street or neighbourhood had also been improved
- **42%** of participants who had reported having a problem with condensation or dampness said that this had now been improved following the works
- EPC data has not yet been made available for all of the properties included in the study. This report will therefore be updated in due course with details of the energy-efficiency ratings.

"I think it's improved the street, definitely...Not even just the street, the whole village"

"We had the condensation on the windows...in all the rooms...it's a lot better since we got the insulation...it's made a difference since we got that done"

Fuel Costs

- Prior to the insulation upgrades, the **mean monthly expenditure** on fuel was **£80** per month. This did not change significantly following the insulation work. These figures are however subject to uncertainty as they are based on self-reported data from the householders. These reports are also skewed by changes to fuel prices and cases where customers fixed monthly payments may not yet have been updated to reflect changes in consumption.
- For those who provided sufficient information, **50%** (21) reported seeing a reduction in their fuel bills while **19%** (8) hadn't noticed a difference and **7%** (3) had witnessed a slight increase
- EPC data has not yet been made available for all of the properties included in the study. This report will therefore be updated in due course with details of the modelled fuel costs and estimated fuel poverty rates.

"Well we get a statement every year and it tells you how much you've used...The electricity was up but the gas was down...I got about £300 off them"

"The bills this time showed that it had reduced in usage...it's quite noticeable 'cause we had about a £70 refund"

Thermal Comfort

- **90%** of the participants agreed that their property was now able to **retain the heat** better following the insulation upgrades and **83%** found that their home now heated up more quickly
- A further **41%** of the householders felt that there was now a **more even distribution** of heat in the property while **59%** felt that they had **more control** of the temperature of their home
- **88%** of those interviewed felt that the overall temperature had increased. **43%** of the sample described their homes as “**much warmer**”
- The majority (**68%**) also felt that the insulation had improved their **level of comfort** experienced in the home.

“Where we feel the difference is when we put the heating off at 10 o'clock, the heat's still in the living room and that's a great thing. So we're saving 3 hours of heating in there”

Health

- There were **2** reports of **improvements to existing conditions** which may have been linked to the intervention. The majority of participants did not report any changes in their physical health since the insulation had been installed.
- There were however **7** reports of **improved mood or mental well-being** which the participants linked to the improved conditions within the home.

“I suppose you are a bit more content that you know you're coming into a warm house”

Installation

- In broad terms, **38%** gave a positive account of the works while **21%** had primarily negative comments. The remaining households gave mixed reports whereby the participants were generally happy with the finished product but had some specific problems which were encountered during the process.
- The majority (**93%**) commented that they would **recommend the scheme to others**.

“I thought they were very good actually. I thought they were very efficient...It didn't take long to put the actual insulation in”

“We're very well pleased with how it has turned out...Very appreciative of the opportunity to have it done when we wouldn't have otherwise. I don't think we could have invested in that really”

Conclusions

This report has summarised the findings from a retrospective study involving **42 households** in Dumfries and Galloway who had received either **external or internal wall insulation** as part of the **HEEPS: ABS** scheme. The recruited households were local in areas or properties which were assumed to be at high risk of fuel poverty. The sample was however skewed by the fact that there were no social housing tenants included in the scheme and the majority of households were retired couples who owned their property. Our findings showed that the majority of this sample did not perceive paying for fuel as a particular difficulty.

A range of different property types were included allowing a broad assessment of factors which may have influenced the extent of improvement following the insulation. The disparity in the level of improvements observed can be linked to the extents of the works carried out and differences in the baseline conditions. Many of the examples may be considered as **'shallow retrofits'** whereby only part of the property was insulated and/or other elements of the building such as windows, ventilation or the heating system were not addressed. This may result in only **marginal improvements** on the EPC and the modelled fuel expenditure. A further investigation of the EPC data will take place once these are available for all properties included in the study.

Additional benefits to the householders, beyond those relating to fuel costs or the modelled energy performance, were also investigated. It was found that the **majority** had experienced an **increase in the temperature of their home** following the insulation upgrades albeit the extent of this improvement varied. Some participants also found it difficult to compare the conditions due to variable weather patterns, highlighting the **need for quantitative data** rather than relying only on the occupant's reports. Nonetheless, there were numerous comments about the **improved heat retention** of the properties resulting in **reduced use of the heating system**, a reduction in the need for **coping strategies** and **increased useable space** within the home. There were also a few reports of **reduced noise** and, where the properties had been insulated externally, the majority were positive about the changes to the appearance of their home and general neighbourhood. There were also some **anecdotal comments of improved health outcomes** particularly in relation **mental well-being and mood** but limited evidence for any physical health improvement. Given the follow-up periods involved, it is possible that **longer term health improvements** are not yet apparent however the evidence does support the more immediate impacts that may be expected following these types of housing improvement. The reports of improved temperatures, reduced fuel bills and improved satisfaction with the home are therefore consistent with the **proximal outcomes** on longer term health improvement pathways.

In relation to any unintended consequences of the insulation, there were some potential issues which were highlighted during the follow-up visit. This included one new case of window **condensation** and two apparent cases of **over-heating** in summer. These are issues which could be mitigated through improved ventilation strategies however such issues may not be apparent immediately after the works. This highlights the benefit of conducting post-install visits at least 6 months after the work has been completed. Another potential downside mentioned was the **loss of character** in traditional properties which had received EWI. These views are determined by the participants own preferences and the prior conditions of the property. Overall the majority still gave positive reports of the improved appearance, both of individual properties and the area as a whole. Other potential downsides were the **mess** and **upheaval** of the works, particularly for the IWI projects. However most participants

Area Based Schemes Evaluation – Retrospective Study (Part 2)

were generally accepting of the level of disruption and issues with the reduction in room size were not seen as a major concern. Indeed for the actual installation process, although there were some mixed reports in relation to the contractors and some issues with supervision, the majority of participants were happy with the end results and stated that they **would recommend the scheme to others**.

Overall while the results demonstrate the numerous benefits resulting from the ABS scheme, there is currently a lack of data on the measurable impacts to fuel bills. This will be updated when the EPC data is finally available and analysed. There is however a benefit in looking beyond **monetary or carbon savings** and considering the **wider impacts** on the occupants with our results showing **improvements in comfort levels** and the **perceived level of warmth** within the home. It is acknowledged that the study is limited due to the reliance on qualitative data and the participant's recall ability. The study will therefore be complimented with an ongoing prospective study and more detailed environmental monitoring for properties located in Dumfries and Galloway which will be completed in 2018.

This report was prepared by the Energy Agency in partnership with NHS Ayrshire & Arran, East Ayrshire Council, South Ayrshire Council and Dumfries & Galloway Council.

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