

# Show Homes

## An effective force for inspiring domestic retrofit



MARCH 2017

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## 1. EXECUTIVE SUMMARY

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This report clearly sets out the huge benefits to be derived from the use of Show Homes to promote energy savings through retrofit and renovation. These benefits are felt throughout the supply chain, by Government, the consumer and the population as a whole:

- Supply chains benefit by raising awareness of their products and services.
- Government benefits by awareness-raising and increasing the uptake of energy efficiency measures, and more generally helping to reduce carbon emissions enabling it to meet its legally binding targets. This last point benefits us all.
- Consumers benefit by being better informed about products, services, benefits and drawbacks of energy efficiency and renewable energy measures.

Recent policies, such as the Green Deal, have all focussed on facilitating the install, be that by introducing an 'innovative financial mechanism', designing a code of conduct for installers or by commissioning an ombudsman. However, successive Governments have failed to address the lack of demand in the market place for energy efficiency measures.

What has worked is using demonstrator properties to educate and inspire. Evidence from SuperHomes shows that over a million people have now visited the website or visited the homes themselves and with huge numbers of those then going on to install measures, this surely must be the way to go. There are now over 200 SuperHomes, but more are desperately needed if we are going to inspire renovation of our 26 million existing properties.

What this report so clearly demonstrates is that Government policy should always encourage or facilitate demonstrators. This has implications for project cost, but also project timescales as demonstrators take time to agree and process. For a solid wall insulation (SWI) project, this could take six to eighteen months, longer if there are planning restrictions. Even the use of existing homes (which have already had measures installed) can take time to set up as Show Homes in conjunction with the property owners and other interested parties.

This Government must get serious about cutting carbon emissions and renovating our aged housing stock. Of course, this has the added benefit of reducing fuel poverty, but it begins with some demand creation. What better way is there than by supporting initiatives which are proven to work?

## 2. What is a Show Home?

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In its simplest form, a Show Home is a property that can be opened to allow others to view it. It's not a difficult concept and it is one which we are very used to in the new-build arena, but the model seems to be a rare occurrence in the promotion of retrofit and renovation. Show Homes may be privately owned, owned by housing associations or local councils or even be rented properties. Their purpose is primarily to inform and educate. They are used to raise awareness of energy efficiency and renewable energy measures. They generate interest among visitors who can find out more about the installation process and might then choose to install similar measures in their own homes.

### 3. What is a SuperHome?

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A SuperHome is a particular kind of Show Home. They are owner-occupied properties where the owners have renovated their homes and saved at least 60% of their carbon emissions. The owners then open their homes to the public to educate and inspire. The National Energy Foundation has been running the multi-award-winning SuperHomes project since 2007. Since that time tens of thousands of visitors have walked through the doors of these homes, with huge numbers of them going on to undertake their own renovations.



SuperHomes are unique in that they don't just showcase one measure, but can demonstrate a combination of measures which have been combined to save at this substantial level of carbon emissions. Statistics show just how effective this project is at generating energy and carbon savings from visitors. See Results section 9.

### 4. Why does demonstration help?

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Some technologies are not well-understood, indeed some might not have been seen before and some might not be widely available. The more innovative or new the technology, the less likely people will know of it, or fully understand it. WHISCERS™, an innovative internal insulation system, is a perfect example<sup>[1]</sup>. Others include newer passive ventilation systems, domestic battery storage systems or even something as comparatively common as an air source heat pump. We all remember when PV was novel, but look at it now.

Homeowners, who are spending their own money, will be wary of accepting information and advice on a new product from someone with a vested interest in making a sale. Taking PV as an example, our research has indicated some customers signed on the dotted line immediately in order to take advantage of a cheap offer, the kind of sales tactic that we never recommend. There were others who did some research online, asked for quotes from more than one installer and went to see other installs. Some even spoke to total strangers.

*“Since having the PV installed, yes on the front of my house, I have had four people from the estate knock on the door to ask me what I thought of it. They want to know how much it cost, whether I think I am saving what the installers said I would and how much money I might get back in the end.”*

Mrs M, Buckingham

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<sup>1</sup> WHISCERS™ – Whole House In Situ Carbon and Energy Reduction Solution. See [www.WHISCERS.org.uk](http://www.WHISCERS.org.uk)

The benefits of local demonstration and being able to speak to neighbours about their experience are almost endless.

### **See the product**

A visitor can see the product in-situ. They can see the visual impact and how it interacts with the rest of the house, for example:

- Where a new window sits in relation to the existing wall
- How much space is taken up by a ground source heat pump
- What is different about the light quality of an LED bulb
- How external wall insulation is finished at the eaves
- The visual impact of internal wall insulation on party walls or of a return

### **Touch and feel**

A visitor can also touch the product. Some people have a pre-conceived idea of what to expect and then find that reality is a little different. This is often true of solid wall insulation where people think that polystyrene will be fragile, but once in-situ and with its relevant reinforcing coats on, they find it a pretty sturdy material.

They can feel the effects too. Walking into a property, similar to their own, and finding that there isn't a major draught coming from below the skirting or around an ill-fitting window can be a revelation.

Even being able to hear some technologies can be an advantage. Listening to the hum of a mechanical heat recovery unit or the whirr of an air source heat pump are things that a customer cannot learn from a brochure. 40 – 60db doesn't mean much to the average person, so the opportunity to hear one in action cannot be underestimated. Yes, it might be the one thing that deters a purchaser, but at least the customer can be fully-informed.

### **Question**

A visitor can ask questions of the householder and can expect to get an honest answer. The householder (whilst wanting to promote renewables, energy efficiency or carbon emissions reductions) is not a salesman for any specific products or technology. She/he is considered to be a trusted source of information and will often explain all the negatives alongside the positives. Questions might also include those about the installer as well as the product.

The householder might explain:

- How they selected their installer
- How much disruption there was during the installation process
- How long the install took
- What the customer service of the company was like
- How much it all cost (and how they financed it)

As well as these more mundane but key questions, the householder is also likely to be asked more qualitative questions:



- Was it worth it?
- Are you happy with the choice you made?
- Would you do it again?
- Is your house more comfortable?
- Are you making the energy savings you expected?

The visitor is likely to learn as much from the negatives as the positives. They can learn which installers to avoid or which products don't do what they 'say on the tin'. They might learn something as simple as they don't like the light from the bluer LEDs, but they do like the orangey ones.

Some Show Home owners, including many SuperHomers, will have before and after photographs. They might have before and after energy use data. They might also have some specific facilities which make it easier for visitors to understand different technologies. For instance, a window sill that can be removed to show the solid wall insulation below, a patch of solid wall insulation which can be removed to show the depth of the material, or an array of different lightbulbs to demonstrate the different light produced by each. It is often the detail that visitors like to investigate, such as seeing the way the solid wall insulation can be pared back where it meets historical features like decorative mouldings, or asking how the photovoltaics and immersion heater can best be used together.

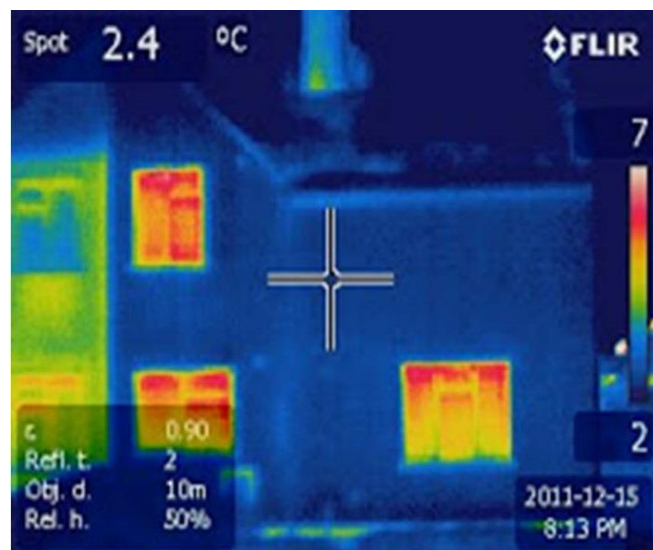
## 5. Openings

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What is involved in a Show Home opening? Bearing in mind that in by far the majority of cases a Show Home is an occupied property, access must be limited and controlled. There are two main types of opening – Open House and Tours.

### Open House

This appears to be the easiest way of opening a home. Dates are chosen: a start and finish time decided and then marketing can take place. Visitors show up during the allocated times and can guide themselves around a property. Often, the householder will provide information by way of explanatory posters near the relevant technologies, take-away notes on different measures or energy use graphs before and after measures were installed. Where solid wall insulation has been included some homeowners will also have before and after thermal images of the property.



Helpful information for visitors can include the make and model of specific technologies, together with their size, output, installer and manufacturer. Occasionally, Show Homes have even hosted installers to provide visitors with on-site access to more technical or specific information.

The homeowner might stay in one room and be available to answer questions or they might walk round the home soliciting questions as they do so. For Open House events which are likely to be more popular, homeowners will often recruit friends or volunteers to supplement their dissemination of information.



A queue outside a SuperHome in Hackney

The major drawback of this approach can be the sheer number of visitors. Where the home is small there can be a problem with queues forming outside a property.

In the case of a couple of SuperHomes an opening weekend attracted over 500 visitors each. This, perhaps, explains the more recent advent of the tour as a means of showcasing energy efficiency and renewable measures.

### **Tours**

A tour is a more organised means of showing visitors around a home. A homeowner plans a tour of the property where measures are viewed in turn and he/she plans what will be said at each point. Additional information materials might still be provided, as noted above, but this option usually includes a specific question and answer session at the end of the tour. Online booking systems can enable the homeowner to limit the numbers for each tour and set specific times. They will also know how many people to expect at any given time.

The online booking systems can also be used to send follow-up reminders to those who have booked and inform potential visitors of cancellations, even at the last minute. Because online bookers have to provide some personal information this can be seen as a safer way of opening a home. It also provides contact details for any follow-up surveys.

Each of these methods of Show Home opening requires preplanning. Not just in terms of any marketing that needs to be done, but specifically thinking in terms of risk assessments, security plans and insurance.

## **6. Demonstrator properties**

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These differ somewhat from the traditional Show Home as they have usually been developed specifically to promote a technology or are part of an area-wide refurbishment project. They might be unoccupied properties which don't have a householder living there who can tell their story. There might also be less information on why a particular technology or installer was chosen and there will be little information about how it feels to experience the technologies.

However, the benefits include:

- Fewer security issues - no personal possessions that could be removed
- More space to tour the building – no furniture taking up valuable space
- Opening times which can suit visitors rather than homeowners – no fixing tour times to coordinate with school runs
- Use of the whole building – no need to cordon off private rooms
- The ability to leave some of the work unfinished so that visitors can better see what has been installed
- The opportunity to use different materials or techniques to show different options

This latter point is worth expanding on as it can also be the root of some problems. In new-build developments we are used to the concept of a Show Home. Even the smallest development is likely to host a Show Home, which is designed to not only show potential purchasers what a beautiful new home could look like, but also the level of finishing by the contractor and most importantly the options available in terms of fixtures and fittings. The Show Home will be used to demonstrate the top-of-the-range fittings available. It is usual for the flooring to be the best on offer, the kitchen and bathroom fittings to be optional extras, tiling to cover a greater area than usual and the garden to be fully landscaped.

Visitors are used to asking questions about what they would get as standard and what they would have to choose independently and probably pay extra for. Sadly, visitors to demonstrator renovation properties are not so experienced and will often think that the way the demonstrator home has been completed is the only option available. A couple of specific examples come to mind here.

*Mrs O visited a home with internal wall insulation. She saw that insulation had been tapered into the decorative moulding. Not unreasonably, she made the assumption that this would happen in her own install with the same contractor. However, once her installation was underway she was devastated to find that her own decorative moulding had been removed. Had she known to ask what her options were she would have requested the Show Home option, probably at an increased cost, but the contractor had not given her any options. She had therefore believed that she would receive the kind of install she had viewed in the Show Home.*

*Mr B visited a Show Home and also viewed internal wall insulation. The Show Home was exactly the same property as his, so he felt confident that his installation would be exactly as the Show Home. However, the contractor had realised that they had omitted to include a return on the insulation on the party wall in the Show Home and therefore they had not been able to claim ECO funding. Once they realised the error they began to install a return on all future internal wall insulation installs. Mr B was one of the first installations to have a return and he wasn't happy that his installation was different to what he'd expected.*



Clearly these problems can occur with any kind of demonstrator property. It is therefore of paramount importance that the purchaser and contractor fully discuss all the installation details at the quote stage and again at installation stage to ensure that there is no ambiguity.

One contractor we have worked with had a novel solution to the problem of demonstration. Where they know they will be working on an area-wide scheme, they will rent a property as soon as possible in the project development stages. They will upgrade that property exactly as they expect to upgrade the others, and they will keep the property empty so that it can be used as a demonstrator.

For the social housing clients in the area, they can view what they are going to get in their own homes. For the private residents, they can view what is possible and potentially sign up to register their interest in the works. The contractor uses the property as a site office initially and keeps a selection of materials, such as examples of different colour finishes, there to show to prospective purchasers. Once the contractor is physically on site and beginning to get the installations properly underway, there is no need to keep the demonstrator property open and it is usually returned to the landlord in remarkably better shape than at the beginning of the tenancy.

*“It just makes sense. How can someone decide whether they want external wall insulation without seeing it first? How can they be expected to choose a colour based on an online sample? They need to see it in the flesh. Having a demonstrator early in the project just gets the ball rolling. People see what their options are and they can start planning nice and early. If I had my way there would be a demo on all sites.”*

Daniel Mackie, Hamilton (Building Contractors) Ltd



©National Energy Foundation – viewing EWI in progress with Hamilton (Building Contractors) Ltd

## 7. Borough Grove case study

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Borough Grove was a project by Drum Housing Association (part of Radian) and was part-funded by the European Regional Development Fund. It involved thirteen three-bed semi-detached properties,

of REEMA construction, which had reached the end of their envisaged useful life and needed substantial updating or demolishing.

The buildings were constructed using precast reinforced concrete and were all EPC 'E' rated, with residents' energy bills at the time typically ranging between £1,000 and £1,500 per year. Carbon emissions for space heating, hot water and lighting were typically between 6tCO<sub>2</sub>/yr and 7.2tCO<sub>2</sub>/yr in total, including appliance-based electricity use.



The properties were refurbished internally and externally, and this included new kitchens and bathrooms, re-wiring, re-plastering and re-roofing.

The sustainability features added included external wall insulation (comprising 100mm Kingspan Kooltherm phenolic insulation with a Wetherby K-silicon wet render finish), floor insulation, loft insulation, new windows, new condensing gas boilers and, in some cases, solar thermal and photovoltaics.

The upgrades of the buildings were expected to result in reducing carbon emissions by 77% in seven of the buildings and by 86% in the other six. The seven east-facing homes achieved a high 'B' rating, while the six remaining south-east-facing homes, with extra PV and solar water heating, achieved an 'A' rating.

Whilst the build itself was innovative, a unique aspect of this project was the inclusion of a Show Home. The housing association used the property to showcase the project to residents, both in the very local vicinity and further afield. They also used it to promote retrofit to local SME builders and to local authorities, the latter of which were particularly interested in the external wall insulation. The Show Home was opened as part of the project for a number of years and then opened by the tenant as part of the SuperHomes project. There is also a [video](#) which explains more about the project.

## 8. Other promotion

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SuperHomers are dedicated to promoting energy efficiency and renewable energy technologies and reductions in carbon emissions. As well as opening their homes to the public, many of them will undertake promotion in other ways. They might present at local meetings (such as transition groups), blog about their installations and even make videos before, during and after.

Show Homes do require other promotion to take place. For instance, an area-wide scheme which is promoting solid wall insulation might need:

- Posters in the area
- Leafleting of relevant property types

- Local door-knocking
- Articles in local papers or parish newsletters
- Posts on social media to generate initial interest

Social media makes it very easy for information to travel very fast. One of the most important things to remember about Show Homes is that whilst a good install will be widely reported, a poor one will be reported much more.

Many SuperHomers provide anecdotal evidence of the bad service they have encountered on their route to 60% carbon savings. As we have already said, we can learn as much from those stories as from the good news ones.

However, if a contractor is using a demonstrator property to generate interest in future sales, they will need to ensure that their installation really is the best they can do. In our experience, news about delays in completion dates, lack of support for the homeowner and issues with installation can get around the neighbourhood very quickly, and as a result an installer can get a bad name before they even set foot on site.

## 9. Results

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Results from the SuperHomes' experience demonstrate the success of Open House events. It should be noted that visitors are often interested in seeing a combination of measures and therefore Show Homes which only demonstrate a single measure might not be as effective at raising awareness or inciting actions as SuperHomes. SuperHomes are spread across the country; their purpose is to raise awareness of what is possible, to provide the touch and feel experience and to take visitors from inspiration to action.

Where an Open Homes is created to promote a specific project its measures will be more tailored to those of the project and its planned outcomes. For instance, an area-wide solid wall insulation project would ensure that the Show Home had solid wall insulation. A more holistic renovation project might have more examples such as windows, draft proofing, new heating systems etc.

Data collected from SuperHomes<sup>[2]</sup> visitors shows that:

From 10 options, the three most frequently selected reasons for wanting to visit a SuperHome were "To learn what works and what doesn't" (79%), "To see technology in action" (68%) and "To learn about the installation process" (52%)

3 in 5 visitors say it is *very likely* they will improve the energy efficiency of their homes following a visit to a SuperHome

86% say it's *very likely* or *likely* they'll investigate a product recommended by a SuperHomer

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<sup>2</sup> Felicity Williams, SuperHomes research 2015

Of five common anxieties about making energy-saving improvements, the one most alleviated by visiting a SuperHome is the concern that “The installed measures will take up too much room/look unsightly/ruin the character of the house”

25% of SuperHomers visited a SuperHome before doing their own refurbishment

“Research suggests that open home events have a greater impact on eco-refurbishment uptake than other ‘mass communication’ campaigns <sup>[3]</sup> and are an important means of helping governments achieve their carbon emission reduction targets”

Julie Hirigoyen of the UK Green building Council explains that

*"Driving up demand for retro-fitting homes is essential for any policy to be a success - the Green Deal told us just offering financial incentives isn't necessarily the only solution. We need to make it all easy, attractive and affordable."*

*"I think the work that SuperHomes does is really important - demonstrating what is possible and bringing retrofit to life".*

## 10. Timescales

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For a project to benefit from a Show Home, the time needed to have one completed is an important factor. Research from SuperHomes and other projects supports the theory that people take time to make decisions about investing in renewable energy or energy efficiency:

27% of visitors to SuperHomes installed energy-saving measures within 12 months, and 41% within 24 months.

65% of SuperHome refurbishments took place over more than two years: More than one third (36%) took place over more than five years.

Clearly, SuperHome owners have undertaken their renovations at a speed to suit themselves, and the majority of them probably weren't doing the works because they wanted to become a Show Home.

The reasons for this time delay are many and varied, but finance has to be considered a major issue. Where homeowners are paying for their own renovations, even if that is only a contribution to the costs, time must be factored into any project for them to secure the relevant finance. This might involve saving, taking out a loan, extending a mortgage, etc.

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<sup>3</sup>Stephen Berry, Anne Sharp, Jo Hamilton & Gavin Killip (2014): Inspiring low-energy retrofits: the influence of ‘open home’ events, Building Research & Information, DOI: 10.1080/09613218.2014.894747

A second major factor will be deciding on the actual measures to be installed. This could involve discussing with friends, visiting Show Homes, online research or other methods to decide on technologies.

There is then the problem of finding a reputable installer. If the technology is reasonably innovative and installers are few and far between then finding one who is recommended might not be so easy. Projects like YouGen ([www.yougen.co.uk](http://www.yougen.co.uk)) which have an installer recommendation service should help, as will projects where installers have been vetted, such as Trustmark ([www.trustmark.org.uk](http://www.trustmark.org.uk)) or local trading standards-endorsed schemes such as buy with confidence ([www.buywithconfidence.gov.uk](http://www.buywithconfidence.gov.uk)). However, it's worth noting that these latter two have more of a focus on building trades rather than specifically renewables or energy efficiency.



All of these issues take time to resolve. Once the finance is in place and a technology and installer have been chosen, there is then the issue of planning. Of course, many measures might not require planning permission; some external works might be part of permitted development, others will be subject to council interpretation. The obvious recommendation is to check before any work starts. Then what if planning is required? This can be another long drawn-out process, often taking around 8-12 weeks to complete. This will also add cost to the project.

Where the Show Home is not a SuperHome there can still be delays. NEF's recent experience of developing Show Homes for our Green Deal Communities project is instructive here.

*Mrs P from Wolverton made her first enquiry about solid wall insulation on 12<sup>th</sup> September 2014. She then won a competition in October 2014 to have solid wall insulation installed in her home, so that she could become a Show Home for a future project. As a competition winner, she needed to have at least 90% of the walls included. Mrs P was first interested in external wall insulation and she requested a quote. A surveyor came to the property to take dimensions. At the same time, Mrs P requested some pre-planning guidance from her local council. Neither the quote nor the guidance came quickly. Mrs P had to chase on many occasions over a fairly long period of time. Planning guidance suggested that a brick slip system would be suitable, but not render. Mrs P then had to request a revised quote and also asked to see samples of brick slip systems as she couldn't find any to view in her local area.*



*On finally receiving the quote, Mrs P was surprised at the high cost of external wall insulation with brick slips and therefore decided to request a quote for internal wall insulation instead. This required a different installer and therefore a new survey. Given that internal wall insulation would be much more intrusive, Mrs P also had to consider whether she should change her kitchen/bathroom at the same time or install new windows. Finally, Mrs P chose internal wall insulation and commissioned the works.*

*By April 2015, some seven months after her initial enquiry, the works were underway, but there were some issues with the quality of the work. Mrs P then began a lengthy dialogue with the installers and project managers to resolve the issues. Mrs P did not sign off the works until 8<sup>th</sup> July 2015 and all the relevant paperwork, guarantees and warranties were then received over the next few months with the final payment being made on 2<sup>nd</sup> October 2015. This installation therefore took over a year from initial enquiry to final payment.*



*Mrs B from Iver first enquired about solid wall insulation on 11<sup>th</sup> December 2014. Her property was more complicated than many, involving a number of different construction methods and requiring both internal and external wall insulation. As is quite common with external wall insulation, a pull-out test was required to confirm the strength of the substrate. Mrs B's external wall insulation was installed first, with a lengthy delay before her internal wall insulation was done, due to protracted discussions about how this should best be undertaken. Unfortunately, although the installation began in May 2015, it took until November 2016 to sign off, complete all the paperwork and settle the invoices. There were a number of delays due to finding new installers and there have been issues with the quality of the works. In this case, planning was not an issue as the external appearance remained the same, but the process took nearly 18 months.*

Although in both these cases there were issues with the quality of the works which delayed customer sign-off and final payment, the majority of the work was funded by a DECC grant and therefore issues around finance were minimised. The installers were also keen to get the works prioritised to showcase solid wall insulation in the area and help to generate more leads for future works. However, each took over six months between enquiry and start of the works and over a year before completion.

## 11. Conclusion

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The benefits of Show Homes cannot be underestimated. Whilst visitors might not go on to immediately install measures, they will know more about the possibilities and practicalities of installation and are likely to be inspired to action in the future. Data from SuperHomes shows that 27% of visitors installed energy saving measures within 12 months of visiting a SuperHome and 41% installed within 24 months.

Without Show Homes some customers will not fully understand what their technologies will look like, how they will sound and how they will function. Without Show Homes many people won't become customers because they will be too wary to take the first step to install. Potential consumers need to see technologies in action and they need to talk to people who have already installed. Without this awareness raising the market for renewable technologies and energy efficiency measures is likely to stagnate.

## OUR CONTACT DETAILS

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