



Healthy Homes for Skye, Raasay and Lochalsh

Report of a community survey
of housing condition

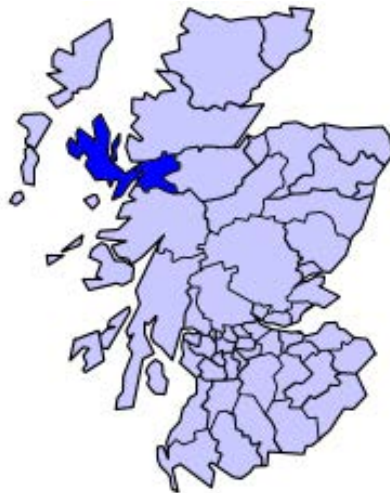
December 2023

Healthy Homes for Skye, Raasay and Lochalsh

Report of a community survey of housing condition

Ian Brown, Anne MacLennan, Dorothy Jackson, James Wilson, Gareth Samuels

© Healthy Homes Skye and Lochalsh
December 2023



The Skye, Raasay and Lochalsh survey area

Credit: Keith Edkins at the English-language Wikipedia, CC BY-SA 3.0
<https://commons.wikimedia.org/w/index.php?curid=12837096>

Acknowledgements

We thank all the residents and tradespeople who completed our surveys, thereby helping to collect information that will help the wider community.

We gratefully acknowledge financial support from Scottish Communities Climate Action Network, Eilean a' Cheò Ward Discretionary Fund, Lochalsh & Skye Housing Association, Highlands and Islands Climate Hub, Sleat Community Trust, Edinbane Community Company and individual supporters. Home Energy Scotland directly funded the project's communications coordinator.

We also received valuable support and advice from Eilean a' Cheò ward and councillors, Home Energy Scotland, Built Environment – Smarter Transformation and Changeworks.

Contents

1. Summary and recommendations.....	2
2. Introduction	4
2.1 Background	4
2.2 Design and implementation of the surveys	4
2.3 Climate change and healthy homes	5
3. Survey results	6
4. Householders' comments	18
5. Condition of the homes	20
5.1 Overview	20
5.2 Characteristics of the sample	20
5.3 Lack of warmth in winter	21
5.4 Draughts and ventilation.....	21
5.6 Damp and mould	22
5.7 Age and construction of homes	24
5.8 Heating.....	26
5.9 Energy costs	27
5.10 Fuel poverty	28
6. Health	29
7. Upgrade and repair work needed	30
7.1 Carrying out repair and upgrade work.....	30
7.2 Advice wanted and received.....	31
7.3 Contractors	32
8. Barriers to getting the work done	33
8.1 Cost.....	33
8.2 Problems with the upgrade and repair process	34
8.3 Overcoming the barriers.....	35
9. Survey results in context	37
10. Recommendations	40
11. References	44

I. Summary and recommendations

“We feel quite trapped. It is a desperate situation.”

The Healthy Homes survey provides the first detailed, community-led, all-tenure, housing condition and energy efficiency information specific to Skye, Raasay & Lochalsh¹ based on 426 responses or 6% of households. The survey presents the perspective of our local community, and reveals notably worse housing conditions than recorded in government statistics for The Highland Council area and Scotland as a whole.

The survey found that our area has particular and severe challenges in terms of

- (1) the state of repair of homes and
- (2) the availability of affordable and effective means of upgrading them.

This results in high levels of energy inefficiency which, coupled with reliance on expensive electricity for heating, means people ration energy and can't keep their homes warm in winter, while generating a higher carbon footprint.

- Nineteen percent of homes were never or rarely warm enough in winter and only 12% were fully warm in winter.
- Many homes suffered from draughts (36%) and moderate to severe mould or damp (37%). Only one third of respondents indicated they had no concerns over mould or damp.
- Two-thirds of homes (67%) were poorly insulated.
- There is no mains gas supply, so the majority rely on expensive mains electricity, leading to 32% of homes economising on heating often, with fuel poverty affecting an estimated 51%.
- The most common type of dwelling was solid stone-walled or concrete-walled homes (38%). These homes have many severe repair and insulation problems that need to be addressed before heating systems can be upgraded.
- Fifty to sixty percent of homes needed repairs to windows, damp-proofing, wall/loft/ underfloor insulation or upgrading their heating system.

Our survey asked both home owners and tenants about the advice, repairs and upgrades they needed.

- Sixty-four percent of respondents wanted advice on affordable warmth, but 48% had not received any.
- The main barrier to getting homes repaired and upgraded was the cost (60% of respondents).
- Not knowing what to do to improve the home, unavailability of builders, the disruption involved in renovations, and unavailability of grants were cited as barriers by a quarter of respondents (25-29%).

Respondents' comments powerfully and movingly expressed their frustrations and despair at the difficulties of getting repairs done while contending with diverse regulations and funding schemes.

The survey report concludes that the answer lies in developing an accessible, local retrofit sector, that is able to repair and upgrade homes efficiently and to a good standard, and is trusted by the local community.

¹Skye and Lochalsh was formerly a local government district. It has an area of 2,700 sq. km., and is located on the northwest coast of Scotland, within The Highland Council area.

Summary and recommendations

Recommendations

- 1. Host an online conference** to communicate the survey's findings and recommendations to the local community, retrofit practitioners, agencies, funders and politicians; sharing knowledge and experience and discussing solutions to improve housing quality and energy efficiency in our area.
- 2. Create a project team** including a local steering group with relevant expertise, a paid project Development Officer and seed funding, in order to progress the actions below.
- 3. Set up a community retrofit hub** (physical centre) for the community, providing information, advice, support and training resources for householders and tradespeople.
- 4. Showcase examples of best practice** using existing buildings and/or pilot projects, to demonstrate the principles and best practice of retrofit work, and test approaches suited to our community, in partnership with community organisations and external agencies.
- 5. Strengthen the local retrofit workforce** by engaging with construction and design businesses to understand their views of repair and upgrade work, while highlighting the potentially huge retrofit business opportunities, encouraging their involvement and rewarding achievements. Work with education, training and retrofit institutions and HIE to develop training provision and business support, and develop accreditation procedures adapted to small enterprises, while maintaining appropriate results.
- 6. Support self-help and community retrofit work** with advice, training and mentoring to reduce repair and upgrade costs and increase skills within the community e.g. DIY draught protection, simple insulation and humidity management skills.
- 7. Improve financing and reduce costs** of retrofit work by increasing access to grants and loans and seeking new funding sources, making grant criteria wider and more flexible, bulk retrofits and materials purchases, piloting cheaper energy-efficiency solutions and developing frameworks for costing different types of retrofit work.

2. Introduction

2.1 Background

In 2022, Skye Climate Action hosted an open meeting to learn more about household energy use in Skye and neighbouring areas. The discussion revealed interacting factors which result in homes not being heated adequately or affordably. These include our windy and wet climate, some of the highest fuel poverty and energy costs in Scotland and dwellings that are not constructed to meet these challenges. The result is cold, damp and draughty living conditions which in turn can negatively affect health. Inefficient heating also means that energy is being wasted, with unnecessary greenhouse gas emissions contributing to our changing climate.

Further meetings considered what needed to be done to improve the situation and how to do it. There were discussions with the wider community as well as agencies such as Home Energy Scotland, Highlands and Islands Enterprise, The Highland Council, and Built Environment – Smarter Transformation. The challenge was summarised as:

Is there more that we can do in Skye and Lochalsh to help the community help itself to make a positive and affordable net-zero transition – in particular to transform home heating, ventilation and insulation?

The agreed first step was to survey the community to obtain up-to-date information on the condition of homes across Skye, Raasay and Lochalsh, the issues that residents would like to get fixed, and the barriers to achieving comfortable, healthy homes that are affordable to keep warm.

Two surveys were designed and implemented: one for households and one for tradespeople and building professionals.

This report summarises and analyses the findings obtained by the household survey. Thanks to the 426 households who participated, we have a wealth of information to present to our communities, people in the construction industry, agencies and policymakers.

The survey for tradespeople and building professionals garnered only three responses. They were informative, but due to the small sample size, they are not analysed for this report. It is hoped to gather better information on the attitudes of trades and professionals later.

2.2 Design and implementation of the surveys

A small group of volunteers, with experience in environmentally-responsible building, architecture, home energy use and climate action, designed the surveys for households and tradespeople, with feedback from relevant agencies. The surveys were designed to be anonymous and quick and easy to complete, to provide quantifiable data as well as subjective comments, and to engender trust so that participants felt free to share personal information and give frank comments.

The household survey sought information about demographics, the condition of homes, health impacts and household costs. Householders were asked about how they needed to upgrade their homes, the barriers they encountered in getting repairs and upgrade work done, and what advice they had received.

The survey for tradespeople and professionals asked about their knowledge of and approach to heating, insulation and retrofit projects in the area and their perceptions of barriers to carrying out this type of work.

A website (www.healthyhomessl.co.uk) was created to provide information on the project with links to the online surveys. The majority of surveys were completed online with paper copies available, if needed.

Introduction

The surveys ran from 3rd March to 17th April 2023. For six weeks prior to, and during the survey period, the project contracted a local survey coordinator to publicise and promote the household survey and help ensure its uptake across all sectors of the population and all states of house condition. Promotion included press and radio coverage, social media coverage, adverts in local publications, placement of posters, flyers and banners, and explanation of the project at in-person community meetings. Lochalsh and Skye Housing Association also shared the survey link with their tenants.

The trades survey was advertised via flyers placed on local trade counters, by social media, direct email contacts and press/radio coverage, and via an invitation to participate circulated by The Highland Council Building Control to all construction-related businesses in the area.

2.3 Climate change and healthy homes

Our climate is changing. Globally, July 2023 was the hottest month ever experienced by humans. Over the past 50 years, rainfall in northern Scotland has increased by about 70% with more chance of heavy downpours, and this is projected to be a major issue for the north west, including Skye, Raasay and Lochalsh. Warm spells are likely to get hotter and there will be spells of drought. Wind speeds and storms are expected to increase, at least by mid-century.

Wind and rain are particularly challenging for achieving dry, cosy healthy homes. Wind-driven rain is a significant factor in household damp and mould. On the other hand, some homes with poor insulation will overheat in extreme hot weather. The changing climate puts more stress on our homes, while our homes can make climate change worse by emitting carbon dioxide and other greenhouse gases.

Heating homes and buildings accounts for 20% of Scotland's carbon footprint^a, through burning of non-renewable fossil fuels (coal, gas, oil, and electricity from fossil fuels) and wasting energy due to draughts or poor insulation, or inefficient heating systems.

Respondents to the Healthy Homes survey were well aware of the climate impacts of their homes. Over half felt that upgrading homes to make them easier to keep warm has a great impact on tackling climate change, whereas only 5% thought it would have no or slight impact (Graph 31). In addition, two thirds of respondents considered the energy efficiency rating to be important or very important when purchasing new appliances (Graph 30).

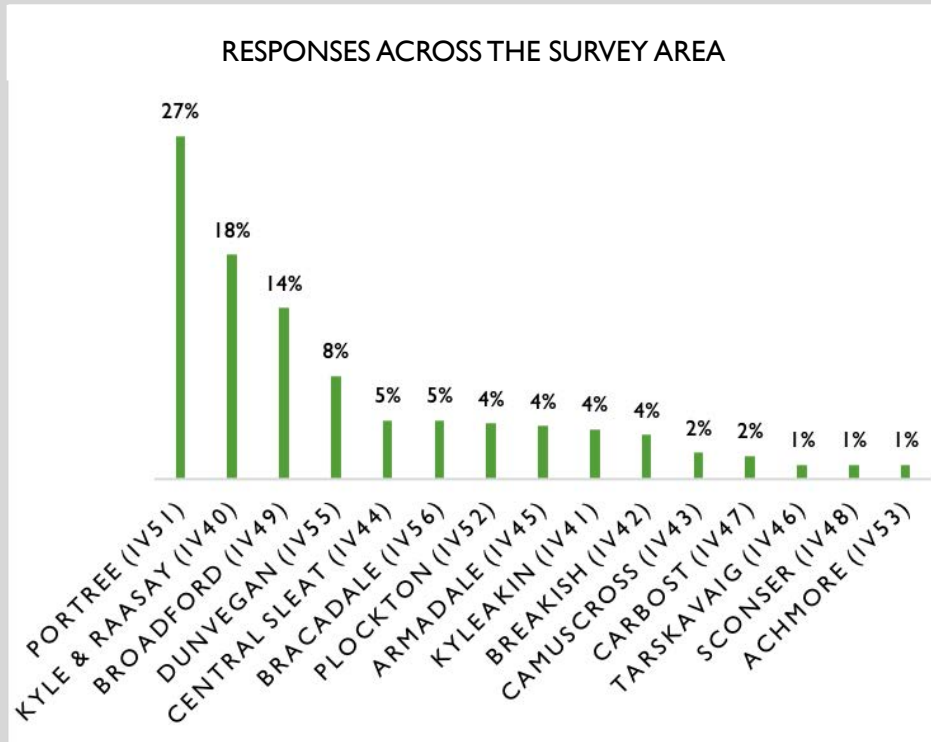
Reducing energy loss from homes through insulation can help to reduce emissions and save money immediately. Switching to greener fuels and more efficient heating reinforces this, makes homes more comfortable and healthier, and increases resilience to future energy crises.

The homes which are hardest to heat, have the highest energy costs and are the least healthy. They will be the hardest hit by increasingly severe weather and also contribute most to climate change.

This report describes how these factors interact in homes in Skye, Raasay and Lochalsh, and proposes measures to help overcome the challenges and make more homes warm, dry and efficient and affordable to heat.

3. Survey results*

DEMOGRAPHICS & CHARACTERISTICS OF HOUSEHOLDS



1. Survey area (426 responses)

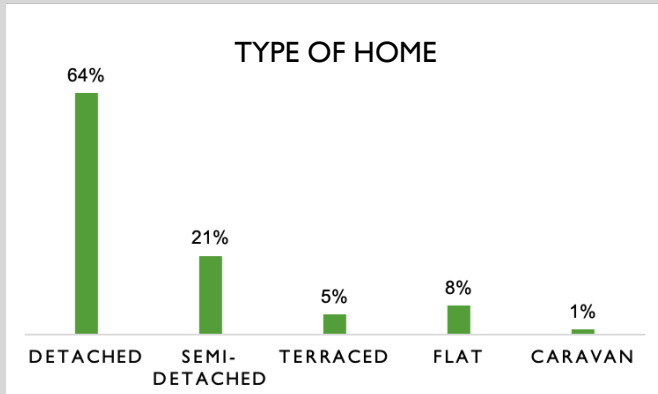
426 households participated. At the time there were 7387 occupied properties in the area, giving a response rate of about 6% of households.

Responses were received from all postcodes in the survey area. The response rate was broadly proportional to the population density across the survey area.

The highest number of responses came from the areas with the largest villages: 27% from the Portree area, 18% from the Kyle and Raasay area, 14% from Broadford area and 8% from Dunvegan area.

Kyleakin, Breakish, central Sleat, Armadale, Plockton and Bracadale each contributed 4-5% of responses.

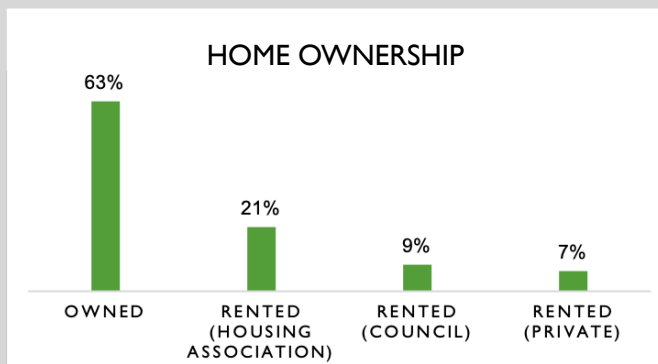
Camuscross, Tarskavaig, Carbost, Sconser and Achmore areas each contributed 1-2% of responses.



2. Type of home (421 responses)

Respondents lived predominantly in detached houses (64%), with 21% in semi-detached houses and 5% in terraced houses. Eight percent of respondents lived in flats and 1% in caravans.

Three percent of houses were used as B&Bs and 1% were second homes.



3. Home ownership (425 responses)

About two thirds of homes (63%) were owned and about one third (37%) were rented.

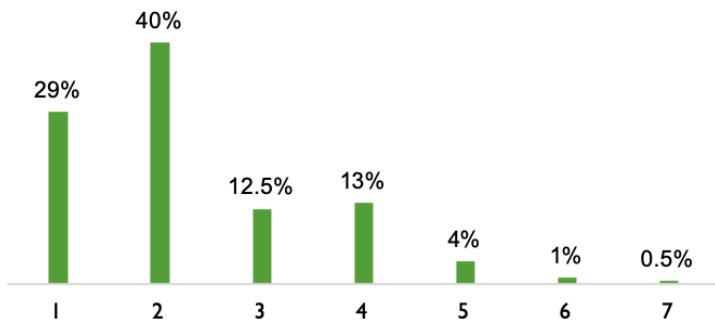
The majority of rentals (21%) were from a Housing Association, 9% from The Highland Council and 7% privately rented.

*The graphs show the basic survey results, with minimal sorting. Further analyses of certain topics (presented as figures later in the report) are obtained by combining variables to achieve more useful information; the numbers may vary.

Survey results

DEMOGRAPHICS & CHARACTERISTICS OF HOUSEHOLDS

NUMBER OF RESIDENTS PER HOUSEHOLD

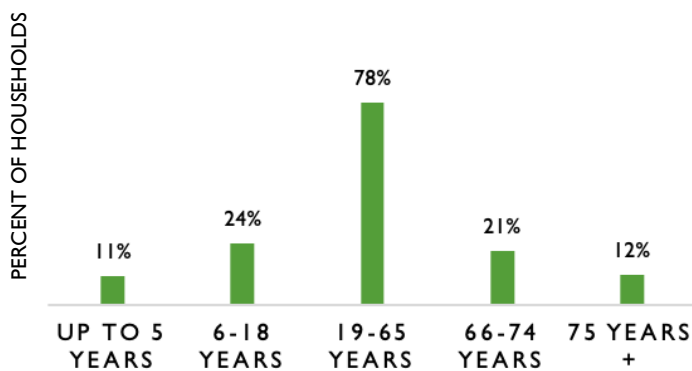


4. Home occupancy (425 responses)

The majority of households had one (29%) or two (40%) residents. 12.5% of households had three residents and 13% had four residents. 5% percent of households had five or six residents, and 0.5% (two households) had seven residents.

Average household size was 2.3 people per household.

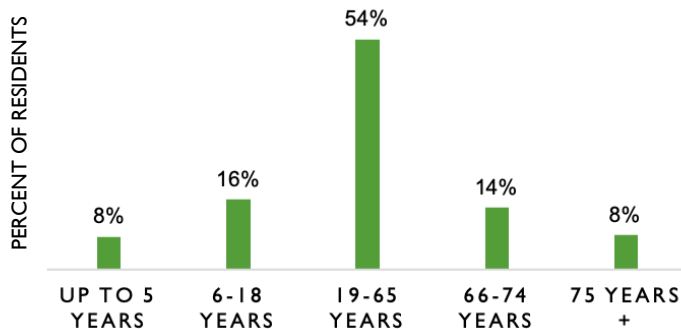
AGE GROUPS IN THE HOUSEHOLD



5. Population age distribution (425 responses)

Just over three quarters of the homes (78%) were occupied by young to retirement-age adults (19-65 years old). 24% had youngsters (6-18 years old) living there, and 21% had older adults (66-74 years). 11% of homes had children up to 5 years old and 12% had aged residents (75 years old and over).

AGE PROFILE OF SURVEY



Considering all 994 residents sampled by the survey, 54% were aged between 19 and 65 years. 16% were youngsters aged 6-18, and 8% were children up to 5 years old. 14% were older adults aged 66-74, and 8% were over 75 years old.

Survey results

DEMOGRAPHICS & CHARACTERISTICS OF HOUSEHOLDS

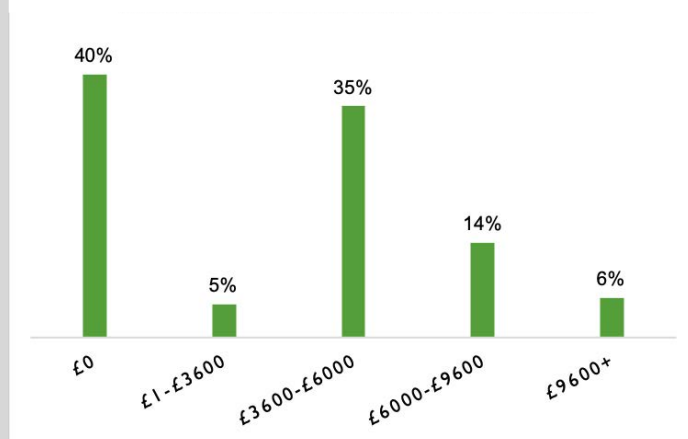
ANNUAL HOUSEHOLD INCOME



6. Household income (417 responses)

Seven percent of respondents had a household income of less than £10,000, and 7% had a household income of £60,000 or more. Between these two ends of the spectrum, 22% had an income of £10,000-£20,000, 26% had an income of £20,000 to £30,000, 26% had an income of £30,000-£45,000 and 12% had an income of £45,000-£60,000.

ANNUAL RENT OR MORTGAGE COSTS



7. Rent or mortgage costs (417 responses)

Forty percent of respondents did not have rent or mortgage costs. 35% of respondents spent £3,600 - £6,000 per year on rent or mortgage payments. 14% spent £6,000-£9,600 per year, and 6% spent more than £9,600 per year. Five percent had rent or mortgage costs of less than £3,600 per year.

Including the respondents who didn't have rent or mortgage costs, the median rent/mortgage costs are estimated at £3,980 per year. Looking only at those who had rent or mortgage costs, the median expenditure is estimated at £5,344 per year.

CONDITION OF THE HOME: WARMTH IN WINTER

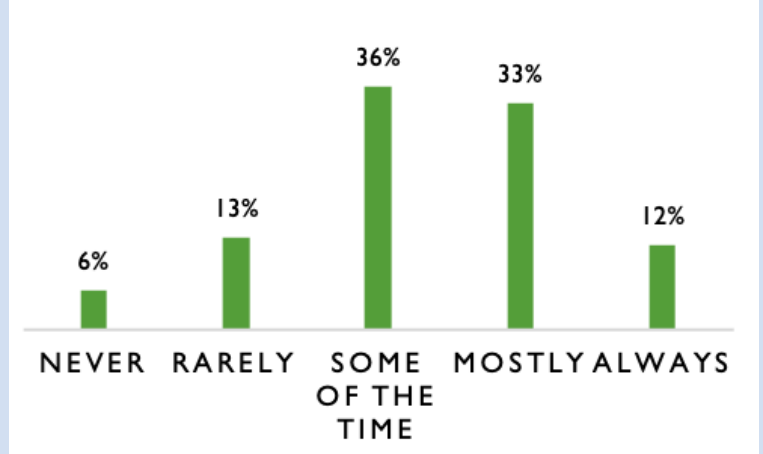
8. Are you warm enough in your home in winter? (425 responses)

Nearly one in five respondents (19%) never or rarely felt warm enough in their home in winter.

Just over one third (36%) felt warm enough some of the time.

Only 12% of respondents felt warm all of the time.

WARM HOME IN WINTER



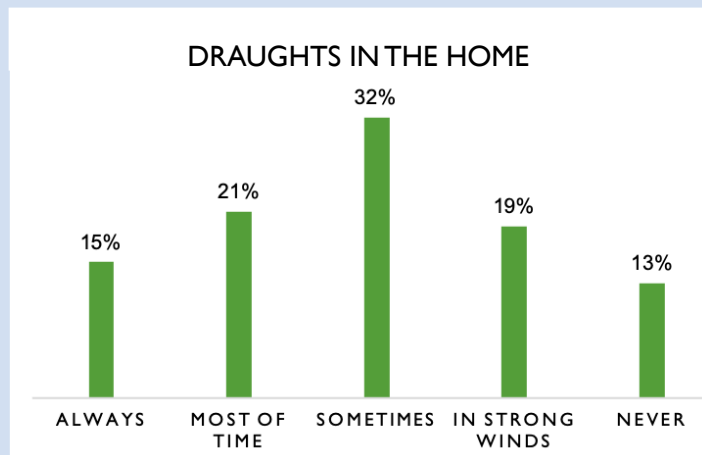
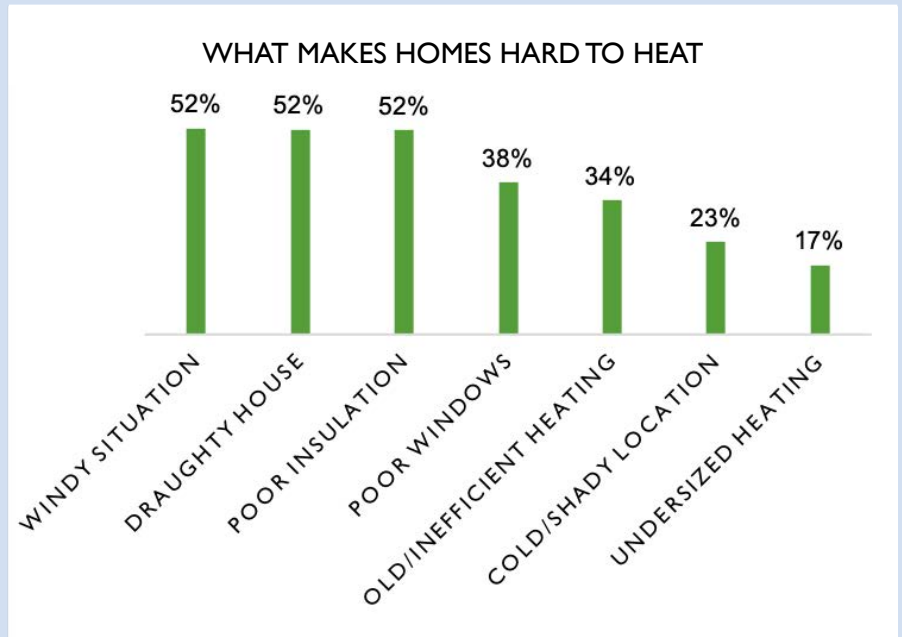
Survey results

CONDITION OF THE HOME: WHAT MAKES HOMES HARD TO HEAT, DRAUGHTS

9. What makes homes hard to heat (378 responses)

Over half of respondents said that their homes were hard to heat because they were draughty or in a windy situation (52% in each case). A quarter (23%) said that a cold or shady location made their homes hard to heat.

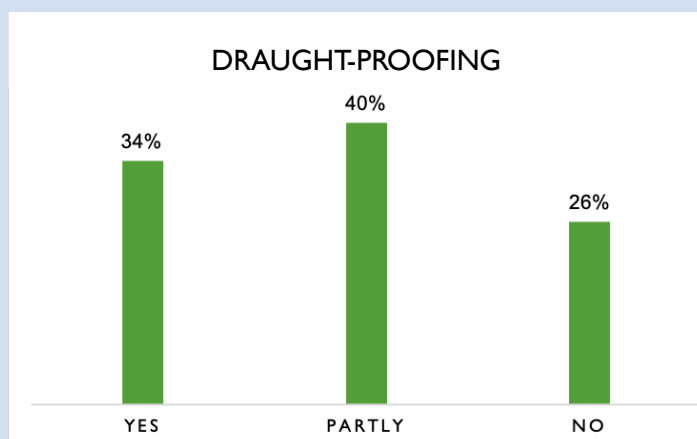
Specific faults making homes hard to heat were poor insulation cited by half the respondents (52%), poor window construction (38%) and old and inefficient heating systems (34%). Just under a fifth of respondents (17%) said their home was hard to heat because of undersized heating. Many people reported multiple factors.



10. Draughts (425 responses)

Over one third of residents (36%) felt draughts in their home most or all of the time: 15% always and 21% most of the time. 32% felt draughts sometimes.

Overall, two thirds of residents (68%) lived in draughty homes. 19% felt draughts only in strong winds, and 13% never felt draughts.



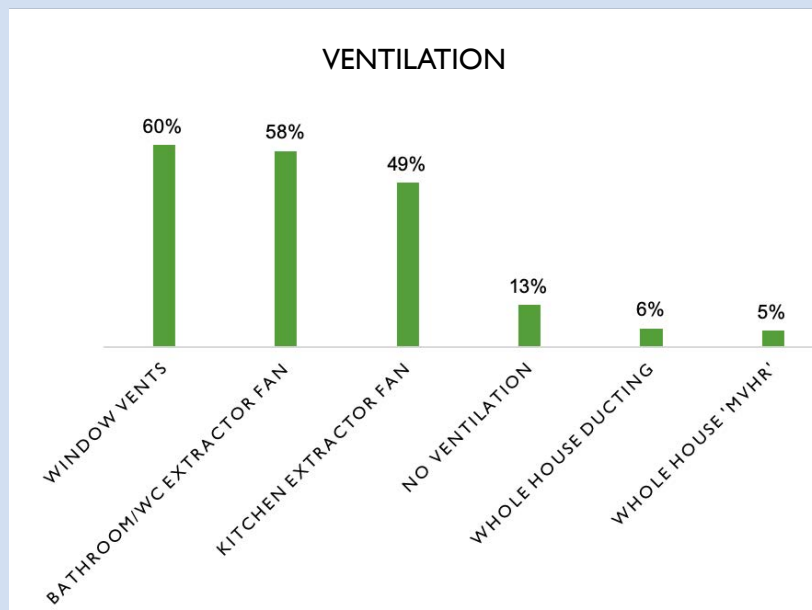
11. Draught-proofing (336 responses)

One third of respondents (34%) had draught-proofing seals around windows and doors, and 40% had partial draught-proofing. Altogether nearly three quarters of respondents (74%) had partial or complete draught-proofing.

One quarter of respondents (26%) had no draught-proofing.

Survey results

CONDITION OF THE HOME: VENTILATION, INSULATION

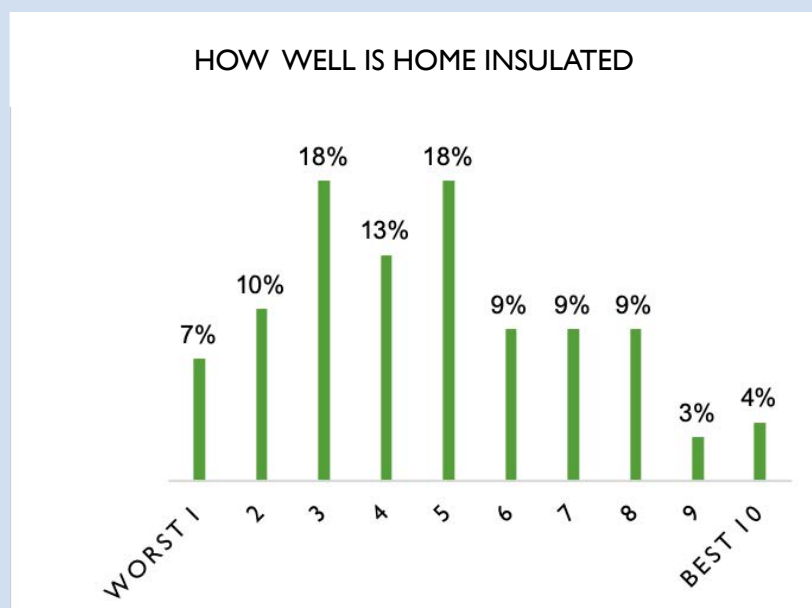


12. Ventilation (339 responses)

The most common forms of ventilation were vents over the windows, and extractor fans in the bathroom/WC and kitchen, used by 60%, 58% and 49% of respondents respectively.

A small but significant number of respondents (13%) had no ventilation in their homes.

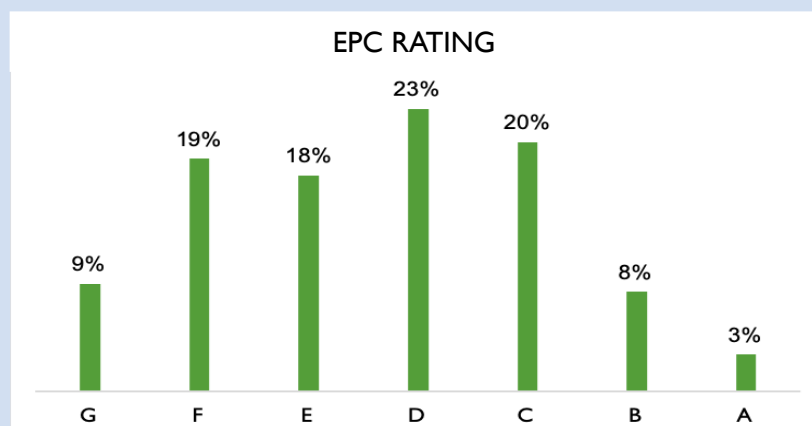
11% of respondents had either whole house ventilation ducting or mechanical ventilation and heat recovery (MVHR) systems.



13. Householders' assessment of home insulation (341 responses)

On a scale of 1 (no insulation) to 10 (excellent insulation), two thirds of respondents (67%) scored their homes 5 out of 10 or less, with nearly half (49%) scoring less than 4/10.

Only 7% felt their homes were very well (9/10) or excellently (10/10) insulated (3% and 4% respectively).



14. Energy Performance Certificate (405 responses)

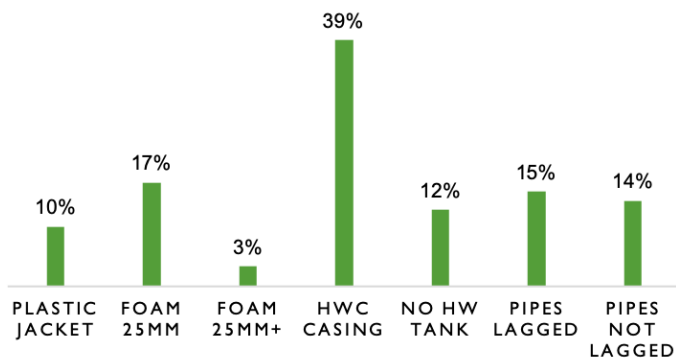
Nearly two thirds of respondents (63%) either didn't have an EPC or didn't know what their rating was.

Of the 148 respondents (37%) who knew their EPC rating, the majority of ratings were in bands C and D (20% and 23% respectively). Bands E and F applied to 18% and 19% respectively of respondent households. 9% were rated G and 11% were rated B or higher, with 3% in band A.

Survey results

CONDITION OF THE HOME: LAGGING, DAMP & MOULD

HOT WATER SYSTEM LAGGING



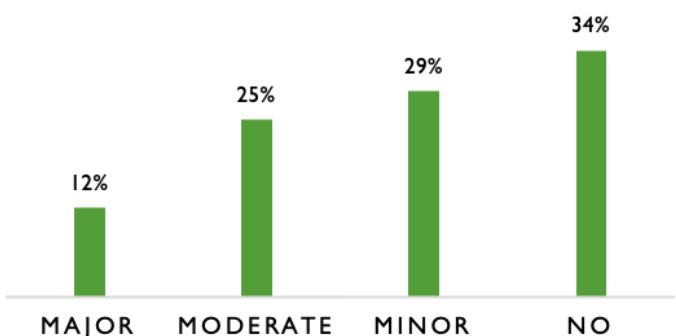
15. Hot water system lagging (217 responses)

One quarter (24%) of the householders who replied to this question didn't know if their hot water system was lagged.

Of the remainder, the most common situation was an encased hot water cylinder (39%), which provides the best insulation. 10% of respondents had a plastic jacket on their cylinder, 17% had factory-applied foam up to 25mm, 3% had foam thicker than the minimum of 25mm. 12% of respondents didn't have a hot water tank.

15 percent reported lagged pipes and 14% reported unlagged pipes.

PROBLEMS WITH DAMP

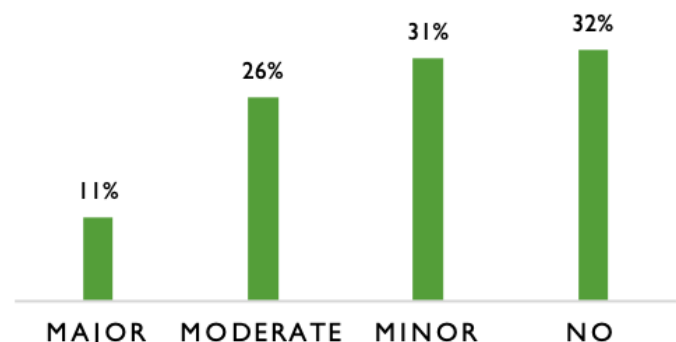


16. Problems with damp (385 responses)

Over a third of respondents (37%) experienced moderate to major problems with damp – 12% had major problems and 25% had moderate problems.

29% experienced minor problems, and 34% no problems at all. Overall, two thirds of respondents (66%) had problems with damp.

PROBLEMS WITH MOULD



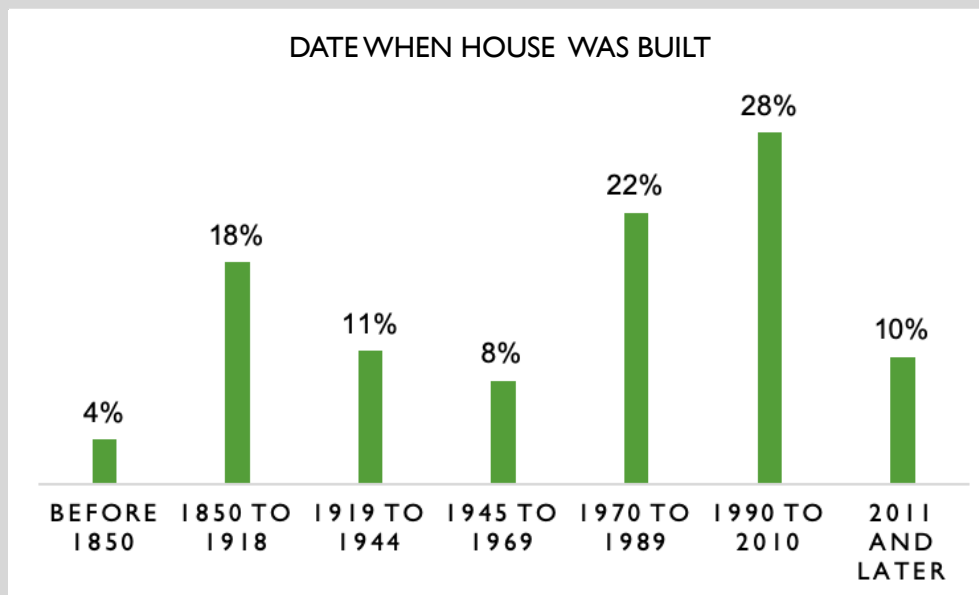
17. Problems with mould (376 responses)

Over one third of respondents (37%) reported moderate to major problems with mould – 11% had major problems and 26% had moderate problems.

31% experienced minor problems, and about third (32%) no problems at all. Overall, 68% of respondents had problems with mould.

Survey results

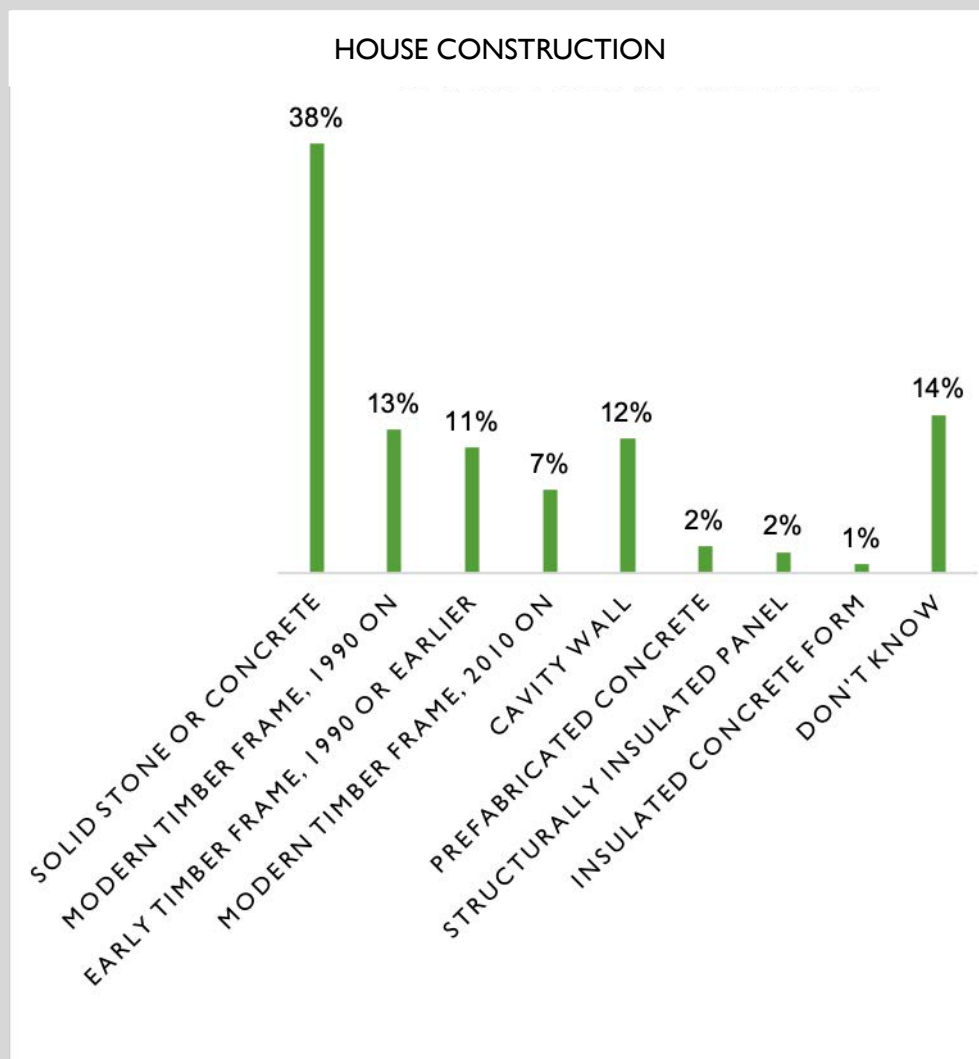
FEATURES OF THE HOME: AGE & CONSTRUCTION



18. Age of home (424 responses)

Half the homes were built between 1970 and 2010 (22% in 1970-1989; 28% in 1990-2010). Together with the tenth of homes built after 2011, nearly two thirds of homes (60%) were built within the last 50 years.

A significant number of homes are older. 18% of homes date from the mid-19th century to the end of the first World War, and 4% were built before 1850. 11% were built between the First World War and the end of the Second World War, and 8% in the post Second World War years.



19. Type of house construction (379 responses)

Over a third of respondents (38%) reported that their homes were constructed from solid stone or concrete.

Just under a third (31%) lived in timber frame homes built pre-1990 through to the present day. The majority of these were built before 2010 (24%) with 7% of most recent construction, from 2010 onwards.

12% of respondents lived in homes with cavity walls.

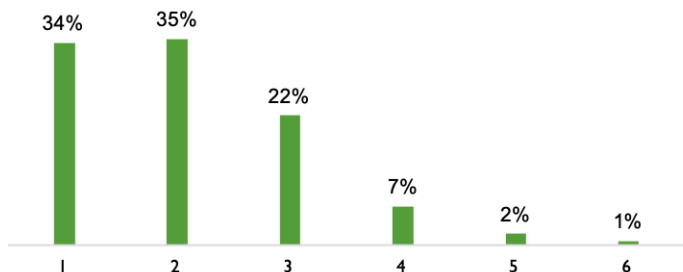
A small number of respondents reported unusual structures: pre-fabricated concrete (2%), structurally insulated panels (2%) and insulated concrete forms (1%), totalling 5% overall.

A sizeable minority of respondents (14%) didn't know how their house was constructed.

Survey results

FEATURES OF THE HOME: HEATING

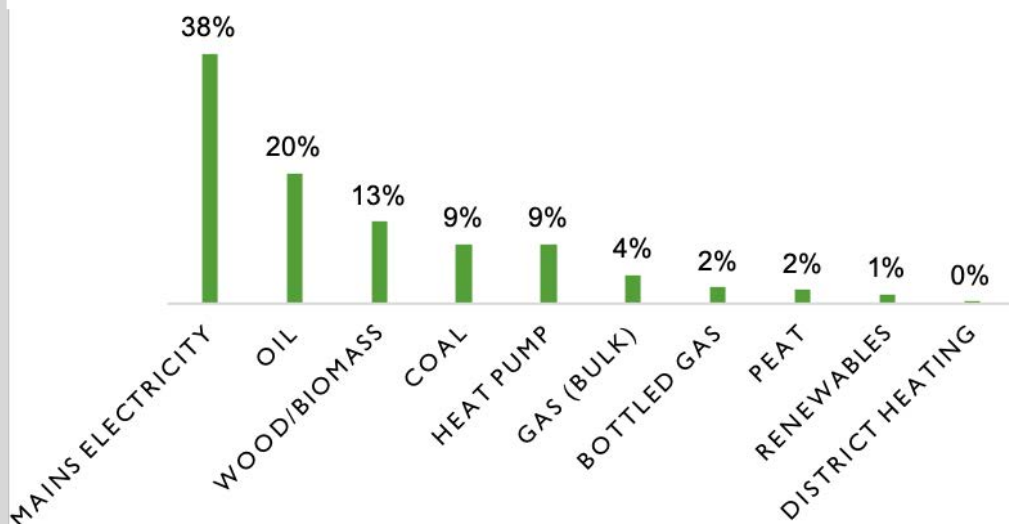
NUMBER OF TYPES OF HEATING



20. Heating the home (425 responses)

Households were asked to list their primary and secondary heating sources. Two thirds of households used more than one type of heating, up to six different types.

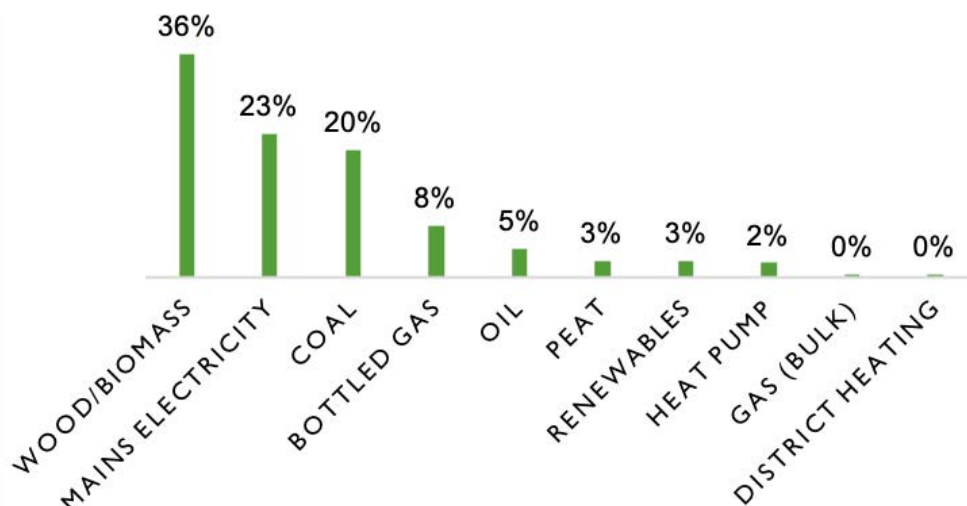
PRIMARY HEATING



Primary heating (570 reports)

The most common type of heating is mains electricity (38% of reports). Oil is the primary heating in 20% of instances, with wood (13%), coal (9%) and heat pumps (9%) also significant.

SECONDARY HEATING



Secondary heating (266 reports)

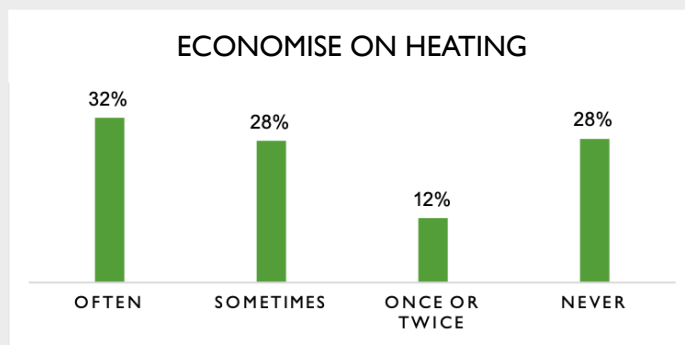
Wood or biomass (36%), electricity (23%), coal (20%) and bottled gas (8%) are the most common types of secondary heating.

Survey results

FEATURES OF THE HOME: ECONOMISING ON HEATING, ENERGY COSTS

21. Turning the heating down or off to save money (424 responses)

In the previous 12 months, a third of residents (32%) had often turned the heating in their home down or off to save money when they were cold. 28% sometimes turned the heating down. 12% turned the heating down once or twice, and 28% never turned it down. Overall, a third of residents often economise on heat in their homes, four in ten residents economise occasionally and only a quarter never need to economise.

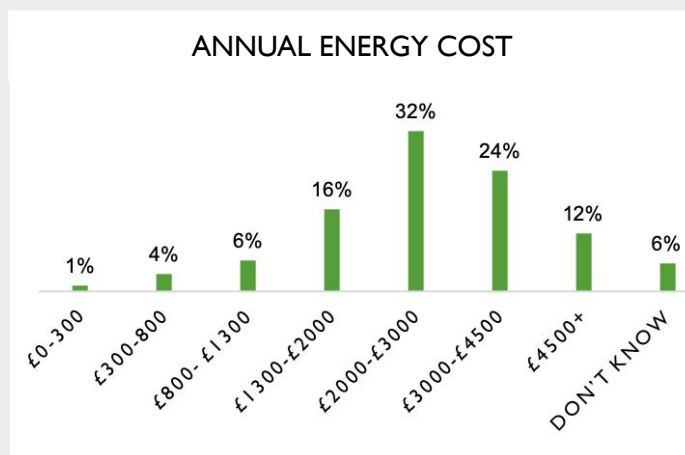


22. Annual household energy costs (442 responses)

Most commonly, residents spent £2000-£3000 on energy per year (one third of residents). A further quarter of residents spent £3000-£4500 per year and 12% spent over £4500. Taken together, two thirds of residents (68%) spent £2000 or more on energy per year, and one third (36%) spent over £3000, possibly reflecting that the survey period occurred during an energy crisis.

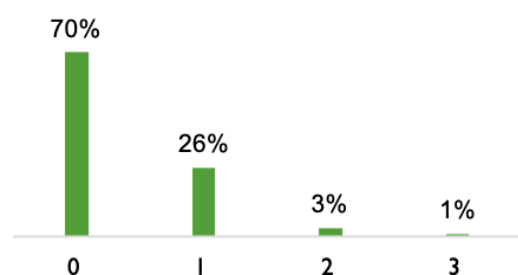
At the other end of the scale, 5% of residents spent £800 or less per year, 6% spent between £800 and £1300 per year and 16% spent between £1300 and £2000. Overall, 27% of residents spent less than £2000 on energy.

6% of residents didn't know how much they spent on energy.



HEALTH IMPACT

ILL HEALTH / DISABILITY IN THE HOME



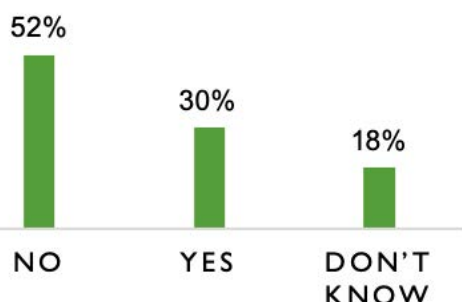
23. Residents with health conditions (417 responses)

70% of respondents had no one with a disability or limiting health condition living in their home.

30% of respondents lived with people with a disability or limiting health condition. Just over one quarter (26%) had one person with a disability or limiting health condition. 3% had two people with a disability or limiting health condition and 1% had three people.

In total, 149 people had a disability or limiting health condition, equating to 15% of the total population of 994 in the surveyed households.

DOES HOUSE AFFECT HEALTH?



24. Does house condition affect health? (338 responses)

Slightly less than one third of respondents (30%) felt that the condition of their house affected the health of someone living in the house.

Just over half (52%) felt that there was no impact of house condition on health and 18% didn't know.

Survey results

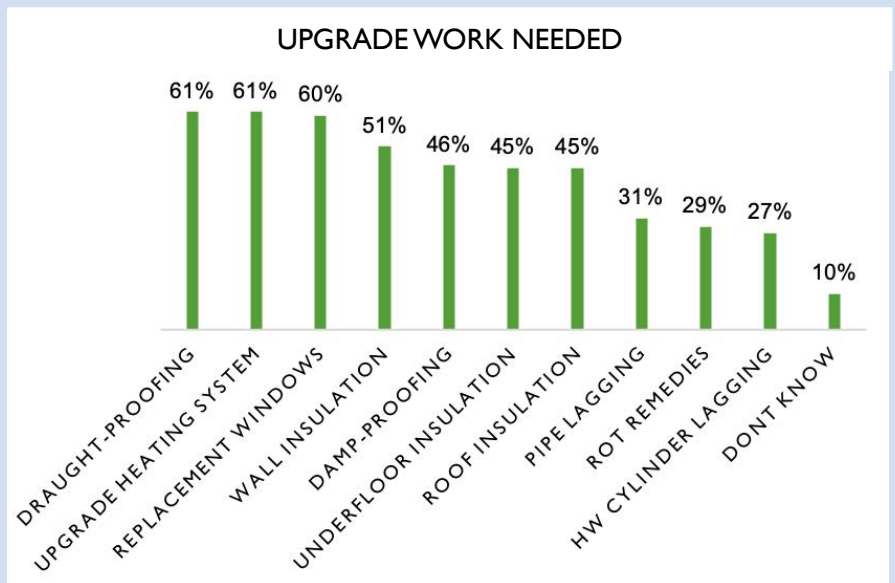
IMPROVING HOMES: UPGRADES NEEDED, ADVICE WANTED & RECEIVED

25. Upgrade work needed

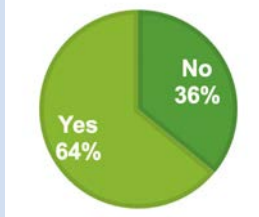
(426 responses)

The most common remedial works needed were draught-proofing, upgrading the heating system and replacing windows, reported by 60-61% of householders. Half the homes needed wall insulation. Just under half (45%-46%) needed damp-proofing, underfloor insulation or roof insulation. Just under a third needed rot to be remedied, hot water cylinder lagging or pipe lagging (27-31%). 10% of respondents didn't know if they needed upgrade work.

Overall, 45-61% homes needed substantial upgrade work involving draught-proofing, up-grading the heating system, replacing windows, wall/underfloor/roof insulation and damp-proofing.



ADVICE WANTED



26. Advice wanted (408 responses)

Nearly two thirds of respondents (64%) said they were interested in getting advice or support on affordable warmth issues.

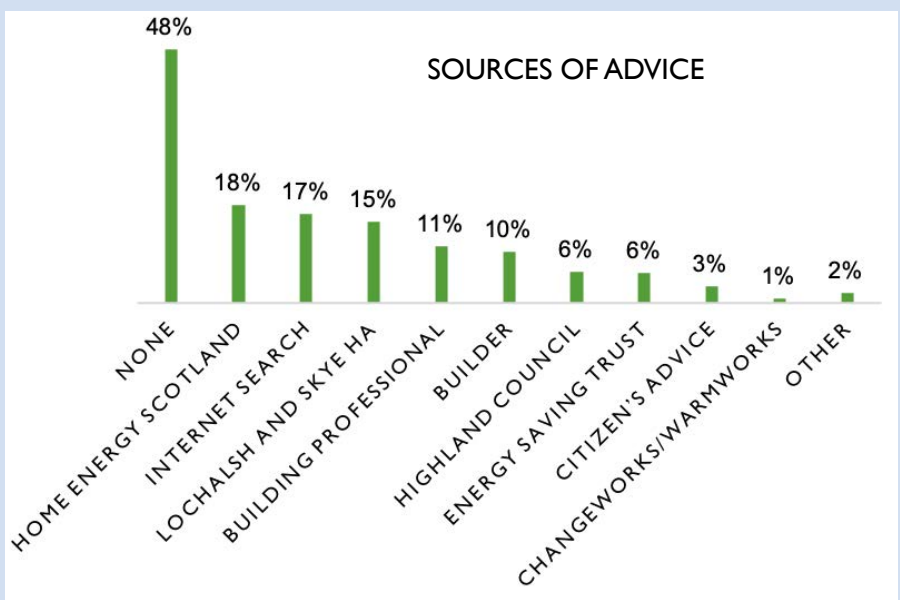
27. Advice received

(403 responses)

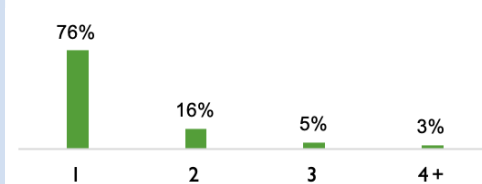
Nearly half of the respondents (48%) had not received advice on affordable warmth issues. The most common sources of advice were Home Energy Scotland (18%) followed by internet searches (17%) and Lochalsh and Skye Housing Association Energy Advice Service (15%).

Respondents also received advice from building professionals and builders (11% and 10% respectively), The Highland Council (6%), Energy Saving Trust (6%) and Citizens Advice (3%). The remainder obtained advice from Changeworks/ Warmworks (1%) or other sources such as personal knowledge, family, salespeople and solar panel installers (2%).

Three quarters of respondents (76%) used only one source of advice. 16% used two sources of advice, 5% used three sources and 3% used four or more sources of advice.

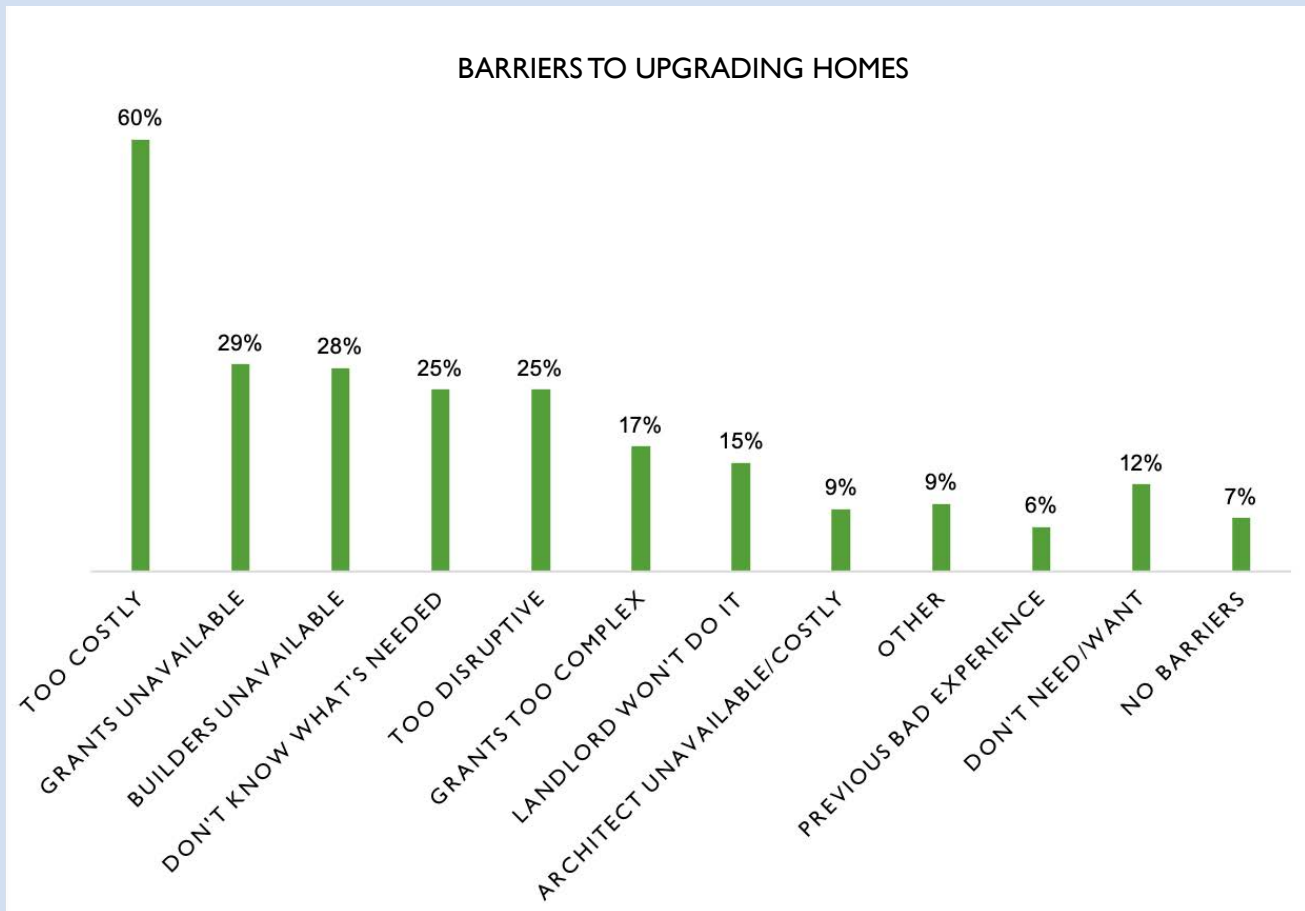


NUMBER OF SOURCES OF ADVICE



Survey results

UPGRADING THE HOME: BARRIERS



28. Barriers to getting upgrades done (404 responses)

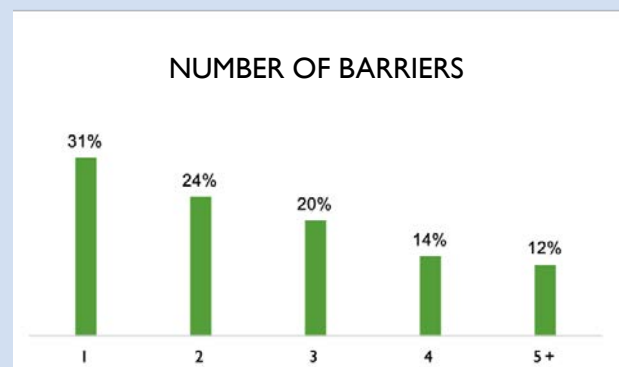
Twelve percent of respondents said they didn't need or want upgrades and 7% said they encountered no barriers to upgrades, accounting for 19% of the respondents overall. This means that 81% of respondents needed or wanted upgrade work done on their home.

The principal barrier to getting upgrades done was the cost (60%). Related to this, 29% said that grants weren't available to help with costs and 17% said that grants were too complex.

Also high up the list was the lack of technical support and knowledge. 28% of respondents cited the lack of builders/tradespeople, 25% didn't know what work was needed, and 9% said architects/surveyors were unavailable or too costly. 6% had had a previous bad experience with upgrades.

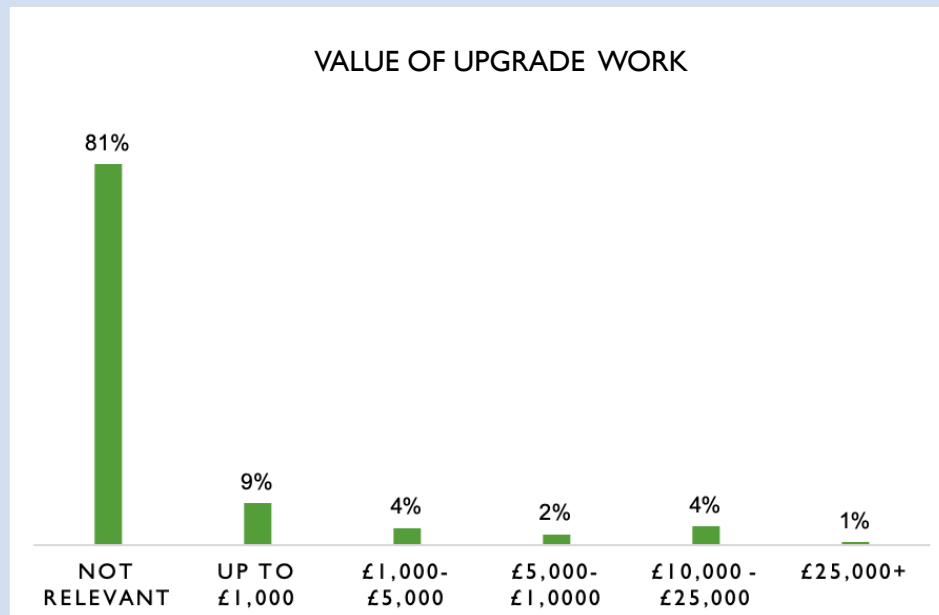
25% of respondents thought the work would be too disruptive, and for 15% the landlord was unwilling to undertake upgrades.

Of the 344 respondents who experienced barriers to getting upgrades done on their homes, two thirds encountered more than one barrier, with 12% encountering five or more barriers.



Survey results

UPGRADING THE HOME: VALUE OF GRANTS/BENEFITS RECEIVED



29. Value of upgrade work (306 responses)

Householders were asked to estimate the level of grant, approximate value of means-tested benefit-funded work or free work they received for insulation, new windows, repairs, solar panels, heat pumps or new boilers.

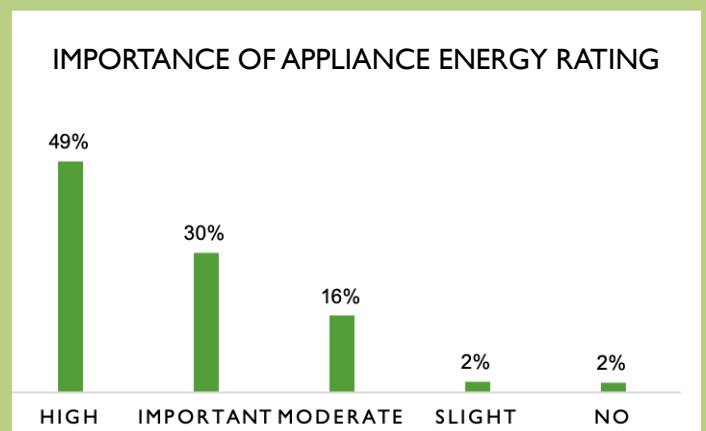
81% of respondents did not receive free or financially supported upgrade work. 9% (27 homes) had received work to the value of £1,000, 4% (11 homes) between £1,000 and £5,000, 2% (7 homes) between £5,000 and £10,000, 4% (12 homes) between £10,000 and £25,000 and 1% (2 homes) received support worth more than £25,000.

ENERGY & CLIMATE AWARENESS

30. Energy rating of appliances (341 responses)

Nearly half the respondents (49%) said that the energy rating was highly important to them when buying appliances. Thirty percent felt it was important, and 16% felt it was moderately important. 2% felt the energy rating was slightly important, and 2% not important.

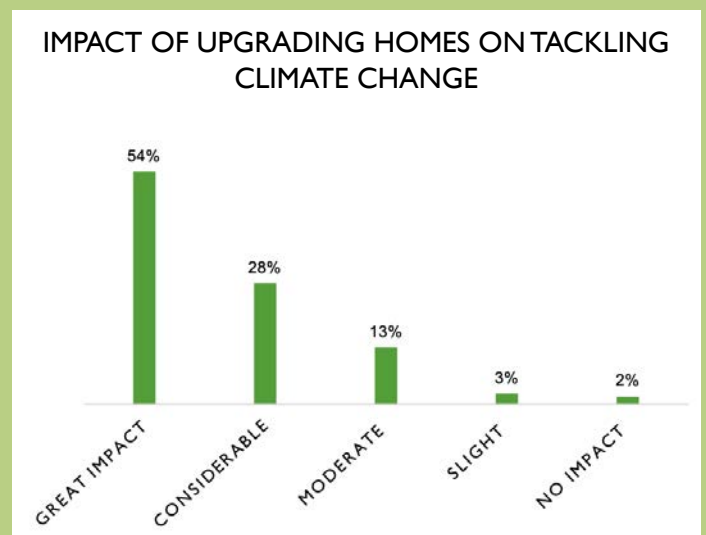
Over three quarters of respondents felt that the energy rating was important or very important, indicating a high level of awareness of energy use.



31. Climate awareness (315 responses)

Over half (54%) of respondents felt that upgrading homes to make them easier to keep warm has a great impact on tackling climate change. 28% said it has considerable impact, and 13% said it has moderate impact.

Overall, over 80% of respondents said that upgrading homes has a considerable or great impact on climate change, indicating a high level of awareness of the impact of heat loss from homes on the climate.



4. Householders' comments

One hundred and sixty two people made 239 comments within their survey response. Others shared their experiences and opinions informally on meeting the survey coordinator who travelled around the area to promote the survey. Their input reinforced the survey, and the main themes are highlighted below. Additional comments are quoted through the report.

Several comments suggested a feeling of helplessness or quiet desperation.

“We feel quite trapped. It is a desperate situation.”

Often respondents recognised structural features or lack of insulation contributing to cold and/or damp, but were unable to remedy them now, and saw little prospect of improving the situation in the future. Cost was most often mentioned, but there were other barriers.

“Perhaps the landlord could apply for grant to renovate and insulate the freezing house.”

Many respondents didn't use the available heating due to cost and knowing that they were paying for wasted heat. Heating was frequently limited, whether to one or two rooms in the house or to one or a few hours in the day. Too many homes were cold and damp and people seemed resigned to living with mould. This affects physical and mental health.

“We have a major mould problem & have lost most of our clothes & shoes.”

“Bathroom has mould and the heating is too expensive to fully utilise.”

“We've really noticed since moving out what that house did to both our physical and mental health.”

Many people were trying to upgrade their homes, but cost was a major barrier. Work was often done in stages when affordable, possibly over many years. Some even went into debt in order to make their homes more comfortable and energy efficient, while others had given up hope of upgrading.

“We are retired and our pensions take us just over the level at which we could claim any help...Having costed up various forms of insulation, we can't afford them.”

Although most used professional help, there were plenty of enterprising do-it-yourselfers out there too. Some had resorted to doing the work themselves to save on costs or because they couldn't get professionals to do the job.

“Did most of it ourselves. Contractors hard to find and expensive.”

Some participants had bad experiences of repair or upgrade work on their home, or had received inappropriate advice and were unsure where to get reliable information. For example, being advised on cavity wall insulation when windows and doors were in poor condition. Some respondents cited the remote location as the reason for inadequate materials being used or inability to get tradespeople to do the work.

Householders' comments

“I don't know where to get independent advice.”

“We had the windows replaced ... and its been a disaster. Every single one is fitted badly, the seals have perished and there is condensation between the panes. Spent nearly £8,000 and they're worse now than the ones we replaced.”

Several comments highlighted difficulties in getting tradespeople to do retrofitting work.

“Would like work done, but no tradespeople available to do it. Insulation not an attractive job to do.”

“After the first visit the tradesman went on to silent mode.”

“A builder must have a certain basic knowledge and I haven't found one!”

“There is a real lack of tradespeople on Skye. Those that do exist are very expensive and often unreliable.”

On the other hand, a few people who were in the building trade told the survey coordinator of a lack of incentives, funding and local opportunities for people to train or retrain in retrofitting work, or to undertake apprenticeships.

Grants and regulations were seen to be overly complicated and restrictive. The restrictions included the necessity of using only approved materials, installers and heating systems so that decision-making power was taken from owners in order to comply. Some desired upgrade work was not allowed on listed buildings.

“Most grants for upgrades are not available unless benefits are being claimed.”

“Would be reluctant to go through grants again due to shoddy workmen.”

In contrast, some people were very pleased with their new home or upgrades.

“Underfloor heating has been a game-changer! A pain to install, but definitely worth it.”

“External wall insulation on a Swedish style timber house made a huge difference.”

5. Condition of the homes

5.1 Overview

The household survey confirmed that many people in Skye, Raasay and Lochalsh are living in cold, damp, faulty and often unhealthy homes, unable to keep comfortably warm. Inadequate heating was often due to the cost of fuel (cheap mains gas is not available) and/or energy inefficiency of the building, coupled with inadequate wind-proofing.

The homes surveyed covered a range of age and type of construction. The largest category was solid-walled stone or concrete buildings, many of which are old. They are hard to keep warm and suffer high levels of damp and mould. People told us that they ration heating to save money. High levels of fuel poverty are evident.

Many respondents wish to upgrade their residence and can clearly identify what is needed, but there are multiple and interlocking barriers, leading to frustration and a sense of being trapped.

There is a lack of available builders and there are significant financial constraints, with many households finding that grants do not apply to them. Additional challenges for this west coast, rural area include distance from building supplies, difficulties in procurement, and lack of accommodation for workers, and for people having to move out during major upgrades.

5.2 Characteristics of the sample



Figure 1: Map of the survey area, postcodes and number of respondents

426 households participated in the survey, or 6% of the 7387 occupied properties in the area². Responses were received from all postcodes in the survey area, broadly in line with variations in population density; the highest number of responses came from the areas with the largest villages: Portree area, Kyle (sharing a postcode with Raasay), Broadford, and Dunvegan (Figure 1, Graph 1³).

Respondents lived predominantly in detached and semi-detached houses (85%), two thirds were owned and one third were rented, mainly from Housing Associations. Most homes had one or two residents. Average household size was 2.3 people. A third of homes had people older than 66 years and a tenth had children under five years of age (Graph 2 to Graph 5).

² On 16 May 2023, The Highland Council Tax Base showed the total number of dwellings for Skye and Lochalsh as 7,659, with 272 dwellings coded as long-term empty, and 540 dwellings coded as second homes.

³ 'Graphs' show the basic survey results, with minimal sorting (pages 6-17). 'Figures' show subsequent analysis obtained by combining variables; the numbers may vary.

Condition of the homes

The median household income was between £20,000 and £30,000, and interpolation gives an estimate of around £29,000. The median household income before housing costs in Scotland (2019-2021) is £505 per week or £26,260 per year^b, so respondents in our survey had slightly higher average household incomes than the Scottish population. Median rent/mortgage costs in our survey are estimated at £3,980 per year (Graph 6, Graph 7).

5.3 Lack of warmth in winter

“All of our heating is electric. We have to have the house warm when we have B&B guests but in winter when its just us we don’t heat the guest rooms and the temperature in these often dips well below 10 degrees and the cold seeps through into other rooms.”

A key indicator of the state of housing in our survey is that only 12% of households felt warm enough all of the time during the winter, and one in five (19%) said they were never or rarely warm (Graph 8). Over half the respondents said that a windy situation, a draughty house or poor insulation made their home hard to heat. Over a third cited poor window construction and old and inefficient heating systems (Graph 9).

As well as the location of the house (windy or shaded), homes being cold in winter can be due to fabric⁴ inefficiencies and costs. We discuss some of these factors below.

5.4 Draughts and ventilation

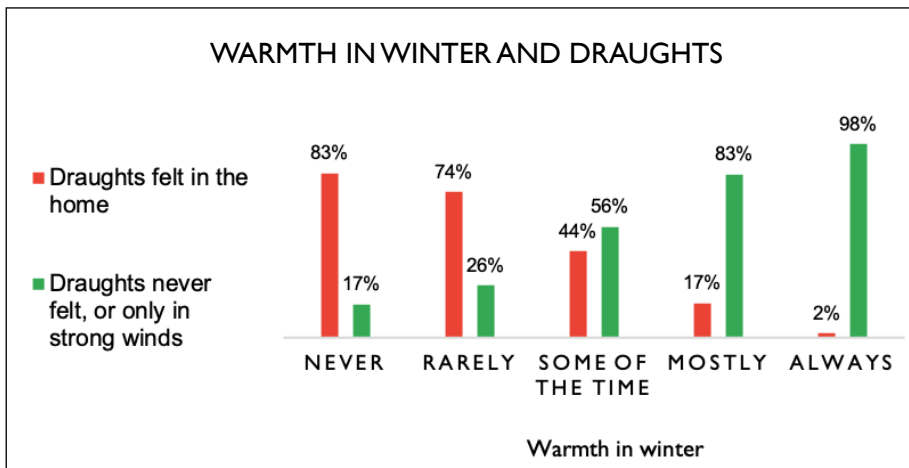


Figure 2: Warmth in winter and households’ frequency of draughts

Households that experience a lack of warmth in winter also report a high incidence of draughts (Graph 10, Figure 2).

One quarter of respondents said their homes had no draught-proofing (Graph 11). Some elements of draught-proofing are simple and cheap, but for many homes the problems lie deep within the building’s construction

and need more complex and expensive remedies.

Draught-proofing should be considered in conjunction with ventilation. Most respondents said they used window vents and extractor fans for ventilation; 13% had no ventilation (Graph 12). Adequate ventilation is essential to provide fresh air. Insufficient ventilation makes damp homes worse, and can cause mould. On the other hand, excessive or unintended ventilation is a major cause of heat loss and can also exacerbate mould. Ensuring appropriate ventilation is therefore important for comfortable living conditions and energy efficiency.

⁴ The fabric of a building comprises the materials that the building is made of: structural materials, cladding, insulation, and finishes.

Condition of the homes

5.5 Insulation

Two thirds of respondents said their homes were badly insulated to uninsulated, compared with only one third reporting their homes as well-insulated (Graph 13).

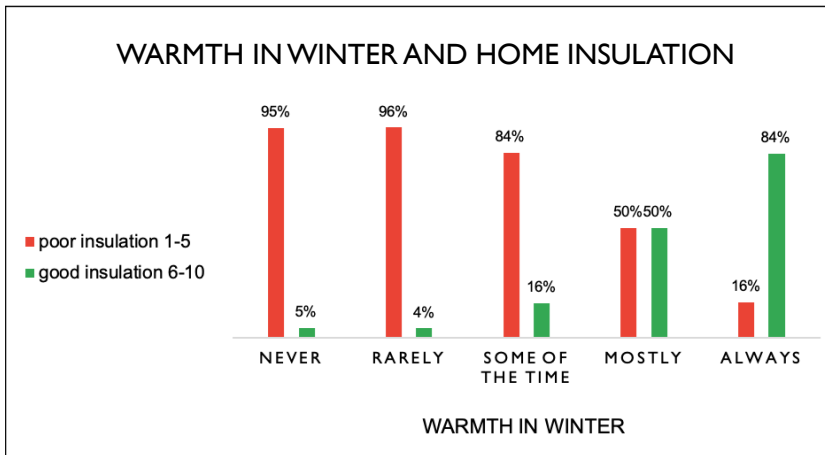


Figure 3: Warmth in winter and extent of home insulation

Homes that were less warm in winter had worse insulation (Figure 3).

Energy performance certificates measure the energy efficiency of a property, based on how well insulated it is, amongst other factors. In practice, their impact is limited: two thirds of respondents either didn't have an EPC or didn't know their rating (Graph 14). However, the available EPC information indicates significantly worse energy efficiency in the Skye, Raasay and Lochalsh area than the wider area: 28% of surveyed households had the lowest EPC rating of F or G, compared with 8% in the The Highland Council area and 3% in Scotland as a whole (Table 3).

A well-insulated home has insulation on all surfaces without conductive materials breaking the 'blanket'. The insulation will also cover the corners of the building, including at floors and ceilings, and will run right up to windows and doors. The result will be low heating requirements for a long time, permitting a cheap-to-install, and possibly a very small, heating system with low energy costs.

Easy and relatively cheap upgrades include loft insulation, and lagging pipes and hot water tanks. Lagging would help 14% of the respondents who have unlagged pipes (Graph 15).

Easy and relatively cheap upgrades include loft insulation, and lagging pipes and hot water tanks. Lagging would help 14% of the respondents who have unlagged pipes (Graph 15).

5.6 Damp and mould

Homes that didn't feel warm enough in winter were more likely to report damp and mould issues (Figure 4).

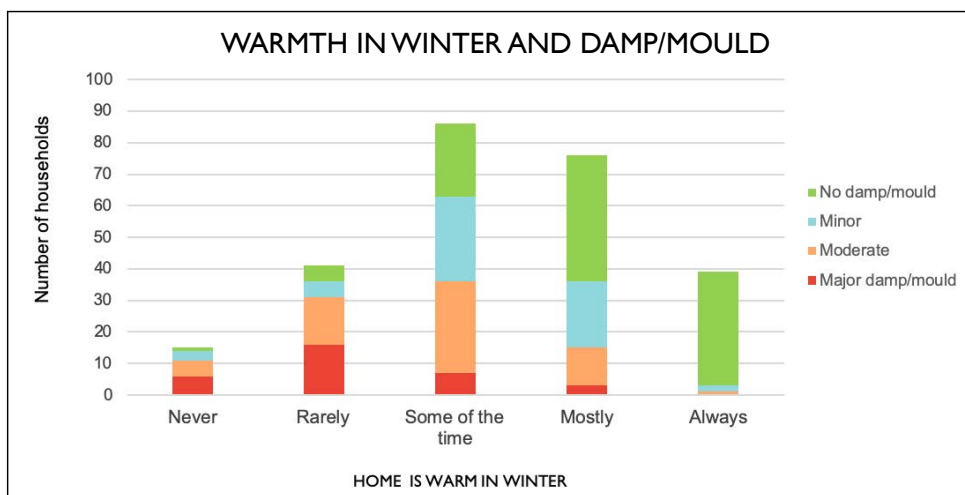


Figure 4: Warmth in winter and households reporting damp/mould issues

Condition of the homes

The level of damp and mould is unacceptably high. Overall, two-thirds of houses reported some damp and mould, ranging in severity (Graph 16 & Graph 17).

Mould and damp occurred in homes of all ages, exacerbated by our maritime climate.

These problems are particularly severe in earlier timber-frame, cavity and solid-walled houses with 69-83% of these construction types having mould and damp, while recent timber-framed homes and more modern constructions (insulated concrete form and structurally insulated panels ‘SIPs’) are less affected (Figure 5).

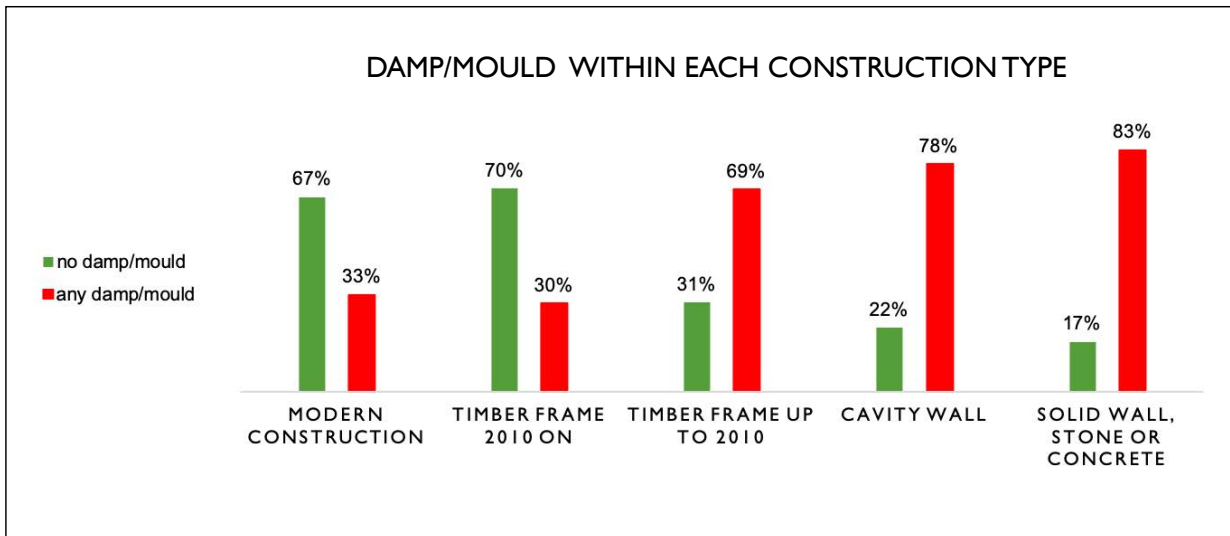


Figure 5: Damp/mould within each construction type

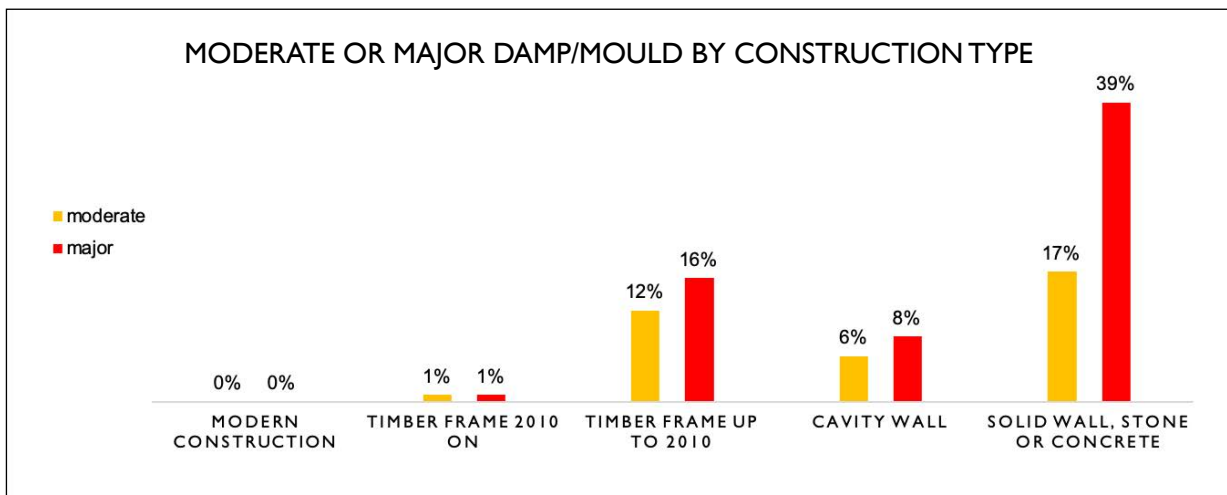


Figure 6: Incidence of moderate or major damp/mould across construction types

Of the 183 homes which had moderate or major damp/mould and where we know the construction type, solid-walled stone or concrete houses present the majority of severe damp/mould problems (Figure 6). These buildings therefore must receive particular attention, although remedies for these faults are costly.

Condition of the homes

The presence of mould indicates excess moisture, which may be due to the home being in a poor state of repair, enabling rising or penetrating damp to enter. In addition, insufficient heating and insulation, and inadequate or uncontrolled ventilation, allow moist air from washing, cooking and other daily activities – even breathing – to condense onto cool surfaces, creating ideal conditions for mould to grow. Mould in cupboards and corners, as reported by the respondent below, is a classic indication of condensation.

“We were there for 18 months ... when we moved and took the pictures off the walls, the backs were all covered in mould. So were clothes in the wardrobes and drawers, utensils in the kitchen, damp in almost every corner... and it was always cold, even in summer.”

Better access to sensitive and informed ongoing humidity management advice could help householders with low or no budgets.

5.7 Age and construction of homes

About one quarter of homes surveyed are more than a century old, with fewer than 10% built in the past decade (Graph 18). There is a variety of construction types, including traditional stone croft houses and timber-frame kit homes from the last 40 years (Graph 19). Nearly 90% of respondents live in detached or semi-detached houses (Graph 2) with larger external surfaces exposed to weather and heat loss.

A larger proportion of older homes need improvement because their structure, fabric and design are no longer suitable for modern lifestyles. None of the construction types is in itself entirely problematic, it's how they are detailed, insulated and heated, and how they have aged and been modified, that may cause difficulties. Each house type has different opportunities and problems for upgrades.

Older houses, particularly stone and concrete solid-walled, are particularly likely to be uncomfortable to live in. As well as problems with mould and damp (see above), over two thirds of them are never or rarely warm in winter (Figure 7), despite being amongst the highest energy users (Figure 8).

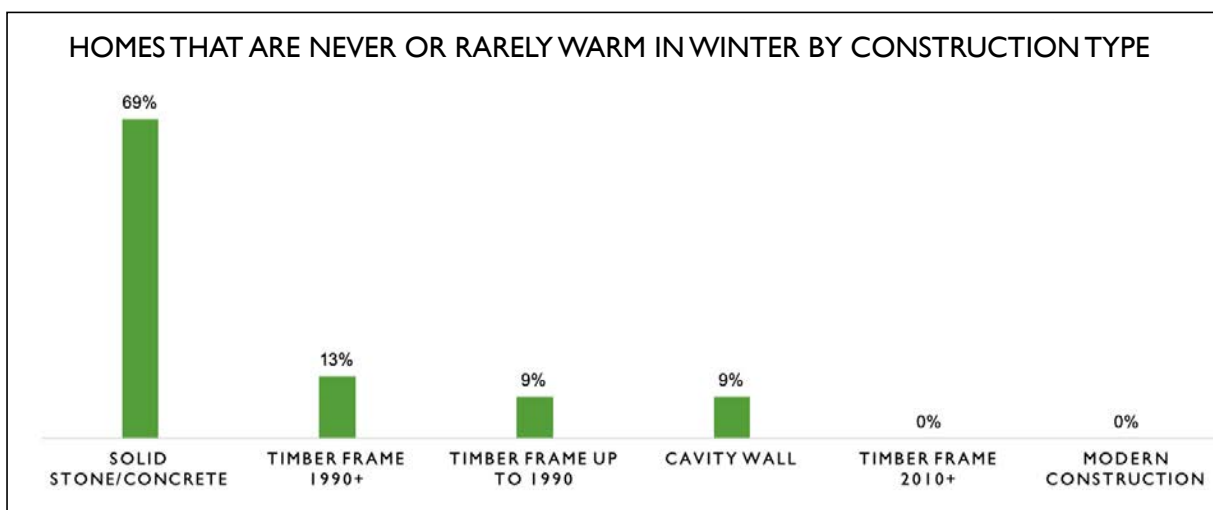


Figure 7: Homes that are never or rarely warm in winter by type of house construction

Condition of the homes

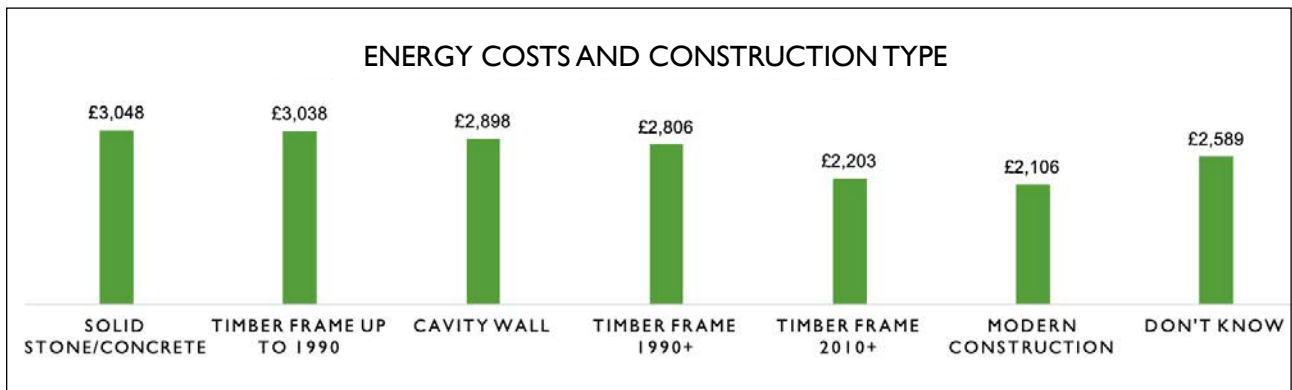


Figure 8: House construction type and households' average annual energy use

Of the 140 households who often or sometimes economised on heating and for whom we know the house construction type, more than half lived in solid stone or concrete buildings (Figure 9). In contrast, recent timber frame buildings and modern construction types (insulated concrete forms and SIPs) have lowest energy costs and are least likely to be cold in winter or economise on heating.

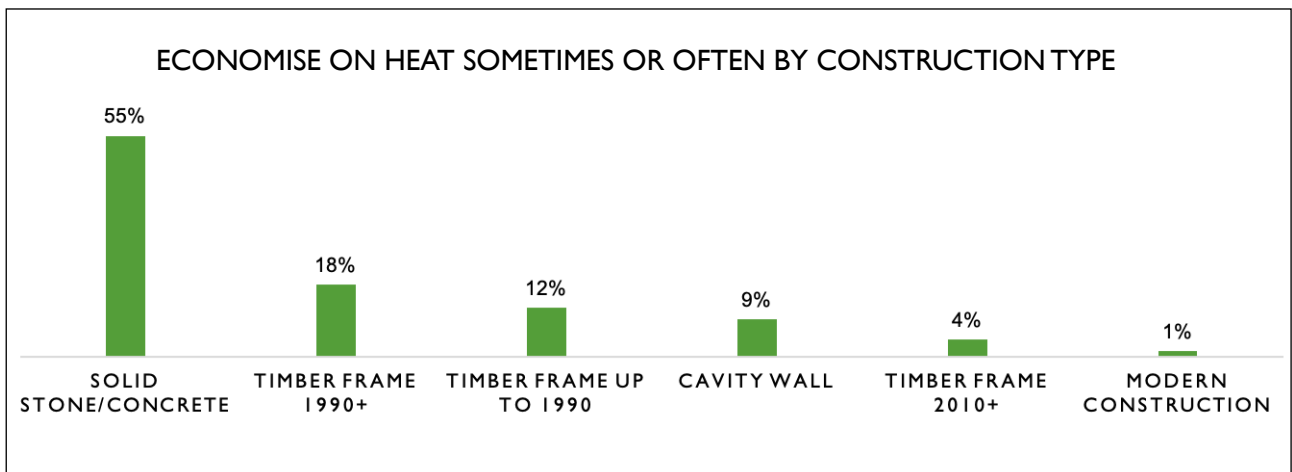


Figure 9: Economising on heat and house construction type

“I am reluctant to put heating on because it disappears out the doors and walls and windows.”

In the past, houses were designed to be heated with a lot of cheap fuel, so insulation was not considered important and the structure may, in fact, pose challenges for retrofitting modern insulation. Often, just selected areas of the home were kept warm and cosy, but as expectations changed to heating the whole house and then fuel costs rose, uninsulated homes could become almost impossible to keep warm. Cooler surface temperatures facilitate condensation and mould. Economising with partial heating can allow moist air to migrate from warm to cold areas of the building, increasing the risk of mould.

Since 2010 stricter regulations, and application of the regulations, on sealing of buildings, insulation and heating, have helped to reduce carbon dioxide emissions and fuel cost, as well as make homes more comfortable and cheaper to keep warm, as indicated in the graphs above.

Condition of the homes

5.8 Heating

Two thirds of households used more than one heating type (Graph 20). The heating types used most often are designated as primary heating, and those used less often as secondary heating (Figure 10). Households could have several primary and several secondary heating types.

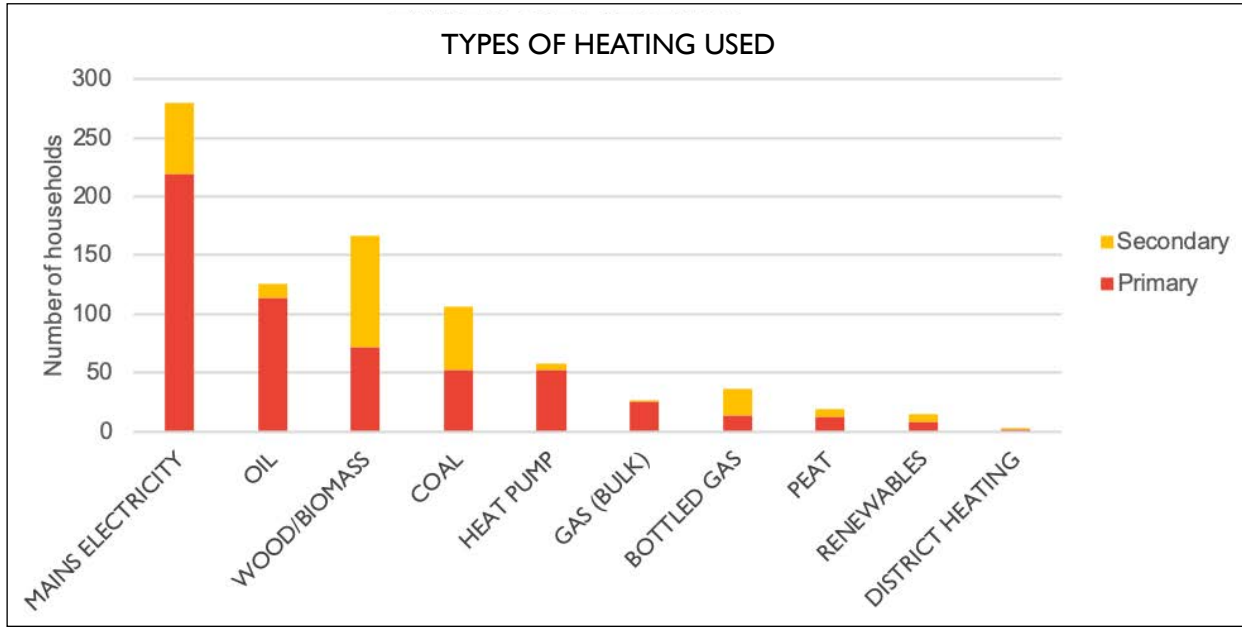


Figure 10: Range of primary and secondary types of heating

Due to lack of mains gas supply, the most common heat source is mains electricity providing 38% of primary heating (Graph 20). Oil is the primary heating in 20% of instances, with wood (13%) and coal (9%) also significant. Heat pumps are becoming more prevalent; these will be mostly in more modern and/or better insulated homes.

Solid fuel stoves are the top choice for secondary heating (Graph 20) using wood or biomass (36%) and non-renewables such as coal and peat (23%). Electricity provides 23% of secondary heating.

A third of residents economised on heat often and a quarter sometimes (Graph 21). Households that economise on heating are more likely to rely on electricity as their primary heat source (Figure 11).

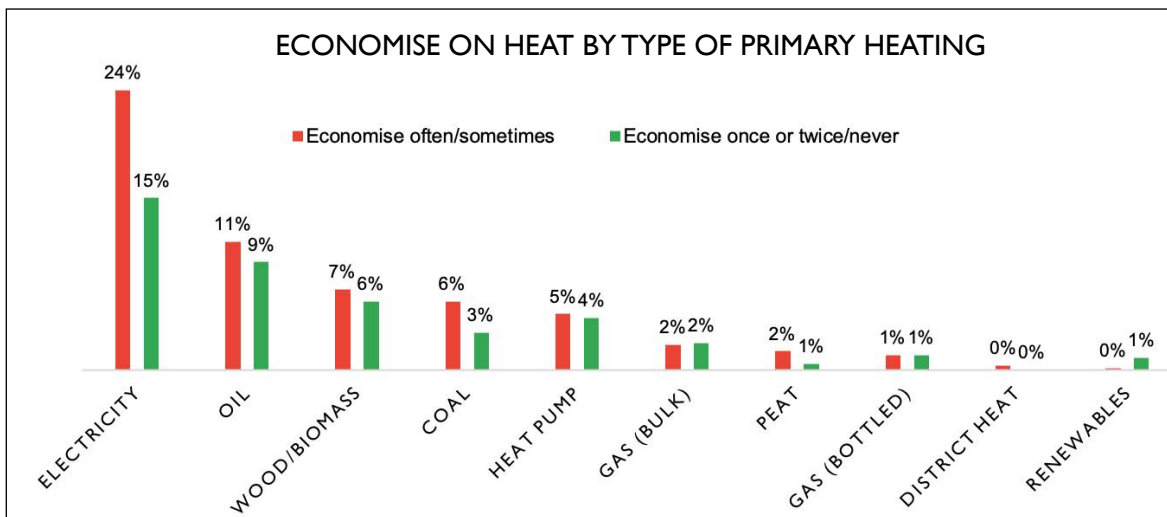


Figure 11: Households economising on heat by type of primary heating

Condition of the homes

Coal is the fourth most important primary heating in our area, and the third most important secondary heating (Graph 20). Peat is used to a much lesser extent. Both of these non-renewable fuels have a high carbon footprint and may be inefficiently burned. For an open fire, about 80% of the heat goes up the chimney, but this is reduced to 20% with the best sealed stoves. In addition, burning coal, peat, and also wood, produces particulates which can damage health, if not eliminated from the rooms of the house (see Section 6: Health).

The type of heating upgrade chosen should aim to save fuel costs while reducing climate impact, at a cost acceptable to the householder. Many homes in our area would benefit from new low- and zero-emissions heating systems with convenient controls, providing more efficient heating and improved comfort levels.

5.9 Energy costs

In the previous 12 months, a third of residents (32%) had often turned the heating in their home down or off to save money when they were cold (Graph 21).

“We are cold because we can’t afford to have the heating on, not because there is anything wrong with the flat.”

Most commonly, residents spent £2,000-£3,000 on energy per year (32% of residents), but 12% were spending over £4,500 (Graph 22). The average energy expenditure was £2,840 per year, £1,000 more than the average north Scotland dual-fuel expenditure of £1,800 per year^c.

Energy costs decreased with better home insulation (Figure 12). The worst insulated half of the homes pay 71% of the total money spent on energy and the best insulated half pay just 29%.

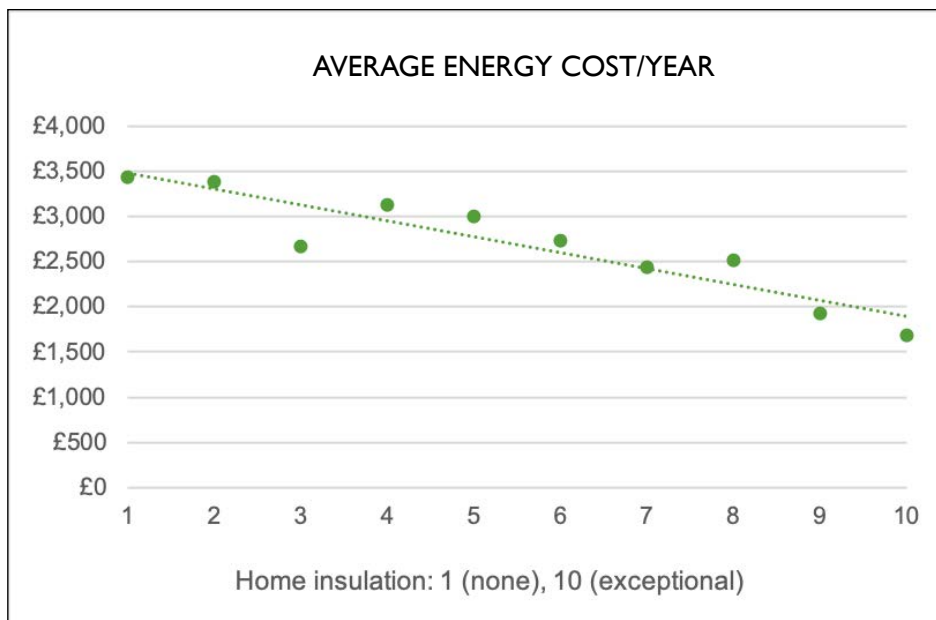


Figure 12: Average household energy cost/year by extent of home insulation

The lack of access to the most consistently cheap heating fuel, mains gas, and exposure to the temperamental pricing of the main alternate fuels – electricity and oil – is one of the most significant burdens faced by the local community.

Condition of the homes

The price of heating oil has varied between 26p and 112p a litre over the last ten years according to the Office of National Statistics, and prices are traditionally higher in remote rural Scotland due to the lack of a competitive supply chain. The lack of certainty over pricing and the requirement to purchase 1000 litres at a time leads to worry and rationing.

Electricity prices have also become very challenging, and are a determining factor in how well homes are heated in our area. 10 years ago, a kilowatt hour (kWh) of electricity was twice the price of a kWh of gas. Today, electricity is four times more expensive^d.

Data gathered in 2017-2020 by the Lochalsh and Skye Housing Association Energy Advice Service^d showed that, largely due to rationing of energy due to high costs, LSHA tenants in electrically heated homes consumed on average 7,461 kWh⁵. This was half the typical UK dual-fuel consumption of 14,900 kWh.

In 2012, Skye & Lochalsh homes (all tenures) were paying up to £1000 a year more in energy costs than the national average^c. Regionally, this situation hasn't changed: in 2023, electric heat customers in North Scotland using 10,000 kWh paid between £600 and £1100 more per year than dual fuel customers using 14,200 kWh^c.

A typical, detached, electrically-heated croft house would have to use 10,000 kWh for even minimum warmth⁶.

Our community therefore pays more than the UK average to achieve much worse heating outcomes. The impacts are compounded by property type and property condition.

5.10 Fuel poverty

“We were spending £1200/month in rent and at least half that again in heating and dehumidifiers.”

Although the survey was not designed to measure fuel poverty, it was possible to make an estimate from the data provided. For the purposes of this report, fuel poverty exists where over 10% of household income after housing costs is spent on energy. On this basis, 51% of the respondents were estimated to be in fuel poverty.

⁵ 7198 kWh as of March 2023. D. MacKay, personal communication, 4/12/23

⁶ D MacKay, personal communication, 4/12/23

6. Health

“I have chronic illness that is greatly affected by the cold and damp. Winters in our home are painful and debilitating for me.”

One of the consequences of poor housing is poor health. One third (30%) of respondents felt that the state of their home was affecting the health of at least one occupant (Graph 24). Separately, a third of respondents (30%) reported at least one person with a pre-existing disability or limiting health condition (Graph 23).

Inadequate heating and ventilation, and burning solid fuels, contribute to poor Indoor Environmental Quality and air pollution, and can increase the risk of asthma and other chronic respiratory conditions^f. If cold and damp are not effectively managed, health is compromised. Also, moist air takes more energy to heat than dry air, adding to the costs of heating a damp home. Health, house condition and fuel poverty are inextricably linked.

Maintaining the optimum level of relative humidity⁷ within a building (30-60%) is a key factor in maintaining both the building's fabric and the occupants' health. Mould spores develop in conditions of high humidity. Mould can lead to respiratory infections in the short term and chronic cough, wheeze, allergic rhinitis and asthma^g. Recent reports have highlighted the problem of mould in Skye homes^h. Prolonged exposure to mould has potentially fatal consequences. A recent coroners' report attributed prolonged exposure to black mould as the cause of death of two-year-old Awaab Ishakⁱ.

Mental health is also known to be affected by living in buildings with poor Indoor Environmental Quality, and is often exacerbated by other factors such as fuel poverty.

In July 2016, the Highlands & Islands Housing Association's Affordable Warmth Group detailed the health-related challenges of poor housing. They proposed that the current care and repair provision be extended to 'energycarer' functions including promoting energy efficiency and affordable warmth, and managing humidity and ventilation. A holistic, in-home, approach to fabric, heating, ventilation and energy efficiency would be better than a measure-by-measure approach, to stop unhealthy homes further compromising health^j.

Rural healthcare costs are at least double the equivalent urban cost^{k,l}. Ultimately, particularly in rural areas, it is a cheaper use of the public purse to promote a healthy home than it is to deal with the health consequences of an unhealthy home.

While this report could not gather detailed information on the construction materials within the home, use of inappropriate materials and furnishings affects internal air quality and health. Attention should be paid to this during retrofitting work in regard to the existing materials and any new materials specified.

⁷Relative humidity is a measure of the amount of water vapour in the air related to temperature.

7. Upgrade and repair work needed

“Positive experience with heat pump. Took a bit of getting used to, but no regrets!”

“We are retired and our pensions take us just over the level at which we could claim any help...Having costed up various forms of insulation, we can't afford them.”

Some survey respondents were very content with their homes, but most were less positive. Many people expressed high motivation to improve their homes by making them more energy efficient. Several respondents shared experiences of the work that they had already done, often in stages – as and when they could afford it.

Sixty percent of households needed draught-proofing, upgrading the heating system and replacement windows. Wall insulation, damp-proofing, underfloor insulation or loft insulation were needed by half the households (Graph 25). A third of households needed lagging of pipes and hot water tanks, and rot remedies. Most homes needed one or more aspects to be repaired or upgraded: 86% needed heating or insulation upgrades, and 72% needed repairs.

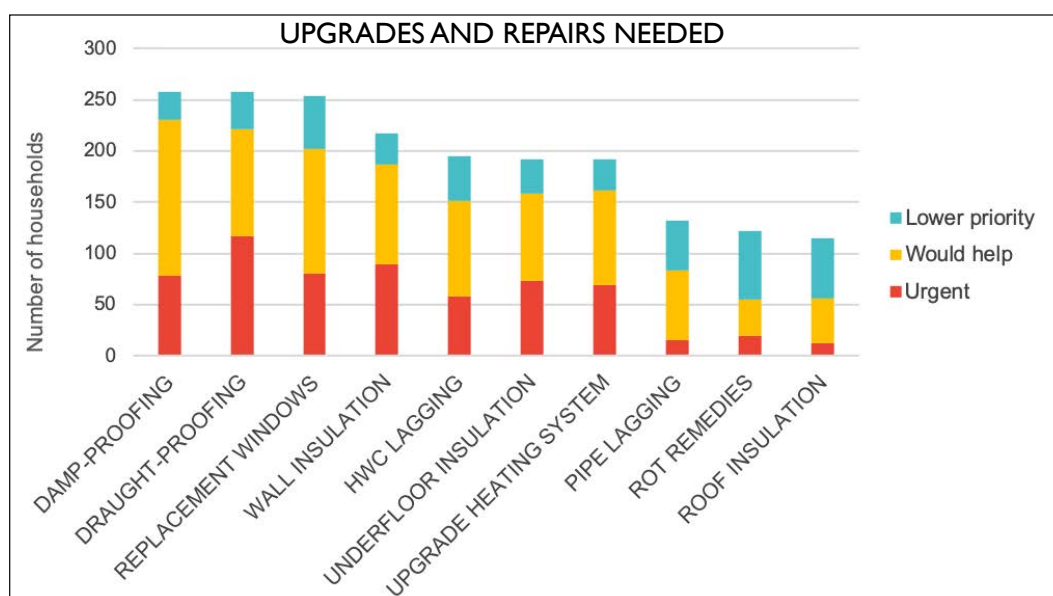


Figure 13: Upgrades and repairs needed and their priority

Householders classified pipe lagging, rot remedies and roof insulation as less urgent interventions. Thirty to forty percent of the other categories were deemed high priority by householders (Figure 13).

The Tolerable Standard is a basic level of repair, defined by the Scottish Government, that a property must meet to make it fit for a person to live in⁸. Serious defects in damp, ventilation/heating, or insulation will cause a property to fail the Tolerable Standard. We estimate that 139 homes in the survey fail the tolerable standard: 62 for rising or penetrating damp, 72 for lack of insulation and 84 for inadequate heating.

7.1 Carrying out repair and upgrade work

Accurate surveys are important so that the contractor can plan the work and avoid unforeseen issues, which can cause costly delays and disruption.

Advisors need to have the training and experience to assess whether particular interventions are suitable for the local weather conditions; for example, cavity wall insulation in areas with severe exposure to wind-driven rain may make things worse.

⁸ <https://www.mygov.scot/landlord-repairs/tolerable-standard>

Upgrade and repair work needed

Prior to undertaking upgrade work on heating systems, any necessary repairs should be carried out competently to ensure the building is wind and water tight.

“We had the windows replaced ... and it’s been a disaster. Every single one is fitted badly, the seals have perished and there is condensation between the panes. Spent nearly £8,000 and they’re worse now than the ones we replaced.”

Wet structure, particularly wet insulation, conducts more heat and so makes a home harder to keep warm. Remedial work for dampness or mould should be carried out before most other tasks, to be sure of a lasting improvement.

Before upgrading heating systems, the heating requirement of the home should be reduced by improving insulation. The most cost-effective remedies are draught-proofing and loft insulation, followed by underfloor insulation and pipe lagging.

	Type of building construction							
	Solid stone or concrete	Prefabricated concrete	Cavity wall	Timber frame up to 1990	Timber frame 1990+	Insulated concrete form	Timber frame 2010+	Structurally insulated panel
No. of buildings	116	7	42	40	47	3	25	7
Indicative repair and upgrade score (average per building type)	10.6	10.4	9.7	8.5	6.1	2.2	2.2	0.4

Table 1: Need for repairs and upgrades by building type. The scores are relative ratings of the amount of work needed. Details of the methodology will be available in project background documents on our website.

The homes in our survey with the greatest need for upgrading and repairs are solid-walled stone or concrete buildings (Table 1). These comprise the largest category of the homes reported, and present a particular challenge, requiring more expensive remedial work to make them affordable to heat. Many are also small buildings where insulation could reduce the size of rooms. Sharing experience and best practice could help to guide solutions for these types of homes.

Much of the remedial work needed involves major disruption and may require residents to find alternative temporary accommodation. This is difficult in Skye, Raasay and Lochalsh due to the housing shortage, largely due to the overdeveloped tourism sector.

7.2 Advice wanted and received

“It would really help to have someone ‘on the ground’ who could give advice.”

Nearly two thirds of respondents said they wanted advice or support on affordable warmth issues (Graph 26). A quarter of respondents didn’t know what work was needed to upgrade their home (Graph 28). Householders’ comments indicate that people are looking for specific in-home advice to understand how to tackle particular issues, rather than generic advice. There were also concerns about the quality and relevance of some of the advice received and assessments carried out.

“We have sought advice from various places but it is all very vague and it seems we do not fit the criteria for grants. We are too old for loans and our pensions just won’t cover it.”

Upgrade and repair work needed

Despite all of the problems identified, almost half the respondents had not received affordable warmth or energy efficiency advice from anyone (Graph 27). Only 18% had contacted the national Home Energy Scotland freephone number and only 10-11% had approached the local construction sector.

“I find [agency] completely unresponsive. It seems impossible to get grants unless you have small children. My husband has asthma, we both work but can’t afford to have heating on for more than 3 hours each day. We dread getting older.”

There is clearly an information and advice deficit. The low level of enquiries reflects the feeling of hopelessness that pervades the survey responses: that improvements are too expensive, that financial support will not be available, and that remedy providers are absent or unskilled.

While reliable advice is important, it can be argued that increasing the amount of advice available is pointless without tackling the practical difficulties householders face in implementing this advice to achieve cost-effective, relevant and competent improvements to their homes.

7.3 Contractors

“Very often funded work is tied to approved partners who are not available locally and others are not interested in coming from further away.”

Householder comments indicate the difficulties of finding and retaining competent contractors to do the work. This is discussed further under barriers to getting the work done (Section 8).

Despite widespread promotion, we received only three responses to our survey for tradespeople and building professionals, which asked about their experience of heating, insulation and retrofit projects in the area. One of these respondents commented:

“It’s often difficult to find the best solution for a property given different constructions, property condition and budget/cost. Often aims are hampered by measures installed previously, which are not compatible with new solutions and/or underlying building fabric. Tailored solutions are required for each individual property.”

The three trades respondents showed a depth of knowledge and openness to participating in retrofit projects. The challenge is to engage more broadly with this sector to understand the incentives and constraints influencing these businesses’ decisions about retrofit work.

From the contractor’s point of view, remedial work poses many challenges and sometimes unforeseen costs. Being called in to tackle the same issue repeatedly, without the underlying problems being identified and addressed, can be disheartening. There is plentiful new-build work in our area and it is generally more profitable, satisfying and easier to schedule, whereas remediation and retrofitting may seem boring, difficult and unimportant.

Other challenges for local contractors are: local, affordable and convenient procurement of materials and acquiring the necessary training and skills, particularly for modern technology and approaches to building. Locally, almost all builders lack appropriate certification.

On the other hand, the amount of upgrade work required in our respondents’ homes shows that there is enormous potential for local business development and employment in the retrofit sector. Enhanced education and training opportunities in this sector would support local business development and benefit the local economy.

8. Barriers to getting the work done

“Cost of repairs combined with uncertainty about what needs doing, about who to trust and how to finance the work just for a start. Lack of grants and confusion around grants did not help.”

Householders reported multiple, complex and interlinked barriers. Two thirds of respondents identified two or more barriers to getting the upgrades and repairs they wanted (Graph 28).

8.1 Cost

Cost is the main barrier, cited by 60% of respondents (Graph 28). Cost affects all income bands, but particularly lower income households (Figure 14).

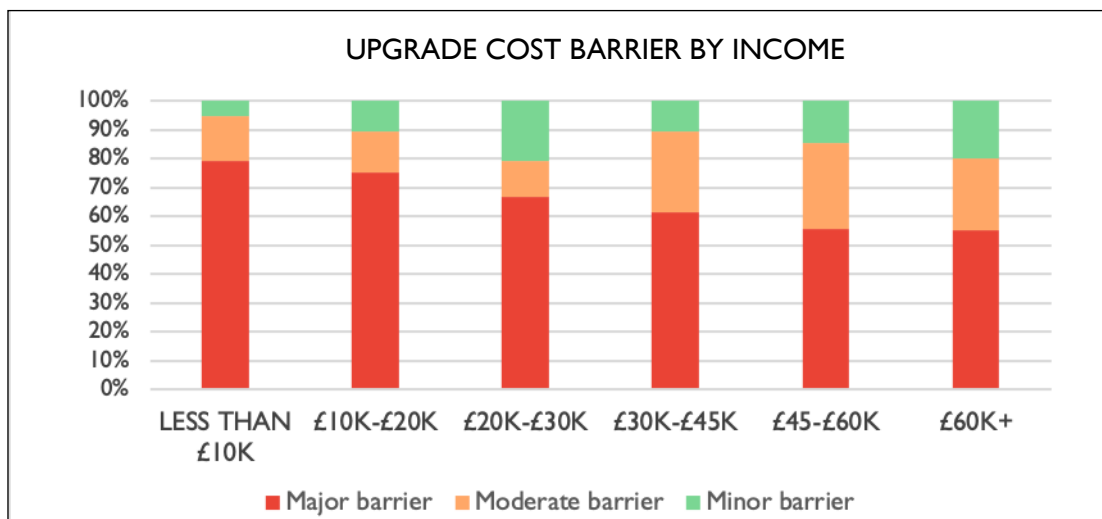


Figure 14: Upgrade cost is a barrier across all income groups, more so for low-income households

Grants were seen as unavailable by 29% of households or too complex (17%), (Graph 28). Some grants are means-tested and only available to people receiving benefits, thereby excluding those on modest incomes⁹. 19% of respondents in our survey had received free or benefit-funded repairs and upgrades (Graph 29). Householders’ comments indicate that grant applications were often overly complex and bureaucratic.

“Information re requirements and grants is far too complicated and contradictory.”

For rental properties, the barrier of ‘Landlord won’t do it’ affected 61 of the 156 rented homes (39%).

The costs of repairing and upgrading the housing stock of Skye, Raasay and Lochalsh to be comfortable, healthy, low-emissions and climate-ready, will depend on several factors. These include: the extent and severity of the defects that need to be addressed, the availability of builders and how far they have to travel, how much work is carried out at the same time, accessibility and remoteness of the site (access via single-track roads to many houses, and by ferry to Raasay), materials cost and delivery, and timing of the work with respect to market variations in materials and labour prices.

⁹ <https://www.homeenergyscotland.org/funding/>

Barriers to getting the work done

An estimated 73% of homes in our survey require moderate or major work entailing significant costs. In the moderate category, estimated costs start at £6,000 (equivalent to replacing all the windows). Estimated costs increase with the extent and severity of the defects, up to work costing over £100,000 that will require a total, or almost total, refit of the home. Our first estimated indicative average cost across all homes needing repairs and upgrades is £29,000. We estimate that about 10% of homes in our survey would need residents to move into temporary accommodation while work is carried out.¹⁰

8.2 Problems with the upgrade and repair process

“Our main barriers are not knowing how to assess our home’s current state, not knowing who to get to do the work, not having tradesmen available and the main reason: cost.”

Poor access to builders affected 28% of respondents (Graph 28). Comments from householders reveal their frustration at not being able to find or retain competent local tradespeople to carry out the work, or even to get quotes. Supply chain problems were reported, with limited choice and high costs of materials and delivery. Builders were perceived to be uninterested in retrofit work. Finding architects to design and oversee the work was also a problem.

Even if it is possible to bring in contractors from Inverness or other areas, this may involve providing worker accommodation, which is in short supply locally, and expensive, due to the predominant use of spare accommodation for tourists. Following up on quality control and accountability once the contractor has left the area is also more difficult.

Respondents noted that contractors sometimes did inappropriate work, such as upgrades to heating without first repairing draughty windows or improving the insulation. Previous bad experience in trying to improve their home was cited by 6% (Graph 28).

“All builders should have training in energy efficiency / insulation (paid for by govt) and access to knowledge-sharing so that we are not all trying to reinvent the wheel.”

The lack of available builders prompted some householders to undertake repairs and upgrades themselves. Providing training and support for this DIY sector could help address the lack of available practical skills, at least for certain categories of retrofitting.

“No luck [accessing tradespeople] so we’re having to just learn how to do these things ourselves and fit them round work.”

The required work was seen as too disruptive by a quarter of respondents. Although some disruption may be inevitable for such work, more careful planning and coordination of work could help to reduce the impacts. Suitable local, temporary accommodation is often lacking to enable residents to move out while major work is being done on their home.

Respondents perceived grants as overly complicated and restrictive. They cited constraints such as the necessity of using only approved materials, installers and heating systems, compliance with which reduced their own decision-making power. Local construction professionals are unwilling or unable to obtain accreditation requirements for retrofitting, thus further limiting the pool of available contractors.

¹⁰ Details of these preliminary cost assessments will be available in a separate document on the Healthy Homes website.

Barriers to getting the work done

8.3 Overcoming the barriers

Based on householders' responses concerning the challenges they face in carrying out repair and upgrade work to make their homes more energy efficient, presented in Section 7 and Section 8 above, we can summarise the key barriers as:

Lack of accessible and relevant information, advice and support for householders

- Householders don't know what work is needed on their homes, the options available and the pros and cons
- Advice is often generic to meet policy aims, rather than the particular home
- Householders don't know how to find competent contractors
- Householders lack alternative accommodation during major repairs and upgrades.

Lack of financial means

- Grants are seen as unavailable or difficult to access due to the criteria stipulated, leaving all but the poorest with little assistance
- Other sources of funding are under-developed.

Costs are too high

- Cost was a barrier across all income levels
- Materials are difficult to source, and increasingly expensive
- Contractors may give high quotes because they can find alternative work with larger, straightforward, more predictably profitable, projects
- Reliable self-help/DIY guidance and accreditation/approval for simple repairs and improvements is lacking.

Lack of competent builders and professionals

- Local contractors are not looking for retrofit work/not interested and won't quote
- Affordable local opportunities for skills upgrades and training are lacking
- Few local contractors are accredited to the standards required for grants
- Contractors from outside the area may need accommodation to enable them to undertake the work
- Contractors from outside the area may evade responsibility for poor quality of work.

Figure 15 (overleaf) "From barriers to a way ahead" presents actions that can help to overcome the barriers identified, thereby achieving positive outcomes.

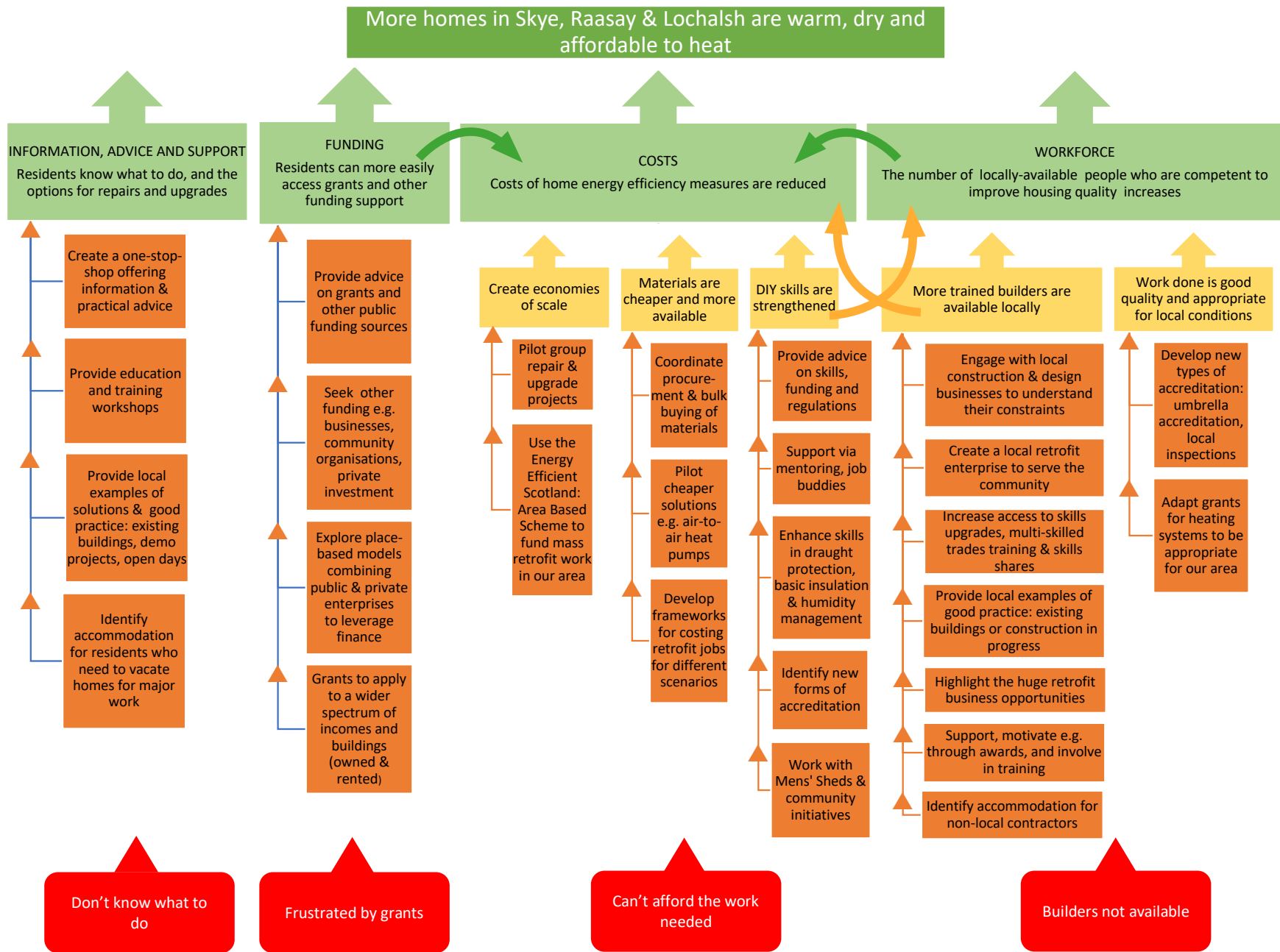


Figure 15: From barriers (in red) to a way ahead (in green)

9. Survey results in context

The community-led Healthy Homes survey gathered information from more people than any other survey in our locality. It is distinctive in (1) the depth of coverage of house conditions and (2) the insights into residents' problems. It included owned and rented homes, and aimed to reveal and share our community's perspective on housing quality issues. The information that householders have given, both quantitative and in the numerous detailed comments, shows how people are struggling with multiple obstacles and in some cases are trapped in homes that are not fit to live in, because affordable and/or effective solutions are desperately lacking.

A number of studies have looked at similar issues over the last decade (Table 2). Several of them focussed on fuel poverty, because the remote and rural Highlands and Islands have the highest levels of fuel poverty in the UK^m, very challenging weather and climate, almost no access to mains gas (the cheapest heating fuel) and very poor access to remedy – creating an unjust situation¹¹.

Fuel poverty and energy costs are certainly of concern in Skye, Raasay and Lochalsh. Our study considered these factors alongside housing condition and access to advice and support, to shed light on the barriers blocking the repairs and upgrades needed to make dwellings warm, dry and energy efficient, and create a healthy home environment.

A recent, separate, survey of 85% of the households on the island of Raasay by the Carbon Neutral Islands Project and Raasay Development Trustⁿ provides a valuable companion study to the Healthy Homes survey.¹² It revealed similar problems, including that just 44% of the residents were fully warm enough in the winter, 66% worried about their energy costs, and 54% said they were rationing fuel purchase. Only 39% of roofs and 33% of walls were well insulated and 47% of households had challenges with condensation and dampness. The Raasay community identified insulating and retrofitting houses as its top priority for action.

Study	Date	Area and number surveyed	Comments
** Carbon Neutral Islands Raasay Household Survey ⁿ	2023	Isle of Raasay; 154 (86% of 179 population)	Survey conducted online and by home visits. Covers a range of issues relevant to Raasay achieving net zero: demographics, employment, transport, internet, crofting, food, community, housing, heating, damp, insulation.
BE-ST report: Energy Efficiency Market Analysis and Economic Opportunity Analysis	July 2023	Scotland	Consideration of retrofit market, barriers and opportunities in Scotland.
Changeworks report: A perfect storm: fuel poverty in rural Scotland ^m	April 2023	Rural Scotland, all	Based on data from the 2019 'Scottish House Condition Survey Regional Realities' for remote rural Scotland, Scottish Highlands & Islands, and Caithness & Sutherland, plus literature research, interviews and workshops - not a survey. Fuel poverty in these areas affects proportionately more households than in the rest of Scotland. Sets the scene in a general way for our survey, particularly barriers to improvements.

¹¹ <https://www.changeworks.org.uk/news/levels-of-fuel-poverty-higher-in-rural-scotland/>

¹² Some Raasay residents completed the Healthy Homes survey as well, but they cannot be distinguished from other residents in the IV40 postcode.

Survey results in context

** Sutherland Affordable Warmth Survey & Fuel Poverty Summit Report ^o	Nov 2021	Sutherland; 378	Energy type and cost vs house type and fuel poverty. Financial support for home energy costs was given to 306 households in community.
** Scottish House Condition Survey, 2019 and 2021 (partial survey) ^p	2019, 2021	All Scotland; with 261 in Highland	Regular record of house condition by survey visits to houses. See Table 3 & Table 4 for comparisons with this survey.
**Lochalsh and Skye Housing Association stock survey 2017 – 2020 ^d	August 2020	Skye & Lochalsh; 612 tenants	Home visits; detailed information on warmth in winter, heating systems, energy costs, humidity management.
Scottish Rural Fuel Poverty Task Force: An Action Plan to Deliver Affordable Warmth in Rural Scotland ^q	October 2016	National: About a million people living in 'rural' Scotland - defined as settlements of 3000 people or less	Report produced by an independent organisation proposing actions to deliver affordable warmth in rural Scotland. Task force of experts, not a survey.
** The Energy Advisory Service: Fuel Poverty Report Comhairle nan Eilean Siar ^r	2014	Entire Western Isles; 2167	18% response by postal survey. Focus on fuel poverty. Data on fuel type, house type, costs collected.
**The Lochalsh & Skye Energy Advice Service 2010 - 2012 ^c	2012	Skye and Lochalsh; 491, all tenures	Home visits to identify how best the household can achieve affordable warmth. Data on heating, insulation, ventilation, house construction, energy costs, advice, remedies.
** Sustainable Uist: Uist Hard to Treat Housing Project (March 2012) ^s	March 2012	All the Uists; 981	Identified on Uist. Detailed survey of 100 covering the 5 construction themes identified and 4 house pilot projects. Targeting house type ignored by Green Deal. Findings and recommendations of direct relevance to Skye, Raasay & Lochalsh.

Table 2: Summary of some energy and housing studies carried out in Scotland in the last eleven years. Those marked ** have overlapping questions to the Healthy Homes survey, though all are relevant.

Comparing our survey findings with government statistics for The Highland Council area and Scotland as a whole indicates that Skye, Raasay and Lochalsh have severe problems with housing condition (Table 3). These include predominance of detached houses (which have greater exposure to heat loss and wind-driven rain than flats), no mains gas, greater levels of disrepair and urgent disrepair, and drastically worse insulation, energy efficiency, damp and condensation. Table 4 shows that comfort factors are much worse in our area than the Scottish average.

The Healthy Homes survey data, specific to our area, are essential information for designing home-improvement support and services that will address local housing characteristics and challenges. We identify specific actions in the Recommendations section below.

Survey results in context

	Dwelling Characteristics						Household Attributes					
	Age of Dwelling		House or Flat		Number of Bedrooms		Tenure			Household Type		
	Pre-1945	Post 1945	House	Flat	2 or fewer	3 or more	Owner-occupied	Social Housing	Private Rented	Older	Families	Other
Scotland	30%	70%	64%	36%	50%	50%	62%	26%	13%	32%	23%	44%
Highland	23%	77%	90%	10%	38%	62%	70%	22%	8%	41%	20%	39%
Skye, Raasay & Lochalsh	32%	68%	92%	8%	41%	59%	63%	30%	8%	24%	29%	47%

Household Attributes											
	Households with one or more Long Term Sick or Disabled	Dwellings off the gas grid	Dwellings with less than 100 mm of loft insulation	Dwellings with Energy Efficiency Rating (SAP 2009) of F or G	Mean household income	Dwellings with Disrepair to Critical Elements	Dwellings with Urgent Disrepair to Critical Elements	Dwellings with no damp or condensation	Dwellings with Rising or penetrating damp	Dwellings with condensation	Sample size
Scotland	44%	17%	6%	3%	£29,100	53%	20%	91%	3%	8%	8,963
Highland	47%	61%	4%	8%	£29,300	60%	11%		2%	7%	261 ¹³
Skye, Raasay & Lochalsh	30%	100%	18%	28%	£29,145 (median)	68%	23% (as evaluated by residents)	34% (damp) 32% (mould)	37% (12% major)	37% mould (11% major)	426

Table 3: Comparison of Healthy Homes Skye, Raasay & Lochalsh survey data with Scottish House Condition Survey (2017-2019, the last full survey)¹⁴

	Warm home in winter			What makes homes hard to heat?				Sample size
	Always	Sometimes	Never	Draughts	Poor/inadequate heating	Poor insulation	Poor windows	
Scotland	81%	13%	4%	14%	12%	10%	10%	3174
Skye, Raasay & Lochalsh	12%	69% (mostly/sometimes)	19% (never/rarely) 6% (never)	36% (always/mostly) 15% (always)	17% (undersized heating)	52%	38%	426

Table 4: Comparison of Healthy Homes Skye, Raasay & Lochalsh survey data with Scottish House Condition Survey 2021 (partial survey)¹⁵

¹³ It is not known how many of these 261 homes were in Skye and Lochalsh, but it is likely to be very few.

¹⁴ <https://www.gov.scot/collections/scottish-house-condition-survey/>; <https://www.gov.scot/publications/scottish-house-condition-survey-local-authority-analysis-2017-2019/documents/>

¹⁵ <https://www.gov.scot/publications/scottish-house-condition-survey-2021-key-findings/>

10. Recommendations

We propose the following seven areas of intervention. They incorporate actions to overcome the barriers to improving home energy efficiency (see Figure 15) and contribute towards the development of a local retrofit sector.

We believe that a local retrofit sector, delivering affordable, appropriate and good quality advice, repairs and upgrades, and accessible to - and trusted by - the local community, is key to resolving the housing quality and energy efficiency problems detailed in this report.

1. Host a conference

Organise an online conference, in partnership with Carbon Neutral Islands Raasay, to communicate findings and recommendations from our respective surveys about the condition of housing in Skye, Raasay and Lochalsh. Conference participants will include community members and organisations, practitioners of community-based retrofit schemes in Scotland, agencies, funders and politicians. The aim is to encourage a sense of ownership and empowerment within our communities and stimulate discussion about the way forward.

Outcomes:

- Increased awareness and understanding of housing quality and energy efficiency problems in our area
- Shared knowledge of community retrofit experience and good practice, sources of advice and support, and potential solutions
- Strengthened local involvement with the next stages of the project
- Strengthened support and funding for the next steps.

2. Create a project team

The Healthy Homes survey project has been led by a small voluntary group. It now requires an institutional base, paid staff and funding to take forward the recommendations in this report and the hopes of the survey respondents.

As a first step, obtain seed funding to set up a formal Steering Group, grounded in the community, with a range of relevant expertise and interest (e.g. sustainable construction, energy systems and business development) and contacts to external bodies such as The Highland Council, Highlands and Islands Enterprise, Home Energy Scotland, Built Environment – Smarter Transformation. The Steering Group would decide the most appropriate institutional structure for future activities, and have funds to hire a project Development Officer.

Engage a paid project Development Officer to take forward recommendations made in this report and at the conference, under the guidance of the steering group. Tasks would include:

- Identify and secure short- and medium-term funding
- Consult with the community, construction businesses and other stakeholders about setting up a community retrofit hub (see below)
- Assemble resources for providing retrofit advice and information
- Initiate a feasibility study on creating a community retrofit company and energy advice service, using seed community funding
- Engage with local construction and design businesses
- Liaise with other organisations for project support such as community organisations, resource organisations, training bodies, NHS, The Highland Council departments and relevant initiatives e.g. the Local Heat and Energy Efficiency Strategy.

Recommendations

3. Set up a community retrofit hub

Establish a physical centre to act as retrofit hub for the Skye, Raasay and Lochalsh community. This could be developed as a social enterprise.

Functions of the centre:

- Base for project staff and volunteers
- Source of area-relevant, up-to-date information and advice for householders and construction sector
- Facility for running education/information/advice sessions and training workshops e.g. hosting Home Energy Scotland Advice Days, DIY training
- Coordination of professional services involved in retrofit e.g. construction, trades, energy advice, procurement
- Contact point for external agency inputs, including NHS services (to identify and remedy unhealthy homes), education/training centres, business support agencies, best practice organisations
- Coordination centre for temporary accommodation for construction workers, and for householders decanted during extensive work
- Provide support and guidance for householder funding applications.

4. Showcase examples of best practice

Physical buildings that showcase good practice in repair and upgrading can be a valuable motivational, educational and/or training resource for residents and the construction sector.

Good practice examples could include:

- Existing renovated buildings/homes, or constructions in progress, that are suitable and accessible as examples of good practice
- Pilot project/s or demonstration project/s in partnership with community organisations and external agencies, demonstrating principles and practicalities of best practice and cost management in retrofitting. Approaches could include:
 - Retrofit work on a selected 'type' of building such as a traditional stone croft house, or an early timber frame house. The demonstration site can have open days and workshops for community and professional education and training.
 - Economies of scale: coordinate the simultaneous retrofitting of groups of homes with high upgrade needs to bring in a multi-skilled workforce and allow testing of bulk purchase methods and improved supply chains. As an example, Scottish Government's Energy Efficient Scotland: Area Based Scheme, as administered by The Highland Council, could allocate substantial funds to our area to demonstrate the outcomes that can be achieved by concentrating infrastructure and resources, expertise and supply chains in one intervention zone.

5. Strengthen the local retrofit workforce

The development of a local retrofit sector depends on having tradespeople, builders and architects trained in retrofit practice, and available and willing to do the work.

The first step is to engage with local construction and design businesses as potential partners in, and beneficiaries of, a local retrofit sector. Our survey to tradespeople garnered few responses, therefore new approaches are needed, such as informal or formal meetings, individual interviews or an alternative survey style. This outreach will help to:

Recommendations

- find out the construction sector's attitudes, experience and knowledge about retrofitting
- understand the constraints limiting their involvement with retrofit work
- understand their training needs and how best to deliver training
- explore the business opportunities with them.

Actions to increase the number of trades and construction workers with training and expertise to carry out retrofit work include:

- Increase new entrants by working with schools, colleges, and youth groups to motivate young locals to take up a trade or profession to meet the demand
- Work with local/regional education and training institutions and national retrofit specialists (e.g. BE-ST, Retrofit Academy) to increase affordable training opportunities, including skills upgrades and multi-skills training
- Create a local retrofit enterprise to serve the community
- Arrange study tours to share knowledge and skills with other rural and island communities
- Develop alternative accreditation procedures adapted to the home retrofit and small business contexts, while maintaining appropriate results e.g. umbrella accreditation, local inspectors
- Highlight the huge amount of retrofit work that needs doing, and thus the business opportunities
- Involve HIE and other agencies in relevant business support
- Acknowledge people already carrying out high quality retrofitting in the area (e.g. awards, commendations) and involve them in retrofit training, education and support
- Coordinate accommodation for contractors from outside the area who could not otherwise do the work.

6. Support self-help and community retrofit work

Skye, Raasay and Lochalsh have a tradition of self-reliance and self-help. Do-It-Yourself (DIY) enthusiasts, and those who are willing to learn how to improve their homes themselves, can be given advice and training, up to their skill level, to carry out simple repairs and improvements at lower cost than engaging a tradesperson. Training and mentoring could be given by local, experienced tradespeople, including those who are retired from active work. Given the very high incidence of draughts, damp and mould in our area, enhancing self-help draught protection and humidity management skills could make a big impact with little cost outlay.

A greater number of skilled DIYers would allow the professional workforce to concentrate on other homes thereby enabling more homes to be upgraded overall. In addition, our communities have shown great enterprise in commissioning buildings and other facilities, and this experience could transfer into helping local retrofit initiatives.

Support could include:

- Advice on techniques, materials and costs
- Advice on job assessments, sources of funding, negotiating regulations, and approvals
- Facilitating access to procurement supply lines
- Accreditation of work done
- Partnerships within community organisations
- Mentoring or buddy schemes
- Men's sheds.

Recommendations

7. Improve financing and reduce costs of retrofit work

At policy level there is a need to factor in the positive benefits of repairing and upgrading homes for physical and mental health, local economy, society and climate change, when setting budgets for home energy-efficiency support.

The survey respondents were frustrated and confused by diverse grant and loan schemes, which can have restricted eligibility and criteria that are difficult to meet, or offer remedies that are not appropriate for the particular situation. This confusion is not helped by pushy and partly misleading advertising.

Actions to improve financing of retrofit work could include:

- Improve local advice and support to access public funding, grants and loans
- Press for grant eligibility criteria and spending stipulations to allow wider and more flexible application of financial support, including a wider spectrum of incomes, building types, tenures and range of energy-efficiency solutions
- Identify other sources of funding such as:
 - Local sources, including businesses and community organisations
 - Exploration of place-based decarbonisation models that deliver solutions across all tenures within the community. These bring together both public and private enterprises that have shared visions and goals to leverage finance over extended periods and can reduce the financial burden on the homeowner or landlord.¹⁶
 - Private investment, as long as vision, values and priorities are shared.

The costs of retrofit work could be reduced by:

- Piloting bulk retrofits of groups of homes (see 10.4 above)
- Reducing the costs incurred by materials and interrupted supply lines, by coordinating and streamlining procurement processes, and bulk purchase of materials
- Piloting cheaper solutions e.g. air-to-air heat pumps, instead of underfloor or wet systems.

Cost information to help plan repair and upgrade work could be improved by:

- Developing frameworks for costing retrofit for different types of housing and problems
- Refining preliminary cost estimates generated from analysis of our survey results, as more accurate information on materials and labour costs, and market trends, become available from local retrofitting work
- Evaluating the benefit-costs of retrofit work in terms of health, increased employment and reduced carbon emissions.

¹⁶ <https://livingplaces.earth/f/why-should-we-tackle-the-complexity-of-place-based-approaches>

11. References

- ^a Ambitious step change outlined for greener and warmer buildings in Scotland (2023) <https://www.gov.scot/news/ambitious-step-change-outlined-for-greener-and-warmer-buildings-in-scotland/>
- ^b Fraser of Allander Institute, University of Strathclyde (2023) New income and poverty statistics for Scotland – initial thoughts. <https://fraserofallander.org/new-income-and-poverty-statistics-for-scotland-initial-thoughts>
- ^c Lochalsh and Skye Energy Advice Service (2023) Electricity Price Update – North Scotland – 11 November 2023
- ^d MacKay D, Campbell L & Scobbie M (2020) Lochalsh and Skye Housing Association stock survey 2017 – 2020
- ^e MacKay D & Scobbie M (2012) The Lochalsh & Skye Energy Advice Service 2010 – 2012
- ^f Bentayeb et al. (2013) Indoor air pollution and respiratory health in the elderly. *J Environ Sci Health A Tox Hazard Subs Environ Eng.* 2013;48(14):1783-9 <https://pubmed.ncbi.nlm.nih.gov/24007433/>
- ^g Parliamentary Office of Science and Technology (POST) (2023) POSTbrief54: Indoor Air Quality. UK Parliament. <https://post.parliament.uk/research-briefings/post-pb-0054/>
- ^h Russell M (2023) Damp and mouldy homes in Broadford. *West Highland Free Press*, 2655: 3
- ⁱ Kearsley J (2022) Report to prevent future deaths. https://www.judiciary.uk/wp-content/uploads/2022/11/Awaab-Ishak-Prevention-of-future-deaths-report-2022-0365_Published.pdf
- ^j MacKay D, M Scobbie & L Campbell (2016) The Energycarer Initiative: A Detailed Proposal (on behalf of the Highlands & Islands Housing Associations Affordable Warmth Group)
- ^k Scottish Health Service Costs (2017): Year ended 31 March 2017 <https://www.isdscotland.org/Health-Topics/Finance/Publications/2017-11-21/2017-11-21-Costs-Report.pdf>
- ^l Scottish Health Service Costs (2016): Year ended 31 March 2016 <https://www.isdscotland.org/Health-Topics/Finance/Publications/2016-11-22/2016-11-22-Costs-Report.pdf>
- ^m Changeworks (2023) A Perfect Storm: Fuel Poverty in Rural Scotland <https://www.changeworks.org.uk/wp-content/uploads/2023/09/A-Perfect-Storm-Fuel-Poverty-in-Rural-Scotland.pdf>
- ⁿ Carbon Neutral Islands Raasay (2023) Residents Survey. <https://raasay.com/carbon-neutral-islands/>
- ^o Sutherland Adaptive and Collaborative Communities Team (2021) Sutherland Affordable Warmth Survey & Fuel Poverty Summit Report. <https://highlandcpp.org.uk/wp-content/uploads/2023/08/Sutherland-Fuel-Poverty-Report-2021.pdf>
- ^p Scottish Government (2023) The Scottish House Condition Survey 2021: Key Findings. <https://www.gov.scot/publications/scottish-house-condition-survey-2021-key-findings/>
- ^q Scottish Rural Fuel Poverty Task Force (2016) An Action Plan to Deliver Affordable Warmth in Rural Scotland. <https://www.gov.scot/publications/action-plan-deliver-affordable-warmth-rural-scotland-proposed-scottish-rural/>
- ^r The Energy Advisory Service (2014) Fuel Poverty Report 2014. Comhairle nan Eilean Siar. <https://tighean.co.uk/wp-content/uploads/2020/07/TIG-Fuel-Poverty-Report-2014.pdf>
- ^s Sustainable Uist (March 2012) Uist Hard to Treat Housing Project



Healthy Homes for Skye, Raasay & Lochalsh

www.HealthyHomesSL.co.uk

