



The cost of poor housing in England by tenure

2023 Briefing paper: Tenure-based analysis

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Executive Summary

For the first time, BRE is reporting on the cost of poor housing by tenure. This tenure-based research uses the same methodology developed for our previous research on the cost burden to the National Health Service (NHS) of the poorest quality homes. The findings for this report use 2018 and 2019 combined year (reference date 2019) English Housing Survey data and the NHS treatment costs used in our previous research inflated to 2019 prices.

'Poor housing' is defined as 'a dwelling that fails to meet the statutory minimum standard of housing in England', i.e., a dwelling that contains one or more Category 1 Hazards under the Housing Health and Safety Rating System (HHSRS). The HHSRS, used in environmental health assessments and enforcement, identifies 29 housing hazards which may pose a risk to the health and safety of occupants. If a hazard is a serious and immediate risk to a person's health and safety, this is known as a Category 1 hazard. The English Housing Survey, used for this research, assesses 26 of the 29 hazards.

In 2019, around 1.6 million (10%) owner occupied homes had a Category 1 hazard that, if left unmitigated, would result in an annual cost to the NHS of £783 million. The average (mean) cost to make an individual home safer was £3,434. If the total investment required to mitigate all these hazards occurred at once then, based only on the saving to the NHS for first year treatment costs, the investment would pay back in 7 years.

Around 619,000 (13%) private rented homes had a Category 1 hazard that, if left unmitigated, would result in an annual cost to the NHS of £290 million. The average cost to make these homes safer was £4,039. If the total investment required to mitigate all these hazards occurred at once then, based only on the saving to the NHS for first year treatment costs, the investment would pay back between 8 and 9 years.

Around 217,000 (5%) social rented homes had a Category 1 hazard that, if left unmitigated, would result in an annual cost to the NHS of £65 million. The average cost to make these homes safer was £3,784. If the total investment required to mitigate all these hazards occurred at once then, based only on the saving to the NHS for first year treatment costs, the investment would pay back between 12 and 13 years.

The two most prevalent Category 1 hazards in the English housing stock are excessive cold and falls associated with stairs.

Excessive cold

Tenure	Number of homes with Category 1 excessive cold hazard	Percentage of homes with Category 1 excessive cold hazard
Owner occupied	518,168	3.3%
Private rented	178,541	3.8%
Social rented	22,615	0.6%

In both owner occupied and privately rented homes, the largest poor-housing-related cost burden to the NHS is ill-health caused by cold, experienced by people living in very energy inefficient homes. A home with an HHSRS Category 1 excessive cold hazard aligns roughly with an Energy Performance Certificate (EPC) Energy Efficiency Rating band of F or G.

Around 518,000 (3%) of owner occupier and 179,00 (4%) of private rented homes are F or G banded. Raising the energy efficiency of these homes is critical to health and wellbeing, in situations where homes are cold either because they do not have adequate heating systems to provide required warmth or where homes are so inefficient that residents cannot afford to heat them.

Since 1 April 2020, private landlords have not been allowed to let or continue to let properties covered by the Domestic Minimum Energy Efficiency Standard (MEES) regulations if they have an EPC rating below E, unless they have a valid exemption in place. If a landlord cannot improve the rental property to this rating for £3,500 or less, the landlord can register an 'all improvements made' exemption.

The average cost to improve homes so they are no longer excessively cold (i.e., raise above an EPC rating band of F) is £6,690 and £6,835 for homeowners and private landlords respectively. If private landlords adhered strictly to the MEES price cap, £3,500 would remedy between 30% to 40% of these excessively cold homes.

Falls associated with stairs

Tenure	Number of homes with Category 1 excessive falls hazard	Percentage of homes with Category 1 falls associated with stairs hazard
Owner occupied	682,763	4.4%
Private rented	251,348	5.3%
Social rented	80,262	2.0%

The risks of falls associated with stairs continues to be the most common cause of poorer housing. Around 1 million (4%) homes across all tenures have a Category 1 fall hazard. Falls are a common, but often overlooked, cause of injury. While many falls will not result in a serious injury, there is always a risk that a fall could lead to broken bones, or worse. Falls hazards are often relatively inexpensive to prevent, typically costing under £500. Mitigating these hazards, and other types of risks from falls, provides a relatively quick return for the NHS.

Overall costs of tackling poor housing

Our research confirms that, while the cost to make a home safe can vary considerably, simple home safety measures such as installing handrails on dangerous stairs or installing hard-wired smoke detectors are relatively inexpensive but very cost-effective.

We understand there are challenges for many homeowners, private and social landlords in tackling our poorest housing; these are well publicised and not repeated in this report. One key challenge is understanding where poor housing exists, as it can often remain under the radar. Many people may be unaware of the existence of a serious hazard in their home and how it may have an impact on their health, safety and wellbeing. Once identified, finding the money to mitigate the hazard may also be a challenge, especially for poorer homeowners.

The data in this report suggests that, given the direct savings to the NHS, let alone wider benefits, there is a strong case for government investment in the improvements required to mitigate Category 1 hazards. There is also a strong case for investment in additional data-gathering on the homes where the hazards exist.

Previous BRE research has looked at the cost-benefit of earlier improvement programmes. Since the early 2000s, the Decent Homes Standard has set the minimum standards that social homes are required to meet. The earlier BRE research looked at social sector homes, examining how the improvement and remedial work required to meet specified standards of decency resulted in a reduction in serious health and safety hazards.

The principal period of government investment in social housing to bring homes to the Decent Homes Standard was from 2001 to 2010: our research estimated that total savings to the NHS as a result of improving social sector homes between 2001 and 2010 was £392 million per annum¹.

Forthcoming: 30-year cost-benefit analysis

This report's tenure-based analysis demonstrates the critical importance of housing to health and wellbeing and shows that small investment costs can result in considerable reductions in the most serious health and safety hazards, as well as generating savings to the NHS. The wider benefits to society of improving the poorest housing go well beyond those that just relate to the health of occupants. They include reduced energy costs and carbon emissions, higher residual asset values, and local job creation opportunities. These wider benefits will be explored in a further piece of BRE Cost of Poor Housing research to be issued later in 2023 providing a 30-year cost benefit analysis, looking over 30 years, of the costs and benefits of improving the poorest homes.

¹ Garrett H, Davidson M, Roys M, Nicol S and Mason V, Quantifying the health benefits of the Decent Homes programme, BRE FB64. Bracknell, IHS BRE Press, 2014

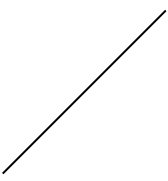


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Introduction

In 2021 BRE published 'The cost of poor housing in England' briefing paper² to update its earlier 2016 research on 'The full cost of poor housing to the NHS'³. The 2021 briefing paper was widely quoted in studies that look at the relationship between health and housing and the benefits of improving the worst quality housing in England. The 2021 research found that the annual cost to the NHS of leaving people in the poorest housing was around £1.4 billion. In addition, when wider societal costs are included, it was estimated that the full cost to society of poor housing was £18.5 billion per annum.

We are building on our 2021 publication in two ways.

- Firstly, this report which, for the first time, investigates the cost of poor housing (COPH) in each tenure
- Secondly, a 30-year cost benefit analysis on the cost of all poor housing to the NHS and wider society, to be published later in 2023.

The methodology for analysing the cost of poor housing by tenure replicates that used in our 2016 and 2021 publications and so will not be described in full in this report.

We have applied this methodology to owner occupied, private rented and social rented homes using the latest publicly available English Housing Survey (EHS) data (2018 and 2019 combined years, reference date 2019) on health and safety hazards in the home and costs to mitigate them. In addition, NHS treatment cost data has been updated to 2019 prices.

This new briefing paper summarises the cost of poor housing methodology before discussing the main findings for each tenure. It focuses on the cost to treat falls associated with stairs and excessively cold homes⁴, the two most common causes of poor housing. The concluding section provides a case study of poor housing due to the serious risk of falling on stairs and the costs and benefits of making the home safer.

Our research continues to demonstrate the critical importance of housing to health and wellbeing and shows that small investment costs can result in considerable reductions in the most serious health and safety hazards as well as generating savings to the NHS. The wider benefits to society of improving the poorest housing go well beyond those that just relate to the health of their occupants. They include reduced energy costs and carbon emissions, higher residual asset values, and local job creation opportunities. These wider benefits will be explored in greater detail in our forthcoming 30-year cost benefit analysis.

² The 2021 Briefing paper used the English Housing Survey 2017 and 2018 combined year data, reference date 2018.

³ Roys M, Nicol S, Garrett H and Margolis S (2016), The full cost of poor housing, BRE FB 81. Bracknell, IHS BRE Press

⁴ For the EHS and this research, a home is excessively cold where the energy efficiency (SAP rating) is below 37.6 (roughly equivalent to an Energy Efficient Rating Band of F or G)

Methodology

Poor housing

'Poor housing' can be defined in many ways, but for the BRE cost of poor housing research it has always been defined as 'a dwelling that fails to meet the statutory minimum standard of housing in England', i.e., a dwelling that contains one or more Category 1 Hazards under the Housing Health and Safety Rating System (HHSRS). This is the same as the minimum condition measure of the Decent Homes Standard⁵.

In 2019, the EHS estimated that 2.4 million (10%)⁶ of England's homes had at least one Category 1 hazard and were considered to be 'poor'. The most common hazards identified in every tenure were those relating to falls on stairs and excessive cold.

Cold homes exacerbate a range of health problems such as chronic obstructive pulmonary disease (COPD) and arthritis, as well as increasing the risk of an acute episode like a stroke or heart attack. Conversely, some hazards are so rare (such as the risk from explosions) that none were picked up in the 2019 EHS.

For each tenure, the BRE cost of poor housing model uses the following data, which is presented in Tables 2, 3 and 4.

1. The number of homes with each type of Category 1 hazard and the total number of homes with at least one of these hazards⁷.
2. The average and total repair cost of making these homes acceptable (so that the risk of harm is no higher than average), modelled using EHS data.
3. The costs to the NHS of leaving the hazards unmitigated.
4. The NHS payback period of mitigating the hazards now.

Data on the HHSRS Category 1 hazards is collected by the English Housing Survey (EHS). Where a Category 1 hazard is identified in the EHS, the surveyor reports the work that would be required to mitigate the risk of harm so that, where feasible, the risk is no worse than the national average for the age and type of dwelling. This work is costed through the EHS 'cost to make safe' model at 2019 prices⁹.

⁵ [English Housing Survey: technical advice - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

⁶ [English Housing Survey 2019 to 2020 Headline report, Annex Table 2.4 English Housing Survey 2019 to 2020: headline report - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

⁷ Homes can have multiply Category 1 hazards; this is the number of homes with one or more Category 1 hazards

⁸ The HHSRS likelihood of harm and harm outcome scores available from the EHS are also used in the cost of poor housing model.

⁹ [English Housing Survey: technical advice - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

To estimate the cost of poor housing to the NHS, the research uses data from publicly available NHS treatment cost data, predominantly the National Schedule of Reference Costs for 2017-18 (NHS Trusts and NHS Foundation Trusts) which have been inflated to 2019 prices¹⁰. Every health incident in the home will have a unique outcome. The cost of poor housing method summarises and simplifies this to provide representative costs for four types of outcomes considered for an HHSRS Category 1 hazard assessment (Table 1). These outcomes range in their seriousness and therefore required cost of treatment.

Table 1: Representative cost to the NHS values

Cost value	Class I (£)	Class II (£)	Class III (£)	Class IV (£)
Representative cost (2019)	127,250	35,630	5,090	204

For each tenure, the payback period is estimated by dividing the cost of remedial work by the savings to the NHS if the hazard is mitigated. For example, if all remedial work was undertaken now to Category 1 hazards in owner occupied homes, it is estimated that it would pay back the NHS treatment costs alone within 7 to 8 years.

The data in this report suggests that, given the direct savings to the NHS, let alone wider benefits, there is a strong case for government investment in the improvements required to mitigate Category 1 hazards. There is also a strong case for investment in additional data-gathering on the homes where the hazards exist.

¹⁰ The inflation factor used Bank of England inflation calculator- <https://www.bankofengland.co.uk/monetary-policy/inflation/inflation-calculator>

Owner occupied homes

Owner occupation is the largest tenure, representing 64% of all homes (15.6 million) in 2018-19. 20% of homes were built before 1919 and a further 18% built between 1919 and 1945. Some 10% of homes have been built since 2002. Most of the stock comprises of houses (91%).¹¹

Around 1.6 million (10%) owner occupied homes had a Category 1 hazard that, if left unmitigated, would result in an annual cost to the NHS of £783 million, with the largest share of this cost due to treating ill health arising from living in an excessively cold home, as shown in Table 2. The most prevalent cause of poor housing (affecting 4% of owner occupier homes) was related to falls on stairs, representing the second highest cost to the NHS of £145 million per annum.

It is important to bear in mind that the average age of all owner occupiers is 58 years (68 years for outright owners)¹². Over a third (36%) of homeowners are aged 65 years or over¹³. For both excessive cold and falls on the stairs hazards, older people (aged 65 and 60 years respectively) are the most vulnerable age group.

Figure 1 shows the distribution of the costs to make owner occupied homes safe and how these costs are not evenly distributed, a pattern also observed for the rented tenures. Our other key findings are:

- The average cost to mitigate all hazards in owner occupied homes was £3,434.
- For less than £1,000, 40% of all poor housing could be remedied.
- 60% of poor housing could be remedied with an investment of around £2,100.
- The average cost to treat excessively cold homes was £6,690 but the most expensive 10% of cold homes required an investment of between £11,225 and £35,800.
- For around £2,600 some 40% of excessively cold homes could be treated.
- Half of the most serious risks of falls on stairs hazards could be mitigated for less than £500.
- If all hazards were mitigated now, the payback to the NHS would be realised in around 7 years.

Local housing authorities have a general duty to monitor and carry out appropriate enforcement action, should they become aware of unsatisfactory housing conditions in their area. However, the most serious health and safety hazards in owner occupied homes often remain 'under the radar' as many councils do not have the funding capacity (or the data) to identify poorer housing in this tenure. Even where a serious hazard is identified that poses a risk to either occupants or others in the vicinity of the dwelling, in most instances owners would not be required to carry out work to their own home.

There are also challenges and barriers to incentivising owners to remedy serious defects to their home, including undertaking energy improvements. These are well documented in other research and not covered in detail here, but include cost, concern about upheaval to the home, lack of knowledge of the work required and its potential benefits, and lack of qualified professionals to undertake retrofit work.

¹¹ EHS 2019 to 2020 Headline report, <https://www.gov.uk/government/statistics/english-housing-survey-2019-to-2020-headline-report>, Section 2, housing stock tables, Annex Table 2.1

¹² EHS_19-20_Home_ownership_report_FINAL.pdf (publishing.service.gov.uk), Annex Table 1.2

¹³ EHS 2019 to 2020 Headline report, <https://www.gov.uk/government/statistics/english-housing-survey-2019-to-2020-headline-report>, Section 1, household tables, Annex Table 2.1

60% of poor housing could be remedied with an investment of around £2,100

£2,100

Half of the most serious risks of falls on stairs hazards could be mitigated for less than £500

£500

If all hazards were mitigated now, the payback to the NHS would be realised in around 7 years

7 years

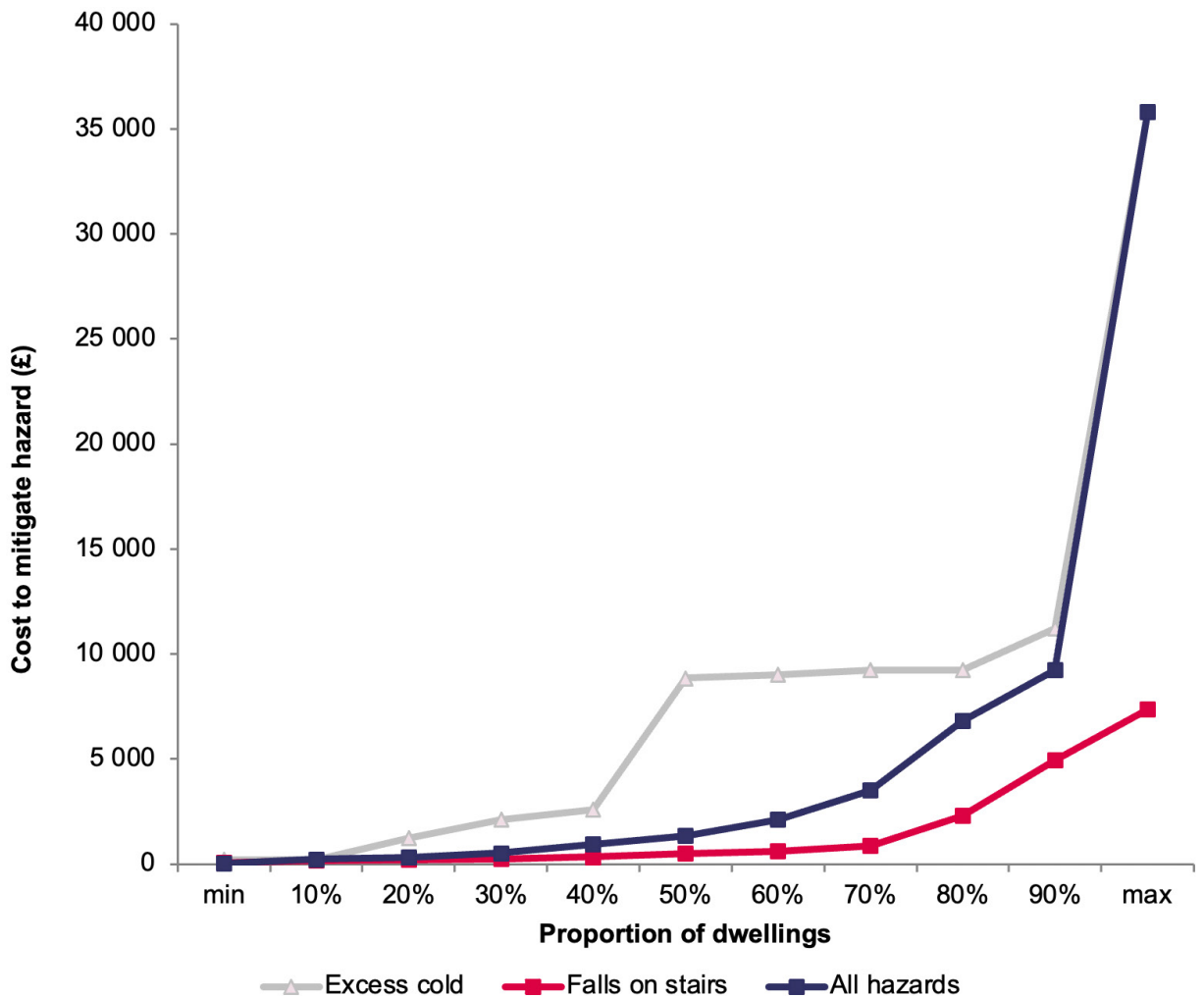
Table 2: Summary of costs and benefits, with Category 1 hazards ordered by NHS savings per annum if the hazard was mitigated, in owner occupied homes, 2019

Hazard	Number of Category 1 hazards	Average cost per dwelling (£)	Total cost to mitigate hazard (£)	Savings to the NHS per annum if hazard mitigated (£)	Payback (years)
Excess cold	518 168	6 690	3 466 741 060	382 936 715	9,05
Falls on stairs	682 763	1 377	940 130 857	145 118 074	6,48
Falls on the level	259 669	1 082	280 965 256	77 567 256	3,62
Hot surfaces	31 820	1 749	55 648 225	72 878 988	0,76
Falls between levels	150 785	1 454	219 305 695	43 227 978	5,07
Fire	77 356	2 461	190 336 914	12 376 709	15,38
Lead	56 879	2 141	121 764 618	12 334 847	9,87
Radon	66 595	1 446	96 283 265	7 855 429	12,26
Damp and mould growth	13 243	2 365	31 323 796	6 899 558	4,54
Collision and entrapment	11 102	741	8 226 248	4 816 089	1,71
Food safety	17 963	3 279	58 898 925	3 806 365	15,47
Pests (Domestic hygiene)	11 121	3 766	41 876 719	2 304 415	18,17
Entry by intruders	4 510	1 150	5 185 539	2 241 873	2,31
Ergonomics	9 403	633	5 953 769	2 021 809	2,94
Sanitation (Personal hygiene)	9 403	513	4 822 891	1 993 854	2,42
Structural collapse	9 199	2 821	25 950 884	1 449 700	17,90
Carbon monoxide	5 403	638	3 448 423	1 029 125	3,35
Noise	1 653	1 456	2 407 278	822 717	2,93
Overcrowding	2 405	20 561	49 448 598	330 075	149,81
Excess heat	2 439	633	1 544 320	326 546	4,73
Electrical problems	1 011	112	112 948	215 552	0,52
Falls - baths	0	0	0	0	0
Water supply	0	0	0	0	0
Uncombusted fuel gas	0	0	0	0	0
Lighting	0	0	0	0	0
Explosions	0	0	0	0	0
Total with any Category 1 hazard	1 610 899	3 434	5 610 376 229	782 553 674	7,17

Table 2 Notes:

1. The total sum of all dwellings with Category 1 hazards will be less than the sum of the individual hazards as some dwellings will have more than one Category 1 hazard.
2. The total sum required to remedy all Category 1 hazards is less than the total number of Category 1 hazards multiplied by the average costs; this is because the modelling avoids the double counting of costs where repair work/energy improvements mitigate more than one hazard.
3. Sample sizes for some Category 1 hazards are very small and are included for quantification purposes only. For some, like explosions, no cases were identified in the survey. There will, therefore, be a degree of uncertainty around these estimates because any calculations relating to cost benefits and payback periods are very sensitive to the mix of hazards present in England.
4. Three of the 29 HHSRS hazards are not measured in the EHS (asbestos, biocides, volatile organic compounds) because they require an intrusive inspection, which is not practicable in a sample survey.

Figure 1: Decile costs to mitigate Category 1 hazards, excess cold, falls on stairs and all Category 1 hazards, in owner occupied homes, 2019



¹ The HHSRS likelihood of harm and harm outcome scores are also used in the COPH model.

Private rented homes

Private rented homes represent around 19% of homes (4.7 million)¹⁴ but comprised around a quarter of all poor housing (25%) and its associated cost to the NHS (26%). Around a third of homes (32%) in the private rented sector were built before 1919¹⁵, and so are more likely to suffer from more serious disrepair and, in terms of retrofitting options, tend to be more problematic (including more expensive) to treat. Some 40% of private rented homes are flats; including 11% of converted flats¹⁶ which commonly date from pre 1919 and are more likely to have Category 1 hazards compared with all other types of dwellings¹⁷.

Private renters tend to be younger than homeowners, with just 8% aged 65 years or over¹⁸. There was, however, an increase in the number and proportion of people aged 55-64 living in the private rented sector, from 7% in 2009-10 to 10% in 2019-20 and an increase in the number of households with dependent children (by about 547,000) over the same period¹⁹. Older people and young children are the most vulnerable age group for many Category 1 hazards assessed by the HHSRS.

Around 620,000 private rented homes had one or more Category 1 hazard, representing a cost to the NHS of around £290 million per annum. Category 1 excess cold hazards resulted in a cost burden to the NHS of around £1.2 billion per annum. Falls on the stairs were, however, the most common hazard, with an annual cost to the NHS of around £271 million (Table 3). Our other key findings are:

- The average cost to make all poor housing safer was £4,039.
- The average repair cost to mitigate excessively cold homes was £6,835.
- Around half (50%) of poor housing could be removed with an investment of under £1,176. Conversely the cost to make homes safe was between £10,000 and £46,343 for the most expensive 10% of homes.
- 70% of the most dangerous stairs could be made safer for under £700.
- If all hazards were mitigated now, the payback to the NHS would be realised between 8 and 9 years.

Improving the energy efficiency of excessively cold homes would realise notable NHS cost savings. On average, an investment of £6,835 would be required. Under the current Minimum Energy Efficiency Standards (MEES), landlords can claim an exemption if work to raise the EPC rating of the dwelling to Band E (the approximate threshold for excess cold) exceeds £3,500 including VAT²⁰. This £3,500 ceiling therefore restricts the scope of the MEES regulations.

¹⁴ EHS 2019 to 2020 Headline report, <https://www.gov.uk/government/statistics/english-housing-survey-2019-to-2020-headline-report>, Section 2, housing stock tables, Annex Table 2.1

¹⁵ EHS 2019 to 2020 Headline report, <https://www.gov.uk/government/statistics/english-housing-survey-2019-to-2020-headline-report>, Section 2, housing stock tables, Annex Table 2.1

¹⁶ EHS 2019 to 2020 Headline report, <https://www.gov.uk/government/statistics/english-housing-survey-2019-to-2020-headline-report>, Section 2, housing stock tables, Annex Table 2.1

¹⁷ English Housing Survey 2017: stock condition - GOV.UK (www.gov.uk), Annex Table 2.9

¹⁸ FA3101_demographic_and_economic_characteristics_of_social_and_privately_renting_households.ods (live.com)

¹⁹ EHS 2019 to 2020 Headline report, <https://www.gov.uk/government/statistics/english-housing-survey-2019-to-2020-headline-report>, Section 1, household tables, Annex Table 1.4.

²⁰ Domestic private rented property: minimum energy efficiency standard - landlord guidance - GOV.UK (www.gov.uk)

Figure 2 shows that half (50%) of these cold homes require an investment of £9,000 or more, while conversely roughly a third (30%) require £2,175 or less.

The private rented sector has the largest number of homes (almost 33,000) that are classified as poor housing due to the most serious damp and mould growth hazards identified by the EHS. Where damp and mould growth is evident, the EHS surveyor will assess threats to health associated with increased prevalence of house dust mites and mould or fungal growths resulting from the dampness and/or high humidity. Their assessment includes threats to mental health and social wellbeing which may be caused by living with the presence of damp.

Many of the common barriers in improving energy efficiency apply to some private landlords: affordability of higher cost improvement measures such as solid wall insulation and availability of suitable qualified installers. For some landlords, there is a potential 'split incentive' whereby landlords are responsible for the cost of energy efficiency improvements, but their tenants are the main beneficiaries, particularly if landlords do not anticipate an equivalent monetary rise in the value of their property.

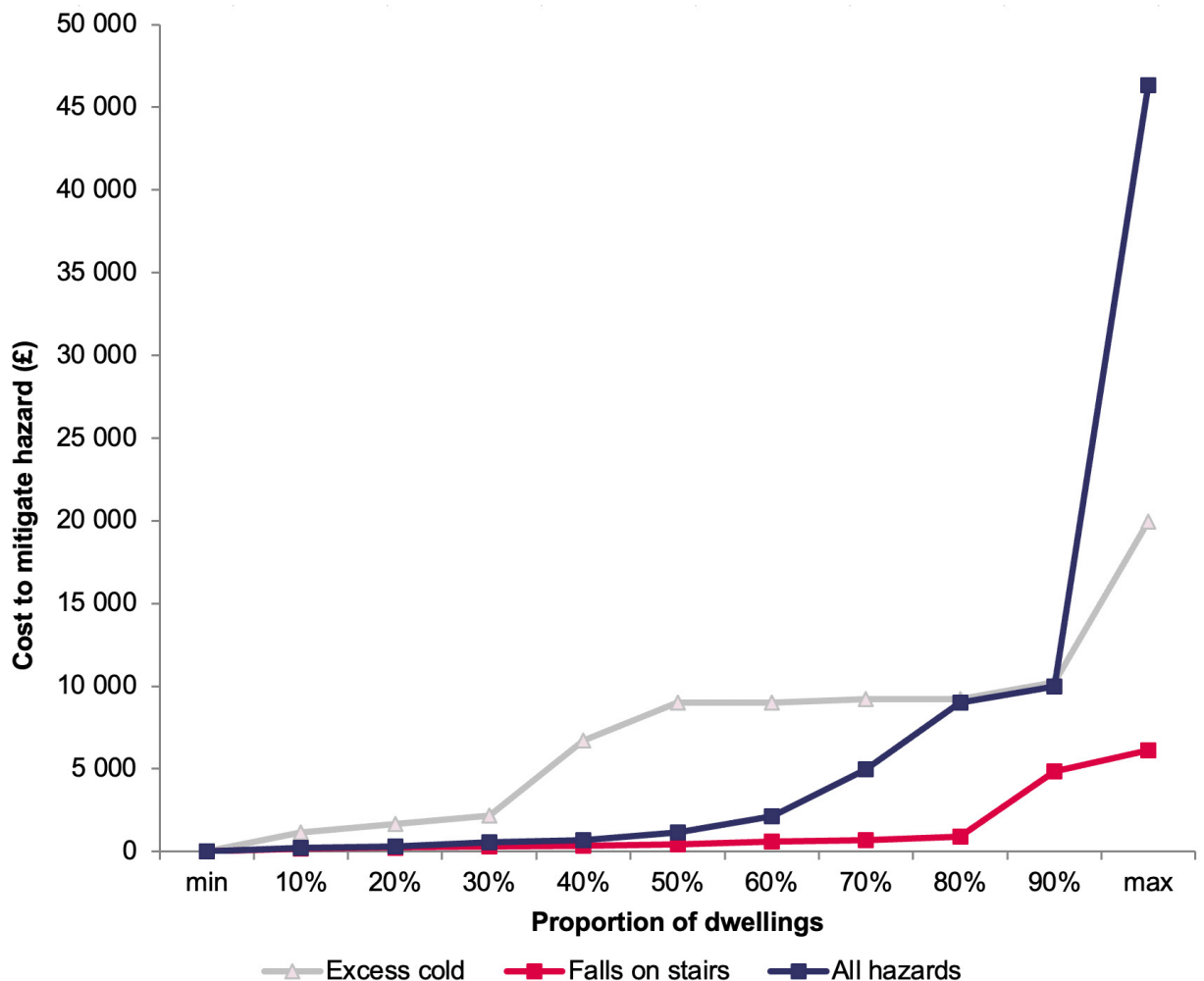
Table 3: Summary of costs and benefits, with Category 1 hazards ordered by NHS savings per annum if the hazard was mitigated, in private rented homes, 2019

Hazard	Number of Category 1 hazards	Average cost per dwelling (£)	Total cost to mitigate hazard (£)	Savings to the NHS per annum if hazard mitigated (£)	Payback (years)
Excess cold	178 541	6 835	1 220 371 478	148 952 992	8,19
Falls on stairs	251 348	1 077	270 714 667	53 422 839	5,07
Falls on the level	99 796	717	71 532 331	25 801 140	2,77
Falls between levels	44 552	1 139	50 766 650	23 439 689	2,17
Damp and mould growth	32 701	6 209	203 035 223	17 037 110	11,92
Fire	44 412	5 540	246 033 502	3 988 694	61,68
Hot surfaces	12 432	2 424	30 141 139	3 491 149	8,63
Entry by intruders	6 433	1 371	8 818 360	3 197 776	2,76
Lead	10 886	2 145	23 348 169	2 360 751	9,89
Overcrowding	16 695	20 470	341 751 103	2 291 308	149,15
Radon	14 274	1 442	20 578 685	1 683 736	12,22
Electrical problems	7 391	1 387	10 252 000	1 575 813	6,51
Collision and entrapment	3 614	742	2 679 811	1 567 767	1,71
Pests (Domestic hygiene)	3 750	2 712	10 169 818	777 049	13,09
Structural collapse	2 274	2 435	5 536 565	358 367	15,45
Ergonomics	1 315	633	832 629	282 748	2,94
Excess heat	692	643	444 626	92 649	4,80
Food safety	0	0	0	0	0
Sanitation (Personal hygiene)	0	0	0	0	0
Carbon monoxide	0	0	0	0	0
Noise	0	0	0	0	0
Falls - baths	0	0	0	0	0
Water supply	0	0	0	0	0
Uncombusted fuel gas	0	0	0	0	0
Lighting	0	0	0	0	0
Explosions	0	0	0	0	0
Total with any Category 1 hazard	619 409	4 039	2 517 006 756	290 321 576	8,67

Table 3 Notes:

1. The total sum of all dwellings with Category 1 hazards will be less than the sum of the individual hazards as some dwellings will have more than one Category 1 hazard.
2. The total sum required to remedy all Category 1 hazards is less than the total number of Category 1 hazards multiplied by the average costs; this is because the modelling avoids the double counting of costs where repair work/energy improvements mitigate more than one hazard.
3. Sample sizes for some Category 1 hazards are very small and are included for quantification purposes only. For some, like explosions, no cases were identified in the survey. There will, therefore, be a degree of uncertainty around these estimates because any calculations relating to cost benefits and payback periods are very sensitive to the mix of hazards present in England.
4. Three of the 29 HHSRS hazards are not measured in the EHS (asbestos, biocides, volatile organic compounds) because they require an intrusive inspection, which is not practicable in a sample survey.

Figure 2: Decile costs to mitigate Category 1 hazards, excess cold, falls on stairs and all Category 1 hazards, in private rented homes, 2019



¹ The HHSRS likelihood of harm and harm outcome scores are also used in the COPH model.

Social rented homes

The social rented sector comprises around 17% of English homes (around 4.1 million dwellings²¹), but its share of all poor housing in England (9%) and share of total costs of poor housing to the NHS (6%) is much lower.

- Around 217,000 social rented homes had the most serious HHSRS hazards representing a total cost to the NHS of around £65 million per annum.
- The average cost to make homes safe from these hazards was £3,784.
- If all hazards were mitigated now, the payback to the NHS would be realised between 12 and 13 years.

Unlike the private sector, Category 1 falls on stairs hazards were both the most common hazard (around 80,300) and incurred the largest cost burden to the NHS (around £17 million per annum), Table 4. Around 22,600 homes (less than 1%) were excessively cold.

The age and dwelling type profile of social rented homes is notably different from those in the private sector; the former tend to be of more modern construction (a smaller proportion built before 1945) and more likely to comprise purpose-built flats which offer less risk of serious falls on stairs and on the level. In addition, ongoing housing and maintenance programmes by social landlords, and previous substantial investment e.g., through Decent Homes Standard funding, have resulted in notable improvements to the social housing stock, particularly in relation to energy efficiency.

It is worth noting that over half (54%) of social renters had one or more household members with a long-term illness or disability. The proportions for private renters, and owner occupiers were 25% and 31% respectively. Long term illness is related to household age; around a quarter (26%) of social renters were aged 65 years or over²².

The distribution of the costs to mitigate excess cold and all types of poor housing looks different for social housing. While 80% of poor social housing can be remedied for less than £4,500, costs rise sharply for the remaining Category 1 hazards. This sharp rise is mainly due to more than 10% of poor housing having an overcrowding hazard. The average cost to mitigate overcrowding was around £20,400 across all tenures, a cost that enables an extension of living space to be made. However, the remedy for overcrowding for social renters is normally a transfer to larger accommodation offered by the landlord.

Despite social housing generally being of a higher standard than the private sector stock, social landlords face many challenges in enabling continuous stock improvement, including the mitigation of poorer housing where it exists. As with other tenures, some serious hazards can remain 'under the radar' as not all tenants will be aware or will report serious defects in their home. Like private landlords and owner occupiers, social landlords also face the challenge of finding suitably qualified retrofitters and face pressure on their capital expenditure.

²¹ [2019-20_EHS_Headline_Report_Section_2_Stock_Annex_Tables.xlsx \(live.com\)](#)

²² EHS 2019 to 2020 Headline report, <https://www.gov.uk/government/statistics/english-housing-survey-2019-to-2020-headline-report>, Section 1, household tables, Annex Table 1.3.

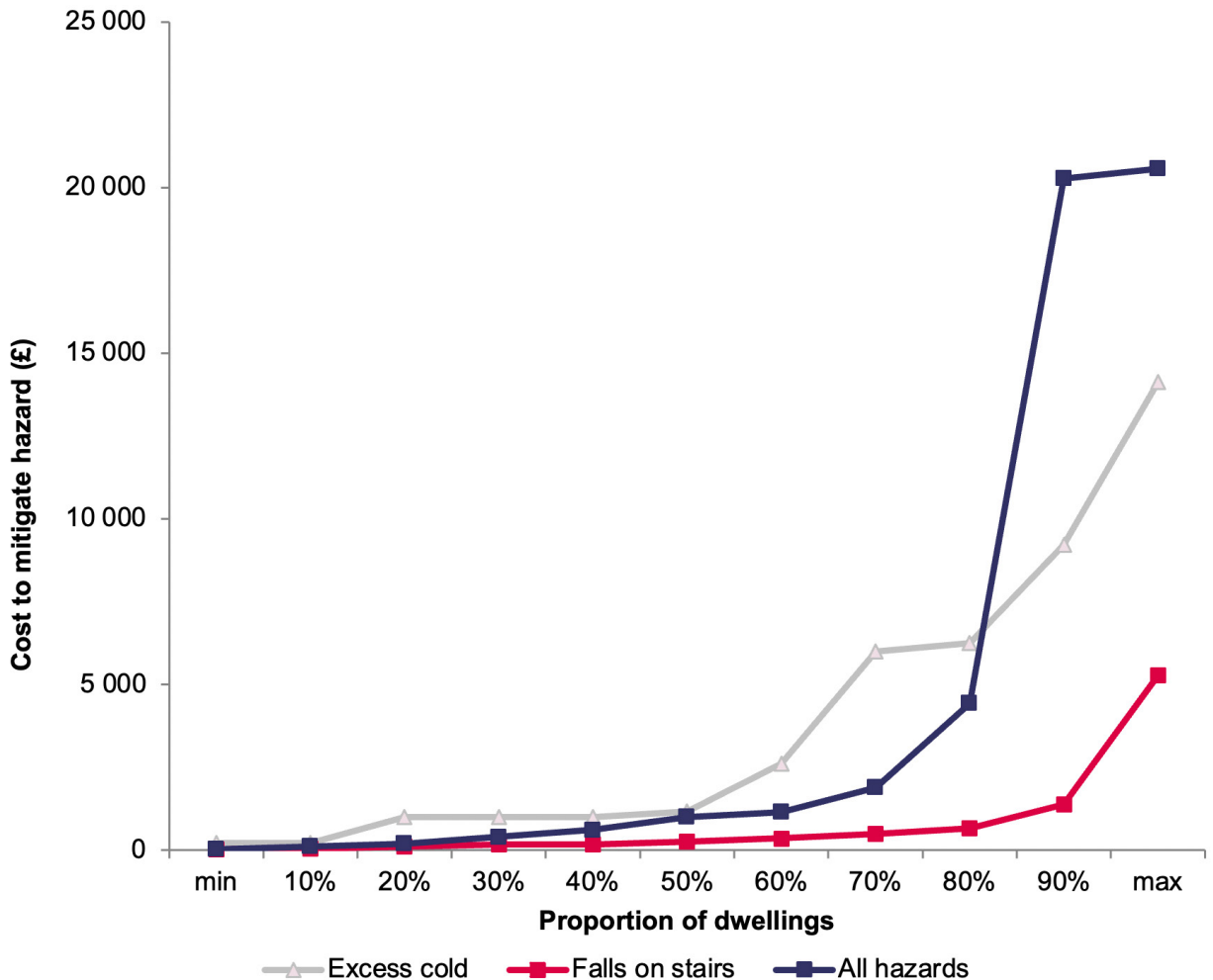
Table 4: Summary of costs and benefits, with Category 1 hazards ordered by NHS savings per annum if the hazard was mitigated, in social rented homes, 2019

Hazard	Number of Category 1 hazards	Average cost per dwelling (£)	Total cost to mitigate hazard (£)	Savings to the NHS per annum if hazard mitigated (£)	Payback (years)
Falls on stairs	80 262	618	49 566 227	17 059 312	2,91
Excess cold	22 615	3 800	85 936 615	11 673 099	7,36
Falls on the level	40 616	1 114	45 251 685	10 500 813	4,31
Damp and mould growth	18 764	985	18 481 721	9 775 980	1,89
Falls between levels	10 410	1 907	19 850 127	5 434 518	3,65
Overcrowding	26 340	20 413	537 683 439	3 615 038	148,74
Sanitation (Personal hygiene)	9 862	1 043	10 281 329	2 091 182	4,92
Pests (Domestic hygiene)	5 634	2 236	12 597 250	1 167 438	10,79
Radon	8 628	1 449	12 506 215	1 017 744	12,29
Fire	5 150	1 902	9 795 073	902 174	10,86
Electrical problems	2 744	4 733	12 987 077	585 040	22,20
Hot surfaces	1 868	2 427	4 533 072	524 571	8,64
Noise	1 030	1 478	1 522 138	512 643	2,97
Structural collapse	2 316	424	981 459	364 986	2,69
Food safety	544	2 883	1 568 131	115 274	13,60
Lead	435	2 152	936 317	94 335	9,93
Entry by intruders	0	0	0	0	0
Collision and entrapment	0	0	0	0	0
Carbon monoxide	0	0	0	0	0
Ergonomics	0	0	0	0	0
Falls - baths	0	0	0	0	0
Excess heat	0	0	0	0	0
Water supply	0	0	0	0	0
Uncombusted fuel gas	0	0	0	0	0
Lighting	0	0	0	0	0
Explosions	0	0	0	0	0
Total with any Category 1 hazard	217 370	3 784	824 477 875	65 434 145	12,60

Table 4 Notes:

1. The total sum of all dwellings with Category 1 hazards will be less than the sum of the individual hazards as some dwellings will have more than one Category 1 hazard.
2. The total sum required to remedy all Category 1 hazards is less than the total number of Category 1 hazards multiplied by the average costs; this is because the modelling avoids the double counting of costs where repair work/energy improvements mitigate more than one hazard.
3. Sample sizes for some Category 1 hazards are very small and are included for quantification purposes only. For some, like explosions, no cases were identified in the survey. There will, therefore, be a degree of uncertainty around these estimates because any calculations relating to cost benefits and payback periods are very sensitive to the mix of hazards present in England.
4. Three of the 29 HHSRS hazards are not measured in the EHS (asbestos, biocides, volatile organic compounds) because they require an intrusive inspection, which is not practicable in a sample survey.

Figure 3: Decile costs to mitigate Category 1 hazards, excess cold, falls on stairs and all hazards, in social rented homes, England 2019

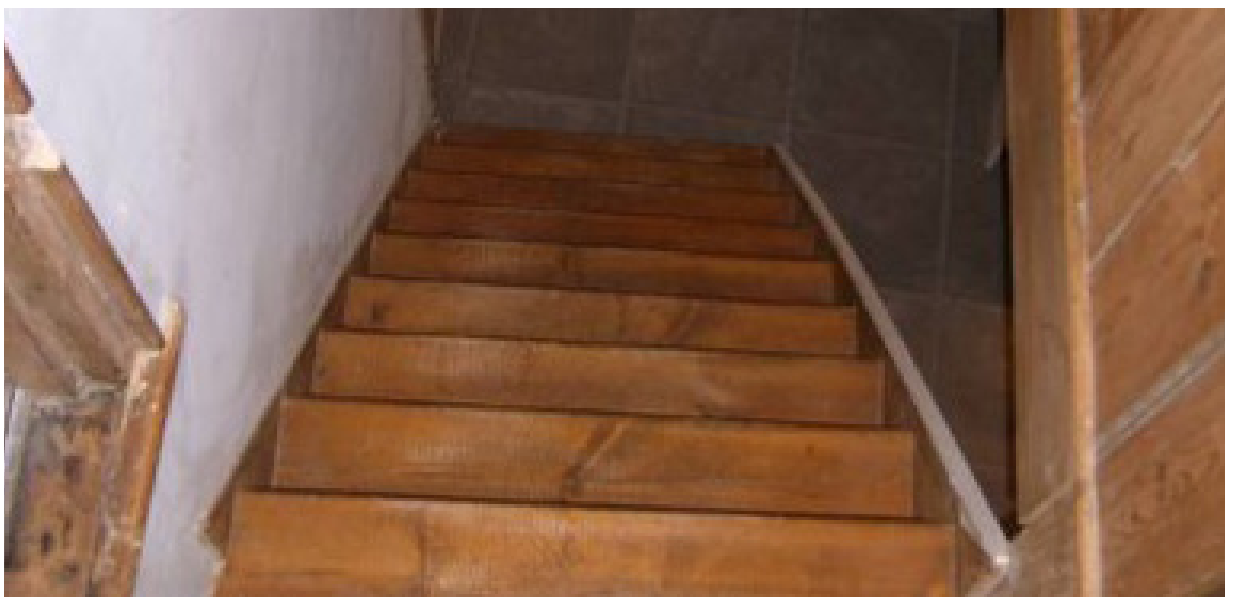
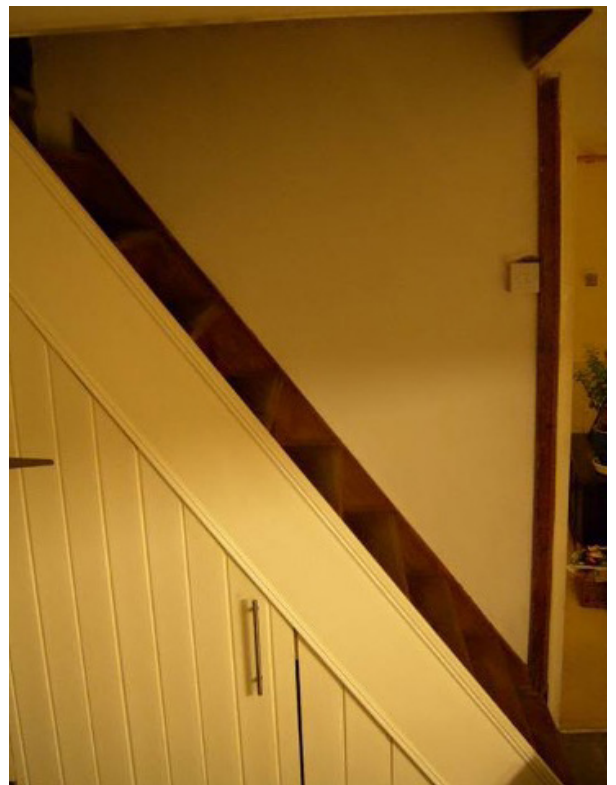


¹ The HHSRS likelihood of harm and harm outcome scores are also used in the COPH model.

Case study

This case study has been put together based on the typical characteristics of a home with Category 1 hazards, informed by the data collected from homes and households in the English Housing Survey process. The case study should not be understood as referring to a particular property.

This home is a small owner-occupied Victorian terraced house. It is situated on a corner plot and is significantly wider at the front than the back. There are two bedrooms upstairs accessed from the only staircase. Downstairs there is a living room, a kitchen, and a small bathroom extension at the rear. The house is well maintained but has not been updated to current standards. It is occupied by a vulnerable older person (78 years), who lives alone.



The stairs are steep, with no guarding on one side, and no evidence that any was ever present. There is no handrail on the wall. The stairs lead up to a small landing, from which access is gained to the two bedrooms. The door opening projects beyond the landing. The kitchen floor, to which the stairs descend, is tiled and the wall is very close to the foot of the stairs. The artificial lighting is located in the ceiling above the top step, with a switch at the bottom.

The home is assessed as having a Category 1 HHSRS 'falls on stairs' hazard. Even an occupier who is familiar with the layout of the staircase and its limitations will be taking a major risk every time they are used, particularly if they are ageing and vulnerable. If, for example, they were to get up in the night to visit the bathroom, they would have to open the bedroom door and descend the stairs in the dark, with no banister or handrail to hold or break their fall if they were to slip on the wooden treads. If they were to fall they face a collision with a hard wall and floor.

The outcome of such a fall would typically involve a broken limb. In this case it is suggested that there would be a 10% chance of death or paralysis, if a fall involving medical intervention was to occur. The outcome is likely to be worse in this case, and there is no other occupant to help or call an ambulance. The home also has a Category 1 excess cold hazard as there is no central heating or insulation. This would, again, impact on the likely outcome of any fall in the home.

A summary of the impact of a recommended improvement package to just make the home healthy and safe is presented in Table 5 below:

Table 5: Improving a home with a Category 1 HHSRS falls on stairs hazard

	Dwelling as it stands	Dwelling after intervention
Cost of stair intervention*	£0	£450
Cost of cold intervention*	£0	£12 000
HHSRS Falls on stairs	Band A (Cat.1)	Band D
HHSRS cold	Band A (Cat 1)	Band E
SAP	21	57
Annual fuel cost	£1 947	£985
Carbon emissions	8,430 kg pa	3,960 kg pa
Household in Fuel Poverty	Yes	No
Cost to NHS pa of HHSRS stair hazard	£1 227	£68
Cost to NHS pa of HHSRS cold hazard	£2 621	£124
Asset value	£73 250	£92 500

*Cost of 'stair' intervention (2019 prices) includes:

- Balustrading and handrail to stairs.
- Non-slip carpeting to stairs
- Additional light switch at top of stairs

*Cost of 'cold' intervention includes:

- Full programmable gas central heating with energy efficient condensing boiler
- Loft insulation
- Full double glazing



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