fuel poverty
repairs and improvements

house condition survey

decent homes
NORTHERN IRELAND
MAIN
household profile
REPORT 2016
dwelling type repair unfitness

Housing Executive


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National Statistics Status

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is a producer's responsibility to maintain compliance with the standards expected of National Statistics, and to improve its statistics on a continuous basis. If a producer becomes concerned about whether its statistics are still meeting the appropriate standards, it should discuss its concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

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Chapter 1

Introduction

1.1 Background

The Northern Ireland Housing Executive's statutory responsibility in relation to housing research is set out in the Housing (NI) Order 1981. Article 6 states that the Housing Executive "shall regularly examine housing conditions and need".

This legislation provides the statutory basis for the Housing Executive to undertake House Condition Surveys. The 2016 survey is the twelfth such survey to be carried out in Northern Ireland since 1974. All tenures and types of housing are included, for example, owner occupied and rented housing, vacant dwellings, houses in multiple occupation, apartments, urban and rural properties.

The House Condition Survey (HCS) provides a wealth of information, which is readily available to, and is regularly requested by government departments, government agencies, the voluntary sector, charities, universities and many private sector interests.

1.2 The structure of the report

The aim of the 2016 House Condition Survey Report is to provide a comprehensive overview of Northern Ireland's dwelling stock and its occupants in 2016, in a readily digestible format. The report concentrates on issues and developments that are of particular importance in understanding the Northern Ireland housing market.

The statistical annex includes a range of tables containing information to support the description and analysis contained in the report and to provide a comprehensive reference for those requiring further details. These tables are identified as 'Appendix tables' in the commentary to distinguish them from the tables included as part of the main body of the report.

The report concentrates on comparisons, where possible, with the 2011 HCS, highlighting any significant changes since 2006.

1.3 Rounding

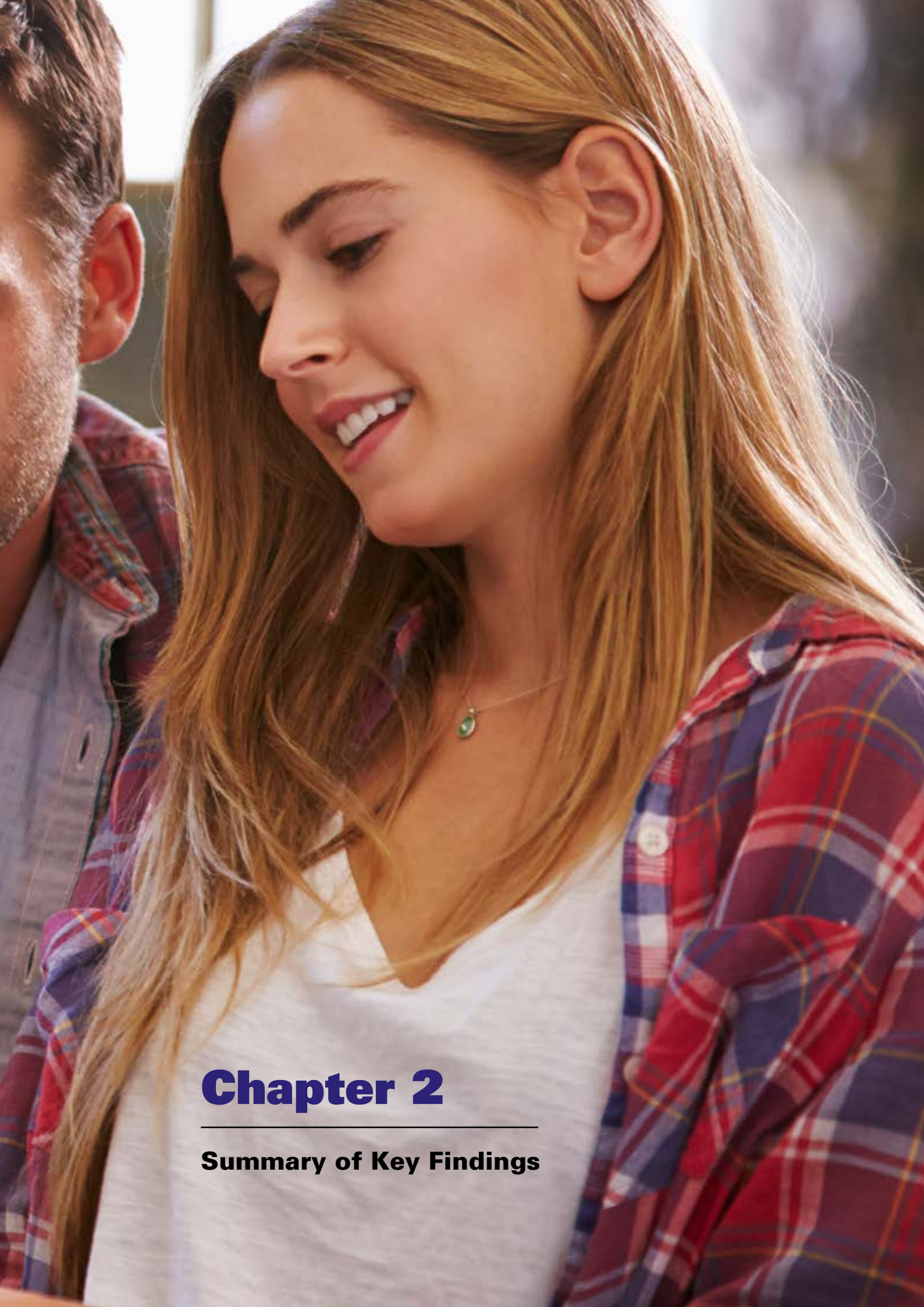
In the appendix tables numbers are rounded to nearest 10 and percentages to the nearest 0.1.

As the HCS figures are estimates, percentages in the main text are rounded in an attempt to prevent readers gaining an exaggerated impression of their accuracy. Percentages were rounded up if the percentage was .5 or more (e.g. 10.5% was rounded up to 11%). There might be more than one instance of rounding up or down. Therefore, the total column may add to more or less than 100%. However, the total column in the table will still be shown as 100%.

Where figures are very small, percentages may be reported to the first decimal place.

1.4 National Statistics Assessment

The House Condition Survey 2016 was assessed for, and awarded, National Statistics status. House Condition Surveys published prior to 2016 are not classed as National Statistics.



Chapter 2

Summary of Key Findings

2.1 Background

Chapter 2 provides a summary of the key findings from each of the chapters within the report. All the key figures are derived from the latest statistical models and are comparable (unless otherwise stated) with figures from the Survey of English Housing.

This report provides an analysis of the new Low Income High Costs (LIHC) measure of fuel poverty and also the Housing Health and Safety Rating System (HHSRS). In England, these have replaced the '10% measure of fuel poverty' and the 'fitness standard' respectively. Although not adopted in Northern Ireland, data collected through the HCS allow them to be measured to permit a useful comparison with housing conditions in England. In addition, the 2016 HCS is the first to report on Energy Efficiency Rating (EER) bands in Northern Ireland. In previous years the EER bands were produced as part of the HCS report and were presented in the appendix tables, but they were not reported on in the commentary.

Key Findings

2.2 Northern Ireland's dwelling stock

- The 2016 House Condition Survey showed there were approximately 780,000 dwellings in Northern Ireland, a net increase of 20,000 (4,000 per annum) since 2011. This represents a slowdown in new housing supply in the second half of the ten year period 2006 to 2016. During the first half (2006 to 2011) the net increase was 55,000 (11,000 per annum).
- The pattern of geographic distribution of the housing stock has remained similar over the last five years. Almost two-thirds (65%) of the housing stock is classified as urban and the remainder as rural.
- Owner occupation (occupied dwellings) remains the largest tenure group (63%) in Northern Ireland and has remained stable since 2011 but has significantly decreased since 2006 (67%).
- Similarly, the proportion of occupied dwellings in the private rented sector (17%) has remained steady since 2011, with the number of dwellings showing a small increase while the proportion was the same. However, this sector has increased since 2006 when the proportion was 12%.
- The social housing sector (16%) is similar in size to the private rented sector.
- In 2016 there were approximately 28,500 (3.7%) vacant properties. This represents a statistically significant decrease since 2006 and 2011 when the comparable figures were 40,300 (5.7%) and 54,700 (7.2%) vacant properties respectively[1].
- There was little change in the age profile of Northern Ireland's dwelling stock 2011 to 2016, although analysis shows a gradual move towards newer housing in the ten year period from 2006 to 2016.
- The characteristics of the housing stock in terms of dwelling type remained similar to 2011, although between 2006 and 2016 there was a significant decrease in the proportion of terraced houses, and significant increases in the proportions of semi-detached and detached houses.

2.3 Household profile

The household data from the 2016 HCS confirmed a number of important housing trends including:

- The private rented sector continues to play a key role in meeting housing need in Northern Ireland, and is a similar size to the social housing sector. There appears to be an increase in the proportion of households with children living in private rented housing since 2011, and a corresponding decrease in the proportion of households with children living in the owner occupied sector.
- Only 4% of households lived in homes which were overcrowded.
- There was little variation in the type of household living in social housing 2011-2016.
- Adult households remained the most common household type in Northern Ireland.
- Protestant households were slightly more likely than Catholic households to own their own homes. There was little difference in the proportions of Protestant and Catholic households living in most dwelling types.
- There was little variation between the types of household living in urban and rural areas, although households with children were more likely to live in urban areas.

1. The quality assurance of the database after 2011 may have removed non-eligible dwellings that were surveyed in 2011 and therefore the 2011 vacancy figure should be treated with caution.

- As in previous years the House Condition Survey showed links between the levels of income and tenure, dwelling type and dwelling age. Higher income households were more likely to own their own homes, live in detached houses and live in newer dwellings.

2.4 Dwelling unfitness and the state of repair

- Between 2011 and 2016 there was a decrease in the rate of unfitness of Northern Ireland's housing stock from 4.6% to 2.1%.
- The three most common reasons for a property being classified as unfit in 2016 were:
  - Dampness (9,300 dwellings);
  - Serious disrepair (9,100 dwellings);
  - Unsatisfactory facilities for the preparation and cooking of food (8,800 dwellings).

State of repair

- In line with the decrease in unfitness, the state of repair of Northern Ireland's stock in terms of the percentage of dwelling stock with at least one fault (any fabric disrepair) improved between 2011 and 2016, falling from 51% to 44%.
- This was reflected in decreases in the proportion of all dwellings with both interior disrepair (18%; 22% in 2011) and exterior disrepair (38%: 42% in 2011).
- Vacant dwellings were most likely to be in disrepair (71%; 44% overall).
- Owner occupied dwellings were least likely to be in disrepair (39%; 45% in 2011).
- The average urgent repair cost decreased from £1.43 billion in 2011 to £710 million in 2016.
- The average basic repair cost decreased from £1.61 billion in 2011 to £920 million in 2016.

2.5 Fuel poverty in Northern Ireland, 2016

For the first time, the 2016 HCS reports on two methods of measuring fuel poverty - the '10% definition' (used in previous HCS reports) and the relatively newer Low Income High Costs method (the measure now used in England).

The Low Income High Costs indicator has not been adopted in Northern Ireland and is not part of the fuel poverty strategy for Northern Ireland. However, it can be measured through the House Condition Survey and users of the Survey have requested information on it. This provides a useful baseline analysis of households affected, which can be compared with England.

Fuel poverty under the 10% indicator - summary of findings

- The 2016 House Condition Survey estimated that approximately 22% (160,000) of households in Northern Ireland were in fuel poverty. This represents a significant improvement in fuel poverty levels since 2011 when the figure was 42% (294,000).

This decrease of 20 percentage points in the five year period is statistically significant and is largely due to lower average fuel prices, lower modelled household energy use (mainly due to improved energy efficiency of the stock, particularly dwelling fabric and heating systems) and increased income.

The investment by government in domestic energy efficiency schemes of over £117 million in the private sector and £181 million in Housing Executive stock during the period 2011 to 2016 will have made a contribution to reducing domestic energy consumption and thus fuel poverty levels.

Analysis of households in fuel poverty in 2016 shows that while the overall proportion of fuel poverty has dropped significantly, similar types of households continue to be affected:

- Low income continued to be a significant cause of fuel poverty in Northern Ireland (55% of households with an annual income of less than £10,399 were in fuel poverty). Indeed, 78% of all households in fuel poverty had incomes of £15,599 per annum or less.
- More than half (52%) of households living in older dwellings (pre 1919) were in fuel poverty.
- One-third (34%) of households living in small villages, hamlets or open country areas were in fuel poverty.
- Almost two-fifths (38%) of households headed by an older person (75 plus) were in fuel poverty and one-third (34%) of older household types were fuel poor.
- Fuel poverty was higher in households with HRPs who were not working (32%) or retired (31%).

Fuel poverty under the Low Income High Costs (LIHC) indicator - summary of findings

Analysis of households in fuel poverty by the two different definitions (LIHC and 10%) shows that while there were similar patterns by dwelling characteristics, there were some contrasting differences by household characteristics (largely due to the methodological differences in the two definitions).

- Overall, findings from the 2016 HCS show that 7% of households were in fuel poverty under the LIHC definition. This compares with 11% in England (2015). The lower rate in Northern Ireland possibly reflects fewer households classified as "low income" (i.e. below 60% of the median income level of Northern Ireland). This could be because the income distribution is narrower than in England (i.e. the range and spread of incomes in Northern Ireland is less than in England).
- As with the 10% definition, low income households have higher rates of LIHC fuel poverty (18% of households with an annual income of less than £10,399 were in LIHC fuel poverty). Indeed, 67% of all households in fuel poverty had incomes of £15,599 per annum or less.

The HCS indicates that LIHC fuel poverty was correlated to a number of other factors:

- Approximately one in ten households (11%) living in the oldest dwellings (pre 1919) were in LIHC fuel poverty.
- Also, 13% of households living in small villages, hamlets or open country areas were in LIHC fuel poverty.
- In contrast to the 10% definition, households headed by persons in the 40 to 59 (11%), and in the 25 to 39 (10%) age bands were more likely to be in LIHC fuel poverty in 2016. Consequently, households with children were more likely to be in LIHC fuel poverty (13%) compared to older households (2%).

The reason for this is that LIHC uses equivalised income which will make smaller households appear better off than larger households and will therefore make them less likely to be "low income"; in general, older households are smaller than younger households. Households with many members are likely to need a higher income to achieve the same standard of living as a household with fewer members as they require more food, clothing etc This is compounded by the switch to using an after housing costs income measure. Older households are more likely to own their homes outright and so not have any housing costs, and thus they are generally better off under this measure.

- LIHC fuel poverty was higher in households with HRPs who were not working (18%).
- In 2016, the average fuel poverty gap for all Northern Ireland households (the amount needed to meet the fuel poverty threshold or, in other words, what needs to be added to income to afford fuel bills) was estimated at £436. For comparison, the average fuel poverty gap in England in 2015 was £353. This indicates that while the extent of fuel poverty under LIHC is less in Northern Ireland, driven in part by the income distribution (7% compared with 11% in England), the depth or severity is greater than England.
- The resulting gap for each individual household can be summed across all fuel poor households to produce an aggregate fuel poverty gap; this provides a sense of the depth of fuel poverty on a national level. The 2016 sum of the fuel poverty gap in Northern Ireland is £24 million; this compares with £884 million for England.

2.6 The Decent Homes Standard, 2016

- Approximately 8% of the dwelling stock in Northern Ireland in 2016 failed the Decent Homes Standard. This equates to 61,000 dwellings. The figures for 2011 were 11% and 86,600 dwellings.
- The proportion of dwellings failing Decent Homes in Northern Ireland in 2016 is less than half the proportion failing in England in 2016 (20%). However, one major reason for the higher failure rate in England is that a higher proportion of homes fail the statutory minimum standard for housing as assessed by the Housing Health and Safety Rating System.

The types of dwellings most likely to fail the Decent Homes Standard in 2016 were:

- Vacant properties (40%: 57% in 2011); however, more than half (52%) of all dwellings that failed the Decent Homes Standard were owner occupied;
- Older dwellings built before 1919 (28%);
- Located in small villages, hamlets or in open country (13%);
- Occupied by households with older HRPs (10%; aged 75 plus);
- Low income households (9%; less than £10,400 per annum and 10% £15,600 to £20,799).

2.7 Housing Health and Safety Rating System, 2016

- Overall, 9% (69,900) of all dwellings in Northern Ireland had Category 1 hazards in 2016.
- This compares with 12% for England in 2014/15 (latest figures available at time of writing).
- A slightly smaller proportion of occupied homes (8%; 59,800) had Category 1 hazards.

The types of dwellings most likely to have Category 1 hazards were:

- Vacant properties (36%);
- Older dwellings built before 1919 (27%) and between 1919 and 1944 (17%);
- Located in small villages, hamlets and in open country (17%);
- Occupied by households with older HRPs (11%; 75 plus);

2.8 Energy efficiency of the stock in Northern Ireland

Since 2011 there has been considerable investment, of approximately £300 million, in energy efficiency in Northern Ireland. £117 million was invested in the private sector through the Warm Homes, Affordable Warmth and Boiler Replacement schemes. £181 million was invested in energy efficiency improvements to NIHE stock through the solid fuel replacement programme and other schemes.

The 2016 House Condition Survey shows the continued progress in achieving higher levels of energy efficiency:

- Overall, 99% of all dwellings had central heating.

Oil remained the predominant fuel source in Northern Ireland (68%); however the proportion of dwellings with gas central heating continued to increase, and the proportion with less efficient fuel sources such as solid fuel, electric, or dual fuel, decreased.

Significant improvements were noted for loft insulation. In particular, there was an increase in the use of the highest standard of loft insulation (more than 150mm in thickness) from 35% in 2011 to 54% in 2016.

Some improvement was also achieved in relation to double glazing, with the proportion of older dwellings with full double glazing increasing (particularly those dwellings built between 1919 and 1944).

The SAP model was modified between 2011 and 2016 so no comparison is possible [2]. A SAP time series using the new methodology will be published when available.

- The overall SAP 2012 rating for dwellings in Northern Ireland in 2016 was 65.83, rising to 66.32 for occupied dwellings.

Energy Efficiency Rating bands (EER)

The Energy Efficiency Rating uses an A-G banding system, where A represents low energy costs i.e. the most efficient band, and G represents high energy costs i.e. the least efficient band. Bands have been combined to increase the robustness of the findings.

- Social housing dwellings were most likely to have an EE rating of A-C (79% compared with 49% overall).
- There was a clear link between dwelling age and EER bands. The newer the dwelling the more likely it was to have an EER band A-C. Proportions in these bands ranged from 15% for pre 1919 dwellings to 72% for post 1980 dwellings (49% overall).
- Dwellings in urban areas (57%) were more likely than dwellings in rural areas (35%) to have an EE rating in bands A-C.
- Households with children (64%) were most likely to live in dwellings in EER bands A-C, while older households (38%) were least likely to live in dwellings in these bands.

2. Further information is available in Appendix H.

Table 3.1: Northern Ireland's Dwelling Stock - Key Figures 1974-2016[1]

	1974	2006	2011	2016
Total Stock	455,500	705,000	760,000	780,000
	100%	100%	100%	100%
Urban[2]	269,400	493,800	490,600	502,900
	(59%)	(70%)	(65%)	(65%)
Rural	186,100	211,200	269,400	277,100
	(41%)	(30%)	(36%)	(36%)
Owner Occupied	212,200	468,900	469,100	494,700
	(46.6%)	(66.5%)	(61.7%)	(63.4%)
Private Rented (and Others)	72,200	80,900	125,400	136,000
	(15.8%)	(11.5%)	(16.5%)	(17.4%)
Housing Executive	153,500	93,400	110,800[3]	85,300
	(33.7%)	(13.3%)	(14.6%)	(10.9%)
Housing Association	-	21,500		35,600
		(3.1%)		(4.6%)
Vacant	17,600	40,300	54,700	28,500
	(3.9%)	(5.7%)	(7.2%)	(3.7%)
Pre 1919	157,300	113,800	87,700	81,600
	(34.5%)	(16.1%)	(11.5%)	(10.5%)
1919 - 44	75,200	71,000	68,100	67,600
	(16.5%)	(10.1%)	(9.0%)	(8.7%)
1945 - 64	223,000	141,400	134,000	126,200
	(49.0%)	(20.1%)	(17.6%)	(16.2%)
1965 - 80	Included in 1945-64	169,300	169,500	189,400
		(24.0%)	(22.3%)	(24.3%)
Post 1980	-	209,500	300,700	315,200
		(29.7%)	(39.6%)	(40.4%)
Bungalow[4,5]	-	159,900	160,000	163,800
		(22.7%)	(21.1%)	(21.0%)
Terraced House	199,000	225,400	209,800	220,700
	(43.7%)	(32.0%)	(27.6%)	(28.3%)
Semi-detached House	91,000	141,300	165,200	179,600
	(20.0%)	(20.0%)	(21.7%)	(23.0%)
Detached House	133,700	122,400	158,500	164,000
	(29.4%)	(17.4%)	(20.9%)	(21.0%)
Purpose Built Flat	23,900	-	-	
	(5.2%)			
Converted Flat	3,200	-	-	
	(0.7%)			
Flat / Apartment	-	56,000	66,500	51,900
		(8.0%)	(8.7%)	(6.7%)

1. Due to rounding columns may not always add to the total stock.
2. The urban/rural definition used in 1974-2006 is different from the standardised version used in 2011-2016. Further information can be found in Chapter 3 and the Glossary. In addition, 2011 figures were revised in line with the new classification so no comparison can be made with previously published 2011 figures.
3. In 2011 'Housing Executive' and 'housing association' were combined due to small numbers.
4. Bungalows were not counted separately until the 1996 Survey. The definition of a bungalow is a dwelling with "no fixed internal staircase". A loft conversion of a bungalow which then includes a permanent staircase becomes a "house". The 1974 House Condition Survey used a slightly different dwelling type classification.
5. House types in 1974 do not add to total stock as temporary buildings and dwellings rated with business premises have been excluded.

Chapter 3

Northern Ireland's Dwelling Stock

3.1 Introduction - Northern Ireland's dwelling stock

This chapter examines the characteristics of Northern Ireland's dwelling stock in 2016 in terms of its distribution, tenure, age and dwelling type. Table 3.1 sets out the key statistics used in this chapter. Additional tables are contained in the statistical appendix.

Where applicable, the 2016 results are compared with previous results from the 2006 and 2011 House Condition Surveys. In this chapter most observed differences between the years were small; however, any statistically significant difference is reported in the text. It should be noted that, although the sample size varies between the different years, the results are representative of the Northern Ireland population and assumed to be directly comparable.

3.2 Key findings

Northern Ireland's housing stock continued to grow between 2011 and 2016 to reach a total of 780,000. However, this represented a slowdown in new housing supply in the second half of the ten year period 2006 to 2016. During the first half of the period (2006 to 2011) the net increase was 55,000 (11,000 per annum).

The broad pattern of the stock's distribution had changed little since 2011, with around 65% located in urban areas, and 36% located in rural areas.[6]

There has been little change in tenure composition between 2011 and 2016, although analysis of 2006 figures shows significant changes over the ten year period.

The proportion of (occupied) owner occupied stock fell from 67% of the stock in 2006 to 63% in 2016. Conversely, the (occupied) private rented sector increased from 80,900 (12%) in 2006 to 136,000 (17%) in 2016. These trends since 2006 reflected the difficulties faced by many households in attempting to become owner occupiers, and the shortage of social housing in areas in high demand. However, analysis shows little change between 2011 and 2016, indicating that the decline in owner occupation has begun to slow. This is confirmed by the Northern Ireland Housing Market Review and Perspectives 2015-2018[7] which noted that in 2013, more first time buyers were entering the market. This was attributed to the *'re-emergence of higher loan-to-value mortgages, the growing demand (and funding) for Co-Ownership and schemes modelled on Help to Buy being run by a number of lenders'*. It should be noted that although the decline in owner occupation has begun to slow, some households still have difficulties entering the market (see Chapter 4).

There was a small, but statistically significant, decrease in the vacancy rate between 2006 (5.7%) and 2016 (3.7%).[8] This was due, in part, to the demolition of older (pre 1919 dwellings) and the increase in the proportion of dwellings in the private rented sector (which included previously vacant dwellings being brought back into use).

The age profile of Northern Ireland's housing stock has become increasingly modern since 2006, although there was little change between 2011 and 2016. In 2016, approximately 40% of the stock had been built since 1980, while 11% had been built before 1919. This move towards newer housing had implications for the energy efficiency of the stock, as outlined in Chapter 7.

The characteristics of the housing stock in terms of dwelling type remain broadly similar to 2011, although analysis shows that between 2006 and 2016, there was a decrease in the proportion of terraced houses and an increase in the proportion of semi-detached and detached houses.

3.3 The total stock and its distribution

The 2016 House Condition Survey showed that there were approximately 780,000 dwellings in Northern Ireland, a net increase of 20,000 (4,000 per annum) since 2011.

This represents a slowdown in new housing supply in the second half of the ten year period 2006 to 2016. During the first half of the period (2006 to 2011) the net increase was 55,000 (11,000 per annum).

Within this overall trend, the average annual increase in stock was 12,000 between 2006 and 2009, and 10,000 between 2009 and 2011.

6. The proportions for urban and rural dwellings do not add to 100% due to rounding. A new eight band classification was used in 2016. 2011 figures have been revised. See section 3.3 The total stock and its distribution for further information
7. Northern Ireland Housing Market Review and Perspectives 2015 - 2018
8. Any comparison with vacant dwellings in 2011 should be treated with caution as the 2011 figure may have been an overestimate (see Appendix A: User Guide)

The period 2006-2016 has continued to be influenced by the change in direction in the housing market in Northern Ireland, with the construction of new dwellings (in the public and private sectors) falling from a historic peak of more than 14,100 in 2006 to a low of 5,400 in 2013 and 2015 before rising again slightly to approximately 6,500 in 2016[9].

In 2016, the HCS moved to a new urban-rural classification. The new eight-band classification was the result of the 'Review of the Statistical Classification and Delineation of Settlements',[10] published by the Northern Ireland Statistics and Research Agency (NISRA) in 2015. The Review was based on three sources: 2011 Census population estimates, November 2014 Settlement Development Limits, and the drive times to town centres within settlements of 10,000 people or more. This updated classification will allow comparison with other official statistics. The 2011 urban-rural data has been revised in line with the updated classification to allow comparison over time.[11]

The pattern of geographic distribution of the housing stock has remained similar over the last five years. Almost two-thirds (65%) of the housing stock is classified as urban and the remainder as rural (Appendix table 3.1). However, within this overall picture:

- The number of dwellings in 2016 in the Belfast Metropolitan Urban Area was 143,800 (18%). In 2011 the figure was 121,400 (16%).
- Almost one-third (31%, 238,100), of the housing stock was located in settlements described as Derry Urban Area/larger towns. In 2011 the figures were similar (34% and 257,400).
- The number of dwellings in Small or Medium Towns was 120,900 (16%).
- The total number of rural dwellings was 277,100 (36%). The majority were located in small villages, hamlets or in open country (182,000; 23% of total stock) and the remainder were located in intermediate settlements or villages (95,200; 12% of total stock).
- The total number of rural dwellings remained similar between 2011 (269,400; 36%) and 2016. This was reflected in both intermediate settlements and villages (from 92,600 to 95,200) and small villages, hamlets and open country (from 176,800 to 182,000).

3.4 Dwelling tenure (Appendix table 3.2)

The 2016 House Condition Survey collected information on dwelling tenure in five categories: owner occupied, private rented and others (including tied dwellings), Housing Executive, housing association and vacant. In addition, vacant dwellings were classified on the basis of tenure when last occupied. However, the sample size of the 2016 Survey was not sufficiently large to produce robust statistics for housing association dwellings on their own. The analysis contained in the main body of the document as well as the appendix tables, therefore, focuses on social housing as a whole.

The following tenure profile emerged:

Owner occupation (occupied dwellings) remains the largest tenure group in Northern Ireland and has remained stable since 2011 but has significantly decreased since 2006.

- In 2016 there were approximately 494,700 occupied dwellings in the owner occupied sector, 63% of the total stock. The number of occupied dwellings in the owner occupied sector had increased a little since 2011 (from 469,100), but the overall proportion remained similar (62% of the total stock in 2011). However, the proportion of occupied dwellings in the owner occupied sector decreased significantly, from 67% in 2006, reflecting the difficulties many households experienced in attempting to become, or remain as, owner occupiers.

Similarly, the proportion of occupied dwellings in the private rented sector has remained steady since 2011, with the number of dwellings showing a small increase while the proportion stayed the same.

- In 2016 there were 136,000 (17%) occupied dwellings in the private rented sector, compared with 125,400 (17%) in 2011. The annual growth rate of 2,000 dwellings per annum between 2011 and 2016 was slower than between 2006 and 2011 (9,000) per annum. Chapter 4 provides more detail behind these overall figures, showing that younger households were disproportionately represented in this sector, reflecting continued demand from households unable to afford owner occupancy or gain access to social housing or who prefer this tenure because of its flexibility[12].

9. Source: District Council Building Control www.finance-ni.gov.uk/publications/new-dwelling-statistics-report Table 2.1
10. https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/review-of-the-statistical-classification-and-delineation-of-settlements-march-2015.pdf
11. No comparison should be made with the previously published HCS 2011 report due to the differences in classification of urban-rural data.
12. https://www.nihe.gov.uk/index/corporate/housing_research/completed/private_rented_sector_and_rents.htm

In 2016, the social housing sector was similar in size to the private rented sector.

- The number of dwellings in the social sector had increased a little since 2011, although the proportion remained comparable. In 2016 there were 120,900 (16%) occupied dwellings in the social sector compared with 110,800 (15%) in 2011[13]. This reflects the programme of new social dwellings and relatively low levels of house sales.

Vacant properties (Appendix Table 3.2)

In 2016 there were approximately 28,500 (3.7%) vacant properties. This represents a statistically significant decrease since 2006 and 2011[14] when the comparable figures were 40,300 (5.7%) and 54,700 (7.2%) vacant properties respectively.

An insight into the reasons for vacancy rates can be gained by analysing the urban/rural[15] split and tenure of dwellings when last occupied:

Table 3.2 Vacant Dwellings and Vacancy Rate by Location, 2016

	Vacant Dwellings	Vacancy Rate (%)
Total Urban	12,400	2.5
Total Rural	16,100	5.8
All Vacant Dwellings	28,500	3.7

- Table 3.2 shows that in 2016 the number of vacant properties in rural areas (16,100) was higher than in urban areas (12,400). Furthermore, the vacancy rate was higher in rural areas (5.8% compared with 2.5%). The overall urban/rural pattern of distribution remained broadly similar to 2011.

Table 3.3 Vacant Dwellings by Tenure, 2016

	Vacant Dwellings[14]	Vacancy Rate (%)
Owner Occupied	17,300	3.4
Private Rented and others	9,800	6.7
Social	1,400	1.1
All Vacant Dwellings	28,500	3.7

- In absolute terms the number of vacant dwellings previously in the owner occupied sector was the highest - at 17,300 (accounting for 61% of all vacant properties), however, this was lower than in 2011 (29,500)[17] and 2006 (21,600). The owner occupied sector as a whole had a vacancy rate of 3.4%, a significant decrease since 2011 when the comparable figure was 5.9% (Table 3.3).
- More than one-third (35%) of all vacant properties in 2016 were privately rented when last occupied. This was similar to 2011 (35%). However, while the proportion of vacant dwellings that had previously been privately rented remains higher than for any other sector (6.7%), it had significantly decreased since 2011, when the figure was 13.2%. The 2011 figure should be treated with caution because some 2011 figures may have been affected by the move to the Pointer database in late 2010. Trend analysis shows 2011 having higher than expected figures in relation to vacancy. More information can be found in Appendix A: User guide.
- The proportion of vacant properties in the social sector was 1.1% (approximately 1,400 homes), a decline of approximately 5,000 homes since 2011 when the comparable rate of vacancy was 5.2%. This decrease was statistically significant but should be treated with caution as this may have been due to the change in the sample frame (See Appendix A: User guide).

13. This increase in number of dwellings 2011-2016 is similar to new social housing development figures produced by District Council Building Control: www.finance-ni.gov.uk/publications/new-dwelling-statistics-report
14. The quality assurance of the database after 2011 may have removed non-eligible dwellings that were surveyed in 2011 and therefore this figure should be treated with caution.
15. Numbers for geographical locations within urban and rural areas were too small to report.
16. Figures for vacant dwellings that were previously private rented or previously social housing are small (generally 25 or less unweighted), caution should be applied when quoting these figures and proportions.
17. Any comparison with vacant dwellings in 2011 should be treated with caution as the 2011 figure may have been an overestimate (See Appendix A: User Guide).

Similar to 2011, more than one-third (35%) of all vacant properties were constructed before 1919, reflecting the traditional abandonment of more remote rural areas. However, more than one-fifth (23%) were built since 1980, perhaps still reflecting a slow uptake of newer properties.

Dwelling tenure - dwelling location (Appendix table 3.2)

Similar to 2011, approximately three-fifths (59%) of the urban stock was owner occupied, compared with 71% in rural areas.

The proportion of stock in the private rented sector in urban areas was 18% in 2016, and 17% in rural areas. In 2011 the figures were 18% and 13%. The increase seen in the rural areas is statistically significant and may reflect growing demand for the private rented sector in intermediate settlements and villages.

The proportion of urban housing in the social sector was 20%. In rural areas in 2016 approximately 7%[18] of the stock was in the social sector. This pattern was similar to 2011 findings.

Dwelling tenure - council area 2016

Table 3.4 provides a tenure breakdown by Council Area for 2016. In order to provide more robust figures the tenure of vacants when last occupied has been included within the other three tenure groups.

Lisburn and Castlereagh had the highest proportion of owner occupied dwellings and Belfast had the lowest proportion.

Fermanagh and Omagh had the highest proportion of private rented dwellings and Lisburn and Castlereagh had the lowest proportion.

Belfast had the highest proportion of social housing stock and Fermanagh and Omagh and Mid Ulster had the lowest proportion.

3.5 Dwelling age (Appendix table 3.3)

Analysis of the 2016 House Condition Survey showed that newer housing, i.e. dwellings built from 1965 onwards, accounted for approximately two-thirds (65%) of Northern Ireland's stock. Previous House Condition Surveys documented the gradual move towards newer housing in Northern Ireland; in particular, between 2006 and 2011 there was a big increase in the proportion of dwellings built post 1980. However, by 2011 the rate of new build construction had begun to slow and this continued between 2011 and 2016[19], as is reflected by the 2016 figures. Overall, the age profile of the housing stock remained broadly the same as in 2011.

- Two-fifths (40%, 315,200) of all dwellings were built after 1980 (40% in 2011, 30% in 2006). The increase between 2006 and 2016 was statistically significant.
- One-tenth of dwellings (11%, 81,600) were built before 1919 (12% in 2011, 16% in 2006). The decrease between 2006 and 2016 was statistically significant.

Table 3.4 Dwelling Tenure by Council Area 2016 (includes vacants - tenure when last occupied)

	Owner occupied %	Private Rented and Others %	Social Housing %
Antrim and Newtownabbey	71	15	14
Ards and North Down	72	16	12
Armagh, Banbridge and Craigavon	65	24	11
Belfast	55	19	27
Causeway Coast and Glens	69	20	12
Derry and Strabane	56	20	24
Fermanagh and Omagh	63	27	10
Lisburn and Castlereagh	78	9	13
Mid and East Antrim	73	13	14
Mid Ulster	69	21	10
Newry, Mourne and Down	68	21	11
Total	66	19	16

18. Figures should be treated with caution as numbers were small.
19. https://www.finance-ni.gov.uk New dwelling statistics

Dwelling age - dwelling tenure (Appendix table 3.3)

In the owner occupied sector, 42% of dwellings were built post 1980 (43% in 2011), and approximately one-tenth (11%) were built prior to 1919 (10% in 2011).

In the private rented sector, 38% of dwellings were built post 1980 (41% in 2011). However it should be noted that this does not represent a real decrease as it is within confidence intervals. The analysis confirms that the private rented sector mirrors overall trends, with a gradual move towards newer housing (in 2006, 25% of private rented dwellings were built post 1980). The increase between 2006 and 2016 was statistically significant.

Between 2006 and 2016 there was a significant decrease in the proportion of private rented dwellings built before 1919 (28% in 2006, 15% in 2011 and 12% in 2016), reflecting the gradual move towards newer stock in this sector.

In the social sector only a small proportion (3%)[20] of dwellings were built before 1919. This was also the case in 2011 (3%) and in 2006 (4%). Between 2006 and 2016 there was an increase in the proportion of social sector dwellings built after 1980, from 32% in both 2006 and 2011, to 41% in 2016. This can be attributed to the younger age profile of housing association dwellings, and reflects the role of housing associations in developing new social sector stock.

Approximately one-third (35%, 9,800) of vacant dwellings had been built before 1919, compared with 44% in 2006. Although this represents a 9 percentage point difference between 2006 and 2016, it should be noted that the number of vacant dwellings in 2016 was small and the difference is within confidence intervals. Therefore it did not represent a real change between 2006 and 2016. Almost one-quarter (23%)[21] of vacant dwellings had been built after 1980, broadly similar to the figure in 2011 (21%) and 2006 (22%).

Dwelling age - dwelling location[22] (Appendix table 3.4)

Analysis of dwelling age by location indicates that in 2016:

The proportion of Northern Ireland's total stock which was built before 1919 was 11% (81,600). However, a much higher proportion of the rural stock (19%) than urban stock (6%) was built during this period. A similar pattern was seen in 2011 when 20% of rural dwellings and 7% of urban dwellings were built before 1919[23]. More than half (58%) of all dwellings built before 1919 were in small villages/hamlets/open country.

Two-fifths (40%, 315,200) of all dwellings in Northern Ireland were built after 1980. A higher proportion of rural stock (44%; 45% in 2011) than urban stock (38%; 37% in 2011) was built after 1980. The Belfast Metropolitan Urban Area was least likely to have stock built after 1980 (31%), while intermediate settlements/villages were most likely to have this newest stock (54%).

3.6 Dwelling type (Appendix table 3.5)

Northern Ireland's housing stock has traditionally been dominated by houses and bungalows (single storey houses, including cottages). Between 2006 and 2016 there was a gradual decline in the proportion of terraced houses, while there were small increases in the proportions of semi-detached and detached houses. There was little change between 2011 and 2016.

- Bungalows accounted for 21% of the housing stock in 2016 (21% in 2011, 23% in 2006);
- The proportion of terraced houses decreased significantly over time, from 32% in 2006 to 28% in 2016;
- Between 2006 and 2016 there was a small but statistically significant increase in the proportion of semi-detached houses, from 20% to 23%;
- The proportion of detached houses also increased slightly, from 17% in 2006 to 21% in 2016. This increase was statistically significant;
- Apartments/flats accounted for 7% of the stock in 2016 (9% in 2011, 8% in 2006).

20. This represents a small number (generally 25 or less unweighted). Caution should be applied when quoting proportion.
21. This represents a small number (generally 25 or less unweighted). Caution should be applied when quoting proportion.
22. A new eight band definition is being used in 2016. For further information refer to 3.3: The total stock and its distribution. 2011 figures are based on the new eight band definition. No comparison should be made with previously published 2011 figures.
23. The urban/rural classification used in 2006 was not the same as the one used for 2011-2016. Therefore no comparison with 2006 is available.

Dwelling type - dwelling tenure (Appendix table 3.5)

Comparison with the findings from 2011 indicates that little has changed in the owner occupied sector. Detached houses were the most common dwelling type, accounting for almost one-third (30%) of dwellings in this sector (27% in 2011).

Similarly, there was little change in the private rented sector between 2011 and 2016. Terraced houses (44%, 40% in 2011) were the most prevalent dwelling type in this sector.

Terraced houses (46%, 39% in 2011) were also the most prevalent dwelling type in the social sector. This apparent increase is within confidence intervals and is therefore not a real change.

No detailed analysis of vacant dwellings was possible as numbers within most tenure groups were too small to report. However, Appendix table 3.5 shows that this tenure group is made of a mix of dwelling types, with no one dwelling type standing out as being more common than the others.

Table 4.1: Household profile, 2016

	Owner Occupied		Private Rented and others		Social Housing		All Households		% of all Households
	Number and percentage of tenure								
Household Type									
Adult households	184,800	63.8	55,100	19.0	49,900	17.2	289,900	(100%)	39.0
Households with children	123,200	55.3	63,600	28.6	35,900	16.1	222,700	(100%)	30.0
Older households	179,900	78.2	17,200	7.5	32,900	14.3	230,000	(100%)	31.0
All Households	487,800	65.7	136,000	18.3	118,700	16.0	742,500	(100%)	100.0
Age of Household Reference Person									
17 - 24	x	8.5	x	67.7	x	23.8	16,100	(100%)	2.0
25 - 39	69,600	44.3	58,900	37.5	28,500	18.2	157,000	(100%)	21.0
40 - 59	174,900	67.2	44,200	17.0	41,000	15.8	260,100	(100%)	35.0
60 - 74	156,600	76.9	16,500	8.1	30,500	15.0	203,500	(100%)	27.0
75 plus	85,500	80.7	x	5.2	14,900	14.0	105,800	(100%)	14.0
All Households	487,900	65.7	136,000	18.3	118,700	16.0	742,500	(100%)	100.0
Employment Status of HRP									
Working	269,000	71.4	78,100	20.7	29,800	7.9	376,900	(100%)	51.0
Not working	13,300	22.1	26,500	44.3	20,100	33.6	59,900	(100%)	8.0
Retired	183,200	78.3	15,500	6.6	35,200	15.1	233,900	(100%)	32.0
Permanently sick/looking after household	22,500	31.2	15,900	22.2	33,500	46.6	71,900	(100%)	10.0
All Households	487,900	65.7	136,000	18.3	118,700	16.0	742,500	(100%)	100.0
Gross Annual Income									
Up to £10,399	44,400	41.3	26,300	24.5	36,700	34.2	107,400	(100%)	15.0
£10,400 - £15,599	106,300	53.9	39,100	19.8	51,600	26.2	197,000	(100%)	27.0
£15,600 - £20,799	61,500	59.9	25,100	24.4	16,100	15.7	102,800	(100%)	14.0
£20,800 - £31,199	107,500	77.9	21,100	15.3	9,400	6.8	138,000	(100%)	19.0
£31,200 - £46,799	90,500	80.3	18,100	16.0	x	3.6	112,700	(100%)	15.0
£46,800 or more	77,700	91.8	x	7.5	x	0.8	84,700	(100%)	11.0
All Households	487,900	65.7	136,000	18.3	118,700	16.0	742,500	(100%)	100.0
Household Religion									
Protestant	243,800	69.4	47,500	13.5	60,100	17.1	351,400	(100%)	47.0
Catholic	175,000	63.0	55,500	20.0	47,400	17.0	277,900	(100%)	37.0
Mixed/Other/None	69,100	61.0	33,000	29.1	11,200	9.9	113,300	(100%)	15.0
All Households	487,900	65.7	136,000	18.3	118,700	16.0	742,500	(100%)	100.0
Other Groups									
Lone Adult Households	43,800	44.5	23,900	24.3	30,700	31.2	98,400	(100%)	13.0

(Due to rounding figures may not always add to total households)
'x' denotes a small number (generally 25 or less unweighted); where this is the case, caution should be applied when reporting the proportion.

Chapter 4

Household profile

4.1 Introduction - household profile

This chapter provides an update of the profile of households in Northern Ireland and an insight into the relationship between key dwelling characteristics and the social and economic circumstances of households. It draws on the household[1] questionnaire section of the Northern Ireland House Condition Survey (NIHCS) form. The 2016 household findings are compared with the last survey in 2011 and with the NIHCS conducted in 2006 thereby giving a ten year perspective.

Users should note that when making comparisons between survey years, some differences may be within confidence intervals and therefore not statistically significant. Key findings which are statistically significant are highlighted in this chapter. It should be noted that, although the sample size varies between the different years, the results are representative of the Northern Ireland population and assumed to be directly comparable.

Social survey information from the NIHCS is used widely among housing practitioners in areas such as the assessment of future housing needs, housing models for dementia, disability indicators, child poverty strategies and affordability. It has also been used to provide information for policy and strategic decisions in recent years in relation to welfare reform, the private rented sector and fuel poverty.

The household questions were reviewed during the questionnaire design stage of each survey. Questions were checked and aligned as far as possible with the latest standards set by ONS (Harmonised Concepts and Questions for Social Data Sources) GSS: Introduction to Harmonisation[2]. In addition, a number of changes were included to align with requirements of the latest government models measured through the survey, for example, the national fuel poverty model. A new NIHCS user engagement group set up in 2016 also helped to guide changes in the wording, layout and in the addition of new questions on emerging topics.

The surveyors completed the household questionnaire with the household reference person[3] or partner (if applicable). In 2016, a total of 1,917 interviews were achieved out of a possible 1,942 interviews (physical inspections excluding vacant dwellings). This gave a very high response rate for the household survey at 99% and is consistent with previous surveys.

4.2 Key findings

The household data from the 2016 HCS confirmed a number of important housing trends including:

- The private rented sector continues to play a key role in meeting housing need in Northern Ireland, and is a similar size to the social housing sector. There was a significant increase in the proportion of households with children living in private rented housing since 2011.
- Only 4% of households lived in homes which were overcrowded.
- The proportion of households living in social housing in 2016 was the same as in 2011. There was little variation in the type of household living in social housing.
- Adult households remained the most common household type in Northern Ireland.
- Protestant households were slightly more likely than Catholic households to own their own homes. There was little difference in the proportions of Protestant and Catholic households living in most dwelling types.
- There was little variation between the types of household living in urban and rural areas, although households with children were more likely to live in urban areas.
- As in previous years the House Condition Survey showed links between income and tenure, dwelling type and dwelling age. Higher income households were more likely to own their own homes, live in detached houses and live in newer dwellings.

4.3 Dwelling profile of Northern Ireland households

The bedroom standard

The bedroom standard is used by government to estimate the occupation density. A standard number of bedrooms are allocated to each household in accordance with the occupants' age, gender and marital status and the relationship between members. If a dwelling has the exact number of bedrooms required for the household it is considered to meet the bedroom standard. If a dwelling has more bedrooms than required it is under occupied, and if it has fewer bedrooms than required it is over occupied. A full explanation is included in Appendix C.

In 2016 the NIHCS measured the bedroom standard using a threshold at age 16 or older to allocate a separate bedroom rather than at age

1. A definition of household is included in Appendix C.
2. https://gss.civilservice.gov.uk/statistics/methodology-2/harmonisation/introduction-to-harmonisation/
3. A definition of household reference person is included in Appendix C.

21 as in previous years. The primary reason for this change was to bring it in line with practices used in the area of Welfare Reform[4] issued by the Department for Work and Pensions. Although, under Welfare Reform this convention applies to working-age people, the NIHCS measures the bedroom standard on the basis of all people living in households. In addition, a number of users of the NIHCS had requested information on the bedroom standard using age 16 or older.

This threshold change should be noted when comparing with previous published NIHCS reports. Findings from the 2011 NIHCS have been revised to take account of the change to age 16 and are provided, where possible, to allow comparison over the five year period (2011 to 2016).

Figure 4.1: Bedroom Standard by Tenure, 2016 (% of households)

Key findings:

- A small proportion (4%) of households in Northern Ireland fell below the bedroom standard, i.e. were overcrowded, in 2016. This equates to approximately 26,000 households living in overcrowded conditions. This compares with 5% in 2011 (33,000 households). The figure for England in 2015-16 was 3%.[5]
- Almost one-fifth of households (19%) met the bedroom standard in 2016 i.e. the dwelling had the exact number of bedrooms required for their household. The figure for 2011 was also 19%.
- The overall rate of under-occupation in Northern Ireland was 78% in 2016 (77% in 2011).

The bedroom standard - tenure, household size and religion

Analysis of overcrowding and under-occupation as defined by the bedroom standard shows that:

- Social housing (9%) was more likely than private rented homes (4%) or owner occupied homes (2%) to be overcrowded. Numbers were too small to provide a meaningful comparison with 2011.
- The larger the household, the more likely the dwelling was to be overcrowded. Approximately one-tenth (9%) of three or more person households lived in overcrowded accommodation.
- Catholic households (5%) were more likely to live in overcrowded accommodation than Protestant households (2%), largely reflecting the different average household size and age structures of the two groups.
- Under-occupation was much more prevalent in owner occupied homes (87%; 83% in 2011) than in private rented homes (71%; 74% in 2011) or in social housing (50%; 54% in 2011). There was some difference in under occupation by religion (Protestant 81%; 78% in 2011 and Catholic 74%; 76% in 2011), again reflecting the age structures of the two groups.
- One-fifth (19%) of households met the standard. This varied by tenure from two-fifths (41%) of homes in the social housing sector to 25% of private rented homes and 11% of owner occupied homes. Proportions of Protestant (17%) and Catholic (20%) households living in homes that met the bedroom standard were similar to the overall average (19%). This was similar to the pattern in 2011.

Age of household reference person

Key findings:

- More than half (56%) of household reference persons (HRP) were aged between 25 and 59. Two-fifths (42%) of household reference persons were 60 or older (14% were 75 or older). A small proportion (2%) of household reference persons were aged between 17 and 24. This age group has been excluded from further analysis due to small sample sizes.

4. http://www.legislation.gov.uk/ukpga/2012/5/contents/enacted
5. The bedroom standard used in the 2016 NIHCS is slightly different than the one used by the 2015/16 English Housing Survey (EHS). The EHS uses age 21 to allocate a separate bedroom rather than age 16.

- One-third (33%) of household reference persons were pensioners[6].
- Table 4.2 shows that there has been little change in the age profile of the household reference person over ten years 2006 - 2016.

Table 4.2: Age Profile of the Household Reference Person, 2006-2016

Age band	2006 NIHCS %	2011 NIHCS %	2016 NIHCS %
17-24	4	4	2
25-39	23	24	21
40-59	37	38	35
60-74	24	23	27
75+	13	11	14
Total	100%	100%	100%

Age of the household reference person - dwelling tenure (Appendix table 4.1)

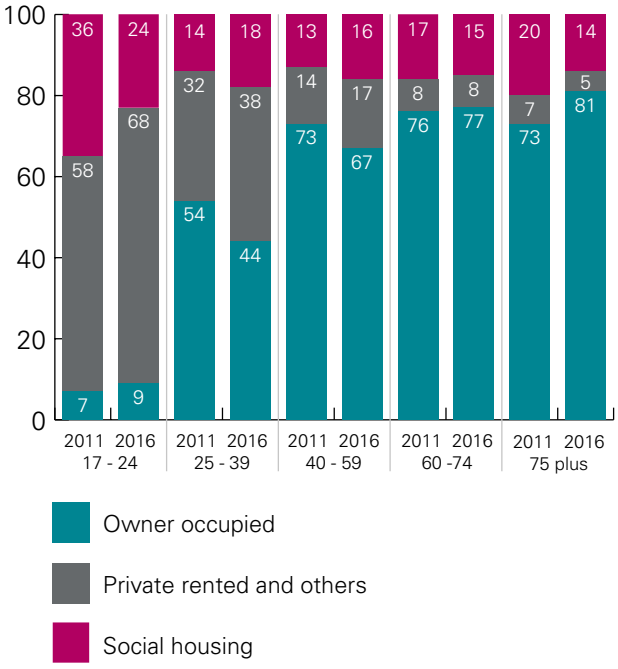
Rates of owner occupation across age groups have remained broadly similar to 2011, with concentration of owner occupation among the older age bands.

Comparisons with the 2006 NIHCS show a statistically significant decrease in the rate of owner occupation and a corresponding increase in households renting privately. This decrease in owner occupation reflected a combination of higher unemployment and uncertainty in the labour market, high levels of personal debt and more cautious lending practices by banks and building societies.[7] In the case of younger household reference persons, specifically those aged between 25 and 39, it reflected the difficulties first time buyers had entering the housing market between 2006 and 2016.

Although the overall proportion of household reference persons living in private rented accommodation has remained stable since 2011 (at 18%), the increase from 12% in 2006 is statistically significant.

The proportion of household reference persons living in social housing has remained stable over the ten year period (2006 to 2016) at around 16%.

Figure 4.2: Age of Household Reference Person and Tenure, 2011-2016 (% of households)



- Figure 4.2 shows that owner occupation remains the largest tenure group in Northern Ireland (66%; 67% in 2011 and 71% in 2006). The proportion of younger households i.e. those with a household reference person aged between 25 and 39, living in owner occupied homes has decreased over the past 10 years[8]. This is a statistically significant decrease; from 64% in 2006, to 54% in 2011, and to 44% in 2016.
- In 2016, household reference persons aged 75 plus (81%) were more likely to live in owner occupied homes. Although this was an increase since 2011 (from 73%) it is not statistically significant.
- The overall proportion of household reference persons living in private rented accommodation has remained steady since 2011 (around 18%). As in 2011, younger households were disproportionately represented in the private rented sector. Almost two-fifths (38%; an increase from 32% in 2011) of household reference persons aged between 25 and 39 lived in private rented accommodation. This is a statistically significant increase since 2006, when almost one-fifth (19%) of household reference persons aged between 25 and 39 lived in private rented accommodation. Due to the substantial waiting list for social housing

6. This figure is based on age (aged 65 or older for males and females).
7. Northern Ireland Housing Market Review & Perspectives 2015 - 2018
8. Refer to 2011 HCS Main Report Chapter 4: Age of the Household Reference Person

and the difficulties facing first time buyers, the private rented sector will play a key role in meeting housing need in Northern Ireland in the longer term.[9]

- There has been little change in the overall proportion of household reference persons living in social housing since 2006, which remains at approximately 16%. Previous NIHCS's showed that higher than average proportions of household reference persons aged 75 plus (20% in both 2011 and 2009, and 23% in 2006) lived in social housing. In 2016 the proportion was 14%. The decrease from 23% in 2006 to 14% in 2016 is statistically significant.

Age of household reference person - dwelling age (Appendix table 4.2)

- In terms of the occupied dwellings in Northern Ireland there has been little change in the overall proportions of stock by dwelling age between 2011 and 2016.
- In 2016, 10% of the stock had been built prior to 1919 (10% in 2011). Household reference persons aged 75 plus (15%; 15% in 2011) were most likely to live in pre 1919 housing.
- Household reference persons aged between 40 and 59 were most likely to live in post 1980 stock (49% compared with 41% overall and 46% in 2011). However, in 2011 the younger age band of 25 to 39 year olds were more likely to live in the newest housing (54% decreasing to 46% in 2016). However, these changes over time were not statistically significant.

Age of household reference person - dwelling type (Appendix table 4.3)

In general the proportions of dwelling types in the occupied stock have remained unchanged since 2011.

- Household reference persons aged 75 plus were over-represented in bungalows[10] (36% compared with 21% overall). A smaller than average proportion (9%) of household reference persons aged between 25 and 39 lived in bungalows.
- Terraced housing remained the largest dwelling type (29%; 28% in 2011). A higher than average proportion of household reference persons aged between 25 and 39 (40%; 35% in 2011) lived in this type of dwelling.
- Household reference persons aged between 25 and 39 were most likely to live in semi-detached houses (31% compared with 23% overall).
- One-fifth (21%) of occupied homes were detached dwellings. In 2016, household reference persons aged between 60 and 74 were most likely to occupy detached dwellings (27%; 22% in 2011).
- Less than one-tenth (7%) of occupied homes were flats/apartments. A slightly higher than average proportion (8%; 14% in 2011) of household reference persons aged 75 plus lived in this type of accommodation.

Age of household reference person - dwelling location (Appendix table 4.4)

In 2016, the HCS moved to a new urban-rural classification. See Chapter 3 section 3.3 'The total stock and its distribution' for a fuller explanation[11].

- Almost two-thirds (65%; 66% in 2011) of occupied dwellings were in urban areas. Most age groups showed little variation from the average with the exception of the 25 to 39 age group which had an above average proportion (73%) living in urban areas.
- More than one-third (35%; 34% in 2011) of occupied dwellings were in rural areas. Again most age groups showed little variation from the average with the exception of the 25 to 39 age group which had a lower than average proportion (27%) living in this location.

Household type

Households were classified into three types - adult households, households with children and older households. Table 4.3 outlines a description of each household type and findings over the ten year period 2006 to 2016.

Key findings:

- Table 4.3 shows that the most common household types were adult households (39%) followed by older households (31%) and households with children (30%).
- The proportions of the household types have remained consistent over time.

9. Northern Ireland Housing Market Review & Perspectives 2015 - 2018
10. Bungalows may also be referred to as single storey dwellings.
11. No comparison should be made with the previously published 2011 urban-rural data due to the differences in classification

Table 4.3 Household Types, 2006 to 2016[12]

	HCS %		
	2006	2011	2016
Adult households (one or more adults below pensionable age)	41	39	39
Households with children (one or more adults living with dependent children less than 16 years old)	28	33	30
Older households (one or more people, at least one of whom is of pensionable age 65+)	31	28	31
Total	100	100	100

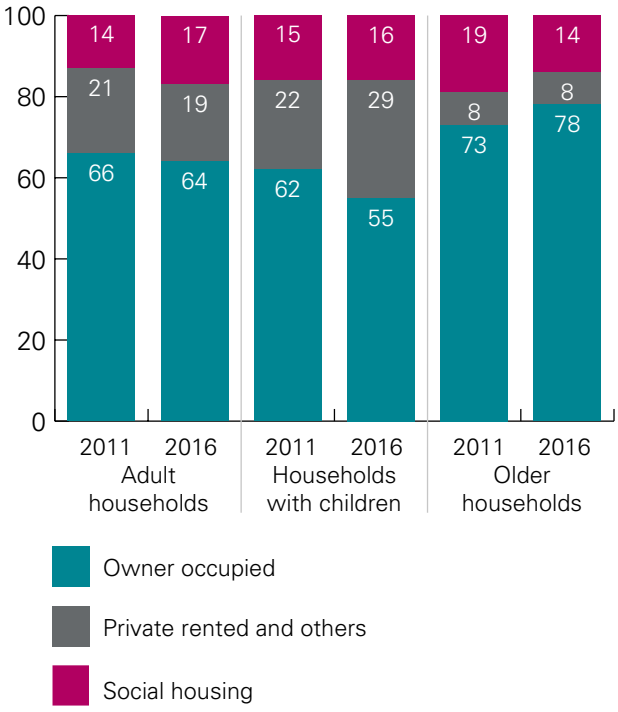
Household type - dwelling tenure (Appendix table 4.5)

Overall, there has been little change in the proportions of households living in each of the tenures since 2011 although there have been some changes since 2006.

The main changes between 2006 and 2016 are highlighted below:

- Overall, two-thirds (66%) of households lived in owner occupation in 2016. Figure 4.3 shows that older households (78%; 73% in 2011 and 73% in 2006) were most likely to live in owner occupied homes. Households with children (55%) showed a significant decrease since 2011 (62%).
- There was no change in the proportion of households living in private rented accommodation (18% in both 2016 and 2011; up from 12% in 2006). A below average proportion of older households (8%; 8% in 2011 and 7% in 2006) lived in this type of housing. Households with children (29%) showed a significant increase since 2011 (22%). Adult households renting privately between 2011 and 2016 remained similar (19% and 21% respectively; however this was a significant increase from 14% in 2006).
- The proportion of households living in social housing has remained the same since 2006 at around 16%. In 2016, older households were slightly less likely to live in social housing (14%; a decrease from 19% in 2011; however this was not statistically significant). Generally, however there was little variation by household type (adult households (17%; 14% in 2011) and households with children (16%; 15% in 2011)).

Figure 4.3 Household Types and Tenure, 2011-2016 (% of households)



Household Type - dwelling age (Appendix table 4.6)

Overall the proportions of the dwelling stock in the various age categories remained similar to 2011:

- More than two-fifths (41%) of all dwellings were built after 1980. An above average proportion of households with children (52%) occupied post 1980 stock. Older households (31%) were least likely to occupy the newest stock.
- A lower than average proportion of households with children (4%) occupied pre 1919 housing (compared with 10% overall).

Household type - dwelling type (Appendix table 4.7)

As with dwelling age, the overall proportions of the dwelling stock classified by type showed little change over time.

- The highest proportion (29%; 28% in 2011) of households lived in terraced housing. Households with children (37%) were most likely to occupy terraced housing.
- A higher than average proportion (30% compared with 21% overall) of older households lived in bungalows.

12. Please note that in the 2016 HCS the pension age for females changed to 65. This mainly affected the small group of females (aged 60 to 64) who are now below pension age. However, this should be taken into consideration when comparing with previous results.

- There was little variation by household type living in detached houses (around 21%).
- Households with children (2%) were the least likely household type to live in flats/apartments (7% overall).

Household type - dwelling location (Appendix table 4.8)

- Under the new eight band settlement definition, almost two-fifths (65%) of all households lived in urban areas. There was little variation between household types. Households with children (68%) were most likely to live in urban areas. The same proportion of older households and adult households (both 64%) lived in urban areas.
- Overall 18% (17% in 2011) of households lived in the Belfast Metropolitan Urban Area and there was little variation from this by household type.
- The highest proportion (31%) of households lived in the Derry urban area/larger towns. Households with children (36%) were most likely to live in this type of settlement.
- More than one-third (35%) of all households lived in rural areas. Households with children (32%) were less likely than other household types to live in rural areas.
- More than one-fifth (22%) of all households lived in small villages, hamlets and the open country. Although generally there was little variation among households, older households (24%) were slightly more likely than the other household types to live in these settlements.

4.4 Social and economic profile of Northern Ireland households

The key socio-economic characteristics examined were:

- The employment status of the household reference person;
- Household income; and
- Household religion.

Employment status of the household reference person

Four key employment groups were identified in 2016, in which; the household reference person was working; the household reference person was not working; the household reference person was either permanently sick/disabled or looking after family/home. In 2011 there were three groups (not working was combined with permanently sick/disabled or looking after family/home). This was because the smaller sample size in 2011 meant that some figures were not robust enough to report. The larger sample size in 2016 meant an additional sub-group could be included, giving more detailed information about employment status. However, for the sub-groups whose definitions have changed since 2011 (not working, and permanently sick or disabled or looking after family/home) it is not possible to make comparisons between 2011 and 2016. Comparisons between 2011 and 2016 will be made for the sub-groups whose definitions have remained the same. A definition of each sub-group reported in 2016 is below:

- Working - self-employed, working full-time, working part-time;
- Not working - not working but seeking work, not working and not seeking work, other (including student);
- Retired;
- Permanently sick or disabled or looking after family/home.

Key findings:

- Table 4.4 shows that approximately half (51%; 54% in 2011) of all household reference persons were working and almost one-tenth (8%) of household reference persons were not working.
- Almost one-third (32%; 27% in 2011) of household reference persons were retired.
- One-tenth (10%) of household reference persons were permanently sick/disabled or looking after family/home.

Table 4.4: Comparisons of Employment Groups, 2006 - 2016

Employment category	Household Reference Persons (%)		
	2006 HCS	2011 HCS[11]	2016 HCS
Working	51	54	51
Not working	9	-	8
Retired	29	27	32
Permanently sick/ disabled or looking after family/home	11	-	10
Total	100	100	100

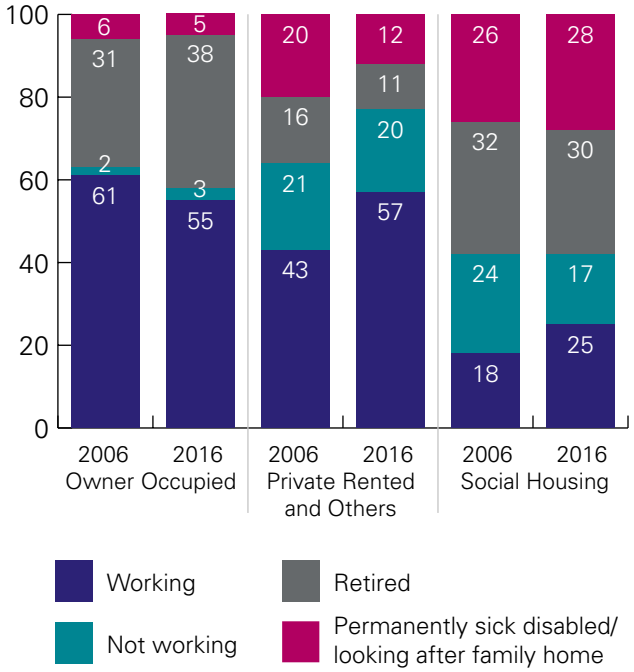
13. Comparisons cannot be made with some of the sub-groups in 2011 as the smaller sample size in this year meant only 3 sub-groups were reported.

Employment status of household reference person - dwelling tenure (Appendix table 4.9)

Unemployment[14] was highest among household reference persons living in private rented housing, and lowest in the owner occupied sector:

- Higher than average proportions of HRPs who were retired (78%) or working (71%) lived in owner occupied housing.
- Higher than average proportions of household reference persons who were not working (34%), and household reference persons who were permanently sick/disabled or looking after family/home (47%) lived in social housing.
- A higher than average proportion (44%; 28% in 2006) of household reference persons who were not working lived in private rented accommodation. This increase since 2006 is statistically significant. Retired household reference persons (7%) were least likely to rent privately.
- Figure 4.4 shows employment groups within tenure and changes since 2006. Due to the changes in the definitions of employment groups it is not possible to include a comparison with 2011.

Figure 4.4: Employment Status of HRP and Tenure, 2006-2016 (% of households)



Employment status of household reference person - dwelling age (Appendix table 4.10)

Generally, findings were consistent with 2011:

- Household reference persons who were retired (11%; 12% in 2011) were most likely to live in pre 1919 dwellings.
- Household reference persons who were working (48%; 49% in 2011) were most likely to live in post 1980 homes.

Employment status of household reference person - dwelling type (Appendix table 4.11)

There was some variation in dwelling type by employment group:

- A higher than average proportion of household reference persons who were not working (52%; 29% overall) lived in terraced houses.
- Retired household reference persons (27%; 29% in 2011), and those who were permanently sick/disabled or looking after family/home (26%) were most likely to live in bungalows (compared with 21% overall).
- As in 2011, a higher than average proportion of household reference persons who were working (26%; 21% overall) lived in detached houses. Household reference persons who were not working (16%) were least likely to live in detached houses.

Employment status of household reference person - dwelling location[15] (Appendix table 4.12)

- Almost one-fifth (18%) of household reference persons lived in the Belfast Metropolitan Urban Area. Higher than average proportions of household reference persons who were permanently sick/disabled or looking after family/home (23%), or who were not working (23%), lived in the Belfast Metropolitan Urban Area.
- Household reference persons who were not working, and who were permanently sick/disabled or looking after family/home were least likely to live in rural areas (both 32%; compared with 35% overall).
- Household reference persons who were permanently sick/disabled or looking after family/home were least likely to live in small villages/hamlets/open countryside (17% compared with 22% overall).

14. Unemployment' refers to HRPs who are 'not working – seeking work', not working – not seeking work, or 'other (including student). This is a change from 2011 when it also included HRPs who were 'permanently sick/disabled or looking after family/home'. Therefore direct comparisons are not possible.
15. For information about the changes to the urban/rural classification refer to Chapter 3 section 3.3: The total stock and its distribution.

Annual household income (gross)

The HCS defines household income as the total annual income before tax for the respondent and partner (if applicable). This was to include all income from savings, employment, benefits[16], or other sources. Income was recorded in bands and these have been grouped together for ease when reporting.

In 2016 there were six income groups, while in 2011 there were five groups. The new bands are in line with the Office for National Statistics (ONS) harmonised concepts and questions, which ONS recommends using on all government household surveys to allow meaningful comparison[17]. The new bands also provide more detailed information about income for use in the fuel poverty model. Due to the changes in the income bands it is not possible to make direct comparisons with previous years.

Key findings:

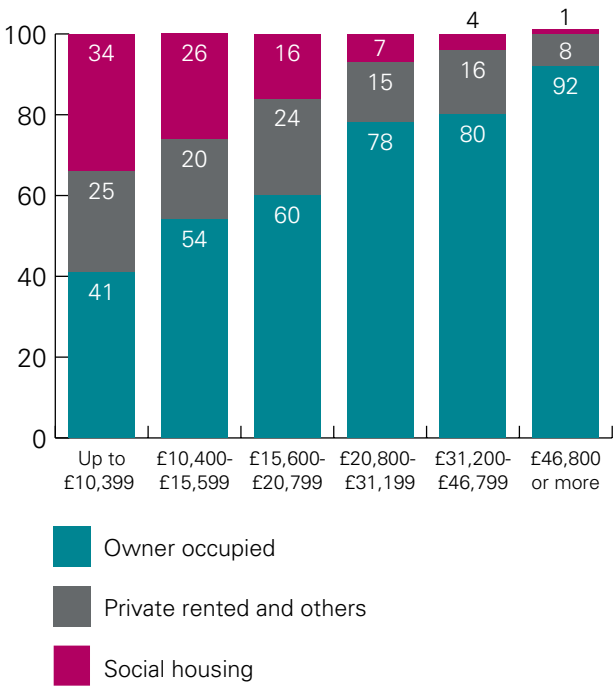
- Overall, 15% of households had an annual income of up to £10,399. Analysis of this group showed that approximately two-fifths (41%) lived in owner occupied homes, more than one-third (35%) had a household reference person aged between 40 and 59 and almost half (46%) were adult households.
- More than one-quarter (27%) of households had an annual income of £10,400 to £15,599.
- Approximately one-tenth (11%) of households had incomes of £46,800 or more.

Annual household income (gross) - dwelling tenure (Appendix table 4.13)

Overall patterns were consistent with 2011 with higher than average proportions of lower income households living in both private rented and social housing.

- Figure 4.5 clearly shows that as household income increased so did the likelihood of owner occupation; 41% of households with an annual income of up to £10,399 were owner occupiers, compared with 92% of households with an annual income of £46,800 or more.

Figure 4.5:Annual Household Income (gross) and Tenure 2016 (% of households)



- Generally, proportions of households living in social housing decreased as annual income increased. Approximately 1% of households with an annual income of £46,800 or more lived in social housing.
- A similar pattern could be seen in the private rented sector: one-quarter (25%) of households with an annual income of up to £10,399 lived in private rented accommodation compared with 8% of households with an annual income of £46,800 or more.
- Almost one-third (31%) of social housing households had an annual income of up to £10,399, compared with 19% of private rental households and 9% of owner occupier households.

Annual household income (gross) - dwelling age (Appendix table 4.14)

As in 2011, higher income households were more likely to live in the newest dwellings.

- Approximately one-third (32%) of households with an annual income of up to £10,399 lived in dwellings built post 1980 compared with 60% of households with an annual income of £46,800 or more.

16. It is important to note that Housing Benefit was excluded from the calculation of income in 2016 and therefore care needs to be taken when comparing with earlier HCSs. This was to provide a more accurate Housing Benefit calculation for fuel poverty modelling.
17. Harmonisation of income bands will enable comparison with Family Resources Survey data when it becomes available.

- Overall, 10% of households lived in pre 1919 dwellings. There is little difference across income groups living in dwellings of this age, however a slightly higher than average proportion (13%) of households with an annual income of less than £10,399 lived in pre 1919 dwellings.

Annual household income (gross) - dwelling type (Appendix table 4.15)

There are clear links between household income and dwelling type.

- Households with an annual income of £46,800 or more were more likely to live in detached dwellings (54%).
- Households with an annual income of up to £10,399 were more likely to live in terraced houses (40%).

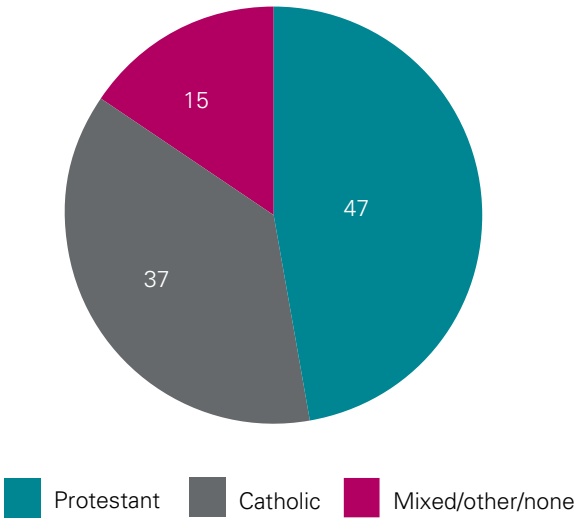
Annual household income (gross) - dwelling location (Appendix table 4.16)

- The proportions of income groups living in urban areas ranged from 60% of households with an annual income of £46,800 or more, to 69% of households with an annual income of up to £10,399.
- Households with annual incomes of £46,800 were most likely to live in rural areas (41%), while those with annual incomes of up to £10,399 (31%) were least likely to live in rural areas.

Household religion

The Survey gathered information on the religious make-up of the household and this is summarised in Figure 4.6. Respondents were asked for the religion of the household.

Figure 4.6: Households by Religion, 2016 (% of households)



Key findings:

The religious designation of households has remained broadly similar since 2006.

- Almost half (47%; 52% in 2011; 52% in 2006) of respondents designated their household religion as Protestant and 37% (38% in 2011; 38% in 2006) as Catholic.
- A small proportion (15%; 10% in 2011; 10% in 2006) of respondents described their household religion as mixed (Protestant & Catholic/ other/none). This increase since 2011 is not statistically significant.

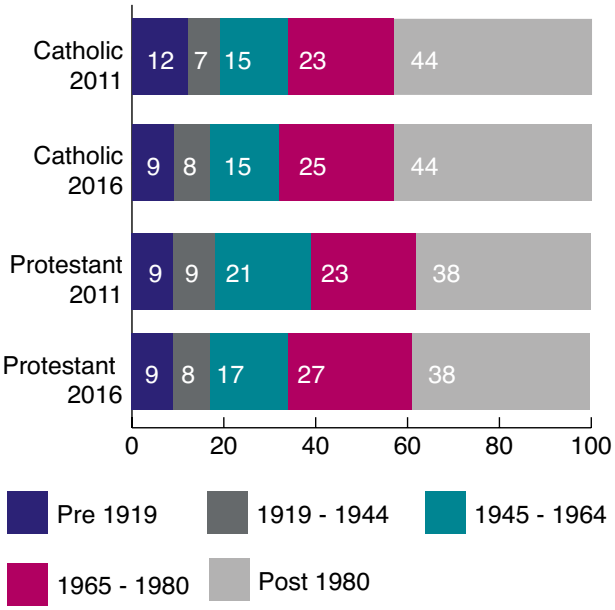
Household religion - dwelling tenure (Appendix table 4.17)

Overall the tenure pattern by religion was similar to 2011.

- Slightly higher proportions of Protestant (69%; 70% in 2011) compared with Catholic (63%; 63% in 2011) households owned their homes.
- More than one-tenth (14%; 13% in 2011) of Protestant households and one-fifth (20%; 20% in 2011) of Catholic households lived in privately rented accommodation.
- The same proportion of Protestant households (17%; 16% in 2011) and Catholic households (17%; 17% in 2011) lived in social housing.

Household religion - dwelling age (Appendix table 4.18)

Figure 4.7: Household Religion and Age of Dwelling, 2011-2016 (% of households)



- Figure 4.7 shows that a higher proportion of Catholic households (44%; 44% in 2011) lived in post 1980 stock than Protestant households (38%; 38% in 2011).
- The same proportion of Catholic (9%; 12% in 2011) and Protestant households (9%; 9% in 2011) lived in the oldest stock (pre 1919).

Household religion - dwelling type (Appendix table 4.19)

Similar proportions of Catholic and Protestant households occupied most dwelling types, with the exception of terraced housing which Catholics were more likely to live in than Protestants.

- Almost one-third (31%; 28% in 2011) of Catholic households lived in terraced housing, while more than one-quarter (27%; 28% in 2011) of Protestant households lived in terraced housing.
- Similar proportions of Protestant (21%; 20% in 2011) and Catholic (20%; 20% in 2011) households lived in detached housing.

Household religion - dwelling location (Appendix table 4.20)

There were some differences between the two main religious groups in terms of location.

- Approximately two-thirds (67%) of Protestant households lived in urban areas compared with 61% of Catholic households.
- Almost one-fifth (18%) of all households lived in the Belfast Metropolitan Urban Area. There was not much variation between religions, with 18% of Protestant households and 19% of Catholic households living in the Belfast Metropolitan Urban Area.
- Catholic households (39%) were more likely than Protestant households (33%) to live in rural areas.

4.5 Profiles of household sub-groups

The decline of the traditional nuclear family and the rise of single person households have been well documented; see, for example:

Demographic Change & Future Housing Need in Northern Ireland: November 2014

Northern Ireland Housing Market Review & Perspectives 2015 - 2018

Analyses of household trends are important for the planning of future housing requirements.

This next section provides a synoptic analysis of a number of household sub-groups that are of particular importance in understanding the housing market and estimating the need and demand for housing. A list of the sub-groups is provided in Table 4.5. The socio-economic circumstances, for each sub-group, along with key variables such as tenure, age, location and dwelling type are compared with the occupied stock as a whole in tables 4.6 to 4.9. A summary of household sub-groups follows after the tables.

Table 4.5: Household Sub-Groups, 2006-2016

Sub-Groups[18]	2006		2011		2016	
	%	No	%	No	%	No
Households with children (dependent child(ren) under 16; includes lone parent households)	29	188,300	33	228,620	30	222,660
Older households (one or more people, at least one of whom is of pensionable age 65+ for both men and women)	31	201,000	28	198,220	31	229,950
Lone Adult Household (non-pensionable, under 65 for both men and women)	14	92,900	15	106,700	13	98,360
Households headed by a person who is not working (includes unemployed and student)[19]	9	55,930[20]	-	-	8	59,870

18. Since 2011 there has been a change in the pension age, with 65 now being the pension age for both males and females. Therefore caution should be used when making comparisons with previous years.
19. Due to the smaller sample size in 2011 this sub-group also included HRPs who were permanently sick/disabled or looking after family/home. Therefore direct comparisons cannot be made and the 2011 figure is omitted.
20. The 2006 figure has been re-calculated using the 2016 definition of 'not working'.

Table 4.6: All Households with Children, 2016

	% of Households		Number of Households	
	in sub group	in whole survey	in sub group	in whole survey
by Age of Household Reference Person				
17-24	4	2	9,100	16,100
25-39	49	21	108,900	157,000
40-59	45	35	99,600	260,100
60-74	1	27	x	203,500
75 plus	1	14	x	105,800
by Employment Status of Household Reference Person				
Working	77	51	171,400	376,900
Not working	13	8	28,300	59,900
Retired	2	32	x	233,900
Permanently sick/disabled or looking after family/home	9	10	19,000	71,900
by Annual Household (Gross) Income				
Up to £10,399	10	15	21,900	107,400
£10,400 - £15,599	19	27	42,800	197,000
£15,600 - £20,799	12	14	26,300	102,800
£20,800 - £31,199	18	19	39,300	138,000
£31,200 - £46,799	25	15	54,900	112,700
£46,800 or more	17	11	37,500	84,700
by Religion				
Protestant	39	47	87,200	351,400
Catholic	43	37	95,600	277,900
Mixed/other/none	18	15	39,900	113,300
by Tenure				
Owner Occupied	55	66	123,200	487,900
Private Rented	29	18	63,600	136,000
Social Housing	16	16	35,900	118,700
by Construction Date				
Pre 1919	4	10	8,800	71,600
1919-1944	8	8	17,400	59,600
1945-1964	14	17	30,400	122,300
1965-1980	23	25	51,100	184,200
Post 1980	52	41	114,900	304,800
by Settlement Type				
Belfast Metropolitan Urban Area	18	18	40,500	136,200
Derry Urban Area/Large Town	36	31	79,800	233,200
Small/Medium Town	14	16	32,100	115,300
Interim Settlement/Village	11	12	23,300	92,000
Small Village/Hamlet/Open Country	21	22	47,000	165,800
by Dwelling Type				
Bungalow	11	21	23,800	154,300
Terraced House	37	29	81,300	212,200
Semi-Detached House	30	23	65,800	173,400
Detached House	21	21	46,500	153,300
Flat/Apartment	2	7	5,200	49,300

Table 4.7: Older Households, 2016

	% of Households		Number of Households	
	in sub group	in whole survey	in sub group	in whole survey
by Household Size				
1	54	30	124,900	222,900
2	46	32	105,100	238,000
3	0	15	0	109,000
4	0	15	0	112,400
5+	0	8	0	60,300
by Employment Status of Household Reference Person				
Working	12	51	27,300	376,900
Not working	2	8	x	59,900
Retired	82	32	189,400	233,900
Permanently sick/disabled or looking after family/home	4	10	9,500	71,900
by Annual Household (Gross) Income				
Up to £10,399	16	15	35,800	107,400
£10,400 - £15,599	43	27	98,200	197,000
£15,600 - £20,799	16	14	37,300	102,800
£20,800 - £31,199	18	19	41,500	138,000
£31,200 - £46,799	4	15	9,900	112,700
£46,800 or more	3	11	x	84,700
by Religion				
Protestant	59	47	135,400	351,400
Catholic	33	37	75,900	277,900
Mixed/other/none	8	15	18,600	113,300
by Tenure				
Owner Occupied	78	66	179,900	487,900
Private Rented	8	18	17,200	136,000
Social Housing	14	16	32,900	118,700
by Construction Date				
Pre 1919	14	10	30,900	71,600
1919-1944	8	8	18,600	59,600
1945-1964	21	17	47,200	122,300
1965-1980	27	25	62,600	184,200
Post 1980	31	41	70,600	304,800
by Settlement Type				
Belfast Metropolitan Urban Area	18	18	41,700	136,200
Derry Urban Area/Large Town	30	31	68,900	233,200
Small/Medium Town	16	16	35,600	115,300
Interim Settlement/Village	12	12	28,600	92,000
Small Village/Hamlet/Open Country	24	22	55,200	165,800
by Dwelling Type				
Bungalow	30	21	67,900	154,300
Terraced House	24	29	54,800	212,200
Semi-Detached House	19	23	43,000	173,400
Detached House	20	21	46,000	153,300
Flat/Apartment	8	7	18,200	49,300

Table 4.8: Lone Adult Households (under pension age), 2016

	% of Households		Number of Households	
	in sub group	in whole survey	in sub group	in whole survey
by Age of Household Reference Person				
17-24	3	2	x	16,100
25-39	18	21	17,500	157,000
40-59	59	35	58,300	260,100
60-74	20	27	19,400	203,500
by Employment Status of Household Reference Person				
Working	51	51	50,200	376,900
Not working	16	8	15,600	59,900
Retired	11	32	10,900	233,900
Permanently sick/disabled or looking after family/home	22	10	21,800	71,900
by Annual Household (Gross) Income				
Up to £10,399	30	15	29,600	107,400
£10,400 - £15,599	25	27	24,400	197,000
£15,600 - £20,799	18	14	17,400	102,800
£20,800 - £31,199	17	19	17,000	138,000
£31,200 - £46,799	7	15	x	112,700
£46,800 or more	3	11	x	84,700
by Religion				
Protestant	50	47	49,400	351,400
Catholic	33	37	31,900	277,900
Mixed/other/none	17	15	17,000	113,300
by Tenure				
Owner Occupied	45	66	43,800	487,900
Private Rented	24	18	23,900	136,000
Social Housing	31	16	30,700	118,700
by Construction Date				
Pre 1919	14	10	13,900	71,600
1919-1944	9	8	8,800	59,600
1945-1964	15	17	14,600	122,300
1965-1980	27	25	26,300	184,200
Post 1980	35	41	34,900	304,800
by Settlement Type				
Belfast Metropolitan Urban Area	22	18	22,000	136,200
Derry Urban Area/Large Town	30	31	29,800	233,200
Small/Medium Town	15	16	14,900	115,300
Interim Settlement/Village	18	12	17,700	92,000
Small Village/Hamlet/Open Country	14	22	13,900	165,800
by Dwelling Type				
Bungalow	23	21	22,500	154,300
Terraced House	32	29	31,600	212,200
Semi-Detached House	18	23	17,700	173,400
Detached House	11	21	10,400	153,300
Flat/Apartment	16	7	16,200	49,300

Table 4.9: HRP not working, 2016

	% of Households		Number of Households	
	in sub group	in whole survey	in sub group	in whole survey
by Age of Household Reference Person				
17-24	10	2	x	16,100
25-39	34	21	20,100	157,000
40-59	44	35	26,400	260,100
60-74	9	27	x	203,500
75 plus	3	14	x	105,800
by Key Benefits Claimed				
Child Benefit	37	15	22,200	118,200
Disability Benefit	20	14	11,800	110,300
Incapacity Benefit	8	3	x	24,700
Housing Benefit	62	17	37,200	135,500
Income Support	25	5	15,100	38,700
Child Tax Credit	34	10	20,300	75,500
by Annual Household (Gross) Income				
Up to £10,399	40	15	24,000	107,400
£10,400 - £15,599	41	27	24,500	197,000
£15,600 - £20,799	11	14	x	102,800
£20,800 - £31,199	5	19	x	138,000
£31,200 - £46,799	2	15	x	112,700
£46,800 or more	1	11	x	84,700
by Religion				
Protestant	37	47	22,200	351,400
Catholic	49	37	29,300	277,900
Mixed/other/none	14	15	8,400	113,300
by Tenure				
Owner Occupied	22	66	13,200	487,900
Private Rented	44	18	26,500	136,000
Social Housing	34	16	20,100	118,700
by Construction Date				
Pre 1919	12	10	x	71,600
1919-1944	12	8	x	59,600
1945-1964	16	17	9,400	122,300
1965-1980	31	25	18,400	184,200
Post 1980	30	41	17,700	304,800
by Settlement Type				
Belfast Metropolitan Urban Area	23	18	14,000	136,200
Derry Urban Area/Large Town	30	31	18,100	233,200
Small/Medium Town	14	16	8,500	115,300
Interim Settlement/Village	12	12	x	92,000
Small Village/Hamlet/Open Country	20	22	11,900	165,800
by Dwelling Type				
Bungalow	16	21	9,600	154,300
Terraced House	52	29	31,300	212,200
Semi-Detached House	17	23	9,900	173,400
Detached House	7	21	x	153,300
Flat/Apartment	9	7	x	49,300

Due to rounding figures may not add up to total households.
'x' denotes a small number (generally 25 or less unweighted); where this is the case, caution should be applied when reporting the proportion.

4.6 Summary of household sub-groups

Due to changes in definitions since 2011 it is not possible to make direct comparisons for some of the sub-groups. Any changes indicated since 2011 are not statistically significant unless otherwise stated.

Households with children 2016

Almost one-third (30%; 33% in 2011) of households had children. The proportion of households with children living in owner occupied dwellings has decreased since 2011 (from 62% to 55%). This is statistically significant. In addition, households with children (29%) showed a significant increase since 2011 when the proportion was 22%.

Older households 2016

Almost one-third (31%; 28% 2011) of households were older households. As in 2011, the majority of older households (78%; 73% in 2011) lived in owner occupied homes. This apparent increase since 2011 is not statistically significant.

Lone adult households (under pension age) 2016

More than one-tenth (13%; 15% in 2011) of households were lone adult households. Almost half (45%; 42% in 2011) of lone adult households lived in owner occupied homes. Since 2011 there has been a decrease in the proportion of lone adult households living in private rented accommodation (from 35% to 24%). This change is statistically significant.

Households with HRP not working 2016

Almost one-tenth (8%) of households had a HRP who was not working. More than two-fifths (44%) of these lived in private rented dwellings, and a further one-third (34%) lived in social housing. Comparisons cannot be made with previous years because of the change in definition since 2011. For further information refer to section 4.4 Social and economic profile of Northern Ireland households.

Table 5.1: Unfitness - key figures, 2006 - 2016 [2]

	2006		2011		2016	
	Number	%	Number	%	Number	%
Location[1,2]						
All Urban	12,800	53.1	x	40.0	x	32.0
All Rural	11,400	46.9	21,100	60.0	11,100	68.0
Tenure						
Owner Occupied	7,500	31.0	x	13.0	x	34.6
Private Rented & others	2,200	8.9	x	7.1	x	13.3
Social Housing	600	2.5	x	0.4	x	<1
Vacant	13,900	57.6	28,000	79.5	x	52.1
Dwelling Age						
Pre 1919	15,000	62.3	18,500	52.5	9,300	57.1
1919 - 1944	3,800	15.5	x	16.7	x	15.5
1945 - 1964	2,500	10.1	x	5.0	x	4.8
1965 - 1980	900	3.9	x	11.2	x	6.7
Post 1980	2,000	8.2	x	14.6	x	16.0
All Unfit Dwellings	**24,200**	**3.4**	**35,200**	**4.6**	**16,400**	**2.1**

x denotes a small number (generally 25 or less unweighted); where this is the case, caution should be applied when reporting proportion.

<1% in a cell indicates that the number of dwellings in a particular category was 0. As the survey was a sample survey, it is possible that there were dwellings in the category (showing as <1%) but none were selected as part of the sample. Caution should be used when quoting these proportions.

Table 5.2: The state of repair - key figures, 2016

	Dwellings in Disrepair		Mean Urgent Repair Cost (£)
Tenure			
Owner Occupied	194,800	39.4	596
Private Rented and Others	66,100	48.6	553
Social Housing	60,600	50.1	278
Vacant	20,300	71.4	10,750
Dwelling Age			
Pre 1919	57,900	71.0	5,026
1919 - 1944	42,100	62.2	1,431
1945 - 1964	61,700	48.9	559
1965 - 1980	86,900	45.9	309
Post 1980	93,200	29.6	233
Dwelling Type			
Bungalow	70,100	42.8	1,027
Terraced House	113,500	51.4	516
Semi-Detached House	75,100	41.8	489
Detached House	63,700	38.8	2,008
Flat	19,400	37.4	197
Location			
Belfast Metropolitan Urban Area	70,900	49.3	618
Derry Urban Area/Large Town	103,700	43.6	315
Small/Medium Town	43,500	36.0	597
All Urban	218,100	43.4	470
Intermediate Settlements/Village	33,400	35.1	243
Small Village/ Hamlet/Open Country	90,200	49.6	2,475
All Rural	123,600	44.6	1,708
All Dwellings in Disrepair	**341,700**	**43.8**	**910**

1. A new eight band definition has been used in 2016 – see Chapter 3 section 3.3 The total stock and its distribution and Appendix C for further information.

2. 2011 figures are based on the updated eight band definition. No comparisons should be made with the previously published 2011 figures.

Chapter 5

Unfitness and the state of repair

5.1 Introduction - unfitness

House Condition Surveys have assessed dwelling conditions against the statutory fitness standard since 1974, providing a robust assessment of the level of unfitness in Northern Ireland and demonstrating the substantial progress made in improving housing conditions.

The relative importance of the fitness standard has declined due to the very low proportion of the stock in Northern Ireland failing on this quality measure. In England the fitness standard was replaced by the Housing Health and Safety Rating system in 2006. In Northern Ireland the fitness standard is under review; however it continues to be measured through the HCS.

Where applicable, the 2016 results are compared with previous results from the 2006 and 2011 House Condition Surveys. In this chapter observed differences between the years were statistically significant unless otherwise stated. It should be noted that, although the sample size varies between the different years, the results are representative of the Northern Ireland population and assumed to be directly comparable. It should be noted that the small proportion failing the fitness standard in 2016 means that many numbers relating to the unfit category have been replaced by an 'x' in Appendix tables. Caution should be used when quoting these proportions.

The fitness standard

In order to be classified as unfit a dwelling must fail on one or more of the 11 individual criteria set out in the nine point fitness standard[3]. Dwellings in need of some repair work may or may not be classified as unfit. In each case the surveyor, using his or her professional expertise, assessed the nature of any faults together with their severity and extent or scale. The risks associated with these faults were also assessed to determine whether or not a particular dwelling should be classified as unfit for human habitation. An important element of the House Condition Survey training programme was to maximise the consistency of surveyors' judgements. The current fitness standard is set out in schedule 5 of the Housing (Northern Ireland) Order 1992[4].

5.2 Key findings - unfitness

Table 5.1 shows that between 2011 and 2016 there was a decrease in the rate of unfitness of Northern Ireland's housing stock from 4.6% in 2011 to 2.1% in 2016. The three most common reasons for a property being classified as unfit in 2016 were:

- Dampness (9,300 dwellings);
- Serious disrepair (9,100 dwellings);
- Unsatisfactory facilities for the preparation and cooking of food (8,800 dwellings).

This was a slight change from 2011 when the three most common reasons for a property being classified as unfit were: unsatisfactory facilities for the preparation and cooking of food; unsuitably located bath; shower or wash hand basin and serious disrepair.

5.3 Profile of unfitness

Unfitness - dwelling location (Appendix table 5.1)

- Dwellings in rural locations were more likely to be unfit (4%; 8% in 2011[5]) than those in urban locations (1%; 3% in 2011).
- Approximately two-thirds of all unfit dwellings were in rural locations (68%; 59% in 2011). The proportion of unfit dwellings in urban areas decreased from 41% in 2011 to 32% in 2016.
- Dwellings in small villages/hamlets/open country[6] were most likely to be unfit (6%; 10% in 2011).
- Dwellings in the Derry Urban Area/Large Towns[7] were least likely to be unfit (0.5%; 2% in 2011).
- There was a decrease in the proportion of unfit dwellings in Belfast Metropolitan Urban Area (1.2%; 5% in 2011).

Unfitness - district council area

Levels of unfitness by council area are regularly requested by government departments and councils who use the figures for planning and policy. However, the overall level of unfitness (2%) is too small to provide meaningful results at this lower geographical level. In order to provide some indication of findings seven out of the eleven council areas have unfitness rates of between 1% and 2% with Fermanagh and Omagh and Mid Ulster having the highest rates of unfitness.

Unfitness - dwelling tenure (Appendix table 5.2)

- The rate of unfitness for most tenures was very small, with the exception of vacant dwelling[8] (29.9%; 2.1% overall).

3. Further information about the 11 criteria for unfitness is available in Appendix C.
4. http://www.legislation.gov.uk/nisi/1992/1725/contents/made
5. The 2011 figures are based on the updated eight band definition. See Chapter 3 section 3.3: The total stock and its distribution. No comparison should be made with previously published 2011 figures.
6. These settlement types were grouped together due to small numbers.
7. These settlement types were grouped together due to small numbers.
8. Any comparison with vacant dwellings in 2011 should be treated with caution as the 2011 figure may have been an overestimation. See Appendix A: User Guide.

- Approximately half of all unfit dwellings were vacant (52.1%) and approximately one-third (34.6%) were owner occupied.

Unfitness - dwelling age (Appendix table 5.3)

- There was a clear relationship between unfitness and dwelling age. Pre 1919 dwellings had the highest rate of unfitness (11.4% compared with 2.1% overall). However, this was a decrease from 21.1% in 2011.
- Almost three-fifths (57.1%) of all unfit dwellings were built before 1919.

Unfitness - dwelling type (Appendix table 5.4)

- Analysis by dwelling type showed that detached houses had the highest rate of unfitness (4.4% compared with 2.1% overall).
- More than two-fifths (44.5%) of all unfit dwellings were detached houses.

Unfitness - household characteristics (Appendix tables 5.5 - 5.9)

The rate of unfitness for the occupied stock was 1.1%. The overall number of unfit dwellings in the occupied stock was not big enough to enable analysis by household characteristics.

5.4 Future action

Surveyors were asked not only to assess whether the property was unfit but, if so, what was the most appropriate course of action in respect of that property. Recommended actions were divided into those suitable for dwellings where the surveyor recommended retention (88%) and those recommended for demolition (12%).

5.5 Introduction - state of repair

Assessing the state of the dwelling stock and the associated repair costs have been key elements in the Northern Ireland House Condition Surveys since 1974.

The method of assessing and modelling repair costs has been refined and has become more complex in more recent surveys, but the basic approach to disrepair has remained essentially the same:

- Surveyors were trained to observe and record the presence of defects;
- The extent of the defects was recorded on the survey form;
- Particular treatments were specified by the surveyor and recorded;
- The cost of the required work was then estimated.

For the 2016 survey, the estimation of the repair costs was, once again, carried out by the Building Research Establishment using its most up to date computer-based model. These repair costs provided a sound estimate of the aggregate cost of the remedial work required. The costs were those required to bring the dwelling into good repair using a high standard of professional workmanship and good quality materials and components. The scale of the treatment as determined by the surveyor is the most critical factor in assessing repair costs. In order to negate the influence of dwelling size on repair costs, the model also produced standardised costing[9] based on £ per m².

For the 2016 survey, repairs were classified into urgent repairs, basic repairs and comprehensive repairs[10]:

Urgent Repairs - work which needs to be undertaken to prevent further significant deterioration to the external fabric of the dwelling in the short term.

Basic Repairs - urgent repairs to the exterior fabric plus additional visible work required to be carried out to the internal and external fabric of the dwelling in the medium term.

Comprehensive Repairs - basic repairs plus any replacements the surveyor has assessed as being needed in the next 10 years.

Table 5.3: Recommended future action for unfit dwellings, 2016

	Unfit Dwellings		All Dwellings	
	Number	%	Number	%
None	-	-	719,400	(92%)
Repair/Improve Single Dwelling	14,400	(88%)	57,000	(7%)
Repair/Improve Block/Group of Dwellings	-	-	1,600	(<1%)
Demolish/Replace Single Dwelling	2,000	(12%)	2,000	(<1%)
Demolish/Replace Block/Group of Dwellings	-	-	-	-
Total	16,400	(100%)	780,000	(100%)

9. For further information on standardised cost see Appendix D.
10. For further information on repair costs see Appendix D.

The state of repair of a dwelling is also a key element of the "Decent Homes" Standard. In order for a dwelling to be considered "decent" it must be in "a reasonable state of repair". Chapter 6 looks at the Decent Homes standard (including the state of repair) in more detail.

5.6 Key findings - state of repair

- The state of repair of Northern Ireland's stock in terms of the percentage of dwelling stock with at least one fault improved between 2011 and 2016, falling from 51% to 44% (see Table 5.2).
- This was reflected in decreases in the proportion of all dwellings with both interior disrepair (18%; 22% in 2011) and exterior disrepair (38%: 42% in 2011).
- Vacant dwellings were most likely to be in disrepair (71%; 44% overall).
- Owner occupied dwellings were least likely to be in disrepair (39%; 45% in 2011).
- The average urgent repair cost decreased from £1.43 billion in 2011 to £710 million in 2016.
- The average basic repair cost decreased from £1.61 billion in 2011 to £920 million in 2016.

5.7 Dwelling faults[11] - elements (Appendix table 5.10)

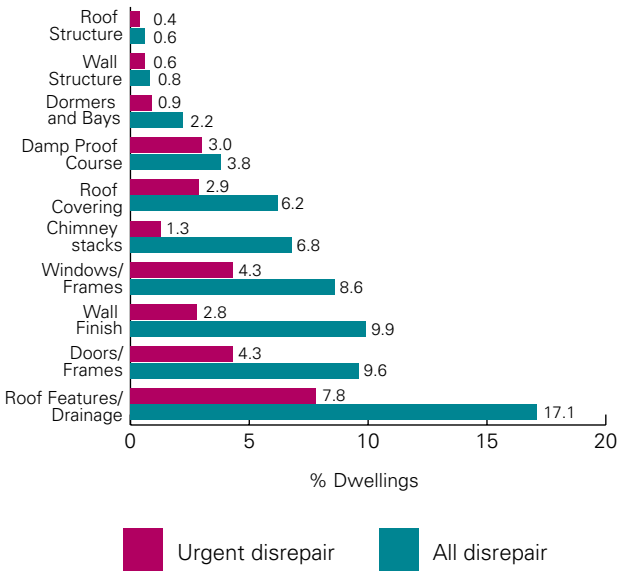
- The proportion of dwellings with faults to their exterior fabric decreased from 42% in 2011 to 38% in 2016.
- The proportion of dwellings with faults to their interior fabric decreased from 22% in 2011 to 18% in 2016.

Further analysis of faults to exterior elements shows:

- Faults to roof elements were the most common type recorded (184,100; 24%), affecting, in particular, roof features such as fascias, rainwater gutters and down pipes and valley gutters (133,300; 17%).
- Faults to plots were recorded in less than one-tenth of dwellings (58,800; 8%).
- Faults to windows and doors were recorded in approximately one-sixth of dwellings (111,900; 14%).
- Almost one-sixth of dwellings (105,200; 14%) had faults in their wall elements, with the most common faults affecting the wall finish (pointing or rendering).
- Structural faults to roofs and walls were relatively rare, being found in less than 1% of properties in both cases.
- In the case of interior disrepair, faults were most commonly recorded to ceilings (54,100; 7%); walls (53,200; 7%) and faults to windows (47,800; 6%). Smaller proportions had faults to doors (26,900; 3%); floors (20,700; 3%) and stairs (13,800; 2%).

Surveyors also had to record their estimate of the urgency of the treatment required for any faulty exterior elements. Figure 5.1 illustrates the relationship between the existence of external faults and the required urgency of repair to those elements.

Figure 5.1: External faults and their urgency, 2016[12]



Disrepair - dwelling tenure (Appendix table 5.11)

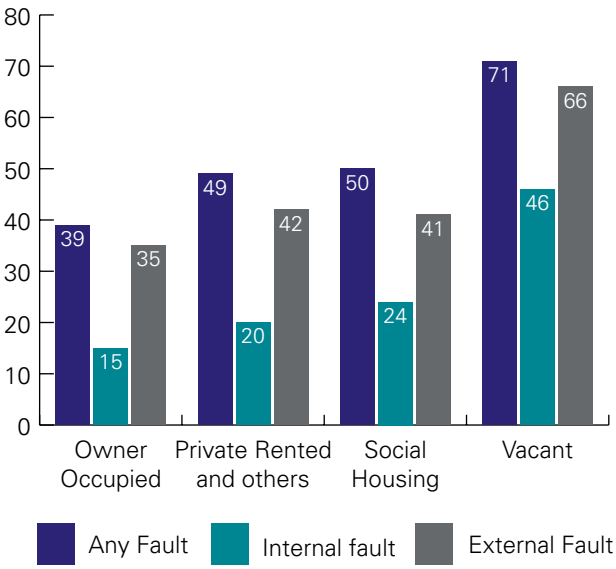
- More than two-thirds (71%) of vacant dwellings were in disrepair.
- Dwellings that were owner occupied were least likely to be in disrepair (39%; 45% in 2011).
- The likelihood of disrepair (external or internal) was clearly associated with the length of time a dwelling had been vacant. More than half (58%) of all dwellings that had been vacant for less than one year had at least one fault, whereas for dwellings vacant for more than one year the figure rose to 90%.
- In terms of internal disrepair, there was a similar pattern to that for all disrepair. Vacant properties had the highest proportion of internal disrepair (46%). Smaller proportions of social dwellings

11. For further information on dwelling faults see Appendix C and D.
12. Due to small proportions for all disrepair and urgent disrepair percentages have not been rounded.

(24%); private rented dwellings (20%) and owner occupied dwellings (15%) had internal disrepair.

- A similar pattern emerged for exterior repairs, with two-thirds (66%) of all vacant properties requiring external repairs. Approximately two-fifths of both private rented (42%) and social dwellings (41%) required external repairs. External disrepair was recorded in 35% of owner occupied dwellings (Figure 5.2).

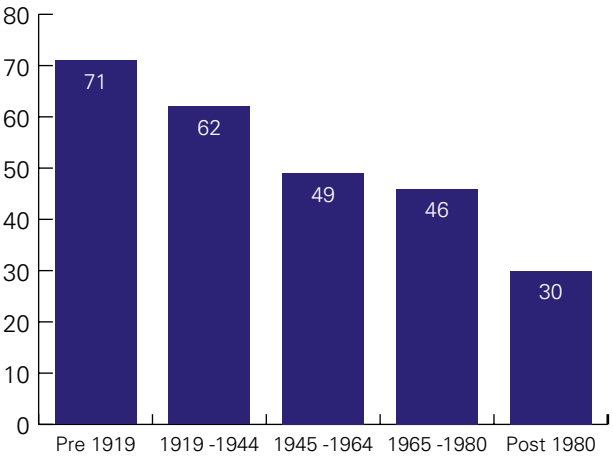
Figure 5.2: Disrepair and dwelling tenure, 2016 (% of dwellings)



Disrepair - dwelling age (Appendix table 5.12)

- There was a clear relationship between fabric disrepair and dwelling age. Dwellings built before 1919 had the highest rate of fabric disrepair (71%) and more than three-fifths (62%) of dwellings built between 1919 and 1944 had fabric disrepair.
- Dwellings built since 1980 (30%) were least likely to have fabric disrepair.
- Pre 1919 dwellings (40%) and those built between 1919 and 1944 (36%) had the highest proportion of internal disrepair.
- Post 1980 dwellings (10%) had the lowest internal disrepair.
- The pattern was similar for external disrepair with proportions being higher for pre 1919 properties (67%) and those built between 1919 and 1944 (54%; 66% in 2011).
- External disrepair was lowest in dwellings built since 1980 (24%).
- There was a significant decrease in the fabric disrepair of dwellings built between 1965 and 1980 (46%; 58% in 2011). Internal disrepair for this age group decreased to 13% (22% in 2011) and external disrepair decreased to 42% (51% in 2011).

Figure 5.3: Proportion of dwellings with any fabric disrepair by dwelling age, 2016 (% of dwellings)



Disrepair - dwelling type (Appendix table 5.13)

- Terraced houses (51%) were most likely to have fabric disrepair while flats/apartments (37%) were least likely to have fabric disrepair.
- Fabric disrepair in semi-detached houses decreased to 42% (51% in 2011). These types of dwellings also saw a significant decrease in external disrepair, from 44% in 2011 to 35% in 2016.
- Flats/apartments saw a decrease in interior disrepair from 25% in 2011 to 14% in 2016.

Disrepair - dwelling location (Appendix table 5.14)

- There was a decrease in the level of fabric disrepair in urban areas (43%; 49% in 2011[13]). Within urban areas the proportion of dwellings with interior disrepair decreased from 21% in 2011 to 18% in 2016. External disrepair in urban dwellings also decreased from 41% in 2011 to 37% in 2016.
- Dwellings with fabric disrepair were most likely to be found in small villages/hamlets/open country (50%) and in the Belfast Metropolitan Urban Area (49%).

13. The 2011 figures are based on the updated eight-band definition. For further information see Chapter 3 section 3.3: The total stock and its distribution. No comparison should be made with previously published 2011 figures.

- Dwellings in intermediate settlements/villages (35% and small/medium towns (36%), were least likely to be affected by fabric disrepair.

5.8 Repair costs

Urgent, basic and comprehensive repair costs

The BRE model provides a sound estimate of the actual cost[14] of any remedial work specified by the surveyors. Repair costs among occupied dwellings had increased since 2011; however there had been a decrease in the repair costs for vacant dwellings[15]. The key figures from this model were as follows:

- The average cost per dwelling of urgent repairs for the housing stock as a whole in 2016 was £909.72. This equated to £11.53 per m². The comparable figures for 2011 were £1,887.59 and £19.62 per m².
- The average basic repair cost was £1,179.89 which was equivalent to £14.39 per m². (The comparable figures for 2011 were £2,122.83 and £22.10 per m²).
- The average costs for comprehensive repairs were £3,916 and £53.15p per m².

Total repair costs

The model estimates the urgent repairs required to Northern Ireland's dwelling stock as a whole would cost approximately £710 million; for basic repairs the figure was £920 million. In nominal terms the total resources required to remedy urgent and basic disrepair has decreased (by £730 million and £740 million respectively).

The estimated repair costs continue to indicate that substantial resources are required on an ongoing basis to ensure that Northern Ireland's dwelling stock does not deteriorate. For more information on estimating repair costs see Appendix D.

Distribution of repair costs

Closer analysis of the modelled figures shows that a relatively small proportion of dwellings in a very poor state of repair skewed the distribution of repair costs (see Table 5.4).

This is reflected in the considerable disparities between the means and medians for both urgent and basic repairs. It is also reflected in the fact that in the case of urgent repairs only 1% of dwellings required repairs costing more than approximately £18,000, only 5% required costs of more than approximately £3,000, and at least 50% required no urgent repairs at all.

A similar pattern existed for basic repairs. One-half of the stock required no repairs at all, and only 5% required repairs costing more than approximately £4,000.

Table 5.4: The distribution of repair costs, 2016

	Actual repair required costing at least (£)	
% of Dwelling Stock	Urgent	Basic
1	18,415	20,074
2	7,934	10,321
5	3,074	4,011
10	1,286	2,358
25	256	615
50	0	0
Mean (£)	910	1,180
Median (£)	0	0
Mean per m² (£)	11.53	14.39
Median per m²(£)	0	0

Repair costs - dwelling tenure (Appendix table 5.15)

- The average urgent repair cost for vacant dwellings was much higher than for any occupied tenure and, at £10,750, it was approximately 20 times higher than for the occupied stock as a whole (£537).
- A similar concentration was apparent for basic repair costs; the figure for vacant stock was £11,087 compared with only £805 for occupied dwellings. Indeed, more than two-fifths (43%) of the total urgent repair costs for all stock and more than one-third (34%) of the total basic repair costs related to the 4% of the housing stock that was vacant.
- The owner occupied sector had the next highest average basic repair cost (£887). In all, almost £440m was required to remedy basic repair costs in this sector.
- Privately rented dwellings required an average of £852 (48% of the total) for basic repairs. This amounted to a total bill of almost £116m (13% of the total) for basic repairs.
- The average repair costs for social housing were much lower at £278 for urgent and £414 for basic (a total basic repairs bill of £50 million).

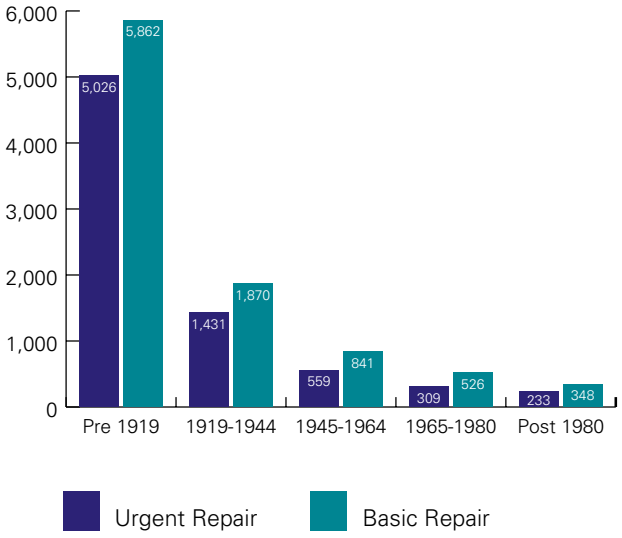
Repair costs - dwelling age (Appendix table 5.16)

- Figure 5.4 shows that the pre-1919 stock had the highest average basic and urgent repair costs (£5,862 and £5,026 respectively).

14. This included costs of preliminary work, access and any relevant uplifts – these amount on average to one-third of actual repair costs.
15. Any comparison with vacant dwellings in 2011 should be treated with caution as the 2011 figure may have been an overestimation.

- Dwellings built since 1980 had the lowest average basic and urgent repair costs (£348 and £233 respectively).

Figure 5.4: Average repair costs and dwelling age, 2016 (£ per dwelling)



Repair costs - dwelling type (Appendix table 5.17)

There were some considerable differences in the average repair costs for different dwelling types.

- Basic repair costs ranged from £2,453 (£19 per m²) for detached dwellings to £279 (£5 per m²) for flats/apartments. However, this difference was partly a function of the different sizes of these dwelling types.
- Urgent repairs costs show a similar picture, with the average cost per dwelling being highest for detached houses (£2,008; £17 per m²) and lowest for flats/apartments (£197; £4 per m²).

Repair costs - dwelling location (Appendix table 5.18)

- Rural dwellings had an average basic repair cost of £2,047 (£23 per m²) compared with a cost of £702 (£10 per m²) for urban dwellings.
- Small villages/hamlets/open country had the highest average basic repair cost (£2,897; £33 per m²), dwellings in intermediate settlements/ villages had the lowest average basic repair cost (£422; £5 per m²).

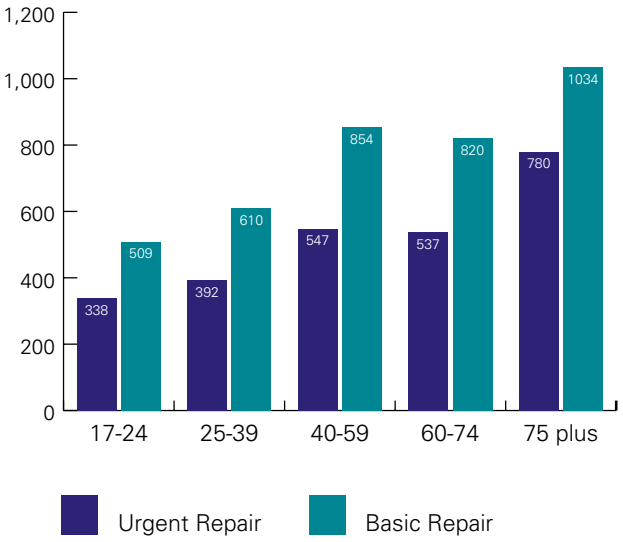
Repair costs - household characteristics (Appendix table 5.19)

In 2016, the average basic repair cost for occupied dwellings was £811 (£9 per m²). The average urgent repair cost was £540 (£6 per m²).

Age of household reference person

- Dwellings where the household reference person was aged 75 years or more had the highest average basic and urgent repair costs (£1,034 and £780 respectively).
- Dwellings where the household reference person was aged between 17 and 24 years old[16] had the lowest average basic and urgent repair costs (£509 and £339 respectively).

Figure 5.5: Average repair costs and age of household reference person, 2016 (£ per dwelling)



Household type

- Basic repair costs ranged from £1,040 (£11 per m²) for dwellings with older households to £654 (£8 per m²) for households with children. Urgent repair costs ranged from £745 (£8 per m²) for dwellings with older households to £431 (£5 per m²) for households with children.

Employment status

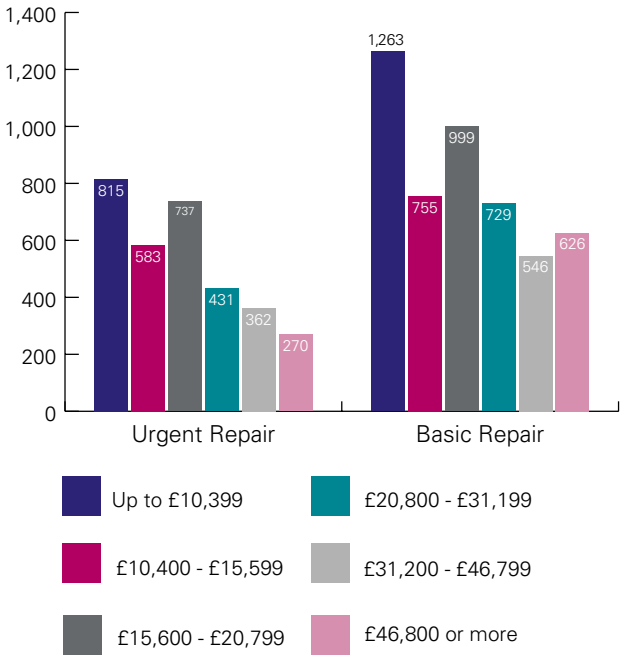
- Basic repair costs ranged from £1,331 (£17 per m²) for households where the HRP was not working to £580 (£7 per m²) for households where the HRP was retired. Urgent repair costs ranged from £981 (£12 per m²) for households where the HRP was not working to £375 (£5 per m²) for households where the HRP was retired.

16. Denotes a small number (generally 25 or less unweighted); where this is the case, caution should be applied.

Annual household income (gross)

- Figure 5.6 shows that households with an income up to £10,399 per year lived in dwellings with the highest basic (£1,263; £15 per m²) and urgent repair costs (£815; £11 per m²).
- Households with an annual income between £31,200 and £46,799, and those with incomes of £46,800 or more per year, were more likely to live in dwellings with the lowest basic repair costs (£546 and £626 respectively).

Figure 5.6: Average Repair Costs and Annual Household Income (Gross), 2016 (£ per dwelling)



Household religion

- Protestant households lived in dwellings with an average basic repair cost of £939 (£10 per m²) while Catholic households lived in dwellings with an average basic repair cost of £637 (£7 per m²).

5.9 Repairs and improvements

As part of the household survey, respondents were asked about repairs and improvements carried out to their dwellings during the previous five years. This provided a valuable insight into the resources committed to the existing dwelling stock by occupiers and landlords. Figures generated from this part of the survey are likely to be underestimated, not only because respondents sometimes forget, but also because with a recent change of occupancy, the full five-year repair/improvement history of the dwelling will not be known.

- Overall, some 324,700 dwellings had some form of repair or improvement work carried out in the five years prior to 2016. This represented almost half (44%) of the total occupied stock.
- The highest rates of repair and improvement were among social housing (53%) and owner occupied (48%) stock. This reflects the ongoing commitments of the Housing Executive and housing associations to maintain and improve the standard of housing in Northern Ireland, and work undertaken by owner occupiers wishing to improve their homes. See Chapter 7 for further information on energy efficiency improvements in the public and private sectors.
- In the private rented sector, the figures were much lower. Only 19% of privately rented dwellings had been repaired or improved, possibly reflecting a lack of investment incentives for private landlords. The high turnover of occupants in privately rented dwellings, however, also resulted in limited knowledge among interviewees of the extent of repair within the previous five years, hence the high proportion of "don't know" responses in Table 5.5.

Table 5.6 shows that the most common repair/improvement work carried out over the five year period to 2016 was replacing central heating (126,680 dwellings; 16% of stock)[18], providing/refitting a bathroom (112,770 dwellings; 15% of the stock), providing/refitting a kitchen (100,890 dwellings; 13% of the stock), For all other work the number of dwellings affected was much lower.

Table 5.5: Repairs and improvement work by tenure, 2016

Tenure	Repair/Improvement		No Work		Don't Know		Total Occupied Dwellings	
	Number	%	Number	%	Number	%	Number	%
Owner Occupied	235,700	48%	244,900	50%	7,000	1%	487,600	100%
Private Rented	26,100	19%	67,000	49%	42,800	32%	136,000	100%
Social Housing	62,900	53%	43,600	37%	12,200	10%	118, 600	100%
Total	324,700	44%	355,500	48%	62,000	8%	742,200[17]	100%

(All occupied and have had repairs/improvements in last 5 years)

17. Overall occupied stock was 742,470, the lower figure used in table 5.5 is due to households who did not answer this question.
18. These improvements are due in part to the Affordable Warmth and Boiler Replacement schemes in the private sector and the Housing Executive's solid fuel replacement programme. For more information see Chapter 7.

Table 5.6: Repairs and improvement work, 2016

Repair/Improvement work	Total dwellings	% of total stock
Installing/Replacing Central Heating	126,680	16.2
Providing/Refitting Bathroom	112,770	14.5
Providing/Refitting Kitchen	100,890	12.9
Replacing Windows	62,710	8.0
Replacing Doors	58,150	7.5
Roof Insulation	51,940	6.7
Other Work	51,380	6.6
Electrical Wiring	24,630	3.2
Internal Plastering	20,360	2.6
New Floors	20,170	2.6
Cavity Wall Insulation	18,870	2.4
Re-Roofing/Roof Structure	13,340	1.7
Extension	12,070	1.5
Structural Repairs	9,320	1.2
Rearranging Internal Space/Flat Conversion	9,130	1.2
Repointing/Rendering	6,590	0.8
Combining Two or More Rooms	5,810	0.7
Inserting/Replacing DPC	3,130	0.4
Conservatory Added	2,970	0.4
Garage Added	1,000	0.1
Any repairs/improvement to occupied stock	324,670	43.7
All occupied stock	742,470	100.0
All dwellings	780,000	100.0

Figure 5.7 illustrates the cost breakdown of repair and improvements carried out in the 324,670 dwellings that had work carried out in the five year period to 2016.

For one-sixth (16%) of dwellings the work cost more than £10,000, while for 18% of dwellings the cost was between £2,001 and £5,000. In 14% of dwellings the cost was between £5,001 and £10,000, but most commonly, for one-third (33%) of dwellings, the total cost of work was unknown. For the dwellings where the total cost was known, the majority of respondents (167,670; 73%) stated that they had paid all of the cost themselves. The remainder had contributed some of the expenditure (19%) or none of it (7%) or did not know how much they had contributed. In the case of those households who had contributed some of the cost of the work (42,740 households) the most common contribution (28%) was between £1,001 and £2,000.

Figure 5.7: Repair and improvement work - total cost, 2016 (% of households with repairs/ improvements in five years before survey)

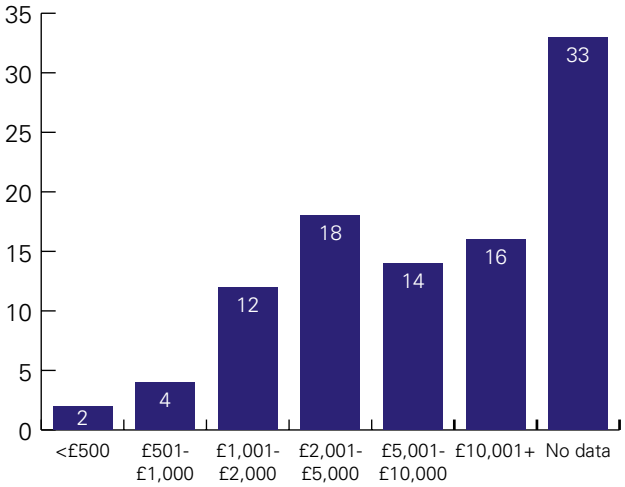


Table 6.1: Fuel Poverty - Key Figures, 2006-2016[1]

	Homes in Fuel Poverty (10% definition)					
	2006		2011		2016	
	Number	%	Number	%	Number	%
Tenure						
Owner Occupied	148,000	31.8	190,000	40.6	112,100	23.0
Private Rented and Others	35,300	44.1	60,300	49.1	35,700	26.3
Housing Executive	37,800	40.8	43,900	39.7	11,700	9.9
Housing Association	4,500	21.1				
Dwelling Age						
Pre 1919	51,800	54.4	45,900	68.7	37,000	51.7
1919 - 1944	27,600	41.4	30,200	53.6	14,600	24.5
1945 - 1964	51,700	38.2	63,200	49.1	29,500	24.2
1965 - 1980	52,700	32.2	78,000	48.4	37,500	20.3
Post 1980	41,800	21.1	76,800	26.7	40,900	13.4
Dwelling Type						
Bungalow	56,800	38.0	76,800	51.3	42,500	27.6
Terraced House	76,900	35.8	90,600	45.9	40,200	18.9
Semi-Detached House	40,700	30.6	62,300	39.7	32,400	18.7
Detached House	36,500	31.9	51,200	36.4	39,300	25.6
Flat/Apartment* *small numbers*	14,700	30.9	13,300	23.5	x	10.5
Dwelling Location						
All Urban	N/A[1]	N/A	206,100	41.2	78,400	16.2
All Rural	N/A	N/A	88,200	44.0	81,100	31.5
All Dwellings in Fuel Poverty	225,600	34.2	294,200	42.0	159,500	21.5

Table 6.2: Decent Homes - Key Figures, 2006-2016

	Non Decency Rate					
	2006		2011		2016	
	Number	%	Number	%	Number	%
Tenure						
Owner Occupied	95,700	20.4	38,300	8.2	31,500	6.4
Private Rented and Others	21,400	26.5	12,800	10.2	14,500	10.7
Housing Executive	23,100	24.7	x		x	3.1
Housing Association	1,900	8.9		3.7		
Vacant	20,000	49.5	31,300	57.1	11,300	39.6
Dwelling Age						
Pre 1919	46,700	41.1	30,900	35.3	22,800	28.0
1919 - 1944	21,500	30.3	20,000	29.4	x	15.2
1945 - 1964	40,400	28.6	11,400	8.5	12,800	10.2
1965 - 1980	36,000	21.3	16,800	9.9	9,200	4.9
Post 1980	17,500	8.3	x	2.4	x	1.8
Dwelling Type						
Bungalow	34,600	21.6	20,200	12.6	13,700	8.4
Terraced House	54,700	24.3	23,700	11.3	18,800	8.5
Semi-Detached House	29,200	20.7	11,200	6.8	11,200	6.2
Detached House	25,700	21.0	22,300	14.1	14,000	8.5
Flat/Apartment* *small numbers*	17,900	32.0	x	13.8	x	6.1
Dwelling Location						
All Urban	N/A	N/A	42,900	8.7	33,100	6.6
All Rural	N/A	N/A	43,700	16.2	27,800	10.0
All Dwellings	162,100	23.0	86,600	11.4	60,900	7.8

1. 2006 figures are not available for the new urban-rural (eight-band) classification. See Chapter 3 section 3.3: The total stock and its distribution.

Chapter 6

Fuel poverty and housing quality

Table 6.3: Housing health and safety rating system - Key Figures, 2016[2,3]

	Category 1 Hazards	
	Number	%
Tenure		
Owner Occupied	43,400	8.8
Private Rented and Others	11,100	8.2
Housing Executive	x	4.4
Housing Association		
Vacant	10,100	35.5
Dwelling Age		
Pre 1919	22,000	27.0
1919 - 1944	11,200	16.6
1945 - 1964	12,700	10.1
1965 - 1980	11,400	6.0
Post 1980	12,500	4.0
Dwelling Type		
Bungalow	18,200	11.1
Terraced House	13,600	6.1
Semi-Detached House	12,700	7.1
Detached House	22,500	13.7
Flat/Apartment	x	5.6
Dwelling Location		
All Urban	33,800	6.7
All Rural	36,100	13.0
All Dwellings	69,900	9.0

x denotes a small number in a table (generally 25 or less unweighted); where this is the case, caution should be applied when quoting proportion.
<1% in a cell indicates that the number of dwellings in a particular category was 0. As the survey was a sample survey, it is possible that there were dwellings in the category (showing as <1%) but none were selected as part of the sample. Caution should be used when quoting these proportions.

2. Revisions to the HHSRS model in relation to SAP2012 and excess cold mean that caution should be exercised when making comparisons with results before 2016.
3. The 2016 Northern Ireland physical survey form changed - creating four new types of extreme HHSRS risks (falls associated with baths, entry by intruders, noise and collision and entrapment); these were previously measured by the surveyor. This is the same approach used in the EHS.

6.1 Introduction - fuel poverty

For the first time, the 2016 HCS reports on two methods of measuring fuel poverty - the '10% definition' (used in previous HCS reports) and the relatively newer 'Low Income High Costs' method (the measure now used in England).

Sections 6.2 to 6.6 provide an update of the 10% definition and this is followed by the Low Income High Costs (LIHC) fuel poverty measure in sections 6.7 to 6.12.

Where applicable, the 2016 results are compared with previous results from the 2006 and 2011 House Condition Surveys. In this chapter observed differences between the years were statistically significant unless otherwise stated. It should be noted that, although the sample size varies between the different years, the results are representative of the Northern Ireland population and assumed to be directly comparable.

Fuel poverty is a devolved matter and each nation in the UK has its own fuel poverty definition and policies to tackle the issue. Annex B[4] of the *Annual Fuel Poverty Statistics report, 2017* by the Department for Business, Energy and Industrial Strategy (BEIS) summarises the definitions and policies that apply in each devolved nation, and the most recent available estimates.

6.2 Fuel poverty under the 10% definition

Under the 10% methodology, a household is considered to be in fuel poverty if, in order to maintain a satisfactory level of heating (21°C in the main living area and 18°C in other occupied rooms), it is required to spend in excess of 10% of its household income on all fuel use.

Fuel poverty assesses the ability to meet all domestic energy costs including space and water heating, cooking, lights and appliances. This is expressed by means of the fuel poverty ratio (FPR):

Fuel poverty under the 10% methodology is determined by three factors:

- fuel prices;
- energy consumption (which, combined with fuel prices, forms the household costs); and
- household income.

The figures for Northern Ireland fuel poverty are derived from several models constructed by the Building Research Establishment (BRE) in Watford, London. The fuel poverty model calculates a fuel poverty ratio for each dwelling.

For further detail see Appendix E.

6.3 Fuel poverty - 10% definition - summary of findings

The 2016 House Condition Survey estimated that approximately 22% (160,000) of households in Northern Ireland were in fuel poverty (Table 6.1). This represents a significant improvement in fuel poverty levels since 2011 when the figure was 42% (294,000).

This decrease of 20 percentage points in the five year period is statistically significant and is largely due to lower average fuel prices, lower modelled household energy use (mainly due to improved energy efficiency of the stock, particularly dwelling fabric and heating systems) and increased income.

The relative nature of fuel poverty, and the interaction of the above drivers, makes it difficult to isolate accurately the absolute reason for change; however, the investment by government in domestic energy efficiency schemes[5] of over £117 million in the private sector and £181 million in Housing Executive stock during the period 2011 to 2016 will have made a contribution to reducing domestic energy consumption and thus fuel poverty levels.

Evidence for this can be seen in the improvements to the mean SAP figures for Northern Ireland. Chapter 7 reports on the new SAP 2012 methodology and a time series report will be published separately. However, analysis of the SAP09 methodology shows that the mean SAP rating for Northern Ireland improved from 59.63 in 2011 to 64.84 in 2016.

$$\text{Fuel poverty ratio} = \frac{\sum_{\text{All fuels}} (\text{Unit Fuel price} \times \text{Fuel Consumption}) + \sum_{\text{All fuels}} (\text{Standing Charge})}{\text{Income}}$$

4. Fuel Poverty Statistics Report 2017 revised August.
5. These include the Affordable Warmth and Boiler Replacement schemes in the private sector and the Housing Executive's solid fuel replacement programme. For more information see Chapter 7.

Analysis of households in fuel poverty in 2016 shows that while the overall proportion of fuel poverty has dropped significantly, similar types of households continue to be affected:

- Low income continued to be a significant cause of fuel poverty in Northern Ireland (55% of households with an annual income of less than £10,399 were in fuel poverty). Indeed, 78% of all households in fuel poverty had incomes of £15,599 per annum or less.
- More than half (52%) of households living in older dwellings (pre 1919) were in fuel poverty.
- One-third (34%) of households living in small villages, hamlets or open country areas were in fuel poverty.
- Almost two-fifths (38%) of households headed by an older person (75 plus) were in fuel poverty and one-third (34%) of older household types were fuel poor.
- Fuel poverty was higher in households with HRPs who were unemployed (32%) or retired (31%).

6.4 10% definition fuel poverty - key results

Table 6.4: Northern Ireland fuel poverty estimates (10% definition) 2001-2016

Households in Fuel Poverty				
2001	2006	2009	2011	2016
27%	34%	44%	42%	22%
167,000	226,000	302,000	294,000	160,000

Table 6.4 above shows how the rate of fuel poverty has changed over time. The 2016 House Condition Survey estimated that approximately 160,000 (22%) of households in Northern Ireland were in fuel poverty. This represents a significant improvement in fuel poverty levels against all previous years in this comparison.

The general trend since 2001 had been an increase in the proportion of households that were fuel poor, peaking in 2009 before decreasing a little in 2011. However, the reduction in the five years between 2011 and 2016 to 22% means that the vast majority of households (583,000) in Northern Ireland were not in fuel poverty in 2016.

The drop in fuel poverty levels was largely due to lower average fuel prices, lower modelled household energy use and increased income.

Fuel prices 2011-2016

The percentage change in gas prices, depending on method of payment was between -26% and -28%. Electricity prices (standard, economy 7 day and night rates) also showed decreases of between -4% and -16%, again depending on method of payment.

The lower fuel prices were combined with a -14% drop in households' energy use between 2011 and 2016.

Fuel costs

To calculate fuel costs, the energy consumption for each end-use is multiplied by the relevant fuel price and the results are summed. The standing charges (where applicable) are then added to provide the final household fuel cost estimation. Therefore, fuel costs are dependent on both fuel prices and household energy use.

Total estimated household energy use in Northern Ireland decreased by 8,060 kilowatt hours (kWh) per annum between 2006 and 2016. At the same time, the price of heating oil [6]increased by 1.81 pence per kWh between 2006 and 2011, and then decreased by 0.01 pence per kWh between 2011 and 2016.

The combined effect of these changes was that the average household fuel costs increased from £1,400 per annum in 2006 to £1,700 per annum in 2011- with the highest percentage change observed during this period occurring between 2006 and 2009, when costs increased by 22% - before falling to £1,500 per annum in 2016.

Improvement in energy efficiency of the stock in Northern Ireland

More than £117 million was invested by the government in domestic energy efficiency schemes, in the private sector, during the period 2011 to 2016. This was mainly through the Warm Homes Scheme, the Boiler Replacement Scheme and the Affordable Warmth Scheme.

The Affordable Warmth Scheme replaced the Warm Homes Scheme from April 2015. The Scheme is funded by the Department for Communities and its purpose is to improve domestic energy efficiency and therefore, reduce energy consumption in eligible private housing. Affordable Warmth is a targeted and area based scheme delivered in a partnership between the Department for Communities, Local Councils, Northern Ireland Housing Executive and a network of local installers.

6. The oil price used in the fuel poverty methodology is based upon a three year average. This averaging process smooths out the high fluctuations observed in the actual 'spot' measurements of the oil price.

Since its launch the Scheme has invested over £50 million in improving the energy efficiency of more than 11,000 low income vulnerable households across Northern Ireland.

Significant investment has also been made in the social sector with £181 million invested in improvements to Housing Executive stock in relation to insulation, double glazing and heating[7, 8].

Income

Table 6.5 summarises the Northern Ireland household income for 2016, together with the relevant 2011 income values and the percentage change between 2011 and 2016. The figures presented here are full income values (calculated from the basic income by adding income due to housing related benefits[9] and deducting rates). An increase of 16% is observed between 2011 and 2016, with the average 2016 full income estimated at £23.8K.

Table 6.5: Northern Ireland household income (gross), 2011-2016

	Income (£)		% change between 2011 and 2016
	2011	2016	
Full income	20.5k	23.8k	16%

Household income has increased continuously since 2006. The highest increase (16%) occurred between 2011 and 2016 (as noted above). Since income is one of the main factors affecting fuel poverty, this has contributed to a reduction in the overall level of fuel poverty.

Fuel poverty estimates by nation

The 10% definition is no longer used in England, where fuel poverty is now measured using the 'Low Income High Costs' (LIHC) indicator. It is modelled using data from the English Housing Survey (which incorporates the English House Condition Survey).

The Northern Ireland House Condition Survey has produced estimates of fuel poverty using this LIHC indicator and results are presented in section 6.7 to 6.12.

Both Scotland and Wales use the 10% definition and the latest available estimates can be found in Table 6.6.

Table 6.6: Fuel poverty (10% definition) estimates by nation[10]

Households in Fuel Poverty	Northern Ireland	Wales	Scotland
2016	22%	23%[11]	27%[12]

Severity of fuel poverty in Northern Ireland, 2016

Table 6.7 shows the level of fuel poverty in Northern Ireland in 2016 by different levels of severity. The table provides information on the proportion of households required to spend between 10% and 15%, between 15% and 20% or more than 20% of their income to meet the required fuel expenditure. It can be seen that 2% of households in Northern Ireland would be required to spend more than 20% of their income in order to meet the required fuel expenditure. This is a decrease from 6% (41,000) households in 2011.

Table 6.7: Severity of fuel poverty (10% definition) in Northern Ireland, 2016

Income spend	10-15%	15-20%	20+%
Percentage of fuel poor households - full income	16%	4%	2%
Number of fuel poor households - full income	115,700	30,400	13,400

6.5 10% definition fuel poverty by key dwelling characteristics

10% definition fuel poverty and dwelling tenure (Appendix table 6.1)

The rate of fuel poverty varied by tenure, but patterns remained broadly similar to previous years.

- The tenure with the highest proportion in fuel poverty in 2016 was the private rented sector (35,700; 26%), followed by the owner occupied sector (112,100; 23%).

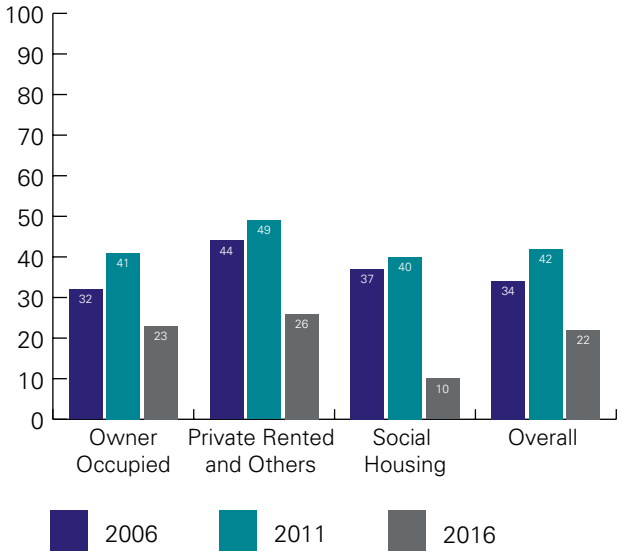
7. See Home Energy Conservation Authority Annual Progress Report 2016-2017. https://www.nihe.gov.uk/index/advice/energy_environment.htm
8. Further information about the energy efficiency schemes in the private and public sectors is available in Chapter 7.
9. It is important to note that Housing Benefit was excluded from the calculation of income in 2016 and a separate question on the amount of Housing Benefit received was used in order to provide a more accurate calculation of income for fuel poverty modelling.
10. In the past Scotland used a more stringent interpretation of a satisfactory heating regime for pensioners, long-term sick and disabled households and had a different approach to under-occupancy with regard to heating regimes. In November 2017 Scotland published a review of the definition of fuel poverty in Scotland. A new definition of fuel poverty in Scotland - A review of recent evidence
11. http://gov.wales/topics/environmentcountryside/energy/fuelpoverty/fuel-poverty-levels
12. https://news.gov.scot/news/99-000-households-move-out-of-fuel-poverty-in-2016

- The social housing stock had a fuel poverty rate of 10% (11,700 households) reflecting in part the much newer stock managed by housing associations. This figure compares with 37% (42,300 households) in 2006, reflecting the investment in energy efficiency measures[13] in Housing Executive accommodation over the decade 2006 to 2016.

It is important to note that seven out of ten (70%) of all households that were fuel poor lived in owner occupied dwellings. The proportion in 2011 was 65%.

Figure 6.1 summarizes the change in fuel poverty by tenure over time.

Figure 6.1: Households in fuel poverty (10% definition) and tenure, 2006-2016 (% of households in fuel poverty)



10% definition fuel poverty and dwelling type (Appendix table 6.2)

As in 2011, the rates of fuel poverty were highest in households living in bungalows[14] (28%). A slightly lower rate of fuel poverty was found in households living in detached (26%) properties in 2016, followed by terraced and semi-detached houses (both 19%).

10% definition fuel poverty and dwelling age (Appendix table 6.3)

There was a clear association between dwelling age and fuel poverty. Households living in older dwellings had higher rates of fuel poverty. This is consistent with previous findings.

- More than half (52%) of households living in dwellings built before 1919 were fuel poor. The figure for 2011 was 69%;
- The rate of fuel poverty was lower for households living in dwellings built between 1919 and 1944 (25%; 2011 54%);
- However, the rate of fuel poverty for households living in newer post 1980 stock was only 13% (27% in 2011).

10% definition fuel poverty and dwelling location (Appendix table 6.4)

In 2016 a much higher rate of fuel poverty was found in rural areas (32%; 44% in 2011) compared with urban areas (16%; 41% in 2011). The highest rate of fuel poverty was found in households living in small villages, hamlets or in open country areas (34%).

Households in fuel poverty and local council area 2006-2016 (Appendix table 6.5)

Table 6.8 shows the rates of fuel poverty by council area. In 2016, the highest rate of fuel poverty was found in Mid Ulster (32%), followed by Derry and Strabane (31%) and Causeway Coast and Glens (27%). The lowest rates were found in Lisburn and Castlereagh (13%), Antrim and Newtownabbey (14%) and Belfast (15%). The table also shows the decrease in fuel poverty rates in each council since 2006[15]. By council Belfast shows the largest proportionate decrease in fuel poverty of 24 percentage points in the ten year period.

Table 6.8: Households in fuel poverty (10% definition) by council area 2006-2016

	% Fuel Poverty	
	2006	2016
Antrim and Newtownabbey	25	14
Ards and North Down	37	20
Armagh, Banbridge and Craigavon	33	24
Belfast	39	15
Causeway Coast and Glens	36	27
Derry and Strabane	33	31
Fermanagh and Omagh	35	26
Lisburn and Castlereagh	29	13
Mid and East Antrim	35	22
Mid Ulster	38	32
Newry, Mourne and Down	35	26
Total	34	22

13. More information on this is available in Chapter 7.
14. Bungalows may also be referred to as single storey houses.
15. The sample in 2011 was too small to provide robust figures at council level.

10% definition fuel poverty and fuel source

There was some variation in rates of fuel poverty by central heating fuel types. Households with mains gas (9%) central heating were least likely to be in fuel poverty. This compares with 25% of households with oil central heating and 25% of households with solid fuel, electric, dual fuel or other heating (the numbers were too small to provide fuel poverty rates for each of these fuel types separately).

10% definition fuel poverty and cavity wall insulation

Households living in dwellings with full cavity wall insulation (16%) were less likely to be in fuel poverty than households living in dwellings with partial (31%) or without any type of wall insulation (34%).

10% definition fuel poverty and loft insulation

There was a clear inverse relationship between loft insulation thickness and fuel poverty; as the thickness of loft insulation increased, fuel poverty decreased, demonstrating the difference that improved insulation can make. Almost one-third (30%) of households with loft insulation less than 100mm were in fuel poverty, compared with 18% of households with more than 150mm of loft insulation. More than half (57%) of households with no loft insulation were in fuel poverty.

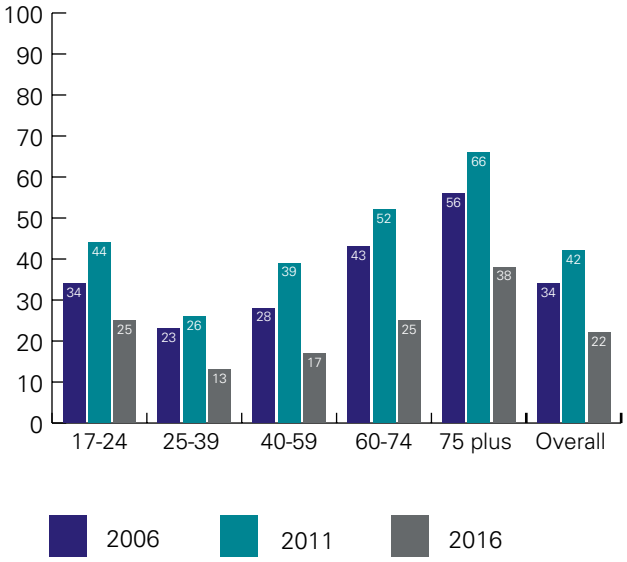
6.6 10% definition fuel poverty by key household characteristics (Appendix table 6.6)

10% definition fuel poverty and age of household reference person

Figure 6.2 shows households in fuel poverty by age of HRP. It clearly confirms that households headed by older people were much more likely to be living in fuel poverty.

- Household reference persons aged 75 plus (38%) and between 60 and 74 (25%) were more likely to be living in fuel poverty, compared with those aged between 40 and 59 (17%) and between 25 and 39 (13%).
- As in 2006 and 2011, approximately half (57%) of all households that were fuel poor were headed by household reference persons aged 60 or more.

Figure 6.2: Households in fuel poverty (10% definition) and age of HRP, 2006-2016 (% of households in fuel poverty)



10% definition fuel poverty and household type

The rate of fuel poverty varied by household type and was consistent with findings by age. The overall patterns were similar to 2011.

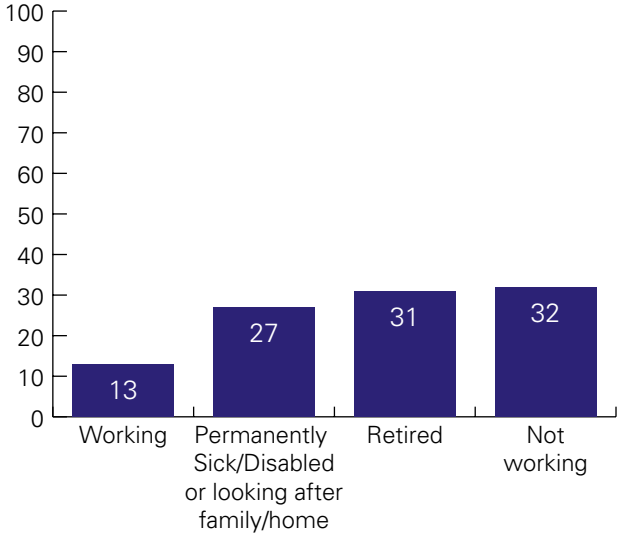
- A high proportion of older households (34%) were in fuel poverty.
- Almost one-fifth (17%) of adult households were in fuel poverty.
- Households with children (15%) were least likely to be in fuel poverty.

10% definition fuel poverty and employment of household reference person

The rate of fuel poverty varied by employment type and was also consistent with findings by age.

- Almost one-third (32%) of households with unemployed reference persons were living in fuel poverty.
- A similar proportion of households headed by a retired person (31%) were living in fuel poverty in 2016.
- The lowest rate of fuel poverty was found in households headed by employed persons (only 13%; 27% in 2011).

Figure 6.3: Households in fuel poverty (10% definition) employment status of HRP, 2016 (% of households in fuel poverty)



10% definition fuel poverty and income

Table 6.9 shows the clear relationship between income[16] and fuel poverty. Low income households were much more likely to be living in fuel poverty, supporting the hypothesis that one of the most important underlying causes of fuel poverty is a low income.

- In 2016, 55% of households with an annual income of up to £10,399 per annum were in fuel poverty.
- As income increased, the proportion of households in fuel poverty declined. The rate of fuel poverty for households with an annual income of between £15,600 and £20,799 was 23%, falling to less than 1% for those with an annual income of £46,800 or more.

Table 6.9 Fuel poverty (10% definition) and annual (gross) household income, 2016

Annual Household Income	% in Fuel Poverty
Up to £10,399	55
£10,400 - £15,599	33
£15,600 - £20,799	23
£20,800 - £31,199[17]	7
£31,200 - £46,799	1
£46,800 or more	<1
Overall Rate	22

- Of all households in fuel poverty, 78% had an annual household income of £15,599 or less.

10% definition fuel poverty and religion

There was little variation in the rate of fuel poverty by the two main religious groups. Around one-fifth of households designated as Protestant (22%) and Catholic (23%) were in fuel poverty. The equivalent figures in 2011 showed a similar pattern (44% and 42% respectively).

6.7 Fuel Poverty under the Low Income High Costs (LIHC) indicator

Fuel poverty in England is measured using the Low Income High Costs indicator (LIHC), which considers a household to be fuel poor if:

- They have required fuel costs that are above average (the national median level);
- Were they to spend that amount, they would be left with a residual income below the official poverty line.

This indicator has not been adopted in Northern Ireland and is not part of the fuel poverty strategy for Northern Ireland. However, it can be measured through the House Condition Survey and users of the Survey have requested information on it.

The intention of this section is to provide a useful baseline analysis of households affected, which can be compared with England.

The *Annual Fuel Poverty Statistics report, 2017 (2015 Data)*, (Department for Business, Energy & Industrial Strategy (BEIS), 2017)[18] provides a useful summary of the LIHC indicator as follows:

A household is considered to be fuel poor if it has higher than typical energy costs ***and*** would be left with a disposable income below the poverty line[19] if it spent the required money to meet those costs.

It captures the fact that fuel poverty is distinct from general poverty: not all poor households are ***fuel*** poor, and some households would not normally be considered ***poor*** but could be pushed into fuel poverty if they have high energy costs. Fuel poverty is therefore an overlapping problem of households having a low income ***and*** facing high energy costs.

The Government is interested in the amount of energy people need to consume to have a warm, well-lit home, with hot water for everyday use, and the running of appliances. Therefore fuel poverty is based on ***required*** energy bills rather than ***actual***

16. Please note: the income question was updated in 2016 in line with ONS harmonised concepts and questions, and provides more detail for the fuel poverty model.
17. Higher income bands should be used with some caution as numbers were small (generally 25 or less unweighted).
18. Annual fuel poverty statistics report 2017
19. The poverty line (income poverty) is defined as an equivalised disposable income of less than 60% of the national median.

spending. This ensures that households who have low energy bills because they actively limit the use of energy at home, for example, by keeping their home cold are included. (Dept. for BEIS 2017, p5).

Low Income High Costs is a ***dual*** indicator in that it measures not only the ***extent*** of the problem (how many households are in fuel poverty) but also the ***depth*** of the problem (how badly affected each fuel poor household is). The depth of fuel poverty is calculated by taking account of the ***fuel poverty gap***. This is a measure of the additional fuel costs (in pounds) faced by fuel poor households to meet the non-fuel poor household threshold. (Dept. for BEIS 2017, p6).

Unlike the 10% fuel poverty definition measure, the LIHC is a relative measure as it compares households to the national median modelled notional fuel bill and household income.

> A change in income will only have an impact on fuel poor households if they see relatively larger income changes (increase or decrease) than the overall population; the same is true for household energy costs. As a result, the proportion of households in fuel poverty remains, on the whole, stable over time, whereas the fuel poverty gap (which is measured in pounds) is more closely linked to changes in energy prices and the economy and therefore, a more informative measure when looking at the direct impacts of fuel poverty over time. (Dept. for BEIS 2017, p6)

As in England, the figures for the Northern Ireland LIHC definition are derived from several computer models constructed by the Building Research Establishment (BRE).

A fuller explanation of fuel poverty under this definition can be found in Appendix E. In addition, the method used to identify households living in fuel poverty under the LIHC definition is further described and documented in Annex B of the DECC Annual Fuel Poverty Statistics report, 2014 *Calculating Fuel Poverty under Low Income High Costs (LIHC)*[20] The Northern Ireland 2016 LIHC values have been calculated following this outlined methodology, using the same base information that was used to calculate the 10% indicator in section 6.2.

6.8 Fuel Poverty - Low Income High Costs - summary of findings

Analysis of households in fuel poverty by the two different definitions (LIHC and 10%) show that while there were similar patterns by dwelling characteristics there were some contrasting differences by household characteristics (largely due to the methodological differences in the two definitions).

- Overall, findings from the 2016 HCS show that 7% of households were in fuel poverty under the LIHC definition. This compares with 11% in England (2015). The lower rate in Northern Ireland possibly reflects fewer households classified as "low income" (i.e. below 60% of the median income level of Northern Ireland). This could be because the income distribution is narrower than in England (i.e. the range and spread of incomes in Northern Ireland is less than in England).
- As with the 10% definition, low income households have higher rates of LIHC fuel poverty (18% of households with an annual income of less than £10,399 were in LIHC fuel poverty). Indeed, 67% of all households in fuel poverty had incomes of £15,599 per annum or less.

The HCS indicates that LIHC fuel poverty was correlated to a number of other factors:

- Approximately one in ten households (11%) living in the oldest dwellings (pre 1919) were in LIHC fuel poverty.
- Also, 13% of households living in small villages, hamlets or open country areas were in LIHC fuel poverty.
- In contrast to the 10% definition, households headed by persons in the 40 to 59 (11%), and in the 25 to 39 (10%) age bands were more likely to be in LIHC fuel poverty in 2016. Consequently, households with children were more likely to be in LIHC fuel poverty (13%) compared to older households (2%).

  The reason for this is that LIHC uses *equivalised* income which will make smaller households appear better off than larger households and will therefore make them less likely to be "low income"; in general, older households are smaller than younger households. Households with many members are likely to need a higher income to achieve the same standard of living as a household with fewer members as they require more food, clothing etc. This is compounded by the switch to using an *after housing costs*[21] income measure. Older households are more likely to own their homes outright and so not have any housing costs, and thus they are generally better off under this measure.
- LIHC fuel poverty was higher in households with HRPs who were unemployed (18%).

20. Annual Fuel Poverty Statistics Report 2014 (DECC)
21. This is the official income definition used to estimate LIHC fuel poverty. It is based on a household's full income minus housing costs (mortgage and rent payments), which is then equivalised by an adjustment factor to standardise spending requirements based on a household composition. See Appendix E.

- In 2016, the average fuel poverty gap for all Northern Ireland households (the amount needed to meet the fuel poverty threshold or, in other words, what needs to be added to income to afford fuel bills) was estimated at £436. For comparison, the average fuel poverty gap in England in 2015 was £353. This indicates that while the extent of fuel poverty under LIHC is less in Northern Ireland (7% compared with 11% in England), the depth or severity is greater than England.
- The resulting gap for each individual household can be summed across all fuel poor households to produce an aggregate fuel poverty gap; this provides a sense of the depth of fuel poverty on a national level. The 2016 sum of the fuel poverty gap in Northern Ireland is £24 million; this compares with £884 million for England.

6.9 LIHC fuel poverty - key results 2016

The LIHC indicator is a twin indicator consisting of:

- The number of households that have both low incomes *and* high fuel costs; and
- The depth of fuel poverty amongst these fuel poor households (the fuel poverty gap - see section 6.12).

Table 6.10 LIHC fuel poverty estimates, 2016[22]

Households in Fuel Poverty	2016 Northern Ireland	2015 England
LIHC Method	7%	11%
	55,100	2.50m

Table 6.10 shows that in 2016, the proportion of households in fuel poverty in Northern Ireland using the LIHC definition was estimated at 7%. This compares with 11% in England in 2015 (latest figures available at the time of this report).

This indicates that the extent of fuel poverty under LIHC is less in Northern Ireland compared with England. The lower rate in Northern Ireland possibly reflects fewer households classified as "low income" (i.e. below 60% of the median income level of Northern Ireland). This could be because the income distribution is narrower than in England (i.e. the range and spread of incomes in Northern Ireland is less than in England).

6.10 LIHC fuel poverty by key dwelling characteristics

LIHC fuel poverty and dwelling tenure (Appendix table 6.7)

The rate of LIHC fuel poverty varied widely by tenure.

- The tenure with the highest proportion in LIHC fuel poverty in 2016 was the private rented sector (18%; 24,600). This compares with 6% for the owner occupied sector (27,500) and only 3% for the social housing sector (3,000 - care needs to be taken as this number is small).

  It is important to note that, of the 55,100 households who were in fuel poverty under this definition, 50% were owner occupiers and 45% were living in the private rented and others sector.

LIHC fuel poverty and dwelling type (Appendix table 6.8)

- There was little variation in the rate of LIHC fuel poverty by dwelling type.

LIHC fuel poverty and dwelling age (Appendix table 6.9)

Households living in the oldest dwellings had higher rates of LIHC fuel poverty. Small numbers for some of the age bands means that findings should be treated with some caution and are excluded from analysis.

- 11% of households living in dwellings built before 1919 were fuel poor compared with 7% for households living in dwellings built post 1980.

LIHC fuel poverty and dwelling location (Appendix table 6.10)

In 2016 a much higher rate of LIHC fuel poverty was found in rural areas (11%; 29,500) compared with urban areas (5%; 25,600). The highest rate of fuel poverty was found in households living in small villages, hamlets or in open country areas (13%; 20,800).

6.11 LIHC fuel poverty by key household characteristics (Appendix table 6.11)

LIHC fuel poverty and age of household reference person

In contrast with findings generated using the 10% fuel poverty definition, households in younger age bands were more likely to be in LIHC fuel poverty. The reason for this is that the LIHC indicator uses equivalised income[23] and younger households are

22. The Building Research Establishment (BRE) kindly provided some information and guidance in relation to the LIHC section of the report.
23. Income equivalisation factors aim to reflect that different size households have different spending requirements - see Appendix E.

more likely to be larger than older households. Households with many members are likely to need a higher income to achieve the same standard of living as a household with fewer members as they require more food, clothing etc. This, combined with the switch to using an *after housing costs* income measure in which older households are more likely to own their home outright, *will* make older households look better off.

- Household reference persons aged between 40 and 59 (11%) and between 25 and 39 (10%) were more likely to be living in LIHC fuel poverty, compared with those aged between 60 and 74 (3%) and aged 75 or more (3%). Small numbers for older age bands means that care should be taken when using these figures.

LIHC fuel poverty and household type

The rate of LIHC fuel poverty varied by household type and, again, was the reverse of the pattern in fuel poverty under the 10% definition (due to the methodological differences outlined above).

- Older households (2%) were least likely to be in LIHC fuel poverty.
- 7% of adult households were in LIHC fuel poverty.
- Households with children (13%) were most likely to be in LIHC fuel poverty.

LIHC fuel poverty and employment of household reference person

The rate of LIHC fuel poverty varied widely by employment type.

- Households with unemployed reference persons (18%) were most likely to be in LIHC fuel poverty, followed by households headed by someone defined as permanently sick or looking after family/home (12%).
- 8% of households headed by employed persons were in LIHC fuel poverty.
- This contrasts with only 3% of households headed by a retired person.

LIHC fuel poverty and income

Table 6.11 shows the clear relationship between income[24] and LIHC fuel poverty. Similar to the 10% definition, low income households were much more likely to be living in LIHC fuel poverty.

- In 2016, 18% of households with an annual income of up to £10,399 per annum were in LIHC fuel poverty.
- As income increased, the proportion of households in LIHC fuel poverty declined. The rate of fuel poverty for households with an annual income of between £15,600 and £20,799 was 8%, falling to less than 1% for those with an annual income of £46,800 or more.

Table 6.11: LIHC fuel poverty and annual (gross) household income, 2016

Annual Household Income	Percentage in LIHC fuel poverty 2016
Up to £10,399	18
£10,400 and £15,599	9
£15,600 and £20,799[24]	8
£20,800 and £31,199	6
£31,200 and £46,799	1
£46,800 or more	<1
Overall Rate	7

- Of all households in LIHC fuel poverty, two-thirds (67%) had an annual household income of £15,599 or less.

LIHC fuel poverty and religion

There was some variation in the rate of fuel poverty by the two main religious groups; 6% of households designated as Protestant and 10% of households designated as Catholic were in fuel poverty; reflecting the different age profiles (See Chapter 4).

6.12 Depth of fuel poverty

Definitions

Average fuel poverty gap
The average (mean) fuel poverty gap across all fuel poor households.

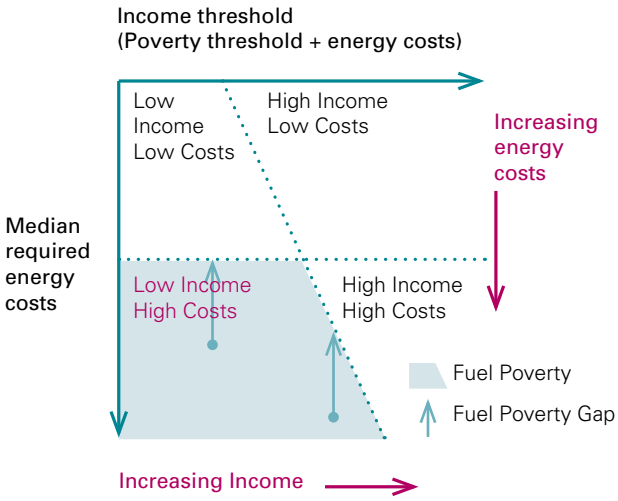
Aggregate fuel poverty gap
The fuel poverty gap for each individual household aggregated across all fuel poor households to produce a national total.

The depth of fuel poverty is measured through an indicator known as the 'Fuel Poverty Gap' which represents the difference between the required fuel costs for each household and the median fuel costs across all households. Figure 6.4 illustrates the relationship between income and energy costs, with the Low Income, High Costs combination that results in fuel poverty (according to this definition)

24. Please note: the income question was updated in 2016 in line with ONS harmonised concepts and questions (see Chapter 4 section 4.1). The updated question provides more detail for the fuel poverty model.
25. Use figures with caution as small numbers.

represented by the shaded area. The fuel poverty gap is zero when households fall within the categories of *Low Income Low Costs, High Income Low Costs and High Income High Costs* (none of which are considered fuel poor). For the households that are considered LIHC, the fuel poverty gap represents the difference between their modelled costs, and what the household fuel costs would need to be reduced by in order for the household to move to one of the other three quadrants.

Figure 6.4: Fuel Poverty under the Low Income High Costs indicator[26]



(Source: Dept. for BEIS 2017)

- In 2016, the average fuel poverty gap for all Northern Ireland households (the amount needed to meet the fuel poverty threshold or, in other words, what needs to be added to income to afford fuel bills) was estimated at £436. For comparison, the average fuel poverty gap in England in 2015 was £353. This indicates that while the extent of fuel poverty under LIHC is less in Northern Ireland, (7% compared with 11% in England), the depth or severity is greater than England.
- The resulting gap for each individual household can be summed across all fuel poor households to produce an aggregate fuel poverty gap; this provides a sense of the depth of fuel poverty on a national level. The 2016 sum of the fuel poverty gap in Northern Ireland is £24 million (this compares with £884 million for England).

6.13 Decent Homes

Introduction - Decent Homes

The Decent Homes Standard was adopted in Northern Ireland in 2004 with the aim of promoting measurable improvements to Northern Ireland's housing stock. The Northern Ireland Housing Executive developed a Maintenance Investment Strategy aimed at achieving the Decent Homes Standard for all Housing Executive dwellings.

The House Condition Survey estimated that 96% of social housing met the Decent Homes Standard in 2011. In addition, a stock survey carried out by Savills indicated that almost all (99%) Housing Executive dwellings met the Decent Homes Standard in 2014-15.

In 2016, The Housing Executive's Asset Management Strategy adopted a new investment standard called the 'Commonly Adopted Standard' reflecting that typically aspired to by other social housing organisations in the UK. This standard comprises upgrading to modern facilities and services, along with thermal and environmental improvement works. Achievement of this standard will be subject to funding.

The Decent Homes standard applies in England and Wales and a similar measure, the Index of Housing Quality, applies in Scotland.

Until 2006, the Standard applicable to Northern Ireland was essentially the same as that in England. However, England introduced a new Decent Home Standard in 2006[27] which replaced the *unfitness* element with a requirement that, to be decent, a dwelling should be free from Category 1 hazards as assessed through the Housing Health & Safety Rating System (HHSRS). Northern Ireland has retained the Fitness Standard as the first component of the Decent Homes Standard.

6.14 The Decent Homes Standard - a summary

A decent home is one that is wind and weather tight, warm and has modern facilities. A decent home meets the following four criteria[28]:

Criterion a: It meets the current statutory minimum standards for housing.

Criterion b: It is in a reasonable state of repair.

Criterion c: It has reasonably modern facilities and services.

Criterion d: It provides a reasonable degree of thermal comfort.

26. See Fuel Poverty Statistics Report 2017 revised August.
27. A Decent Home: definition and guidance for implementation - June 2006 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7812/138355.pdf
28. Further information about the Decent Homes criteria is available in Appendix F.

6.15 Summary of the key findings of the Decent Homes Standard in Northern Ireland

Approximately 8% of the dwelling stock in Northern Ireland in 2016 failed the Decent Homes Standard. This equates to 61,000 dwellings (Table 6.2).

Table 6.12 shows how the proportion (and numbers) of the stock failing Decent Homes has steadily decreased since 2001.

Table 6.12: Percentage and number failing Decent Homes, 2001-2016

HCS Year	% failing Decent Homes	Number of dwellings
2001	32	206,000
2006	23	162,100
2009	15	111,800
2011	11	86,600
2016	8	61,000

The proportion of dwellings failing Decent Homes in Northern Ireland in 2016 was less than half the proportion failing in England in 2015[29] (19%). However, one major reason for the higher failure rate in England is that a higher proportion of homes fail the statutory minimum standard for housing as assessed by the HHSRS (12% in 2015 compared to the Fitness Standard in NI: 2% in 2016). Failure to meet individual components of the Decent Homes is compared with England later.

The types of dwellings most likely to fail the Decent Homes Standard in 2016 were:

- Vacant properties (40%: 57% in 2011); however, more than half (52%) of all dwellings that failed the Decent Homes Standard were owner occupied;
- Older dwellings built before 1919 (28%);
- Located in small villages, hamlets or in open country (13%);
- Occupied by households with older HRPs (10%; aged 75 plus);
- Low income households (9%; less than £10,400 per annum and 10% £15,600 to £20,799).

Summary of the components of Decent Homes

Overall 46% of the stock in Northern Ireland which failed the Decent Homes Standard did so on the thermal comfort criterion. This compares with 62% in 2011. This reduction is in part due to the significant investment in new and improved heating systems and insulation upgrades in both the social and the private sector. In the private sector, this was mainly through schemes such as the Warm Homes, Affordable Warmth and the Boiler Replacement scheme. In the social sector the investment was through the Housing Executive's solid fuel replacement scheme[30].

One-third (32%) of the stock in Northern Ireland that failed the Decent Homes Standard did so on disrepair, a decrease since 2011 when the figure was 42% (although this was not a statistically significant decrease). Failing to meet the Decent Homes Standard due to disrepair was particularly associated with vacant properties and there were fewer vacant dwellings in the 2016 stock (4%) compared with 2011 (7%).

Overall, 28% of the stock in Northern Ireland which failed the Decent Homes Standard did so on the basis of lacking modern facilities and services. This compares with 24% in 2011 (although again the difference was not statistically significant).

6.16 Decent Homes by key dwelling characteristics

Decent Homes and dwelling tenure (Appendix table 6.12)

Variation in the non-decency rate by tenure in 2016 showed that the likelihood of failing Decent Homes was far greater where the dwelling was vacant:

- Vacant dwellings had the highest rate of non-decency (40%), whereas occupied homes had a much lower proportion failing Decent Homes (7%).

This remained in line with previous findings.

When vacants were included within tenure the highest failure rates were in the private sector (owner occupied 8% and private rented 11%), whereas social rented homes have a much lower proportion of dwellings failing Decent Homes (3%).

With vacants included, the greatest fall in non-decency has been in the social rented sector, falling from 45% in 2001 to 3% in 2016. The private rented sector has also seen an improvement in the proportion of non-decent homes failing from 49% in 2001 to 11% in 2016. The owner occupied sector has also improved but at a slower rate (from 25% in 2001 to 8% in 2016). However non-decency has been less prevalent in this sector.

Of all the dwellings failing the Decent Home Standard, more than half (52%) were owner occupied, 24% were privately rented and a further 19% were vacant dwellings.

29. Latest available at time of report.
30. Further information about the energy efficiency schemes in the private and public sectors is available in Chapter 7.

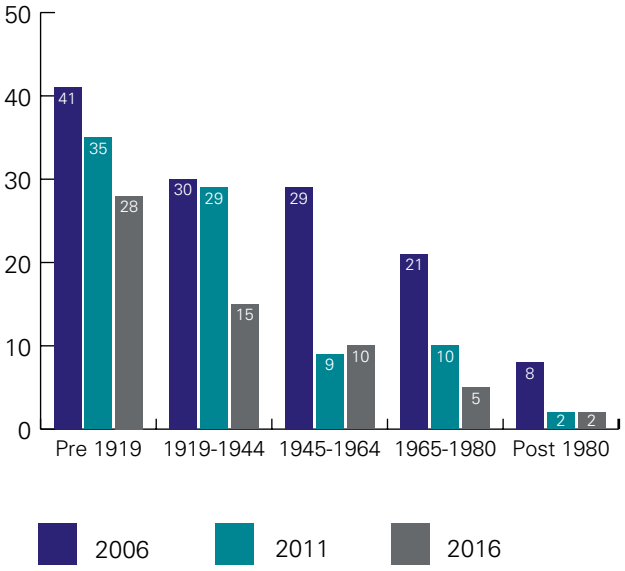
Decent Homes and dwelling age (Appendix table 6.13)

Figure 6.5 shows the relationship between dwelling age and likelihood of failing the Decent Homes Standard over ten years 2006-2016. Older dwellings have consistently been more likely to fail the Standard than newer dwellings.

In 2016, 28% of the oldest dwellings (pre 1919) failed the Standard compared with 2% of the newest (post 1980) dwellings.

Of all dwellings that failed the Decent Homes Standard, almost two- fifths (38%) were pre-1919 in age (23,000 dwellings).

Figure 6.5 Non-decent homes and dwelling age, 2006-2016 (% of dwellings)



Decent Homes - dwelling type (Appendix table 6.14)

In 2016 the likelihood of failing the Decent Homes Standard was similar for bungalows, detached and terraced houses (around 8%). Semi-detached and flats/apartments were slightly less likely to fail Decent Homes (around 6%). However, small sample sizes for flats and apartments means that numbers should be treated with caution.

Decent Homes - dwelling location (Appendix table 6.15)

In 2016, dwellings located in small villages, hamlets or in the open country were more likely to fail the Decent Homes Standard (13%) compared with dwellings located in Derry urban areas or larger towns (4%). In the Belfast Metropolitan Urban Area 9% of dwellings failed the Decent Homes Standard.

Overall, more than half (54%) of all non-decent dwellings were located in urban areas and the remainder (46%) in rural areas.

Decent Homes - district council area

The proportion of dwellings failing the Decent Homes standard by council area is regularly requested by government departments and councils who use the figures for planning and policy. However, the overall level failing Decent Homes (8%) is too small to provide meaningful results at this lower geographical level. In order to provide some indication of findings eight out of the eleven council areas have non-decent rates of between 4% and 8%. Mid Ulster, Newry, Mourne and Down and Fermanagh and Omagh have above average rates failing Decent Homes.

6.17 Decent Homes - household characteristics (Appendix table 6.16)

Less than one-tenth (7%; 49,700) of all occupied dwellings failed the Decent Home Standard. This was examined by the following household characteristics:

Age of household reference person

Consistent with 2011, household reference persons over the age of 75 (10%) were much more likely to live in non-decent homes than other age groups. However, due to small numbers this figure should be treated with some caution.

Household type

Again, similar to 2011, older households (9%) were more likely to live in non-decent homes than other household types. Households with children (3%) were the least likely to live in dwellings that failed the Decent Homes Standard.

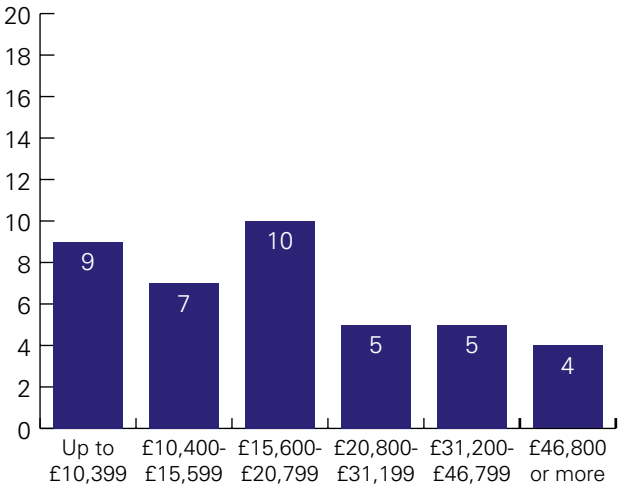
Employment status

There was little variation in likelihood of living in non-decent homes by household reference person employment group. Approximately 7% of each group (working, non-working and retired households) lived in non-decent homes. Household reference persons who were permanently sick or looking after the family home were the least likely to live in non-decent homes (5%).

Annual income

Figure 6.6 shows the relationship between annual household income and the likelihood of failing the Decent Homes Standard. Households with lower annual incomes were more likely to be living in non-decent homes.

Figure 6.6: Non-decent homes and annual household income (gross), 2016 (% of households)



Household religion

Similar proportions of households describing themselves as Catholic (6%) and those describing themselves as Protestant (7%) lived in non-decent homes.

6.18 Thermal Comfort, Lacking Modern Facilities and Services and Disrepair

The Decent Homes Standard is made up of four components including thermal comfort, lacking modern facilities and services, disrepair and unfitness (covered in Chapter Five). If a dwelling fails the Decent Homes Standard it could fail on one or more of the four criteria.

The large majority of dwellings failed on just one criterion (81%; 49,100). A further 10% of dwellings failed on two (5,900), 6% (3,400) on three and 4% (2,500) on all four criteria.

Overall 61,000 dwellings (8%) failed the Decent Homes Standard in 2016. Of these:

- Almost half (46%; 27,900, dwellings) failed on the basis of the thermal comfort criterion, a decrease in the proportion from 62% in 2011. This is mainly due to significant investment of approximately £300m in domestic energy efficiency, in Northern Ireland, between 2011 and 2016.
- One-third (32%; 19,700) failed on the basis of disrepair, a decrease in proportion since 2011 (42%; 36,100 - although this was not a statistically significant decrease). This partly reflects the lower number of vacant dwellings in the 2016 stock (4%) compared with 2011 (7%).
- More than one-quarter (28%; 17,200) failed on the basis of lacking modern facilities and services, compared with 24% in 2011; this was not statistically significant.

It should be noted that the thermal comfort component of Decent Homes has changed over time as refinements and improvements were made to the SAP model. The SAP01 model was used up to 2006, the SAP05 model was used in 2009, and the SAP09 model in 2011. In 2016 thermal comfort was based on the SAP 2012 incorporating the updates to the U-values for solid brick, stone and cavity walls which more accurately reflect their thermal performance (published by the Government in November 2017[31]). Chapter 7 and Appendix H explain the effects of using the revised SAP 2012 in more detail.

Comparison with England

Table 6.13 shows how Northern Ireland compares with England on the individual components that make up the Decent Homes Standard.

The latest figures available at the time of writing this report show that overall, in England there is a higher failure rate for Decent Homes compared with Northern Ireland (19% compared with 8%). This appears to be because dwellings in England are more likely to fail on the HHSRS.

Table 6.13: Failing Decent Homes components - Northern Ireland and England

	Northern Ireland 2016	England 2014/15
Decent Homes	% of total stock	
Failing on unfitness	2	N/A
Failing on HHSRS	N/A	12
Failing on disrepair	3	4
Failing on modern facilities	2	2
Failing on thermal comfort	4	6
All dwellings failing Decent Homes	8	19

Due to the small sample size and the smaller proportion of dwellings failing Decent Homes in 2016, it is not possible to provide detailed analysis of the characteristics of dwellings and households based on the four criteria which make up the Standard - thermal comfort, lacking modern facilities and services and disrepair. However, the fourth criterion, unfitness, is covered in more detail in Chapter 5.

31. For revised SAP 2012 (published conventions 31 December 2017) see: https://www.bre.co.uk/filelibrary/SAP/2012/RdSAP-Conventions-10_0---from-31-December-2017.pdf

6.19 The Housing Health and Safety Rating System (HHSRS)[32]

Introduction - HHSRS

The Housing Health and Safety Rating System (HHSRS) represents a very different approach to housing standards. It is a risk based system that identifies defects in dwellings and evaluates the potential effect of any defects or deficiencies on the health and safety of occupants, visitors, neighbours or passers-by. The System generates a score which represents the seriousness of any hazard. Any hazards that have a score of over 1,000 are described as 'Category 1' and are deemed to fail the statutory minimum standard.

The Government commissioned Warwick University and the Building Research Establishment (BRE) to develop the HHSRS.

This report provides an analysis of the HHSRS in Northern Ireland. In England, this has replaced the 'fitness standard'. Although the HHSRS has not been adopted in Northern Ireland, data collected through the HCS allow it to be measured to permit a useful comparison with housing conditions in England. It has been the minimum standard for housing in England since 2006.

6.20 The House Condition Survey and the HHSRS

Caution should be exercised when making comparisons with HCS HHSRS results before 2016. It should be noted that Category 1 excessive cold has been modelled using the latest SAP2012 (published in November 2017) methodology which is not directly comparable with the version of SAP2012 before this or SAP09 (used for the 2011 report.

A revised SAP2012 time series for 2001 to 2011 House Condition Surveys will be published in a separate report.

In Northern Ireland, there was notable surveyor variability in the assessment of HHSRS risks in the early surveys in which it was included. This was minimized for the 2011 and 2016 surveys by additional training and quality assurance. Therefore, with these issues in mind, any improvements over time should be treated with caution.

6.21 Common Category 1 HHSRS hazards, 2016

The most common risks in Northern Ireland in 2016 were:

- falls on stairs (3%);
- falls on level surfaces (2%);
- excess cold (2%).

The most common risks in England in 2014/15 were:

- falls on stairs (5%);
- excess cold (3%);
- falls on level surfaces (2%).

It should be noted that Category 1 *excessive cold* has been modelled using the latest version of SAP2012, for Northern Ireland, which is not directly comparable with the version of SAP2012 used for the reporting of the 2014/15 results in England.

Almost three-quarters (74%) of dwellings identified with a Category 1 hazard had only one such hazard and 11% had two hazards. At the other end of the scale, 6% of dwellings had between six and thirteen hazards, the vast majority of these being vacant properties.

6.22 Summary of the HHSRS in Northern Ireland in 2016

Overall, 9% (69,900) of all dwellings in Northern Ireland had Category 1 hazards in 2016 (Table 6.3).

This compares with 12% for England in 2014/15 (latest available at time of writing).

A slightly smaller proportion of occupied homes (8%; 59,800) had Category 1 hazards.

The types of dwellings most likely to have Category 1 hazards were:

- vacant properties (36%);
- older dwellings built before 1919 (27%) and between 1919 and 1944 (17%);
- located in small villages, hamlets and in open country (17%);
- occupied by households with older HRPs (11%; 75 plus);

6.23 HHSRS by key dwelling characteristics

HHSRS and dwelling tenure (Appendix table 6.17)

There was some variation by tenure in relation to dwellings identified as having serious hazards under the HHSRS assessment. Not surprisingly, due to the nature of this measure vacant dwellings were more likely to have Category 1 hazards (36%; 10,100) than any other tenure.

32. The 2016 Northern Ireland physical survey form changed – creating four new types of extreme HHSRS risks (falls associated with baths, entry by intruders, noise and collision and entrapment); these were previously measured by the surveyor. This is the same approach used in the EHS.

Approximately 9% (43,400) of owner occupied and 8% (11,100) of private rented sector dwellings had Category 1 hazards. The proportion in the social sector was lower (4%; 5,300). This pattern was similar to the findings in 2011.

HHSRS and dwelling age (Appendix table 6.18)

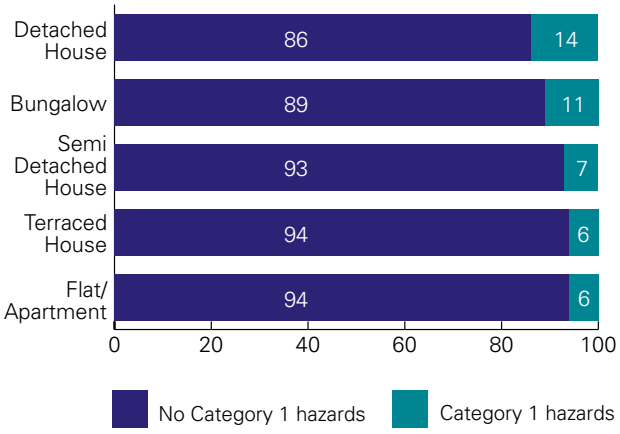
As with fuel poverty and Decent Homes, and in line with previous findings, older dwellings were more likely to have serious (Category 1) hazards when assessed using the HHSRS than newer dwellings. More than one-quarter (27%) of dwellings constructed before 1919 had category 1 risks compared with only 4% of dwellings after 1980.

HHSRS and dwelling type (Appendix table 6.19)

Less than one-sixth (14%) of detached houses and 11% of single storey dwellings had Category 1 hazards. Flats or apartments and terraced housing were least likely to have Category 1 hazards (6%). This pattern was similar in 2011.

Given the relatively small sample sizes for Category 1 hazards in flats or apartments findings should be treated with caution.

Figure 6.7: Category 1 Hazards and Dwelling Type, 2016 (% of dwellings)



HHSRS and location (Appendix table 6.20)

As in 2011, dwellings in rural areas (13%) were more likely to have Category 1 hazards than dwellings in urban areas (7%). Dwellings in small villages, hamlets or open country (17%) had the highest proportion of Category 1 hazards.

6.24 HHSRS and key household characteristics (Appendix table 6.21)

Please note that due to the small sample sizes for Category 1 hazards among the different household categories, the following analysis is limited although any trends are highlighted.

Age of household reference person

As in previous HCS findings, as the age of the HRP increased so did the likelihood of living in a dwelling with Category 1 hazards. Dwellings with HRPs aged 75 or more had the highest rate of Category 1 hazards (11%; compared with 6% for HRPs aged between 25 and 39).

Household type

Table 6.14 shows that households with children were the least likely to have Category 1 hazards (5%).

Table 6.14 Household Type and Category 1 Hazards, 2016

Household Type	Category 1 Hazards (%)
Adult households	9
Households with children	5
Older households	9
Overall	8

Employment status of household reference person

As in 2011, there was little variation by employment group.

Household income

In 2016 there was little variation by income groups below £31,200 (8-10% with Category 1 risks). However, for the highest income group (£46,800 or more) only 4% lived in dwellings with Category 1 hazards.

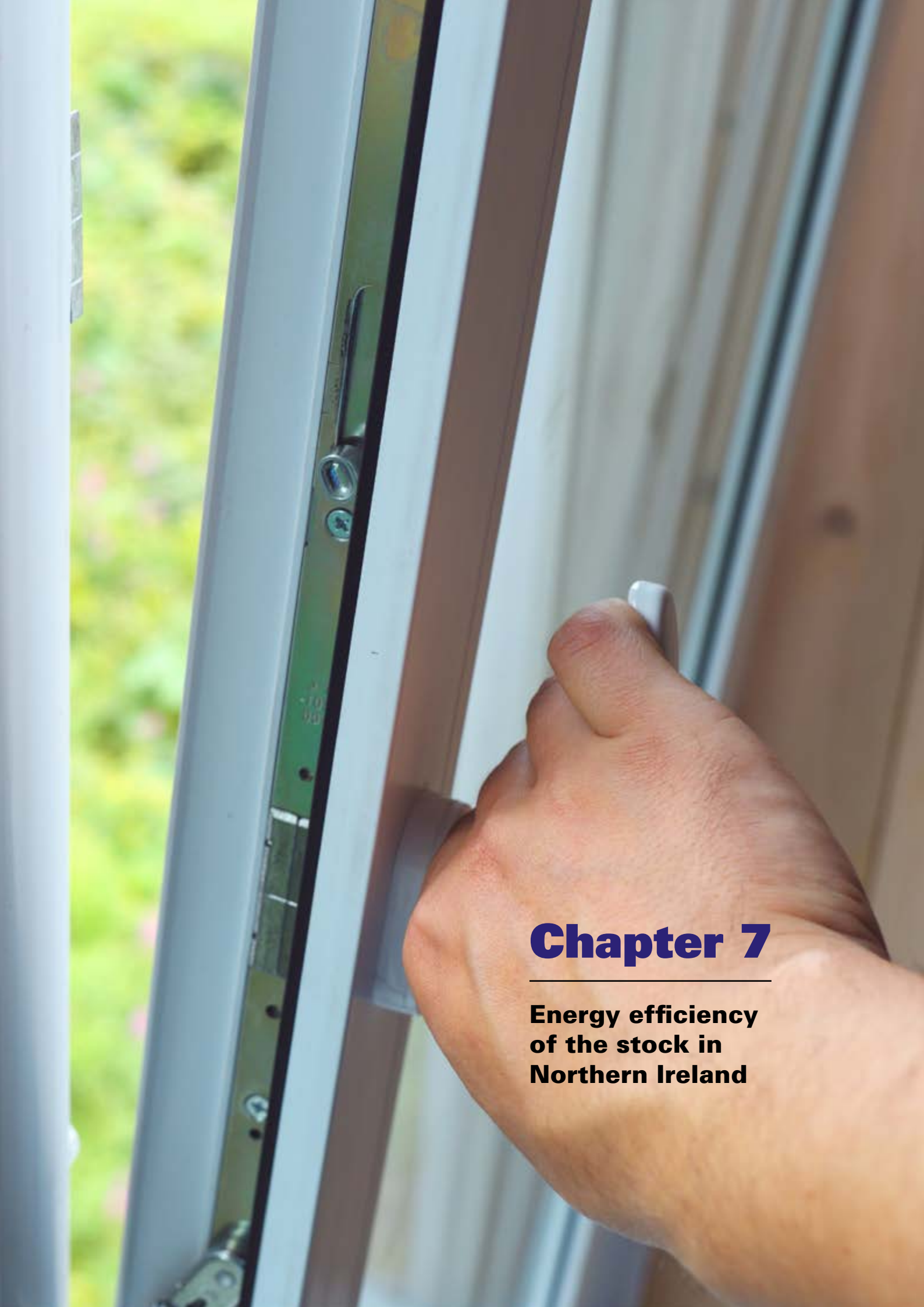
Household religion

Catholic households (9%) were slightly more likely to live in dwellings with Category 1 Hazards compared with Protestant households (7%).

Table 7.1: Central heating - key figures, 2016

	CH Gas		CH Oil		CH Solid Fuel/ Electric/Dual Fuel/ Other		Total Central Heating		Total Non Central Heating		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Owner Occupied	95,800	19.4	363,920	73.6	33,480	6.8	493,200	99.7	x	0.3	494,660	100.0
	51.5		69.2		54.8		63.8		21.6		63.4	
Private Rented & Others	27,010	19.9	96,280	70.8	12,290	9.0	135,580	99.7	x	0.3	135,980	100.0
	14.5		18.3		20.1		17.5		5.9		17.4	
Social Housing	58,630	48.5	50,650	41.9	11,610	9.6	120,890	100.0	x	<1	120,890	100.0
	31.5		9.6		19.0		15.6		<1		15.5	
Vacant	x	16.1	15,340	53.9	x	12.9	23,590	82.9	x	17.1	28,470	100.0
	2.5		2.9		6.0		3.1		72.4		3.7	
Total	186,010	23.8	526,190	67.5	61,060	7.8	773,260	99.1	x	0.9	780,000	100.0
	100.0		100.0		100.0		100.0		100.0		100.0	

Due to rounding figures may not add to totals shown
'x' denotes a small number (generally less than 25 unweighted) – use caution when quoting proportion
<1% in a cell indicates that the number of dwellings in a particular category was 0. As the survey was a sample survey, it is possible that were dwellings in the category (showing as <1%) but none were selected as part of the sample. Caution should be used when quoting these proportions.



Chapter 7

Energy efficiency of the stock in Northern Ireland

7.1 Introduction - energy efficiency of the stock in Northern Ireland

The Housing Executive is Northern Ireland's Home Energy Conservation Authority. In this role its primary objective is to improve the energy efficiency of the entire housing stock. Energy efficiency is a key factor which impacts on fuel poverty.[1] The measures used to tackle fuel poverty (including energy efficiency measures) are outlined in the Department for Communities' Fuel Poverty Strategy for Northern Ireland 2011.

The Northern Ireland House Condition Survey is the primary data source for assessing progress towards improved energy efficiency. Any reported changes since 2011 are statistically significant unless otherwise stated. It should be noted that, although the sample size varies between the different years, the results are representative of the Northern Ireland population and assumed to be directly comparable.

The energy efficiency of a dwelling is determined primarily by the fuel source and heating type. Other factors such as insulation and double glazing are also important. This chapter examines these key energy-related features by tenure, dwelling age, type and location and household characteristics of the occupants.

7.2 Key findings

Since 2011 there has been considerable investment, of approximately £300 million, in energy efficiency in Northern Ireland. £117 million was invested in the private sector through the Warm Homes, Affordable Warmth[2] and Boiler Replacement[3] schemes. £181 million was invested in energy efficiency improvements to the Housing Executive stock through the solid fuel replacement programme[4] and other schemes. Between 2011 and 2016, there were approximately:

- 13,000 loft insulation installations or upgrades;
- 23,900 double glazing installations;
- 29,400 boiler replacements (21,800 gas boilers and 7,600 oil boilers).

The 2016 House Condition Survey shows the continued progress in achieving higher levels of energy efficiency:

- Overall, 99% of all dwellings had central heating.
- Oil remained the predominant fuel source in Northern Ireland (68%); however the proportion of dwellings with gas central heating continued to increase, and the proportion with less efficient fuel sources such as solid fuel, electric, or dual fuel, decreased.
- Significant improvements were noted for loft insulation. In particular, there was an increase in the use of the highest standard of loft insulation (more than 150mm in thickness) from 35% in 2011 to 54% in 2016.
- Improvement was also achieved in relation to double glazing, with the proportion of older dwellings with full double glazing increasing (particularly those dwellings built between 1919 and 1944).

The SAP model was modified between 2011 and 2016 so no comparison is possible[5]. A SAP time series using the new methodology will be published when available.

- The overall SAP 2012 rating (version 9.93) for dwellings in Northern Ireland in 2016 was 65.83, rising to 66.32 for occupied dwellings.

7.3 Central heating

Central heating is traditionally seen as a key indicator of the standard of housing. The 2016 House Condition Survey defines "central heating" as a heating system with a distribution system sufficient to provide heat in at least two rooms. In addition, in dwellings where there was no boiler, but there was a heating system with some means of controlling temperature and timing, (for example, electric storage heaters) and at least two rooms were heated, this system was counted as central heating. This approach is consistent with the previous six House Condition Surveys.

- Almost all (99%) dwellings in Northern Ireland had central heating in 2016.

Central heating - dwelling tenure (Appendix table 7.1)

Table 7.1 shows that there was little variation by tenure, with the exception of vacant[6] dwellings. This reflects the number of older, poorer quality properties which are increasingly being left vacant.

- In 2016 almost all occupied dwellings (99.7%) had central heating;
- Vacant dwellings (83%) were least likely to have central heating.

Central heating - dwelling age (Appendix table 7.2)

Dwelling age was not a factor in relation to central heating. High proportions (96% or above) of dwellings of all ages had central heating in 2016.

1. Further information about fuel poverty is available in Chapter 6
2. https://www.nihe.gov.uk/index/benefits/affordable_warmth_scheme.htm
3. Boiler Replacement Scheme: https://www.nidirect.gov.uk/articles/grant-to-replace-your-boiler
4. http://www.nihe.gov.uk/heating_policy_review_september_2012.pdf
5. Further information is available in Appendix H.
6. Any comparison with vacant dwellings in 2011 should be treated with caution as the 2011 figure may have been an overestimate

Dwellings built before 1919 were most likely to have no central heating.[7] A small proportion of post 1980 dwellings were recorded as having no central heating, but these were in the process of refurbishment.

Central heating - dwelling type (Appendix table 7.3)

High proportions (at least 98%) of all dwelling types had central heating in 2016.

Central heating - dwelling location (Appendix table 7.4)

Similar proportions of urban and rural dwellings had central heating in 2016 (at least 99% for both).

Central heating - household characteristics (Appendix table 7.5)

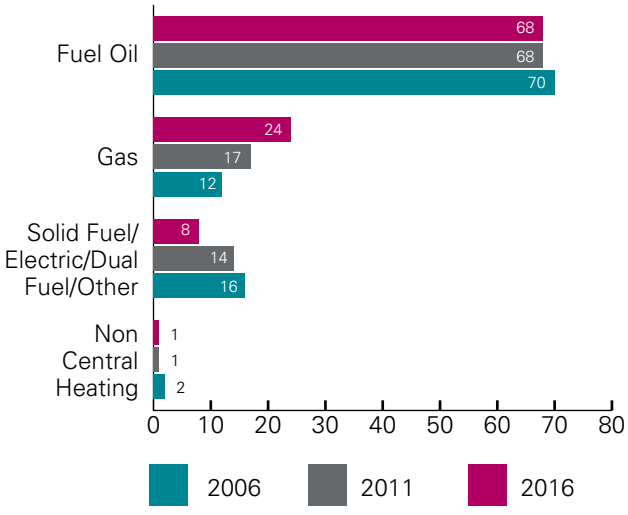
Overall, 99.7% of occupied dwellings had central heating in 2016. When analysed by age of household reference person, household type, employment status, annual income and household religion there was little variation from the overall proportion, with at least 99% of each group having central heating.

7.4 Fuel sources and heating systems

The type of fuel used for heating is a key determinant of the energy efficiency of a dwelling.

Figure 7.1 shows the fuel sources used for heating homes in Northern Ireland over a ten year period.

Figure 7.1: The Changing Profile of Central Heating Fuel, 2006-2016 (% of dwellings)



The great majority of dwellings (91%; 85% in 2011) had either oil fired or mains gas central heating systems.

- Oil remained the predominant fuel source for domestic heating in Northern Ireland, with more than two-thirds (68%; 68% in 2011) of all dwellings having oil central heating. In addition, a further 4% of dwellings had dual fuel central heating, where the use of oil was by far the most common primary fuel source.
- The use of gas for central heating has become more popular in Northern Ireland. In 2006 approximately one-tenth (12%) of dwellings had gas central heating, rising to 17% in 2011 and 24% in 2016. This increase since 2006 is likely to be due to a number of factors such as the increasing availability of gas, the cost of gas compared to other fuel sources, and the introduction of schemes such as the Warm Homes Scheme and subsequently the Affordable Warmth Scheme[8] (part of the Fuel Poverty Strategy for Northern Ireland[9]). These schemes provided a range of energy efficiency measures to the private sector, including assistance to install, or convert to, an efficient central heating system. A solid-fuel replacement programme was also introduced for social housing following a heating policy review in 2000 (and continued with the 2006 and 2012[10] reviews).
- The remaining dwellings with central heating (8%; 14% in 2011) had solid fuel, electric, or dual fuel heating.

Central heating fuel source - dwelling tenure (Appendix table 7.1)

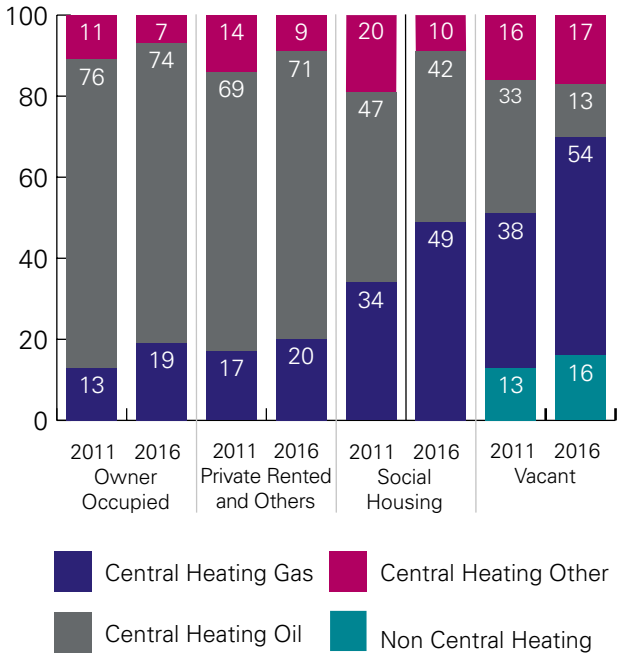
- Owner occupied dwellings (74%) and private rented and others (71%) were most likely to have oil central heating (68% overall).
- Social housing sector dwellings were more likely to have gas central heating than any other tenure (49%; 24% overall). The proportion of social housing dwellings with gas central heating increased between 2011 and 2016 (from 34% to 49%).

This is mainly due to the Housing Executive's solid-fuel replacement programme which replaced solid fuel with more efficient central heating systems. Gas central heating was the preferential option where available, and oil central heating systems were installed where gas was not available. In addition, any new social housing dwellings will have gas heating installed (where available). Since 2011 gas has overtaken oil as the predominant fuel source for social housing dwellings.

7. This represents a small sub-group so caution should be used when quoting the proportion.
8. https://www.nihe.gov.uk/index/benefits/affordable_warmth_scheme.htm
9. Fuel Poverty Strategy for Northern Ireland 2011: https://www.communities-ni.gov.uk/sites/default/files/publications/dsd/warmer-healthier-homes.pdf
10. https://www.nihe.gov.uk/heating_policy_review_september_2012.pdf

- The private sector also saw an increase in gas central heating between 2011 and 2016. This was partly a result of the investment in this sector, such as the Warm Homes Scheme and the Affordable Warmth Scheme.

Figure 7.2: Central Heating Fuel and Tenure, 2011-2016 (% of dwellings)



Central heating fuel source - dwelling age (Appendix table 7.2)

- Oil was the predominant fuel source for all dwelling ages, ranging from 61% of pre-1919 dwellings to 71% of post 1980 dwellings.
- Newer dwellings (built between 1965-1980 and post 1980) were more likely to have oil central heating (70% and 71% respectively).
- Dwellings built between 1919 and 1944 were most likely to have gas central heating (32% compared with 24% overall). This was an increase from 19% in 2011. The 1965-1980 group also saw an increase in gas central heating, from 12% in 2011 to 24% in 2016.
- Dwellings built before 1919 were most likely to have central heating systems other than mains gas or oil fired (16%[11]; 8% overall).

Central heating fuel source - dwelling type (Appendix table 7.3)

Analysis of central heating fuel source by dwelling type showed there were a number of differences.

- While 68% of all dwellings had oil central heating in 2016, there was some variation by dwelling type, ranging from 59% for terraced houses to 79% for both single storey dwellings and detached houses[12].
- Flats/apartments were most likely to have gas central heating (59% compared with 24% overall). This was an increase since 2011 when 47% of flats/apartments had gas central heating.
- Flats/apartments also had the highest proportion of central heating systems other than mains gas or oil fired (27%; 8% overall).
- Since 2011 there has been an increase in the proportion of terraced houses with gas central heating (from 22% to 35%), and a decrease in the proportion of terraced houses with oil central heating (from 69% to 59%). The NIHE's solid fuel replacement programme[13] may have been a contributing factor in the increase in gas central heating for terraced houses.

Central heating fuel source - dwelling location[14] (Appendix table 7.4)

- Oil was the predominant fuel source in both urban (58%) and rural (84%) locations.
- Gas central heating was most likely to be used in urban areas (36% compared with 1% in rural areas and 24% overall). In particular, 62% (47% in 2011[15]) of dwellings in the Belfast Metropolitan Urban Area, and 33% of those in the Derry Urban Area/Large Towns[16] had gas central heating.
- The use of gas in urban areas has increased since 2011 (from 26% to 36%), but there has been little change in the proportion of dwellings in rural areas with gas central heating.

Central heating fuel source - household characteristics (Appendix table 7.5)

In 2016, 24% of occupied dwellings had gas central heating and 68% had oil fired central heating. This section gives an overview of central heating fuel sources by key household characteristics.

11. This represents a small sub-group so caution should be applied when quoting proportion
12. The proportion of flats/apartments with oil heating was small; caution should be used when quoting the proportion.
13. http://www.nihe.gov.uk/heating_policy_review_september_2012.pdf
14. A new eight-band definition is being used in 2016. For further information see Chapter 3 section 3.3: The total stock and its distribution.
15. 2011 figures are based on the updated eight band definition. No comparison should be made with previously published 2011 figures.
16. 'Derry Urban Area' and 'Large Town' were combined due to small numbers.

Age of household reference person

- Oil was the predominant fuel source for all age groups. However, between 2011 and 2016 there was an increase in the proportion of some age groups living in a dwelling with gas central heating. In particular, the proportion of household reference persons aged between 25 and 39 living in a dwelling with gas central heating increased from 19% to 29%, and the proportion of those aged between 60-74 living in a dwelling with gas central heating increased from 13% to 27%.

Household type

- There was little variation between overall figures and those found by household type for oil fired (68% overall) and gas (24% overall) central heating.

Employment status

- There was little variation between overall figures for oil central heating by employment status. Household reference persons who were permanently sick/disabled or looking after family/ home were least likely to live in a dwelling with oil central heating (61% compared with 68% overall).
- There was little variation between overall figures for gas central heating (24%) by employment status (ranging from 23% to 28%).

Annual income

- Households with an annual income of £46,800 or more (74%) were most likely to live in a dwelling with oil central heating, while those with an annual income of up to £10,399 (60%) were least likely to live in a dwelling with oil central heating. However, there was some variability between the middle income bands.
- Households with an annual income of up to £10,399 were most likely to live in a dwelling with gas central heating (31% compared with 24% overall).

7.5 Dwelling insulation

Changes were made to the 2011 House Condition Survey surveyors' form in relation to the recording of cavity wall insulation and as a result, careful consideration was given to the procedures for identification and recording of cavity wall insulation during the surveyors' briefing prior to fieldwork in 2011. Consequently, findings for cavity wall insulation for 2011 were subject to design effect and fluctuation between surveys' findings was expected. In 2016, the same approach was used and trends remained broadly similar to 2011.

The proportion of the dwelling stock with full cavity wall insulation (65%) remained broadly similar to 2011 findings (66%). This was expected as there hasn't been the same level of investment in cavity wall insulation as there has been in loft insulation, double glazing or the replacement of solid fuel heating.

The analysis of the housing stock in terms of wall insulation is complex, primarily due to the fact that many older dwellings (often with solid walls) now have modern extensions with insulated cavity walls. For the purpose of this analysis the following classification has been adopted.

Full cavity wall insulation

Dwellings constructed with cavity walls where all walls contain cavity wall insulation.

Partial cavity wall insulation

Dwellings of full or part cavity wall construction; where at least one cavity wall contains insulation.

Dry lining/internal/external insulation

Dwellings originally built with solid wall construction, not included in the above category, but which have at least one wall with dry lining, internal and/or external insulation. Partial cavity wall insulation, dry lining, and internal/external insulation figures were presented together in 2016.

No wall insulation

The remaining dwellings (of cavity wall or solid construction or both) where there is no evidence of insulation.

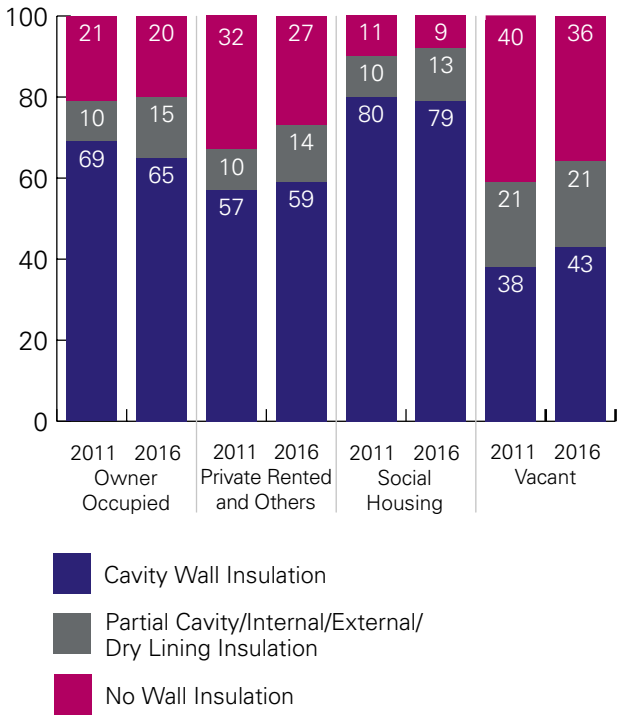
Wall insulation - dwelling tenure (Appendix table 7.6)

The tenure most likely to have full cavity wall insulation was social housing (79%). Vacant dwellings were least likely to have full cavity wall insulation (43%; 65% overall).

The proportion of dwellings with no wall insulation ranged from 9% for social housing to 36% for vacant dwellings (20% overall).

Further analysis of all dwellings with no wall insulation shows that the majority were in the private sector (63% owner occupied; 24% privately rented).

Figure 7.3: Cavity Wall Insulation and Tenure, 2011-2016 (% of dwellings)



Wall insulation - dwelling age (Appendix table 7.7)

As in previous years there was a clear association between dwelling age and wall insulation:

- All dwellings built after 1980 (100%) had full cavity wall insulation. The proportion declined steadily by age band to 2%[17] of pre-1919 dwellings, reflecting the solid wall construction that predominated during this period.
- Pre-1919 dwellings were most likely to have no cavity wall insulation (58% compared with 20% overall).

Wall insulation - dwelling type (Appendix table 7.8)

- Terraced houses had the lowest rate of full cavity wall insulation (58%; 65% overall) and the highest rate of no wall insulation (26%; 20% overall).

Wall insulation - dwelling location (Appendix table 7.9)

- The proportion of all urban dwellings with full cavity wall insulation (67%) was slightly higher than the proportion of all rural dwellings (62%).
- Dwellings in small villages/hamlets/open country were least likely to have full cavity wall insulation (55%).
- Dwellings in intermediate settlements/villages were most likely to have full cavity wall insulation (77%).

Wall insulation - household characteristics (Appendix table 7.10)

This section examines wall insulation by key household variables. Overall, 66% of occupied dwellings had full cavity wall insulation.

Age of household reference person

Dwellings with household reference persons aged 75 or older (60%) were least likely to have full cavity wall insulation and most likely to have no cavity wall insulation (26%).

Household type

Households with children (75%) were more likely to live in dwellings with full cavity wall insulation than adult households (64%) or older households (60%), and were least likely to live in dwellings with no wall insulation (12%).

Employment status

The proportion of households living in dwellings with full cavity wall insulation ranged from 59% for 'household reference person not working' to 68% for both 'household reference person working' and 'household reference person permanently sick/ disabled or looking after family/home'.

Annual Income

Households with an annual income of £46,800 or more (76%) were most likely to live in dwellings with full cavity wall insulation. Households with an annual income of £15,600 - £20,799 (26%) were most likely to live in dwellings with no cavity wall insulation.

Religion

There was little difference by religion, with 65% of Protestant households and 69% of Catholic households living in dwellings with full cavity wall insulation (66% overall).

7.6 Loft insulation

The 2016 House Condition Survey collected information on the presence and thickness of loft insulation in all dwellings with lofts, where access was available and where the householder granted permission. Consistent with previous years, there has been little change in the overall proportion of dwellings with loft insulation. However, the proportion of dwellings found to have the highest standard of insulation in terms of thickness (more then 150mm) continues to increase.

17. Caution should be used when quoting figures for pre 1919 dwellings as this is a small sub-group.

The 2016 Survey estimated that 747,700 (96%) dwellings had lofts. Of these, around 96,200 had been converted to a room(s) with permanent stairs or the pitch of the roof was too shallow to permit access or insulation to be laid. This left a total of 651,500 dwellings (84% of the total stock) where there was potential for loft insulation. Of these:

- 98% (641,600 dwellings) had loft insulation;
- Approximately one-tenth (9%) had insulation that was less than 100mm;
- The proportion of dwellings with insulation that was between 100 and 150mm decreased from 46% in 2011 to 35% in 2016;
- The proportion of dwellings with insulation that was more than 150mm increased from 35% in 2011 to 54% in 2016;

The proportion of dwellings with no loft insulation was small (2%). Therefore no further analysis is possible for this sub-group.

Loft insulation - dwelling tenure (Appendix table 7.11)

- Almost all social housing dwellings (99.8%) had loft insulation in 2016.
- All tenures[18] saw a significant increase in the proportion of dwellings with the thickest loft insulation (more than 150mm) since 2011. This improvement is due to the energy efficiency measures available in both the private and social sectors[19] [20]. Proportions ranged from 53% for owner occupied dwellings to 56% for social housing dwellings (54% overall).

Loft insulation - dwelling age (Appendix table 7.12)

There remains a clear association between loft insulation and age of dwelling.

- Dwellings in the oldest age category (pre 1919[21]) were most likely to have no loft insulation.
- Almost all (at least 99%) dwellings built since 1945 had loft insulation. Moreover, dwellings built after 1980 were most likely (68%; 54% overall) to have loft insulation of more than150mm in thickness.

Loft insulation - dwelling type (Appendix table 7.13)

- There continues to be a shift towards increased levels of loft insulation within all dwelling types. Between 2011 and 2016 there was an increase in the proportion of all dwelling types[22] with loft insulation of more than 150mm.

Loft insulation - dwelling location (Appendix table 7.14)

- Dwellings in rural areas (57%) were slightly more likely than those in urban areas (52%) to have loft insulation of more than 150mm (54% overall).
- Dwellings in the Belfast Metropolitan Urban Area were least likely to have loft insulation more than 150mm, but there had been a significant improvement between 2011 (21%) and 2016 (44%). This improvement is due to the energy efficiency measures available in both the private and social sectors.[23] [24]

Loft insulation - household characteristics (Appendix table 7.15)

In 2016, 99% of occupied dwellings with lofts had loft insulation (98% in 2011).

Age of household reference person

- Household reference persons aged 75 or older were most likely to live in dwellings with loft insulation of less than 100mm (14%; 9% overall).
- There was an improvement in the proportion of household reference persons of all ages living in dwellings with the highest standard of loft insulation (more than 150mm in thickness); however, the younger age groups (17-24[25] and 25-39), were most likely to live in dwellings with this standard of loft insulation (63% for both, compared with 54% overall).

18. The number of vacant dwellings with loft insulation more than 150mm was small, therefore caution should be used when quoting the proportion.
19. https://www.nihe.gov.uk/index/benefits/affordable_warmth_scheme.htm
20. https://www.nihe.gov.uk/heating_policy_review_september_2012.pdf
21. These represent small sub-groups so caution should be used when quoting proportions.
22. Flats/apartments represent a small sub-group, any change is not statistically significant.
23. https://www.nihe.gov.uk/index/benefits/affordable_warmth_scheme.htm
24. https://www.nihe.gov.uk/heating_policy_review_september_2012.pdf
25. This represents a small sub-group so caution should be used when quoting the proportion.

Household type

Households were categorised into three broad types in 2016: 'adult households', 'households with children' and 'older households'. Since 2011 there was an increase in the proportion of all household types living in dwellings with loft insulation of more than 150mm. In particular, the proportion of households with children living in dwellings with this standard of loft insulation increased from 45% to 66%.

Employment status

The proportion of households living in dwellings with the highest standard of loft insulation (more than 150mm) ranged from 51% for households where the household reference person was retired, to 58% for households where the household reference was not working (54% overall).

Annual income

Households with an annual income of £46,800 or more (60%) were most likely to live in dwellings with the highest standard of loft insulation (more than 150mm) and least likely to live in dwellings with loft insulation less than 100mm (7%). Households with an annual income of up to £10,399 were least likely to have loft insulation of more than 150mm (48%; 54% overall).

Religion

Consistent with previous years, there was some variation by religion, largely due to the differing age profiles and the tendency for Catholics to live in newer housing. Although there has been an overall increase in the proportion of households living in dwellings with the highest standard of loft insulation (more than 150mm in thickness), Protestant households (51%; 33% in 2011) remain less likely to live in these dwellings than Catholic households (60%; 41% in 2011).

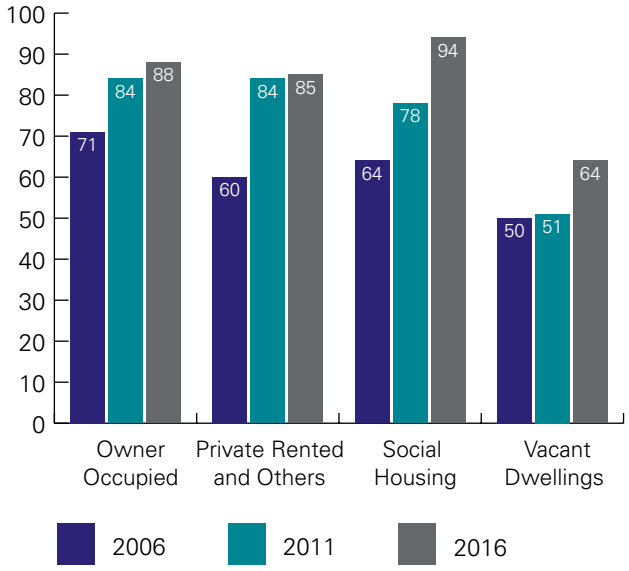
7.7 Double glazing

The 2016 House Condition Survey indicates that further progress has been made in relation to this aspect of energy efficiency in Northern Ireland's dwelling stock.

In 2016, 87% of all dwellings had full double-glazing (81% in 2011).

Approximately one-tenth (9%) of dwellings had partial double glazing in 2016, and the remaining 4% had no double glazing.

Figure 7.4: Double Glazing and Tenure, 2006-2016 (% of dwellings)



Double glazing - dwelling tenure (Appendix table 7.16)

Figure 7.4 shows that between 2006 and 2016, improvement has been made in the proportions of dwellings with full double glazing in both the private and social sectors.

- Social housing was most likely to have full double glazing (94%; 87% overall). This was an increase since 2011 when 78% of social housing dwellings had full double glazing, and was partly due to substantial investment by the Housing Executive to meet the commitment for full double glazing in all its properties by 2015, that was set out in the Northern Ireland Programme for Government 2011 - 2015.[26]
- Vacant dwellings (64%) were least likely to have full double glazing.

Double glazing - dwelling age (Appendix table 7.17)

There remains a correlation between dwelling age and the presence of full double glazing:

- The vast majority of dwellings built after 1980 (97%) had full double glazing, compared with 64% of pre 1919 dwellings. However, since 2011 there has been an increase in the proportion of older dwellings with full double glazing, with 64% (55% in 2011) of pre 1919 dwellings and 77% (60% in 2011) of dwellings built between 1919 and 1944 having full double glazing. This improvement may be a result of the energy efficiency measures[27] available in Northern Ireland.

26. Programme for Government 2011 - 2015: https://www.northernireland.gov.uk/sites/default/files/publications/nigov/pfg-2011-2015-report.pdf
27. https://www.nihe.gov.uk/index/benefits/affordable_warmth_scheme.htm

Double glazing - dwelling type (Appendix table 7.18)

Analysis of full double glazing indicates some variation by dwelling type, with proportions ranging from 96% for flats/apartments to 85% for terraced houses (87% overall).

There was an increase in the proportion of bungalows with full double glazing (from 76% in 2011 to 89% in 2016).

Double glazing - dwelling location (Appendix table 7.19)

There was little variation between the proportion of dwellings in urban (88%) and rural (86%) areas with full double glazing (87% overall).

Dwellings in 'Derry Urban Area/ Large towns' were most likely to have full double glazing (90%).

Double glazing - household characteristics (Appendix table 7.20)

The proportion of occupied dwellings with full double glazing in 2016 was 88% (83% in 2011). Three per cent (6% in 2011) of occupied dwellings had no double glazing in 2016.

Age of household reference person

Households where the household reference person was aged between 25 and 39 (93%) were most likely to live in dwellings with full double glazing. The older age groups were less likely to live in dwellings with full double glazing. However these age groups have seen an increase since 2011, with 86% (76% in 2011) of household reference persons aged between 60 and 74, and 81% (69% in 2011) of household reference persons aged 75 or more living in dwellings with full double glazing.

Household type

Older households were less likely to live in dwellings with full double glazing (81%) than households with children (93%) or adult households (90%).

Employment status

Households with household reference persons working were more likely to live in dwellings with full double glazing (91%). Consistent with the age of household reference person and household type, households with retired household reference persons were least likely to live in a dwelling with full double glazing (84%).

Annual income

There remains an association between annual household income and double glazing. Households with an annual income of up to £10,399 (80%) were least likely to live in dwellings with full double glazing, while those with an annual income of between £31,200 and £46,799, or £46,800 or more were most likely (both 93%) to live in dwellings with full double glazing.

Household religion

There was little variation for dwellings with full double glazing by household religion with 87% (81% in 2011) of Protestant households and 90% (85% in 2011) of Catholic households living in dwellings with full double glazing.

7.8 SAP rating

The Standard Assessment Procedure (SAP) is the Government's standard method of rating the energy efficiency of a dwelling. The Building Research Establishment (BRE) has developed the current and previous models on behalf of Government.

The SAP takes into account a range of factors that contribute to energy efficiency such as materials used for construction, the efficiency and control of heating systems and fuel used for space and water heating.

The SAP rating itself is on a logarithmic scale and provides a comparative measure of the energy efficiency of dwellings. The lower the score, the lower the energy efficiency and the higher the score (up to a maximum of 100), the higher the efficiency.

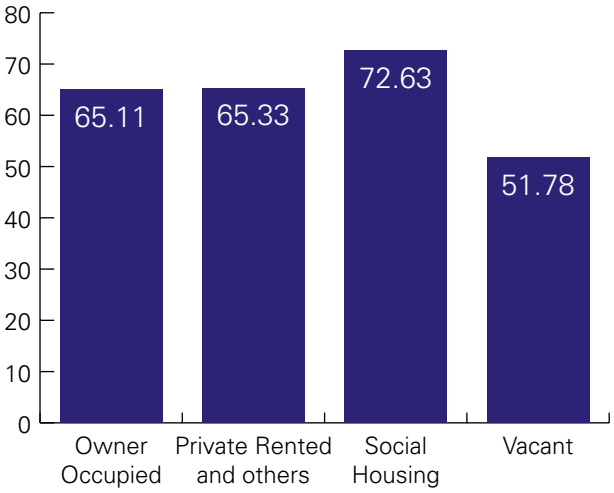
Over time the SAP model has been modified in order to improve the accuracy of energy efficiency ratings. The Energy Efficiency Rating for the 2016 NIHCS data has been derived from SAP 2012[28]. RdSAP was recently updated (to SAP 2012, version 9.93) and this came into use for the calculation of SAP for EPCs in November 2017. This is the version used throughout this report. Further information about SAP 2012, and the previous versions of SAP, is available in Appendix H. The changes in the SAP methodology mean that a SAP rating using the SAP 2012 is not directly comparable to one calculated with an earlier version of SAP. Therefore it is not possible to make comparisons with the 2011 NIHCS, and caution should be used when quoting the previously published 2011 SAP ratings[29].

Using SAP 2012, Northern Ireland's dwelling stock had an average SAP rating of 65.83 in 2016.

28. Further information about SAP 2012 can be found on the BRE website www.bre.co.uk
29. A SAP time series using SAP 2012 will be published separately.

This section outlines how the SAP rating varied by the physical characteristics of the dwelling and the socio-demographic characteristics of the household.

Figure 7.5: Mean SAP 2012 and tenure, 2016



SAP rating - dwelling tenure (Appendix table 7.21)

Social housing had the highest SAP rating (72.63), and vacant dwellings had the lowest SAP rating (51.78).

SAP rating - dwelling age (Appendix table 7.22)

Newer dwellings had higher SAP ratings than older dwellings. Pre 1919 dwellings had a SAP rating of 51.53, rising to 71.60 for dwellings built after 1980.

SAP rating - dwelling type (Appendix table 7.23)

Flats/apartments had the highest SAP rating (76.81). Bungalows had the lowest SAP rating (61.62).

SAP rating - dwelling location (Appendix table 7.24)

Urban dwellings had a higher SAP rating (68.14) than rural dwellings (61.63). Dwellings in the Belfast Metropolitan Urban Area had the highest SAP rating (70.42).

SAP rating - household characteristics (Appendix table 7.25)

The following section outlines variations in average SAP ratings by household characteristics. Overall, the average SAP rating for occupied dwellings was 66.32.

Age of household reference person

The SAP rating decreased as age of household reference person increased. Household reference persons aged 75 plus were least likely to live in energy efficient dwellings (with a SAP rating of 62.47).

Household type

Households with children lived in dwellings with the highest average SAP rating (69.41).

Employment status

There was little variation in SAP ratings by employment status of household reference person. SAP ratings ranged from 65.0 for retired household reference persons, to 67.56 for household reference persons who were permanently sick/ disabled or looking after family/home.

Annual income

Households with an annual income of £46,800 or more lived in dwellings with the highest average SAP rating (68.51).

Religion

There was little variation in SAP ratings by religion (65.75 for Protestant households and 66.70 for Catholic households).

7.9 Energy efficiency rating

The 2016 SAP 2012 Energy Efficiency Rating (EER) uses an A-G banding system. EER band A represents low energy costs i.e. the most efficient band, and EER band G represents high energy costs i.e. the least efficient band. Bands A to C and F to G have been combined to avoid low sample size. Further information about the EER bands can be found on the BRE website[30].

The Annual Fuel Poverty Statistics Report, 2017[31] stated that the statutory fuel poverty target for England was to *ensure that as many fuel poor homes as reasonably practicable achieve a minimum energy efficiency rating of Band C, by 2030*. Although fuel poverty is a devolved matter, with each nation in the UK having its own policy target, measurement and outputs, it is clear that reporting on the EER bands is now essential in monitoring fuel poverty. The 2016 HCS is the first to report on EER bands in Northern Ireland, and will provide a baseline for future comparison (in previous years the EER bands were produced as

30. www.bre.co.uk
31. Annual Fuel Poverty Statistics Report, 2017 (2015 Data)

part of the HCS report and were presented in the appendix tables, but they were not reported on in the commentary).

The changes in the SAP methodology mean that an EER rating calculated using SAP 2012 is not directly comparable with one calculated with an earlier version of SAP. Therefore it is not possible to make direct comparisons with the 2011 NIHCS, and caution should be used when quoting the published 2011 SAP ratings[32].

Approximately half (49%) of all dwellings were in EER bands A-C. It should be noted that there were no dwellings found in Band A and only 4% in Band B. More than one-third (36%) of dwellings were found in Band D and 11% in Band E. A small proportion, 3% were in EER bands F-G.

While direct comparison with 2011 is not possible, the 2016 findings show an improvement in the energy efficiency of dwellings in Northern Ireland[33], with more dwellings falling into bands A-C and less falling into bands F-G. This improvement is likely to be due to the investment into reducing fuel poverty in both the public and private sectors[34]. Since 2011, there has been a 20 percentage point decrease in fuel poverty in Northern Ireland[35].

EER bands - dwelling tenure (Appendix table 7.21)

Social housing dwellings were most likely to have an EE rating of A-C (79% compared with 49% overall).

EER bands - dwelling age (Appendix table 7.22)

There was a clear link between dwelling age and EER bands. The newer the dwelling the more likely it was to have an EER band A-C. Proportions in these bands ranged from 15% for pre 1919 dwellings to 72% for post 1980 dwellings (49% overall).

EER bands - dwelling type (Appendix Table 7.23)

Flats/apartments (86%) were most likely to have an EE rating in bands A-C, while bungalows (30%) were least likely to fall into these bands.

EER bands - dwelling location (Appendix table 7.24)

Dwellings in urban areas (57%) were more likely than dwellings in rural areas (35%) to have an EE rating in bands A-C. In particular, a higher than average proportion of dwellings in the Belfast Metropolitan Urban Area had an EE rating of A-C (66% compared with 49% overall).

EER bands - household characteristics (Appendix table 7.25)

The following outlines variations in EER bands by household characteristics.

Age of household reference person

Households with younger HRPS, aged between 17 and 24 (69%) or between 25 and 39 (60%), were more likely to live in dwellings with an EE rating of A-C.

Household type

Households with children (64%) were most likely to live in dwellings in EER bands A-C, while older households (38%) were least likely to live in dwellings in these bands.

Employment status

Households where the HRP was retired (43%) or not working (49%) were least likely to live in dwellings with EE ratings of A-C.

Annual income

Households with an annual income of £46,800 or more (62%) were most likely to live in dwellings that had EE ratings between A and C. The proportion declines steadily as income decreases, although it increases again for the two lowest income bands (49% below £15,599). This is likely to be due to the availability of means tested schemes[36] [37] which provided energy efficiency measures to the private sector, and to the Housing Executive's solid fuel replacement programme[38], and to the high energy efficiency standards of recently built social housing provided by housing associations.

Religion

Catholic households (53%) were slightly more likely than Protestant household (47%) to live in dwellings with EER bands A-C. This is largely due to the tendency for Catholics to live in newer housing.

32. An EER time series based on the latest version SAP 2012 will be published separately.
33. Changes in the SAP methodology were minor and would not explain the improvement in energy efficiency between 2011 and 2016.
34. Fuel Poverty Strategy for Northern Ireland 2011
35. Further information about fuel poverty is available in Chapter 6.
36. https://www.nihe.gov.uk/index/benefits/affordable_warmth_scheme.htm
37. Boiler Replacement Scheme: https://www.nidirect.gov.uk/articles/grant-to-replace-your-boiler
38. http://www.nihe.gov.uk/heating_policy_review_september_2012.pdf

Table 7.2: SAP 2012 Rating by Council Area[39]

	Bands A-C		Band D		Band E		Bands F-G		Total		Mean SAP
	Number	%	Number	%	Number	%	Number	%	Number	%	
North Down & Ards	34,157	48.4	29,829	42.3	x	8.6	492	0.7	70,519	100.0	66.80
	8.9		10.5		6.9		2.1		9.0		
Armagh, Banbridge & Craigavon	35,743	43.0	30,202	36.3	x	15.5	x	5.3	83,191	100.0	63.86
	9.3		10.6		14.7		18.9		10.7		
Antrim & Newtownabbey	29,725	50.2	18,370	31.0	x	15.7	x	3.0	59,178	100.0	64.99
	7.7		6.5		10.6		7.8		7.6		
Belfast	102,144	65.2	45,640	29.1	x	4.6	x	1.1	156,697	100.0	70.31
	26.5		16.1		8.3		7.3		20.1		
Causeway Coast & Glens	23,310	37.4	27,603	44.3	9,820	15.7	x	2.6	62,367	100.0	63.55
	6.0		9.7		11.2		7.1		8.0		
Derry & Strabane	26,985	44.9	25,168	41.9	x	11.7	x	1.5	60,065	100.0	65.36
	7.0		8.9		8.0		3.9		7.7		
Fermanagh & Omagh	19,140	39.0	20,365	41.5	x	15.8	x	3.8	49,105	100.0	62.61
	5.0		7.2		8.9		8.0		6.3		
Lisburn & Castlereagh	30,218	51.8	20,502	35.1	x	13.1	x	<1	58,349	100.0	67.00
	7.8		7.2		8.7		<1		7.5		
Mid & East Antrim	32,047	54.1	20,164	34.0	x	9.7	x	2.2	59,219	100.0	66.72
	8.3		7.1		6.5		5.5		7.6		
Mid Ulster	23,606	44.7	18,005	34.1	x	12.2	x	8.9	52,787	100.0	62.45
	6.1		6.3		7.4		20.4		6.8		
Newry, Mourne & Down	28,446	41.5	28,054	40.9	x	11.1	x	6.4	68,523	100.0	63.31
	7.4		9.9		8.7		19.0		8.8		
Total	385,521	49.4	283,902	36.4	87,425	11.2	23,152	3.0	780,000	100.0	65.83
	100.0		100.0		100.0		100.0		100.0		

- Belfast council area had the highest mean SAP rating (70.31) and the highest proportion of dwellings in EER bands A-C (65%).
- The lowest mean SAP ratings were found in Mid Ulster (62.45) and Fermanagh and Omagh (62.61).
- Causeway Coast and Glens had the lowest proportion of dwellings in EER bands A-C (37.4%), followed by Fermanagh and Omagh (39%).

39. Due to changes to the SAP model since 2011 it is not possible to make comparisons with previously published 2011 figures.

Appendices

APPENDIX A: NORTHERN IRELAND HOUSE CONDITION SURVEY (NIHCS) USER GUIDE

The purpose of this guide is to help users to better understand the NIHCS statistics and to aid the interpretation of statistics.

Survey objectives

The NIHCS 2016 objectives are broadly consistent with those of the 2001, 2004, 2006, 2009 and 2011 surveys.

- To provide a comprehensive picture of the dwelling stock and its condition in 2016 for Northern Ireland and each of the 11 new District Councils (where possible);
- To facilitate a comparative analysis of housing conditions in Northern Ireland with other parts of the UK;
- To examine the association between dwelling conditions and the social and economic circumstances of households;
- To examine changes in the condition of the stock over time in terms of key Government measures: Decent Homes Standard and the Housing Health and Safety Rating System (HHSRS).
- To provide a reliable assessment of the energy efficiency of the stock and the level of Fuel Poverty in Northern Ireland on a comparable basis with the rest of the UK.

Data collection

The 2016 Survey used electronic tablet devices to collect the data. This approach was first used in 2009 and was reviewed and enhanced for the 2011 and 2016 surveys.

The bespoke software used was developed by the Building Research Establishment (BRE). Validation and consistency checks were built into the programme and once a survey was completed it was uploaded and locked into a database via a secure website.

The hardware had secure user identification and device level security.

The electronic approach, the project management, design, administration, quality assurance analysis and report writing were the responsibility of the Housing Executive's Research Unit.

The e-survey form

The E-Survey form comprised five main sections of questions covering:

- The physical attributes of each dwelling (internal and external);
- The physical aspects of flats and common areas;
- Demographic, social, economic and attitudinal information on households;
- The front and back plot of the dwelling, the local neighbourhood and area;
- The Housing Health and Safety Rating System (HHSRS).

The main areas of change between the 2011 and 2016 survey forms were the inclusion of a number of new energy items for surveyors to record and a number of social questions (including income and benefits) were harmonised with the Primary Principles as set out by the Office for National Statistics[1].

The information gathered in the physical section allows measurement of repair costs, the Fitness Standard, The Decent Homes Standard, Fuel Poverty, SAP and the HHSRS.

Information from the social survey is cross referenced with the physical survey data to provide an indication of the types of households living in dwellings which are in the poorest condition and most likely to fail government standards.

Surveyor training

A total of 19 professional surveyors were employed to work on the 2016 House Condition Survey (HCS); all of whom worked on the 2006, 2009 and/or 2011 surveys. Surveyors employed were Environmental Health Officers, chartered surveyors or architects.

Five experienced supervisors were re-appointed all having carried out this role for previous surveys. Each supervisor was responsible for advising surveyors and ensuring their work was of a consistent and satisfactory quality.

All surveyors attended a two and a half day pre-briefing session in May 2016 held at the Canal Court Hotel, Newry, Co. Down. The purpose of the training was to introduce the new fieldwork tablet and updates to the e-form and website and to discuss changes to the form since 2011. The training also included a review of the more complex aspects of the form such as the HHSRS

1. ONS Harmonised Concepts and Questions for Social Data Sources

and energy sections and also a refresh on interviewing techniques.

The training was conducted by the Building Research Establishment (BRE), Housing Executive Research Staff and by the HCS supervisors. Training included test inspections of selected dwellings in Newry.

The training was in two stages. A main session of updates and reviews of the survey form and then surveyors were asked to complete two surveys of dwellings on their tablet over the next few days. After this a further half-day training session covered any problems encountered by the surveyors with the tablet or the website.

Fieldwork

Fieldwork began in May and was completed by November 2016.

Each surveyor was responsible for between 50 and 220 full inspections depending on whether they were contracted on a part time or full time basis. They were required to work in at least two sample areas to reduce likelihood of differences between areas being the result of surveyor variability.

In 2016 (as in previous years) a system of 'payment by result' was used and there were four different rates of payment:

- Full physical inspection and household survey;
- Full physical inspection but no household survey;
- Full physical inspection of vacant dwellings;
- Refusal/non-response.

A property could be classified as a non-response only after a minimum of five visits (including at least 1 evening and 1 weekend visit). Surveyors were required to complete the first two pages and take at least one photograph for all dwellings. These photographs were to be an important part of the data quality assurance.

Each surveyor issued a letter and a leaflet to each household selected explaining the purpose of the survey 1-2 weeks prior to calling out.

Each survey form was registered on a secure website using a unique schedule number. Surveyors uploaded their completed forms on a daily basis. Initial quality assurance checks were carried out by surveyors on the tablet. The surveyors also completed further quality assurance and validation checks after the form had been uploaded to the website. Surveyors, on completion of their own checks, sent forms to their supervisors. Supervisors were then responsible for checking key technical data and completing and correcting as appropriate in consultation with the surveyor.

The website was designed to provide information on how the fieldwork was progressing, giving details by surveyor of the number of forms uploaded, or being validated, sent on to supervisor or completed.

The NIHCS sample

The NIHCS is a survey based on a stratified random disproportionate sample of 3,000 dwellings. The published data are estimates for Northern Ireland housing stock based on this sample. The sample design process, and the weighting and grossing process are carefully designed to ensure that the results are accurate and representative of the total housing stock.

Selecting sample size

Sample size was an important factor in the design of the NIHCS sample as it ultimately determines the level of geographical disaggregation for any analysis undertaken. User consultation highlighted the importance of having results at Council level (there are 11 councils in Northern Ireland). In order to produce accurate results at this level the sample needs to be of a sufficient size. However, budgetary pressures also had to be considered. The agreed sample size (3,000) reflected an optimal balance between user requirements and budgetary priorities, and was approved by both the NIHCS Steering Group and the Housing Executive's Board of Directors (the Chief Executive's Business Committee).

Sample size implications

A sample size of 3,000 allows robust analysis not only at Northern Ireland level, but also by important subgroups such as tenure, age of dwelling, type of dwelling, rural/urban. Key figures (such as mean SAP and fuel poverty) for the 11 Council areas will also be available, although caution will be required if analysis by subgroup within Council area is undertaken. The robustness will depend on the achieved response rate in each area. This will be determined during the data analysis process. Cautions will be included in the report where appropriate.

Sample frame

The sample for the NIHCS is drawn from a subset of the Pointer database, which is the address

database for Northern Ireland, and contains the common standard address for every property in Northern Ireland. The database is maintained by Land and Property Services (LPS) with input from local councils and Royal Mail. Every month LPS provides the Northern Ireland Statistics and Research Agency (NISRA) with an updated version of the database. Pointer is NISRA's preferred address database and is used as the sampling frame for the selection of addresses on Government social surveys in Northern Ireland. Detailed information about the quality assurance checks carried out on the sample frame and on the sample itself are available on the Housing Executive's website:

http://www.nihe.gov.uk/nihcs_quality_assurance.pdf

Sample design

The 2016 Northern Ireland House Condition Survey (HCS) was based on a random sample of 3,000 dwellings completed in two stages.

- The first stage involved including all the full surveys completed as part of the 2011 HCS (resample: 1,434 surveys). Consideration had to be given to the location of addresses because the 2011 HCS eleven council areas were approximations only, based on the grouping of existing LGDs, as boundaries were not finalised at the time of the 2011 HCS sampling. Consequently, this meant there were some sample variations in the final totals by the eleven council areas in the 2016 HCS sample.
- The second stage was a fresh random sample of 1,566 properties selected by council area to ensure that each area total (fresh and resample) added to approximately 200. In Belfast Council Area, a total of 635 households were selected (150 in North, 151 in East, 171 in South and 163 in West Belfast). In addition the Causeway Coast Council area was divided into two areas to allow for more detailed information on holiday homes in Northern Ireland.
- The fresh sample frame, in 2016, was Pointer (see 'Sample frame'). This database (Pointer) contained a subset of the computerised records for domestic residential property maintained by the LPS and had been subject to extensive quality assurance and validation since 2011.

Additional sampling procedures

Addresses were selected at random and no substitution of addresses was allowed. In instances where surveyors encountered a multi-dwelling address and there was no sub-number on their contact sheet, there were processes in place to ensure the correct address was selected. In the case of a fresh sample address a kish grid was used to randomly select the sub-number. In the case of a resample address the statistics team looked up the details of the previous survey in order to identify which sub number had been surveyed, and the same sub-number was surveyed in 2016. If the address was a single-dwelling address in the previous survey, but had subsequently changed to a mutli-dweling address, a kish grid was used to randomly select the sub-number.

Confidence interval

Sample surveys provide estimates of the population and these estimates are subject to what was traditionally known as 'sampling error' but is now more commonly referred to as 'confidence interval'. This indicates to the reader the +/- range in which the reader can be 'confident' that the true value of the statistic is found. There is an inverse relationship between sample size and confidence interval. As the sample size increases the confidence interval decreases. In the case of the NIHCS, where comparisons are made between Areas, or between Northern Ireland and other parts of the UK, or between results of the current and previous Surveys, it is important that the confidence interval is calculated, even approximately to determine to what extent apparent differences e.g. between Councils are real, or simply the result of statistical vagaries.

It has become normal practice to estimate the confidence interval at the 95% confidence level i.e. the results would be replicated nineteen times out of twenty if the survey were repeated. The formula for sample error is:

$$+/- 1.96 \sqrt{\frac{P(100-P)}{N-1}}$$

Where P is the percentage in question and N is the sample size in question. Where N is large, for convenience this 1 is ignored. The result of application of this formula is that the percentage error increases as the sample size is reduced and the relative error increases when the percentage is very low or very high e.g. less than 10% or higher than 90%.

Taking an example of a sample size of 100 and where the percentage in question is 10

S sample error =

$$+/- 1.96 \sqrt{\frac{10 \times 90}{99}} = +/- 5.91\%$$

Thus the percentage (10%) should be read as 10% +/- 5.91% i.e. one can only be sure that the percentage is between 4.09% and 15.91%. For 50% and a sample size of 100 the sample error would be +/- 9.85% i.e. the range would be from 41.15% to 59.85%.

The table of confidence intervals below has been calculated for an approximate achieved sample, after allowance for non-response.

Response rates

The 2016 sample issued consisted of the following components.

Resample from 2011	1,434
Fresh Sample (Pointer)	1,566
Total Sample	3,000

1. The following table summarises the Survey outcome.

Survey outcome 2016

	Number	%
Full Survey	2,023	67
No contact made	318	11
Access refused to Surveyor	494	16
Access refused at NIHE	146	5
Address untraceable	0	0
Dwelling derelict	8	<1
Dwelling demolished	6	<1
No longer usable as a dwelling	2	<1
Other	3	<1
Total	3,000	100

2. Of the 3,000 addresses issued to surveyors, full surveys were completed for 2,023 properties giving a gross response rate of 67%. However, the potential response was 2,984 (excluding not traced, derelict, demolished and no longer usable as a dwelling), giving a response rate for the physical survey of 68% 2,023 out of 2,984).
3. The response rate for the household survey was higher. Overall, 1,942 inspected dwellings were occupied and of these 1,917 household interviews were achieved, a response rate of 99%.

Table 1: Confidence intervals at 95% confidence level

% Sample Size		5 or 95	10 or 90	15 or 85	20 or 80	25 or 75	30 or 70	35 or 65	40 or 60	45 or 55	50
	100	4.3	5.9	7.0	7.9	8.5	9.0	9.4	9.7	9.8	9.8
Unfit	50	6.1	8.4	10.0	11.2	12.1	12.8	13.4	13.7	13.9	14.0
Vacant	80	4.8	6.6	7.9	8.8	9.5	10.1	10.5	10.8	11.0	11.0
Pre 1919	200	3.0	4.2	5.0	5.6	6.0	6.4	6.6	6.8	6.9	6.9
Private Rented	340	2.3	3.2	3.8	4.3	4.6	4.9	5.1	5.2	5.3	5.3
Social Housing	410	2.1	2.9	3.5	3.9	4.2	4.4	4.6	4.7	4.8	4.8
Rural	710	1.6	2.2	2.6	2.9	3.2	3.4	3.5	3.6	3.7	3.7
Owner Occupied	1200	1.2	1.7	2.0	2.3	2.5	2.6	2.7	2.8	2.8	2.8
Urban	1320	1.2	1.6	1.9	2.2	2.3	2.5	2.6	2.6	2.7	2.7
Occupied	1940	1.0	1.3	1.6	1.8	1.9	2.0	2.1	2.2	2.2	2.2
Northern Ireland	2020	1.0	1.3	1.6	1.7	1.9	2.0	2.1	2.1	2.2	2.2

4. The number of vacant dwellings visited during the Survey was 81. Therefore the total number of dwellings in which a household interview would have been possible was 2,984-81=2,903. This gives a social survey response rate of 66% (1,917 interviews out of 2,903).

   The following table summarises the response rates:

Response rates 2016

Full surveys as a % of sample	67%
Full physical surveys as a % of existing dwellings	68%
Full social surveys as a % of inspected occupied dwellings	99%
Full social surveys as a % of existing dwellings	66%

Weighting and grossing

Design, calculation and validation of statistical weights for the 2016 Northern Ireland House Condition Survey

Weighting and grossing is the process whereby the information gathered by means of a sample survey is translated into figures that reflect the real world. The process has a number of stages reflecting the separate stages of the sampling process and the survey process itself.

In the case of the 2016 HCS there were a number of stock factors taken into account, when weighting, including building/household splits and mergers, new build and demolitions.

Survey weighting factors that were taken into account included non-response. Adjustments for non-response were based on the sample and achieved surveys and tenure (public and private). Corrections were also required for the oversample in the Causeway Coast area and to take into account, as much as possible, the boundary changes within and around the Belfast (North, South, West and East) area since 2011[2].

The grossing process corrected to the known external totals of the Pointer database held by NISRA.

The overall weighting and grossing strategy involved designing and calculating separate weights for the re-sample and the fresh elements of the sample.

The weights for these two elements were combined and further adjustments were made for tenure, boundary changes in and around Belfast and to the Pointer sample frame totals.

In addition, the two strands of the process (weighting and grossing) were merged into a single 'weight' for application to each sampled dwelling and the data held for it.

For each step of the weighting and grossing process area tables by tenure (including vacants), construction date and fitness were checked for accuracy. A final quality assurance of statistical outputs by key variables was also undertaken.

Interpreting the data

When comparing between years users are advised to use 2011 HCS figures with some caution. It could be that some 2011 HCS figures may have been affected by the move to the Pointer database in late 2010. Trend analysis shows 2011 having higher than expected figures in relation to vacancy, unfitness and rural areas. This is highlighted where appropriate in the text of the report. It may have been possible that a small number of the non-eligible dwellings on the Pointer database were included in the 2011 sample and were surveyed by surveyors (and were later removed from the database as part of NISRA's QA process). The reason why non-eligible dwellings were surveyed as part of the HCS in 2011 may have been due to different definitions used by HCS surveyors when deciding to include a dwelling in the survey (based on certain identified physical structures), and by NISRA staff when deciding to remove a property from the Pointer database (based on a dwelling's potential of being brought back into use).

As new and improved address information becomes available, the reliability of dwelling totals across the 11 council areas will become further enhanced.

Quality information

Quality assurance (QA) checks are carried out by the producers/suppliers of the administrative data which is used to select the sample for the HCS. QA checks are also carried out at various stages of the survey by the Housing Executive's Research Unit, Building Research Establishment (BRE) and by HCS supervisors.

The Housing Executive has produced a document which sets out the quality assurances processes

2. It was hoped that the 2016 HCS would provide analysis at the sub- Belfast level (North, South, West and East). However, changes in new boundaries aligning with the HCS definition of the four Belfast areas meant that findings were subject to some caution and it was decided to omit any analysis at this level. This will be reviewed and updated for the 2021 HCS.

carried out at each stage of the survey. It has also produced a background quality report which shows the degree to which the NIHCS statistics meet the European Statistical System's five dimensions of quality. Both documents are available on the Housing Executive website:

http://www.nihe.gov.uk/index/corporate/housing_research/house_condition_survey/corporate-quality-information.htm

Strengths and weaknesses

Strengths

- The NIHCS provides statistics at national level relating to the dwelling stock, unfitness, household profiles, state of repair, and the HHSRS. When the sample size allows it also provides statistics at smaller geographical levels such as Council area.
- It is the only source of data for key government measures of housing quality such as fuel poverty, energy efficiency, SAP, Repair Costs, the Decent Homes Standard, and Fitness Standards.
- All tenures and types of housing are included, for example, owner occupied and rented housing, vacant dwellings, houses in multiple occupation, apartments, urban and rural dwellings.
- The sample design and the weighting and grossing processes ensure accurate and reliable data are produced.
- The response rate has remained high over the years, reducing the effect of non-response bias. The response rate has fallen slightly in 2016 although this is consistent with the experience of most household surveys in the UK and Europe.
- The consistency of the questionnaire over time, as well as the resample element of the survey, allow changes in the condition of stock over time to be measured.
- The partnership with Building Research Establishment (BRE) ensures that the questionnaire is (as much as possible) the same as the English Housing Survey, thus enabling comparability with England, and where possible with Scotland and Wales.
- Where necessary, the questionnaire is tailored to NI conditions.
- The methodological expertise of the NIHCS Steering Group and of BRE ensures that sound methodology is used.
- Any revisions to definitions/government measures are adopted to ensure statistics provide an accurate picture of housing conditions in Northern Ireland, comparable with England, and where possible with Scotland and Wales. These changes are explained in the report and where possible a time series is produced using the updated definitions/measures.
- Intensive training of surveyors by a combined BRE/NIHE team, monitoring by NIHCS supervisors, tablet and website validation, and validation by NIHE and BRE all help to minimise surveyor variability and reduce the possibility of measurement error.
- Thorough quality assurance processes are in place at all stages of the NIHCS to ensure that high quality data are produced:

  http://www.nihe.gov.uk/index/corporate/housing_research/house_condition_survey/corporate-quality-information.htm
- Key NIHCS socio-demographic statistics have shown consistency over time and are similar to those emerging from other surveys in Northern Ireland eg. the Family Resources Survey, the Continuous Household Survey, and the Census.
- Regular engagement with users ensures that the statistics meet user needs.
- Before publishing statistics for any sub-groups, checks are carried out to ensure that the data are robust and users are provided with information regarding confidence intervals.
- Statistical disclosure control techniques are used to safeguard the confidentiality of respondents to the NIHCS.
- The NIHCS team upholds the principles of the Data Protection Act, and the General Data Protection Regulation (from 25 May 2018).

Weaknesses

All surveys have limitations which can be caused by a number of factors such as budget and resources. The Housing Executive monitors any issues that could cause weaknesses in the data and take steps to address them. These are outlined below.

1. Sample size

The size of the sample determines the geographical level at which analysis can be carried out. User consultation showed that many NIHCS users need results at the new Council level. In some cases because of budget driven restrictions in sample size, robustness of Council level figures are less than optimal.

A sample size of 3,000 will provide robust data at Northern Ireland level, and possibly at new Council areas for some sub-groups (depending on the achieved response rate in each area).

It is normally not possible to carry out three-way cross tabulations eg. fuel poverty in rural areas by Council area, as the data would not be robust enough. However, requests for three-way analysis are always checked for robustness and only provided if meaningful.

Addressing the issue of sample size:

When the sample size places limitations on data analysis the Housing Executive will investigate other ways to meet user needs eg. in 2011 when the sample size was 2,000, a modelling exercise was carried out using 2011 NI Census data in order to produce robust data for some key government measures at the new Council area level.

The Housing Executive will also examine the possibility of recoding sub-groups in order to produce meaningful data. The Housing Executive will inform users about the implications of the smaller sample size eg. in 2016 cells in some appendix tables contained a 'x' rather than a number. This indicated to users that the cell contained a small number and that percentages should be used with caution.

In addition, the Housing Executive will, where possible, provide data to users which might only be useful for indicative purposes but not of sufficient robustness for quoting or publishing. The limitations of this data will be made clear to the users.

2. Non-response to individual questions

This can impact on the quality of data, therefore the Housing Executive has measures in place to minimise non-response in the NIHCS. The level of non-response for most key NIHCS variables is non-existent. However, consistently there are two variables which are likely to have incomplete data. These variables relate to sensitive topics ie. income and religion. Surveyors are trained in interview techniques and encourage respondents to answer the questions by stressing the confidentiality of their personal information, the security of the data, and by explaining what the data will be used for. However people find income in particular difficult to answer and the refusal rate for this question is high. This is not unique to the NIHCS and is an issue for many surveys.

Addressing the issue of non-response to individual questions:

Procedures are in place to deal with non-response to individual questions in the NIHCS:

- built in tablet validation and ongoing monitoring and checking by NIHCS supervisors and Housing Executive staff
- consistency checks
- imputation work for key data items such as income. This involves using other known data items such as age, employment status, Standard Occupational Group (SOC), if there is a partner, benefit data and tenure, alongside estimated average incomes from other sources such as the NI Annual Survey of Hours and Earnings (ASHE) to help impute an estimated banded income value. Imputations are cross-referenced with similar NIHCS sub-groups where average income bands have been supplied for 2016.

3. Changes to the sample frame

The overall estimate of the housing stock in Northern Ireland was provided by NISRA from the Pointer database. It is important to note that in 2010 NISRA moved to using the Northern Ireland Pointer database (previously the Valuation and Lands Agency database was used) for sampling surveys.

Addressing the issues of the changes to the sample frame:

This database has been subject to ongoing quality assurance and validation[3] and this, along with ongoing address checks, means that as new and improved address information becomes available dwelling totals across the council areas will become more reliable.

3. Although NISRA moved to the Pointer database in 2010, the sample for the 2011 HCS was drawn before any QA and validation was carried out on the database.

APPENDIX B

Northern Ireland House Condition Survey 2016

Please write address here

Surveyor Name

Surveyor Number

1. Survey record

	Date		Start time		Finish time		Internal inspection			External inspection			Household interview		
	Day	Month	Hrs	Mins	Hrs	Mins	Full	Partial	None	Full	Partial	None	Full	Partial	None
First visit							1	2	3	1	2	3	1	2	3
Last visit							1	2	3	1	2	3	1	2	3
Total number of visits			Inspection outcome				1	2	3	1	2	3	1	2	3

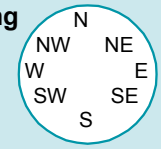
Survey Outcome

	Problems of access			Other problems				
Full survey	No contact made	Access refused to surveyor	Access refused at NIHE	Address untraceable	Dwelling derelict	Dwelling demolished	No longer usable as a dwelling	Other
1	2	3	4	5	6	7	8	9

Number of photographs taken

0	1	2	3	4	5	6	7	8

Compass Reading



Income Completed	1	2
HMO form	1	2
Photos taken	1	2

Settlement Type

Urban		Rural		
BMA	District town / Other town	Small rural settlement	Isolated rural	Clear
1	2	3	4	5

2. First impression of condition / Capital Value

Seriously defective	Defective		Acceptable		Satisfactory	
1	2	3	4	5	6	7

Capital value

Is the dwelling in accord with the Capital Value?

Yes	1
No	2

→ **Inspect this dwelling**

Is there another dwelling on the plot that better matches the Capital Value?

Yes	1
No	2

→ **Is this a viable dwelling?**

Yes	1
No	2

→ **Inspect this dwelling**

Inspect original dwelling

Inspect original dwelling

OFFICE USE ONLY

Address on PRAWL database?	Yes / No	**Address on Grants database?**	Yes / No	**X Coordinate**	
Prop ref number		**Grants number**		**Y Coordinate**	
Prop code	Tenant / Sold	**Grant type**	Renovation / Disabled Facilities	**Pointer UPRN**	
Date of sale		**Date of construction from VLA**		**Postcode**	

3. Dwelling description and occupancy

Type of occupancy ***(clarify with household)***

Single family dwelling 1	Shared house 2	Household with lodgers 3	Bedsits or flatlets 4	Purpose built with shared amenities 5	Hostel/ B&B 6

Supplementary HMO form to be completed - see manual

Dwelling type ***(clarify with household)***

House/bungalow						Flat		
End terrace 1	Mid terrace 2	Mid terrace w. passage 3	Semi detached 4	Detached 5	Temporary 6	Purpose built 7	Converted 8	Non residential plus flat 9

Bungalow? Y | N

Tenure ***(clarify with household)***

Owner occupied 1	Private rented 2	Housing Executive 3	Housing association 4

Construction date ***(clarify with household)***

Pre 1919 1	1919-1944 2	1945-1964 3	1965-1974 4	1975-1980 5	1981-1990 6	1991-2000 7	2001-2016 8

If Post 1990 specify year ____

Source of information ____

Occupancy ***(ask where possible)***

Occupied 1	Vacant						
	Awaiting another owner 2	Awaiting another tenant 3	Awaiting demolition 4	Being modernised 5	New never occupied 6	Being used for other purpose 7	Other (specify) 8

If occupied: how long have the current occupants lived here? Years ____ Months ____

If vacant: how long has the dwelling been vacant? Years ____ Months ____

Is the dwelling boarded up/secured? Y | N

Permanent residence?

Yes 1	No - second home 2	No - holiday home 3

If occupants have moved in within the last 6 months, ask for date:-

Day ____ Month ____ Year ____

Source of information on tenure and occupancy

Occupant 1	Neighbour 2	Caretaker/ warden/agent 3	Estimate/ appearance 4	Other (specify): 5 ----------

IDENTIFY MODULE NOW

4. Is address one dwelling?

Yes 1	NO - dwelling is part of one address 2	NO - address is part of one dwelling 3
	No. dwellings at address ____	No. addresses at dwelling ____
	Consult supervisor if in doubt	

Continue

5. Interior

	Living room		Kitchen		Bedroom		Bathroom		Circulation	
Does room exist?	Y	N	Y	N	Y	N	Y	N	Y	N
Level (B, G, 1, 2, 3 etc)										
Direction (L, K, S, T, D, B, U, C, X)										
Room inspected?	Y	N	Y	N	Y	N	Y	N	Y	N
Ceiling height (metres)	•		•		•		•		•	
Width (metres)	•		•		•					
Depth (metres)	•		•		•					

Ceilings (answer in vertical)

Faults?	Y	N	Y	N	Y	N	Y	N	Y	N
Take down and renew										
Isolated repair / fill cracks										
Leave										

Floors (answer in vertical)

Solid floors?	Y	N	Y	N	Y	N	Y	N	Y	N
Faults?	Y	N	Y	N	Y	N	Y	N	Y	N
Replace structure										
Replace only boards or screed										
Leave										

Walls (answer in vertical)

Faults?	Y	N	Y	N	Y	N	Y	N	Y	N
Rebuild partition wall										
Hack off / replaster										
Isolated repair / fill cracks										
Leave										
Dry lining present?	Y	N	Y	N	Y	N	Y	N	Y	N
Internal insulation	Y	N	Y	N	Y	N	Y	N	Y	N

Doors (answer in vertical)

Faults?	Y	N	Y	N	Y	N	Y	N	Y	N
Renew										
Repair/rehang										

Windows/Frames

Faults?	Y	N	Y	N	Y	N	Y	N	Y	N
Means of escape?	Y	N	Y	N	Y	N	Y	N	Y	N
Secondary glazing for sound insulation?	Y	N	Y	N	Y	N	Y	N	Y	N

Heating & Services

Oil/gas appliance?	Y	N	Y	N	Y	N	Y	N	Y	N
Fixed other heater?	Y	N	Y	N	Y	N	Y	N	Y	N
Fluorescent/low energy lighting?	Y	N	Y	N	Y	N	Y	N	Y	N

Defects

	Living room	Kitchen	Bedroom	Bathroom	Circulation	Other rooms
Rising (ground level) damp	Y	Y	Y	Y	Y	Y
Penetrating (higher level) damp	Y	Y	Y	Y	Y	Y
Serious condensation/mould growth	Y	Y	Y	Y	Y	Y
Inadequate natural light	Y	Y	Y	Y	Y	Y
Inadequate artificial light	Y	Y	Y	Y	Y	Y
Inadequate room ventilation	Y	Y	Y	Y	Y	Y
Inadequate appliance ventilation	Y	Y	Y	Y	Y	Y
Wood boring insect attack	Y	Y	Y	Y	Y	Y
Dry rot	Y	Y	Y	Y	Y	Y
Evidence of mice	Y	Y	Y	Y	Y	Y
Evidence of rats	Y	Y	Y	Y	Y	Y

	Integral garage	Integral utility	Extra room 1	Extra room 2	Extra room 3	Extra room 4	Extra room 5	Extra room 6	Extra room 7	Number rooms (specify no.)
Does room exist?	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	
Level (B, G, 1, 2, 3 etc)										
Direction (L, K, S, T, D, B, U, C, X)										

Stairs within dwelling

Bedrooms (specify no.)

Present?	Y N
Open Plan?	Y N
Faults?	Y N
Replace structure	Y
Replace treads	Y
Replace balustrades	Y
Repair/refix treads/balustrades	Y

Security of dwelling

	High	Fairly high	Fairly low	Low	Very low	No Access
Main entrance door	1	2	3	4	5	
Other external doors	1	2	3	4	5	8
Accessible windows	1	2	3	4	5	8

Burglar alarm present?	Y N
Door viewer present?	Y N
Smoke detector(s)	Y N
Carbon monoxide detector	Y N

Accessibility

Flush threshold <15mm?	Y N
Room on entrance level suitable for bedroom?	Y N
Bathroom at entrance level?	Y N
WC at entrance level?	Y N
Wheelchair accessible WC at entrance level?	Y N
Change in floor level/trip steps at entrance level?	Y N
Doorsets and circulation meet part R?	Y N
Straight stairs with landings >900mm?	Y N

Adaptations for disabled people

Ramps?	Y N
Grab rails?	Y N
Stair lift/through floor lift?	Y N
Hoists?	Y N
Electrical modifications?	Y N

HHSRS

	Significantly lower risk than average	Average risk	Significantly higher risk than average
Falling on stairs etc	1	2	3
Falling on level surfaces	1	2	3
Falling between levels	1	2	3
Fire	1	2	3
Flames, hot surfaces, etc	1	2	3
Damp and mould growth		2	3

If '3', score HHSRS in Section 22

	Significantly lower risk than average	Average risk	Significantly higher risk than average	Extreme risk
Entry by intruders	1	2	3	4
Noise	1	2	3	4
Collisions and entrapment	1	2	3	4
Excess heat	1	2	3	4
Lighting	1	2	3	4
Domestic hygiene,pests and refuse	1	2	3	4

Describe 'extreme risk' in Section 22

Rats and Mice

Type of evidence

Traps seen?	Y N
Chemicals seen?	Y N
Other visual evidence?	Y N
Told about it?	Y N

5. Interior – amenities

Kitchen amenities

	Present		Working		Action				
					None	Minor repair	Major repair	Replace	Install
Cold water drinking supply?	Y	N	Y	N	1	2	3	4	5
Hot water?	Y	N	Y	N	1	2	3	4	5
Sink?	Y	N	Y	N	1	2		4	5
Fixed waste?	Y	N	Y	N	1	2		4	5
Cooking provision?	Y	N	Y	N	1	2	3	4	5
Cupboards?	Y	N	Y	N	1	2	3	4	5
Worktop	Y	N	Y	N	1	2	3	4	5
Extractor fan?	Y	N	Y	N					

Drinking water supply pipework

	Pipework seen		Lead present		Mains	
Before stopcock?	Y	N	Y	N	Y	N
After stopcock?	Y	N	Y	N		

Main cooker fuel type

Electric	Oil	Solid Fuel	Mains gas	LPG / bottled gas	Other
1	2	3	4	5	6

Y	N	Adequate cooker space?
Y	N	Adequate cupboard units?

Under 1.5m	1.5 - 3m	Over 3m	Worktop *(metres)*
1	2	3	

Are there significant problems with: Space Y N; Layout Y N; Cleanability Y N

Kitchen adapted for disabled use? Y N

	Original	Pre 1950	1960's	1970's	1980's	1990's	2000's	2010's	In progress
Kitchen amenities last refurbished	9	1	2	3	4	5	6	7	8

Actual date of kitchen refurbishment (if known)

Bathroom amenities

	Present		Working		Hot & cold water		Action					Floor		Specify	Fully tiled?		No. of external surfaces	Internal?		Close to sink?		In bathroom?		PVC mesh ceiling or Extractor fan?	
							None	Minor repair	Major repair	Replace	Install	Basement	Ground												
Bath/shower?	Y	N	Y	N	Y	N	1	2		4	5	BB	GG		Y	N									
Wash hand basin?	Y	N	Y	N	Y	N	1	2		4	5	BB	GG												
W.C.?	Y	N	Y	N			1	2	3	4	5	BB	GG					Y	N	Y	N	Y	N	Y	N
Extractor fan in bathroom?	Y	N	Y	N																					

Are there significant problems with: Space Y N; Layout Y N; Cleanability Y N; Location Y N

Is any bathroom adapted for disabled use? Y N

Is any bathroom wheelchair accessible? Y N

	Original	Pre 1950	1960's	1970's	1980's	1990's	2000's	2010's	In progress
Bath/shower last refurbished	9	1	2	3	4	5	6	7	8

Actual date of bath/shower refurbishment (if known)

Secondary amenities

	Present		Working		Hot & cold water		Floor		Specify	Is bathroom en-suite		Internal?	
							Basement	Ground					
Second kitchen?	Y	N			Y	N	BB	GG					
Second bath/shower?	Y	N	Y	N	Y	N	BB	GG		Y	N		
Second wash hand basin?	Y	N	Y	N	Y	N	BB	GG		Y	N		
Second W.C.?	Y	N	Y	N			BB	GG		Y	N	Y	N

HHSRS - hazards relating to whole dwelling interior

Hazards that may pose an extreme risk

	Significantly lower risk than average	Average risk	Significantly higher risk than average	Extreme risk
Falls associated with baths etc.	1	2	3	4
Water Supply	1	2	3	4
Food Safety	1	2	3	4
Personal hygiene, sanitation and drainage	1	2	3	4
Position and operability of amenities	1	2	3	4

Describe 'extreme risk' in Section 22

5. Interior - Primary services

Gas system

Present? Y N Mains supply? Y N

Action	None	Minor Repair	Major Repair	Replace
	1	2	3	4

Housing Health and Safety Rating System (HHSRS)

	Significantly less risk than average	Average risk	Significantly higher risk than average	Extreme risk
Uncombusted fuel gas	1	2	3	4
Explosions	1	2	3	4

Describe 'extreme risk' in Section 22

Electrical system

Present? Y N Normal mains supply? Y N Off-peak supply? Y N

Location of meters	Under stairs or on wall 1	Special cupboard 2	External access to meter 3	Mixture 4	Unknown 5
Type of wiring	Lead or rubber covered 1	PVC sheathed 2		Mixture 4	Unknown 5
Earthing wires	Unsheathed or green cover 1	Yellow and green sheath 2		Mixture 4	Unknown 5
Consumer unit arrangement	Separate fuse boxes for each circuit 1	One or two "covered boxes" 2	One or two "accessible boxes" 3	Mixture 4	Unknown 5
Overload protection	Wire fuses 1	Cartridge fuses 2	MCB's 3	Mixture 4	Unknown 5
Personal protection	No RCD's 1	RCD in consumer unit 2	Separate RCD's 3	Mixture 4	Unknown 5
Power sockets	Round 2 or 3 pin 1	Square 3 pin 2		Mixture 4	Unknown 5
Lighting circuits	Wooden mounting blocks 1	Flush mounted switches or roses 2		Mixture 4	Unknown 5

Action	None	Minor Repair	Major Repair	Replace	Install
	1	2	3	4	5

Housing Health and Safety Rating System (HHSRS)

	Significantly less risk than average	Average risk	Significantly higher risk than average	Extreme risk
Electrical safety	1	2	3	4

Describe 'extreme risk' in Section 22

Cavity wall insulation

Is there any evidence of cavity wall insulation in/around the electricity or gas meters? Y N

Ventilation

Total number of open fireplaces

5. Interior – space heating

Primary heating

Present?

Y	N

If present: Main heat source in winter? (ask household)

Y	N

Location of system

Individual	Communal system: Estate	Communal system: Block	Communal system: Group of dwellings
1	2	3	4

If communal, number of dwellings served: | | |

If present:

Primary heating group

Central heating (wet with rads)	Storage heaters	Warm air	Communal/ CHP	Electric ceiling/ underfloor	Room heaters
1	2	3	4	5	6

Distribution type

Radiators	Underfloor
1	2

Primary heating fuel

Gas			Oil	Solid fuel				Electricity			Communal		Dual	
Mains	Bulk LPG	Bottled		Coal	Smoke-less fuel	Anthracite	Biomass	Economy 7	Standard	Other	CHP/Waste heat	From boiler		Primary / Secondary
01	02	03	04	05	06	07	08	09	10	11	12	13	14	

Biomass type

Wood chips	Wood logs	Wood pellets	Gas	Oil
1	2	3	4	5

Primary heating type

Standard (non condensing)	Back boiler	Combination (non condensing)	Condensing	Condensing Combi	Combined primary storage unit	No boiler	Unknown
1	2	3	4	5	6	7	9

CRITICAL INFORMATION FROM TABLE

Primary heating appliance
First digit should match code for primary heating group

Code: | | |

Clarify with household

Primary heating system working?

Y	N

	Action: None	Minor repair	Major repair	Replace	Age (Clarify with household)
Primary heating appliance	1	2	3	4	
Primary heating distribution	1	2	3	4	

Primary heating distribution

If boiler driven system: Boiler

Manufacturer name:

Model name/number:

Primary heating controls *(non storage heaters)*

	Present?		
Overall on/off	Y	N	U
Boiler thermostat	Y	N	U
Timer	Y	N	U
Manual override on timer	Y	N	U
Room thermostat	Y	N	U

	Present?		
Radiator controls (manual)	Y	N	U
TRVs / appliance thermostat	Y	N	U
Time and temperature zone control	Y	N	U
Delayed start thermostat	Y	N	U

Primary heating controls *(storage heaters)*

	Present?		
Manual charge control	Y	N	U
Automatic charge control	Y	N	U
Celect type control	Y	N	U

Other heating

Present?

Y	N

Main heat source in winter? (ask household)

Y	N

Type of system

Mains gas fires									LPG	Electric heaters			Solid fuel heaters		LPG	Other
Open flue	Balanced flue	Fan assisted	Cond-ensing	Live effect - sealed to chimney	Live effect fan assisted flue	Decorative open to chimney	Flueless	Unknown	Fixed heaters	Panel, convector or radiant	Portable	Individual storage heater	Open fire	Stove/ space heater	Portable heaters	
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17

Action: None	Minor repair	Major repair	Replace	Age
1	2	3	4	

Housing Health and Safety Rating System (HHSRS)

	Significantly lower risk than average	Average risk	Significantly higher risk than average	Extreme risk
Carbon monoxide and fuel combustion products	1	2	3	4

Describe 'extreme risk' in Section 22

6

Hot water system

Present?

Y	N

If present indicate all systems available

	Present? Y	N	Fuel								Action: None	Repair	Major repair	Replace	Age
Boiler with central heating															
Boiler (water heating only)			Mains gas 01	Bulk LPG 02	Bottled gas 03	Oil 04	Coal 05	Smokeless 06	Anthracite 07	Biomass 08	1	2	3	4	
Back boiler (water heating only)			Mains gas 01	Bulk LPG 02	Bottled gas 03	Oil 04	Coal 05	Smokeless 06	Anthracite 07	Biomass 08	1	2	3	4	
Single immersion heater			Standard 09	7 hr tariff 10							1	2	3	4	
Dual immersion heater				7 hr tariff 10							1	2	3	4	
Separate instantaneous heater (Single point)			Mains gas 01	Bulk LPG 02	Bottled gas 03	Oil 04	Standard 09				1	2	3	4	
Separate instantaneous heater (Multi point)			Mains gas 01	Bulk LPG 02	Bottled gas 03	Oil 04	Standard 09				1	2	3	4	
Communal			CHP/waste 13	From boiler 14											
Other			Specify:						Fuel from facing page						

Cylinder present?

Y	N	U

Cylinder seen?

Y	N

If cylinder seen:

Size/volume

450 x 900mm (110 l) 1	450 x 1050mm (140 l) 2	450 x 1500mm (210 l) 3	450 x 1650mm (245 l) 4

Cylinder insulation

Foam Factory insulated 1	Jacket Loose jacket 2	Other 3	None 4

Cylinder insulation thickness

0 1	12.5mm 2	25mm 3	38mm 4	50mm 5	80mm 6	100mm 7	150mm 8

Water heating controls?

Present?

	Y	N	U
Time clock for water heating			
Cylinder thermostat			

6. Loft inspection

Inspect <u>all</u> houses and top floor flats

House/ Bungalow 1	Top floor flat 2	Mid floor flat 3	Ground floor flat 4	Basement flat 5
		GO TO SECTION 7 →		

Loft information from:

Inspection 1	Occupant 2	No loft (flat or very shallow pitched roof) 8	no information 9
		GO TO SECTION 7 →	

Type of loft

Fully boarded 1	No boarding or partial boarding 2	Room(s) with permanent stairs 3	Don't know 9

Roof insulation above living space?

Yes 1	No 2	Don't know 9

Type of loft Insulation

Mineral wool/ fibre glass 1	Vermiculite beads 2	High performance quilt 3	Rigid foam board 4	Not applicable 8	Don't know 9

Approximate thickness of loft insulation

No insulation 00	25mm 01	50mm 02	75mm 03	100mm 04	125mm 05	150mm 06	200mm 07	250mm 08	300mm 09	>300mm 10	Don't know thickness 99

Any roof structure problems seen?

Y	N

Is there any evidence of cavity wall insulation in the loft?

Y	N

If yes, describe and transfer to Section 21

7. Household questionnaire

I would now like to ask you some questions about your home and the people who live in it.

Cooperated	Vacant	Occupant temporarily away	Refused	Reasons(s)
1	2	3	7	

Q1 Is this accommodation your household's only residence?

Yes	1	Go to Q3
No	2	Go to Q2
Don't know	9	Go to Q3

Q2 Is this accommodation

Your household's main residence	1
A home used for holidays/weekends by you or your family (for four weeks or more per year)	2
A home used for holidays/weekends by holiday makers (i.e. let out on a commercial basis)	3
A home used for holidays/weekends by your family (less than 4 weeks), & also holiday makers (on a commercial basis)	4
A home used as an alternative to your main residence in connection with your job but not for holidays/weekends	5
A home used by a student of a university or college	6
Don't know	7

(ASK ALL)
Q3 Do you (or your family) own this dwelling?

Own property outright	1	Go to Q4
Buying with mortgage or loan	2	Go to Q3a
Co-Ownership	3	Go to Q3a

I would now like to ask you some questions about the mortgage you pay for this home.

Q3a How often is the mortgage paid for this accommodation?

Calendar month	1
Other (please specify)	2
Don't know	8

Q3b How much is the monthly mortgage for this accommodation? Amount to the nearest £.

Amount (£)	
Refused	88
Don't know	77

(ASK All OWNERS)
Q4 From whom did you buy this dwelling?

Bought from the Housing Executive/ Housing Association	1	Go to Q5a
Bought from previous private owner	2	Go to Q5a
Bought new from builder/developer	3	Go to Q5a
Inherited	4	Go to Q7
Other (Please specify)	5	Go to Q7

Q5a Is this dwelling your first home purchase (i.e. are you a first time buyer?)

Yes	1
No	2

Q5b Did you (or your family) rent this dwelling before buying it?

Yes	1
No	2

Q5c When did you (or your family) buy this dwelling? Go to Q7

Year

Or do you rent it?

Housing Executive tenant	4	Go to Q6 below
Private tenant	5	Go to Q6 below
Housing Association tenant	6	Go to Q6 below
Goes with job	7	Go to Q6 below
Other (Please specify)	8	Go to Q6 below

(ASK ALL TENANTS - HE, HA and Private Rented Sector)

Q6a When did you (or your family) first rent this dwelling? Year

I would now like to ask you some questions about the rent you pay for this home.

Q6b How often is the rent paid for this accommodation?

One week	1
Two weeks	2
Four weeks	3
Calendar month	4
Don't know	77
Live rent free	5

(Interviewer check HB is not paid) Go to Q7

Q6c How much is the weekly, fortnightly, monthly rent for this accommodation? Amount to nearest £.

Amount (£)		Go to Q7
Refused	88	Go to Q7
Don't know	77	Go to Q7

Q6d Does this include your rates? Y | N | D/K

Q6e Does this include a service charge? Y | N | D/K

ASK ALL

Q7 Which of the following do you have in your home?
(Read out list and ring all that apply) SURVEYOR DOUBLE CHECK DWELLING FOR

Cavity wall insulation	Y N DK N/A	
Loft insulation	Y N DK N/A	
Double glazing	Y N DK	
Draught stripping on external doors	Y N DK	
Draught stripping on windows	Y N DK	
Low energy light bulbs	Y N DK	If YES, HOW MANY
Smoke alarm (battery)	Y N DK	If YES, HOW MANY
Smoke alarm (mains)	Y N DK	If YES, HOW MANY
Lead water pipes	Y N DK	
Mains drainage	Y N DK	If NO, ask type
Home computer / tablet / laptop	Y N DK	
Access to the internet	Y N DK	
Mobile phone	Y N DK	
External security lights	Y N DK	

The next questions are about repairs and improvements to your home.

Q8a Have any repairs or improvements been carried out to your home in the past 5 years by you or a landlord (if applicable)?

Yes	1	Go to Q8b
No	2	Go to Q9
Don't know	8	Go to Q9

Q8b Which of the following repairs and/or improvements have been carried out by you or a landlord in the past 5 years? (Read out list and ring all that apply) SHOW CARD

Re-roofing/roof structure work	Y N DK	Providing or refitting bathroom	Y N DK
Structural repairs to walls, chimneys, foundations	Y N DK	Installing/replacing central heating	Y N DK
Repointing/rendering	Y N DK	Rearranging internal space/flat conversion	Y N DK
Replacing windows	Y N DK	Roof insulation	Y N DK
Replacing doors	Y N DK	Cavity wall insulation	Y N DK
Inserting/replacing damp proof course	Y N DK	Garage added	Y N DK
Internal plastering	Y N DK	Conservatory added	Y N DK
Putting in new floors	Y N DK	Extension (adding one or more rooms)	Y N DK
Electrical wiring	Y N DK	Combining two or more rooms	Y N DK
Providing or refitting kitchen	Y N DK	Other (please specify)	

Q8c Approximately how much did this work cost in total? (include VAT)

Less than £500	1	£5001-£10000	5	
£501-£1000	2	Over £10000	6	
£1001-£2000	3	DK	7	Go to Q9
£2001-£5000	4	Refused	8	Go to Q9

Q8d How much of the total cost of the work did you or your household pay?

All	1	Go to Q9
Some	2	Go to Q8e
None	8	Go to Q9

Q8e Approximately how much did this work cost your household (ie your contribution to the overall cost?)

Less than £500	1	£5001-£10000	5
£501-£1000	2	over £10000	6
£1001-£2000	3	DK	7
£2001-£5000	4	Refused	8

OWNERS GO TO Q9 RENTERS GO TO Q14

(ASK OWNERS)

Q9a Are you aware that grants may be available from the Housing Executive towards the cost of carrying out work to your property?

	Yes	1	Go To Q9b
(ASK IF YES)	No	2	Go To Q14a

Q9b If no Housing Executive grants were available, would you consider taking a low/no interest or equity release loan in order to carry out work to your home?

Yes	1
No	2
Don't know	9

(ASK IF YES to 9a)

Q10 Have you applied for a grant from the Housing Executive in the last 5 years?

Yes	1	Go To Q11
No	2	Go To Q13
Don't know/Can't remember	9	Go To Q14a

(ASK IF YES)

Q11 When did you apply? Year ____

Q12 What was the outcome?

Still awaiting outcome	1	
Executive refused	2	All
Didn't pursue grant	3	go to
Awarded grant and still doing work	4	Q14a
Awarded grant and work now completed	5	
Other (please specify)	6	

_____

ASK IF RESPONDENT HAS NOT APPLIED FOR GRANT Do not prompt: (Ring all that apply)

Q13 Why not?... any other reasons?

Reason(s)			
No major work was required on the house	Y	N	
Didn't think the type of work which was required on the house would be grant-aided	Y	N	
Because of means testing	Y	N	All
Didn't want the inconvenience	Y	N	go to
Heard that approval took too long	Y	N	Q14a
Thought the cost of work would be too high relative to grant	Y	N	
Previous grant - more than five years	Y	N	
Other (please specify)	Y	N	

The next questions ask about heating in your home.

Q14a How satisfied are you with each of the following aspects of your heating system?

	Very Satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
The type of heating	1	2	3	4	5
The cost of running your system	1	2	3	4	5
The amount of heat that you can get	1	2	3	4	5
The control over the level of heat	1	2	3	4	5
The ease of use of the system	1	2	3	4	5

Q14b SHOWCARD

Generally speaking, during winter when heating needs are greatest, when would you or someone else in your household have your heating on to stay warm? (For each option ring one only)

All day/all the time	1	2	Weekday evenings	1	2
Weekday morning	1	2	Weekend daytimes	1	2
Weekday lunchtime	1	2	Weekend evenings	1	2
Weekday afternoon	1	2	Don't know	1	2

ASK ALL

Q15 SHOWCARD

Which of these methods do you mainly use to pay for your electricity? (Ring one only)

Direct debit	1	Fuel direct	7
Budget payment	2	Standing order	8
Easysaver / Energysaver Card	3	Cash	9
Included with rent	4	Cheque	10
Debit / Credit Card	5	Keypad meter (Pay-as-you-go)	11
Easy Pay	6	No mains electricity	12
		Don't Know	13

Q16a SHOWCARD

REFER BACK TO SECTION 5 HEATING. ONLY ASK QUESTION 16 IF PRIMARY HEATING SERVICE IS MAINS GAS

Which of these methods do you mainly use to pay for your mains gas? (Ring one only)

Direct debit	1	Other (please specify)	8
Prepayment (key) / meter / pay as you go	2		
Quarterly bill - online	3	Not applicable	9
- at the bank	4	Don't know	10
- by debit card via phone	5		
- Energy saver / easy pay card	6		
- Cheque	7		

Q16b How much do you agree or disagree about each of the following statements about the police in your area? You don't need to have had contact with the police to answer these questions and again, by area we mean within a 15 minute walk.

	Strongly agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Strongly disagree	Don't know
They (the police in this area) can be relied on to be there when you need them	1	2	3	4	5	6
They would treat you with respect if you had contact with them for any reason	1	2	3	4	5	6
They treat everyone fairly regardless of who they are	1	2	3	4	5	6
They can be relied on to deal with minor crimes	1	2	3	4	5	6
They are dealing with the things that matter to people in this community	1	2	3	4	5	6
Taking everything into account I have confidence in the police in this area	1	2	3	4	5	6

Q17 The next questions ask about the people who live in your home. I do not require names. I will start with the Household Reference Person.

Person	HRP	2	3	4	5	6	7	8	9	10
Age last birthday										
Gender Male	1	1	1	1	1	1	1	1	1	1
Female	2	2	2	2	2	2	2	2	2	2
Relationship to Household Reference Person HRP	1									
Partner (married)		2	2	2	2	2	2	2	2	2
Partner (cohabiting)		3	3	3	3	3	3	3	3	3
Partner (civil partnership)		4	4	4	4	4	4	4	4	4
Child		5	5	5	5	5	5	5	5	5
Parent		6	6	6	6	6	6	6	6	6
Other Relative		7	7	7	7	7	7	7	7	7
Lodger		8	8	8	8	8	8	8	8	8
Other non-relative		9	9	9	9	9	9	9	9	9
Marital Status Single (never married)	1	1	1	1	1	1	1	1	1	1
Married	2	2	2	2	2	2	2	2	2	2
Civil Partnership	3	3	3	3	3	3	3	3	3	3
Separated / Divorced	4	4	4	4	4	4	4	4	4	4
Widowed (not legally remarried)	5	5	5	5	5	5	5	5	5	5
Other	6	6	6	6	6	6	6	6	6	6
Co-habiting	1	1	1	1	1	1	1	1	1	1
Family Unit (See Surveyor Notes above)	1									
PERSONS AGED 16+ ONLY - Employment Status:										
Self-Employed	01	01	01	01	01	01	01	01	01	01
Working Full Time	02	02	02	02	02	02	02	02	02	02
Working Part Time	03	03	03	03	03	03	03	03	03	03
Not working - seeking work	04	04	04	04	04	04	04	04	04	04
Not working - not seeking work	05	05	05	05	05	05	05	05	05	05
Retired from work - excludes looking after family home	06	06	06	06	06	06	06	06	06	06
Student (Further/Higher Education)	07	07	07	07	07	07	07	07	07	07
Perm Sick/Disabled	08	08	08	08	08	08	08	08	08	08
Looking after family/home	09	09	09	09	09	09	09	09	09	09
Other (including schoolchild)	10	10	10	10	10	10	10	10	10	10
Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months' (Include problems related to old age)										
Yes, limited a lot	1	1	1	1	1	1	1	1	1	1
Yes, limited a little	2	2	2	2	2	2	2	2	2	2
No	3	3	3	3	3	3	3	3	3	3
Do you have any of the following conditions or illnesses which have lasted, or are expected to last, at least 12 months?										
Vision	01	01	01	01	01	01	01	01	01	01
Mobility	02	02	02	02	02	02	02	02	02	02
Dexterity	03	03	03	03	03	03	03	03	03	03
Learning / understanding / concentrating	04	04	04	04	04	04	04	04	04	04
Memory	05	05	05	05	05	05	05	05	05	05
Mental health	06	06	06	06	06	06	06	06	06	06
Stamina / breathing / fatigue	07	07	07	07	07	07	07	07	07	07
Socially or behaviourally	08	08	08	08	08	08	08	08	08	08
Other	09	09	09	09	09	09	09	09	09	09
No condition	10	10	10	10	10	10	10	10	10	10
Does anyone in the household use the following aids **indoors or outdoors?** (For each person code the highest number used by that person)										
No aids	01	01	01	01	01	01	01	01	01	01
Stick	02	02	02	02	02	02	02	02	02	02
Crutches	03	03	03	03	03	03	03	03	03	03
Zimmer Frame	04	04	04	04	04	04	04	04	04	04
Self-propelled wheel chair	05	05	05	05	05	05	05	05	05	05
Wheel chair pushed by another person	06	06	06	06	06	06	06	06	06	06
Battery powered scooter	07	07	07	07	07	07	07	07	07	07
Adapted vehicle	08	08	08	08	08	08	08	08	08	08
Confined to bed	09	09	09	09	09	09	09	09	09	09
To which of these ethnic groups does the person belong?										
White	01	01	01	01	01	01	01	01	01	01
Other (please specify) _____	02	02	02	02	02	02	02	02	02	02
What does each person consider their nationality/citizenship to be?										
British	01	01	01	01	01	01	01	01	01	01
Irish	02	02	02	02	02	02	02	02	02	02
Northern Irish	03	03	03	03	03	03	03	03	03	03
British and Northern Irish	04	04	04	04	04	04	04	04	04	04
Irish and Northern Irish	05	05	05	05	05	05	05	05	05	05
Polish	06	06	06	06	06	06	06	06	06	06
British, Irish and Northern Irish	07	07	07	07	07	07	07	07	07	07
British and Irish	08	08	08	08	08	08	08	08	08	08
English	09	09	09	09	09	09	09	09	09	09
Scottish	10	10	10	10	10	10	10	10	10	10
Other (please specify) _____	11	11	11	11	11	11	11	11	11	11

Enter person number of respondent	
Enter total number of people in the household	
Enter total number of adults (16 or over) in the household	
Enter number of family units in the household	
Enter number of children in the household	

OCCUPATION

Q18a What is the Household Reference Person's present/most recent (last) job?
Record full title of main job: (If job title is ambiguous probe for more details. If civil servant stated ask for department/ division. If a manager ask how many people he/she manages.) If the person is retired ask for main job at retirement. If the person is of working age and not working, only ask for previous job if he/she has worked in last 5 years.
_____

Q18b If HRP is currently working Ask:
Where is your place of work located? _____
If HRP reports to a depot, write in depot location. _____
(Tick as appropriate)
Mainly work at or from home ☐ No fixed place ☐

Q19a Does the Household Reference Person or partner (if applicable) receive any of the following benefits? (If no partner code N/A). (Read out list and ring all that apply) (SHOW CARD)

BENEFITS/TAX CREDITS	Household Reference Person				Partner					
	Yes	No	Ref	D/K	Yes	No	Ref	N/A	D/K	
Child Benefit	1	2	7	9	1	2	7	0	9	
A Disability Benefit	1	2	7	9	1	2	7	0	9	
Incapacity Benefit	1	2	7	9	1	2	7	0	9	
Employment & Support allowance	1	2	7	9	1	2	7	0	9	
Carer's allowance	1	2	7	9	1	2	7	0	9	
Housing Benefit / Local Housing allowance	1	2	7	9	1	2	7	0	9	(if yes, complete Q19b)
Income Support	1	2	7	9	1	2	7	0	9	
Jobseeker's Allowance	1	2	7	9	1	2	7	0	9	
State Retirement Pension	1	2	7	9	1	2	7	0	9	
Occupational Pension	1	2	7	9	1	2	7	0	9	
Working Tax Credit (excluding childcare element of WTC)	1	2	7	9	1	2	7	0	9	
Child Tax Credit (including childcare element of WTC)	1	2	7	9	1	2	7	0	9	
Pension Credit	1	2	7	9	1	2	7	0	9	
Rates Rebate (Owner Occupiers only)	1	2	7	9	1	2	7	0	9	(if yes, complete Q19e)
None of these	1	2	7	9	1	2	7	0	9	
Any others: (If yes, please specify) _____	1	2	7	9	1	2	7	0	9	

Q19b Can I just check, how much does the Household Reference Person or partner (if applicable) receive from Housing Benefit / Local Housing allowance each week? Code exact amount to nearest £, possible, if not known, probe and code estimate. Probe for weekly period, if other period given, calculate as weekly.

£ _____

Estimate	1
Don't know	2
Refused	3

Q19c Does the Housing benefit / Local Housing allowance you receive cover all the rent? Y / N

Q19d How much is the shortfall you have to pay per week / month between housing benefit / Local Housing allowance and full rent?

Per Week	£	Per Month	£
Don't Know	77	Don't Know	77
Refused	88	Refused	88

Q19e ASK OWNER OCCUPIERS ONLY
Can I just check, how much does the Household Reference Person or partner (if applicable) receive from Rates Rebate each week? Code exact amount to nearest £, if possible, if not known, probe and code estimate. Probe for weekly period, if other period given, calculate as weekly.

£ _____

Estimate	1
Don't know	2
Refused	3

Q19f Did anyone in the Household receive the Winter fuel Payment between October and December 2015? Y / N / D/K

Q20 I am now going to ask you some questions about income. We normally analyse income information to report on the differing circumstances of Northern Ireland households e.g. dwelling tenure and dwelling condition and to help understand the impact of fuel poverty. This helps policy makers to understand the differences that exist in society. This information is used for statistical purposes only and is not shared with anyone else in any way which can be associated with you or your address. Please look at this card and tell me which band represents your total household income (before tax and other deductions) of yourself and your partner (if applicable). Please include all income from employment, benefits (excluding Housing Benefit / Local Housing allowance), credits, pension, or other sources. To help you, you can select your household income group based on weekly, monthly or annual income bands. USE SHOWCARD.

Up to £59 per week	Up to £259 per month	Up to £3,119 per annum	1
£60-£79 per week	£260-£346 per month	£3,120 to £4,159 per annum	2
£80-£99 per week	£347-£432 per month	£4,160 to £5,199 per annum	3
£100-£119 per week	£433-£519 per month	£5,200 to £6,239 per annum	4
£120-£139 per week	£520-£606 per month	£6,240 to £7,279 per annum	5
£140-£159 per week	£607-£692 per month	£7,280 to £8,319 per annum	6
£160-£179 per week	£693-£779 per month	£8,320 to £9,359 per annum	7
£180-£199 per week	£780-£866 per month	£9,360 to £10,399 per annum	8
£200-£219 per week	£867-£952 per month	£10,400 to £11,439 per annum	9
£220-£239 per week	£953-£1,039 per month	£11,440 to £12,479 per annum	10
£240-£259 per week	£1,040-£1,126 per month	£12,480 to £13,519 per annum	11
£260-£279 per week	£1,127-£1,212 per month	£13,520 to £14,559 per annum	12
£280-£299 per week	£1,213-£1,299 per month	£14,560 to £15,599 per annum	13
£300-£319 per week	£1,300-£1,386 per month	£15,600 to £16,639 per annum	14
£320-£359 per week	£1,387-£1,559 per month	£16,640 to £18,719 per annum	15
£360-£399 per week	£1,560-£1,732 per month	£18,720 to £20,799 per annum	16
£400-£499 per week	£1,733-£2,166 per month	£20,800 to £25,999 per annum	17
£500-£599 per week	£2,167-£2,599 per month	£26,000 to £31,199 per annum	18
£600-£699 per week	£2,600-£3,032 per month	£31,200 to 36,399 per annum	19
£700-£799 per week	£3,033-£3,466 per month	£36,400 to £41,599 per annum	20
£800-£899 per week	£3,467-£3,899 per month	£41,600 to £46,799 per annum	21
£900-£999 per week	£3,900-£4,332 per month	£46,800 to £51,999 per annum	22
£1000 or more per week	£4,333 or more per month	£52,000 or more per annum	23
Refused	Refused	Refused	99
Don't know	Don't know	Don't know	88

Q21 How would you describe the religious make-up of this household? (Ring one only)

Protestant	Catholic (RC)	Mixed religion (Protestant/Catholic)	Other	None	D/K	Refused
1	2	3	4	5	8	9

Q22 How would you describe the religious make-up of this estate/area? (Ring one only)

Totally Protestant	Mainly Protestant	Mixed Protestant/Catholic	Mainly Catholic (RC)	Totally Catholic (RC)	D/K	Refused
1	2	3	4	5	8	9

Q23 How many cars or vans are owned, or available for use, by one or more members of your household? (include any company car or van if available for private use). (Ring one only)

None	0
One	1
Two	2
Three	3
Four or more (please write in)	

Q24 Has this accommodation been designed or adapted for wheelchair useage?

Y	N	D/K

Q25 Overall how satisfied or dissatisfied are you with your home? (Ring one only)

Very Satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
1	2	3	4	5

Q26 Overall how satisfied or dissatisfied are you with this neighbourhood as a place to live? (Ring one only)

Very Satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
1	2	3	4	5

14

Q27a What was your usual address one year ago?

The address shown on the front of the form	**1**	**Go to Q28**
No usual address one year ago	**2**	**Go to Q28**
Elsewhere please write in below (include postcode)	**3**	**Go to Q27b**

Number and street/road name

Town

County

Country

Go to Q27b

Q27b Was this property .... (Ring one only)

Your parental home?	**1**
Own home - Owner occupied?	**2**
- private rented?	**3**
- NIHE?	**4**
- housing association?	**5**
- Other?	**6**

Q27c What is your main reason for moving to your new home? (select one only)

	Property Related
1	Wanted / Needed larger property
2	Wanted / Needed smaller property
3	No suitable properties in previous area
	Financial
4	Wanted to purchase own home
5	Wanted to move up the property ladder
6	Wanted to reduce housing costs
	Personal
7	To be nearer work
8	Change in employment / place of study
9	To be nearer family, relatives and friends
10	Set up home with a partner
11	Relationship breakdown or bereavement
12	Addition to the family
	Area
13	To be nearer schools/services
14	Disliked previous neighbourhood / area
15	Wanted a different neighbourhood / area
16	Poor transport links
17	Other reasons **(specify)**

Q28 As part of the Housing Executive's quality assurance role of the House Condition Survey a small number of respondents will be selected to ask for their views on how the survey was conducted. Would you be willing to take part in this? (Ring one only)

Yes	1	If Yes, go to Q29
Yes (in certain circumstances)	2	
No	3	

INTERVIEWER INSTRUCTION
If YES, in certain circumstances code main conditions to any follow-up survey.

Contact household beforehand	Y
Only at a convenient time	Y
Someone else (eg carer) needs to be there	Y
Other (please specify)	Y
_____	
_____	
N/A	0

Q29 Would it be possible to have your telephone number, so the Housing Executive can contact you. (Ring one only)

Yes	1
No	2
No phone	3
N/A	0

IF YES, RECORD TELEPHONE NUMBER

Code	Telephone number

Q30 It is helpful to have a contact name to ask for.
Record as much of this as respondent will allow (Refusal enter 0)

NAME OF RESPONDENT	Title	Forename	Surname

Q31 If access to email, can I have your email address?

Y	Record email address:
N	
N/A	

INTERVIEWER INSTRUCTION
Ask this question if the dwelling has cavity wall insulation

Q32 You have CWI in your home. The Housing Executive will be conducting a survey about the quality of CWI. Would you be interested in having the quality of your CWI checked?

Y	N

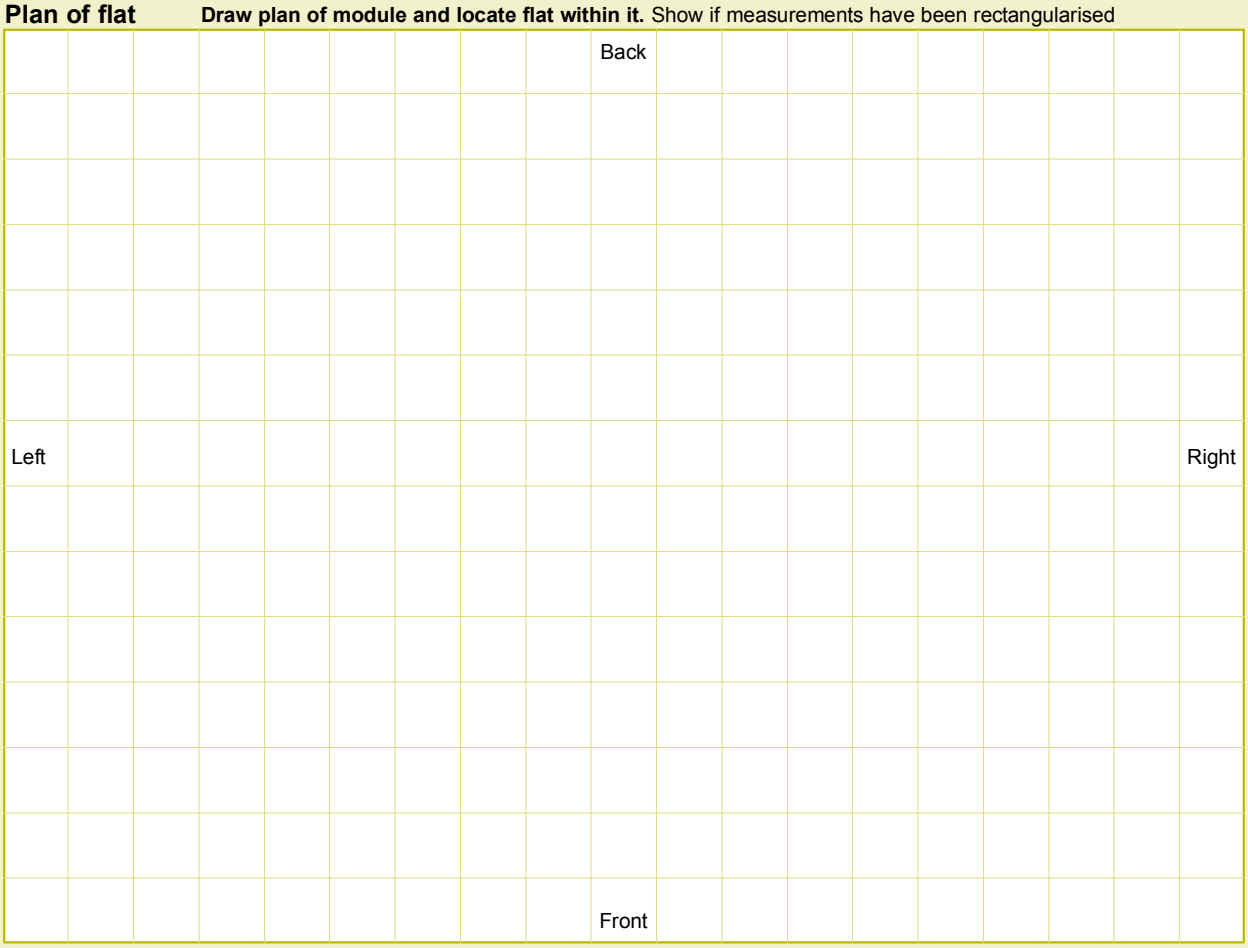
INTERVIEWER INSTRUCTION
Ask this question if the dwelling is privately rented

Q33 Would you be willing to take part in further research about the private rented sector?

Y	N

8. Details of flat

Plan of flat **Draw plan of module and locate flat within it.** Show if measurements have been rectangularised



Tenths of wall exposed
(Columns add up to 10)

	Front wall	Fenestration area m²	Back wall	Fenestration area m²	Left wall	Fenestration area m²	Right wall	Fenestration area m²
To outside air								
To internal accessways								
To other flats								

For Fenestration area use whole numbers only

Entry floor to dwelling proper
(level of first actual accommodation)

Basement	Ground	Specify	Unknown
BB	GG		99

Dimensions of flat (internal and rectangularised)

No. of floors in flat		Level *(B, G, 1, 2 etc)*			External dimensions same as module	Width *(metres)*	Depth *(metres)*
	Main floor	Basement BB	Ground GG		Y / N →		
	Next floor	None exists NN	Basement BB	Ground GG		Same as above SSS	Same as above SSS

If yes, record at section 13

9. Common parts of module.

Common parts exist

Y | N — IF NO, GO TO SECTION 10

	Accessway						Lifts	
	Main horizontal of typical/ upper level		Stairway on typical/ upper level		Main entrance to module			
Does access/area exist?	Y	N	Y	N	Y	N	Y	N
Balcony/**D**eck/**C**orridor/**L**obby								
Spacious/**A**verage/**T**ight								
Enclosed?	Y	N	Y	N	Y	N		
In module?	Y	N	Y	N	Y	N	Y	N
Working?							Y	N
Lift controls accessible to wheelchair user?							Y	N
Lift controls accessible to a visually impaired person?							Y	N

Security of module

Type of access

Multiple access	Single access	Restricted access
1	2	3

	Present?		Working?		In module?	
Concierge system	Y	N	Y	N	Y	N
Door entry system	Y	N	Y	N	Y	N

Floors/ treads *(answer in m^2)*

Faults?	Y	N	Y	N	Y	N
Modify structure						
Renew surface						
Repair surface						

Walls *(answer in m^2)*

Faults?	Y	N	Y	N	Y	N
Modify structure						
Renew surface						
Repair surface						
Repaint surface						

Ceilings/soffits *(answer in m^2)*

Faults?	Y	N	Y	N	Y	N
Modify structure						
Renew surface						
Repair surface						
Repaint surface						

Access doors/screens *(answer in numbers)*

Faults?	Y	N	Y	N	Y	N
Replace						
Repair/rehang						
Repaint						

Accessway windows *(answer in numbers)*

Faults?	Y	N	Y	N	Y	N
Replace						
Repair						
Repaint						

Accessway lighting *(answer in numbers)*

Faults?	Y	N	Y	N	Y	N
Replace light fittings						
Replace light switches						

Balustrades *(answer in metre lengths)*

Faults?	Y	N	Y	N	Y	N
Replace						
Repair						

Fire safety of flat surveyed

Escape route from flat surveyed to final exit from building

Flat is final exit	Through another flat	Through another flat and common areas	Through common areas
1	2	3	4

Fire precautions

	Present		Action			
			None	Minor	Major	Renew
Protection to stairs/lobbies?	Y	N	1	2	3	4
Self closing fire doors?	Y	N	1	2	3	4
Fire extinguishers?	Y	N	1	2	3	4
Emergency lighting?	Y	N	1	2	3	4
Sign posting?	Y	N	1			4
Safe practices?	Y	N				
Alternative route?	Y	N				
Alarm system?	Y	N	1	2	3	4

Contribution to problems (within survey module)

	None	Minor	Major
Vandalism	1	2	3
Graffiti	1	2	3
Litter/rubbish	1	2	3

HHSRS - common areas *(affecting flat surveyed)*

	Significantly lower risk than average	Average risk	Significantly higher risk than average
Falling on stairs etc	1	2	3
Falling on level surfaces	1	2	3
Falling between levels	1	2	3
Fire	1	2	3
Flames, hot surfaces, etc	1	2	3
Damp and mould growth		2	3

If '3', score HHSRS in Section 22

10. Number of flats in module

This section is critical. Make every attempt to record correct number of flats in module

Number of flats in module

Specify	Unknown
	999

DOUBLE CHECK the number of flats against what you have defined as your module in **Section 8** before continuing

---

Level of lowest flat

Basement	Ground floor	Floor	Unknown
B	G		9

Use of ground floor

Dwelling only	Dwelling and services	Services only	Dwelling and non residential	Non residential only	Dwelling and void	Other
1	2	3	4	5	6	7

Use of basement

No basement	Dwelling only	Dwelling and services	Services only	Dwelling and non residential	Non residential only	Dwelling and void	Other
8	1	2	3	4	5	6	7

Non residential use

If any non residential use, % total floor area of module in non residential use

No non residential				Specify %	Unknown		
88					99		

If 'dwelling with non residential': non residential use

Not 'dwelling with non residential'	Shop/ business	Office	Industrial/ Institutional	Surgery	Public House	Hotel	Other 7
8	1	2	3	4	5	6	

If 'dwelling with non residential':
Does the non-residential use include the handling/processing of food for commercial purposes? Y N U

Other flats in module

Are they?

Survey flat is only one in module	Mostly same as survey dwelling	Mostly small flats	Mostly large flats	Mixture of small/large flats	Mixture of flats/ maisonettes	Unknown
8	1	2	3	4	5	9

Approximate number of vacant flats in module

Survey flat is only one in module	Specify
888	

11. Shared facilities and services *(within 100m of survey dwelling)*

Do shared facilities/services exist? Y | N **IF NO**, GO TO SECTION 12

Stores and common rooms

	Present?		Location: Integral?	Location: Not Integral?	Action: None	Action: Minor	Action: Major
Tenant stores	Y	N	1	2	1	2	3
Bin stores	Y	N	1	2	1	2	3
Paladin stores	Y	N	1	2	1	2	3
Laundry	Y	N	1	2	1	2	3
Drying room	Y	N	1	2	1	2	3
Community room	Y	N	1	2	1	2	3
Warden cartaker office	Y	N	1	2	1	2	3

Communal parking facilities

	Present?		Location: Integral?	Location: Not Integral?	Action: None	Action: Minor	Action: Major
Garages	Y	N	1	2	1	2	3
Multi storey parking	Y	N	1	2	1	2	3
Underground parking	Y	N	1	2	1	2	3
Roof parking	Y	N	1	2	1	2	3
Other covered parking	Y	N	1	2	1	2	3
Open air parking bays	Y	N			1	2	3

Common/electrical services

	Present?		Action: None	Action: Minor	Action: Major
CCTV	Y	N	1	2	3
TV reception	Y	N	1	2	3
Lightning conductors	Y	N	1	2	3
Communal heating	Y	N	1	2	3
Burglar alarm system	Y	N	1	2	3
External lighting	Y	N	1	2	3

Surfaces and fences

	Present?		Action: None	Action: Minor	Action: Major
Drying areas	Y	N	1	2	3
Children's play areas	Y	N	1	2	3
Unadopted estate roads	Y	N	1	2	3

Landscaping

	Present?		Action: None	Action: Minor	Action: Major
Paths	Y	N	1	2	3
Walls/fences	Y	N	1	2	3
Hard landscaping	Y	N	1	2	3
Grass/planting	Y	N	1	2	3

Contribution to problems in condition (outside survey module)

	None	Minor	Major
Vandalism	1	2	3
Graffiti	1	2	3
Litter/rubbish	1	2	3

Accessibility

Number of steps from pavement to entrance of module

Level Access	No step but slope > 1:20	1 step	2 step	3 or more steps
8	7	1	2	3

Space for ramp

Not applicable 8 Yes 1 No 2

Is path firm and even?	Y	N
Is entrance adequately lit?	Y	N
Is entrance covered?	Y	N

Design of paths

ANSWER IF PATHS PRESENT ('Y' IN BOX ABOVE)

Paths	Yes	No	Not applicable
At least 900mm wide?	1	2	3
Gradient gentler than 1 in 12?	1	2	3
Protected from adjacent drops?	1	2	3

HHSRS - shared areas

(affecting dwelling surveyed)

	Significantly lower risk than average	Average risk	Significantly higher risk than average
Falling on stairs etc	1	2	3
Falling on level surfaces	1	2	3
Falling between levels	1	2	3

If '3', score HHSRS in Section 22

12. House/module shape

Draw plan

Back

Left

Right

Front

Location of additional part

No additional part	Front elevation			Back elevation			Left elevation			Right elevation		
	Left	Centre	Right	Left	Centre	Right	Front	Centre	Back	Front	Centre	Back
77	01	02	03	04	05	06	07	08	09	10	11	12

Attic/basement in house/module

Attic only	Basement only	Both	Neither
1	2	3	4

Entry floor to house/module

Basement	Ground	Floor
B	G	

13. External dimensions of house/module

	No. of floors	Level *(B, G, 1, 2 etc)*	Width *(metres)*	Depth *(metres)*
Main structure		Basement BB, Ground GG		
		None exists NN, Basement BB, Ground GG	Same as above SSS	Same as above SSS
		None exists NN, Basement BB, Ground GG	Same as above SSS	Same as above SSS
	No. of floors			
Additional part	None exists NN	None exists NN, Basement BB, Ground GG		
		None exists NN, Basement BB, Ground GG	Same as above SSS	Same as above SSS
		None exists NN, Basement BB, Ground GG	Same as above SSS	Same as above SSS

14. Material and construction of house/module (code one type only)

Code	Material	Construction	Type
01	Masonry	Boxwall	Solid
02	Masonry	Boxwall	Cavity
03	Masonry	Crosswall	
04	Concrete	Boxwall	In-situ
05	Concrete	Boxwall	Precast panel <1m wide
06	Concrete	Boxwall	Precast panel >1m wide
07	Concrete	Crosswall	In-situ
08	Concrete	Crosswall	Precast panel
09	Concrete	Frame	In-situ
10	Concrete	Frame	Precast
11	Timber	Frame	Pre 1919
12	Timber	Frame	Post 1919
13	Metal	Frame	
14	Other, please specify if known		

If external wall is stone, what is the proportion (tenths) of wall that is stone?

N/A	1	2	3	4	5	6	7	8	9	10

Proprietary system?

Y	N	U

If Yes, name:

Type of stone?

Granite	sandstone	limestone
1	2	3
basalt / whin	other	unknown
4	5	9

If other, specify:

15. Improvements/alterations

(to the house/module since original construction)
Code most recent (or most significant)

Clarify with Household

	None	Pre 1945	1945-1964	1965-1984	1985-1990	1991-1995	1996-present	In progress
Conversion to more than one dwelling	1	2	3	4	5	6	7	8
Conversion to HMO use	1	2	3	4	5	6	7	8
Conversion from non-residential use	1	2	3	4	5	6	7	8
Two or more dwellings combined	1	2	3	4	5	6	7	8
Complete refurbishment/modernisation	1	2	3	4	5	6	7	8
Rearrangement of internal space	1	2	3	4	5	6	7	8
Extension added for amenities	1	2	3	4	5	6	7	8
Extension added for living space	1	2	3	4	5	6	7	8
Alteration of external appearance	1	2	3	4	5	6	7	8
Over-roofing	1	2	3	4	5	6	7	8
Over-cladding	1	2	3	4	5	6	7	8
Structure replaced	1	2	3	4	5	6	7	8
Loft conversion	1	2	3	4	5	6	7	8
Radon remedial works (check postcode)	1	2	3	4	5	6	7	8

ASK HOUSEHOLD
Exact year of loft conversion

16. Elevation features

	Front face	Left face	Right face	Back face
Is part of face unattached?	Y N	Y N	Y N	Y N
Gables *(tenths)*				
Parapets *(tenths)*				
Mono supporting walls *(tenths)*				
Base walls *(tenths)*				
Main walls *(tenths)*				
Must add up to 10				Must add up to 10
Valley gutters *(number)*				
Solar water heating panels	Y N PV m²	Y N PV m²	Y N PV m²	Y N PV m²
Solar photovoltaic *(PV)*?	Y N	Y N	Y N	Y N
Evidence of Cavity wall insulation?	Y N	Y N	Y N	Y N
External insulation?	Y N	Y N	Y N	Y N
Fenestration *(tenths)*	window void wall	window void wall	window void wall	window void wall

Is there any evidence from the air bricks of cavity wall insulation? Y N

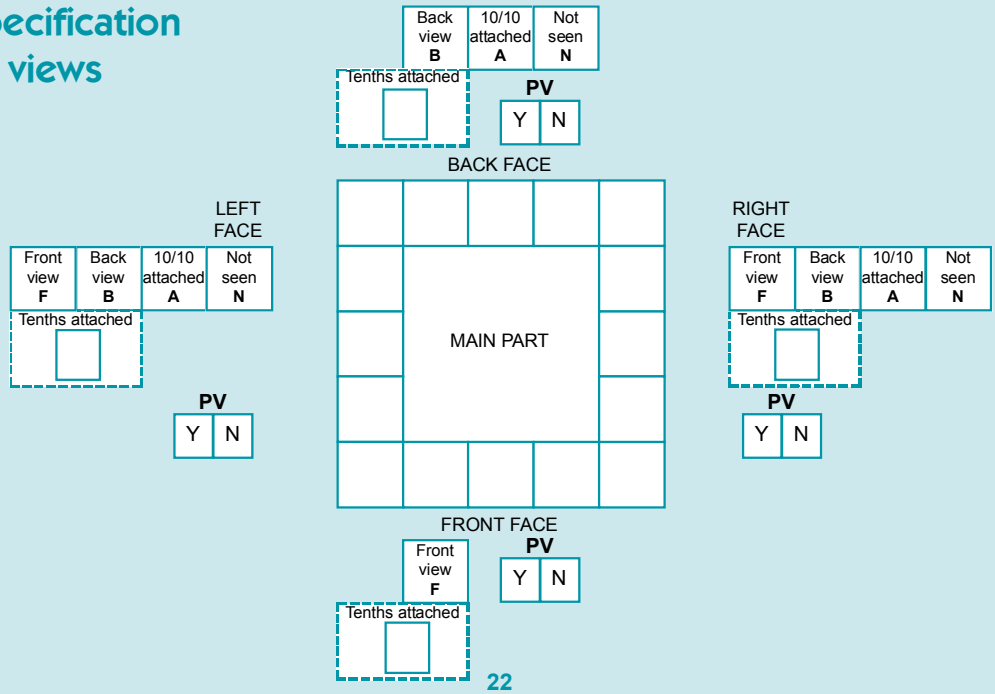
Wind turbine present? Y N

Solar ventilation present? Y N

Roof Pitch (deg.)

flat - 5	6 - 20	21 - 35	36 - 49	50+
1	2	3	4	5

17. Specification of views



18. Exterior – of house/module

FRONT VIEW

Masonry		Other		
Y	N	Y	N	Present?
				Number
				Age
Y	N	Y	N	Faults?
				Rebuild
				Part rebuild
				Repoint/refix pot
				Leave
Y	N	Y	N	Urgent?
				Replacement period

Chimney stacks
(Number)

BACK VIEW

Masonry		Other	
Y	N	Y	N
Y	N	Y	N
Y	N	Y	N

Roof structure
(Tenths of area)

Pitched		Mansard		Flat		Chalet		
								Tenths of area
								Age
Y	N	Y	N	Y	N	Y	N	Faults?
								Replace
								Strengthen
								Leave
Y	N	Y	N	Y	N	Y	N	Urgent?
								Replacement period

Pitched		Mansard		Flat		Chalet	
Y	N	Y	N	Y	N	Y	N
Y	N	Y	N	Y	N	Y	N

Roof covering
(Tenths of area)

Natural slate/stone /shingle		Man made slate		Clay tile		Concrete tile		Asphalt		Felt		Glass/ metal/ laminate		Thatch		
																Tenths of area
																Age
Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Faults?
																Renew
																Isolated repairs
																Leave
Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Urgent?
																Replacement period

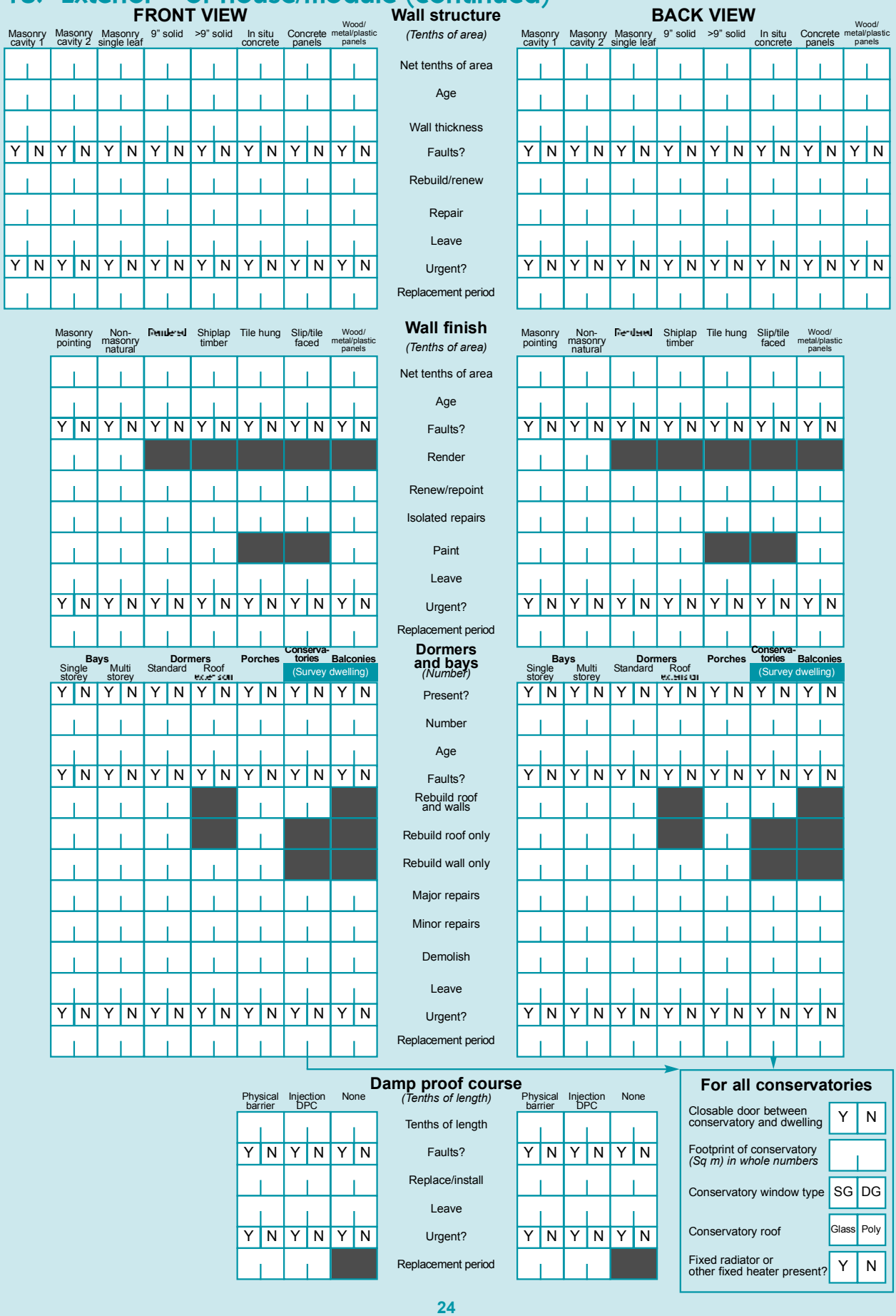
Natural slate/stone /shingle		Man made slate		Clay tile		Concrete tile		Asphalt		Felt		Glass/ metal/ laminate		Thatch	
Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

Roof features and drainage
(Tenths of length)

Fascias		Valley gutters/ flashings		Gutters/ down-pipes		Stacks/ wastes		Party parapets		
Y	N	Y	N	Y	N	Y	N	Y	N	Present?
Y	N	Y	N	Y	N	Y	N	Y	N	Faults?
										Replace
										Repair
										Leave
Y	N	Y	N	Y	N	Y	N	Y	N	Urgent?
										Replacement period

Fascias		Valley gutters/ flashings		Gutters/ down-pipes		Stacks/ wastes		Party parapets	
Y	N	Y	N	Y	N	Y	N	Y	N
Y	N	Y	N	Y	N	Y	N	Y	N
Y	N	Y	N	Y	N	Y	N	Y	N

18. Exterior – of house/module (continued)



18. Exterior – of survey dwelling

FRONT VIEW

Single-glazed						Double-glazed							
Wood (case-ment)		Wood sash		UPVC		Metal		Wood		UPVC		Metal	
Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

Windows/frames to survey dwelling

(Number)

Number

Age

Faults?

Replace

Repair/replace sash/member

Ease sashes etc/reglaze

Repaint/reputty

Leave

Urgent?

Replacement period

BACK VIEW

Single-glazed						Double-glazed							
Wood (case-ment)		Wood sash		UPVC		Metal		Wood		UPVC		Metal	
Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N

Doors/frames to survey dwelling

(Number)

Wood		UPVC		Metal	
Y	N	Y	N	Y	N
Y	N	Y	N	Y	N

Number

Age

Faults?

Replace

Repair/glaze

Ease/replace/adjust ironmongery

Paint

Leave

Urgent?

Replacement period

Wood		UPVC		Metal	
Y	N	Y	N	Y	N
Y	N	Y	N	Y	N

18. Exterior – plot of survey dwelling (Not shared plots)

Private plot exists	No private or shared plot	Shared plot / facilities only
Complete all this section	***Complete accessibility + HHSRS***	***Complete section 11 only***
1	2	3

Accessibility

Number of steps from gate/pavement to entrance

note: entrance maybe in either view

Level Access	No step but slope > 1:20	1 step	2 step	3 or more steps
8	7	1	2	3
Space for ramp				
Not applicable 8		Yes 1		No 2

Is path firm and even?	Y	N
Is path at least 900mm wide?	Y	N
Is gradient less than 1:12?	Y	N
Is entrance adequately lit?	Y	N
Is entrance covered?	Y	N

Front plot		
Exists	Y	N
Depth (m)		
	Y	N
	Y	
	Y	
	Y	N

Width of plot

Width (m)	Same as module
	88

Tenths hard

Tenths soft

Faults?

Bridged DPC

Inadequate/reverse falls

Excavation (m^3)

Internal tanking (m^2)

Repair/renew paving (m^2)

Repair/renew retaining wall (m)

Repair/renew steps (no.)

Install gully?

Rear plot		
Exists	Y	N
Depth (m)		
	Y	N
	Y	
	Y	
	Y	N

HHSRS - of plot

note: include front and rear plots

	Significantly lower risk than average	Average risk	Significantly higher risk than average
Falling on stairs etc	1	2	3
Falling on level	1	2	3
Falling between levels	1	2	3
Damp and mould growth		2	3

If '3', score HHSRS in Section 22

19. Around the house/module

Underground drainage

Mains Drainage present	Y	N
Faults to drains?	Y	N

HHSRS	Significantly lower risk than average	Average risk	Significantly higher risk than average	Extreme risk
Personal hygiene sanitation and drainage	1	2	3	4
	Describe 'extreme risk' in Section 22			

Rats and mice outside house/module

Evidence of mice?	Y	N
Evidence of rats?	Y	N
Pets/livestock kept outside?	Y	N

Type of evidence:

Traps seen?		Chemicals?		Other visual evidence?		Told about it?	
Y	N	Y	N	Y	N	Y	N

	None	Minor	Major
Litter/rubbish around house/module	1	2	3

HHSRS	Significantly lower risk than average	Average risk	Significantly higher risk than average	Extreme risk
Domestic hygiene pests and refuse	1	2	3	4
	Describe 'extreme risk' in Section 22			

Parking provision of survey dwelling

ASK HOUSEHOLD

	Present?		On plot?		Car spaces
Integral garage	Y	N	Y	N	
Attached garage	Y	N	Y	N	
Detached garage	Y	N	Y	N	
Car port	Y	N	Y	N	
Designated parking space(s)	Y	N	Y	N	

	Adequate	Inadequate	None
Street Parking	1	2	3

Is there any off-plot parking located within 30 meters of the entrance to dwelling/module, with an even acces route of less than 1:12 gradient? Y N

Cavity wall insulation summary

Evidence of cavity wall insultation:

Y	N	Area around meters (P5)
Y	N	Loft space (P7)
Y	N	Occupant response (P8)
Y	N	Elevation features (P14)
Y	N	Air bricks (P14)

% of cavity walls with CWI present

0%	25%	50%	75%	100%
0	1	2	3	4

Internal / external insulation summary

Evidence of internal / external insulation:

Y	N	Internal wall insulation (P3)
Y	N	Occupant response (P8)
Y	N	External wall insulation (P14)

% of walls with internal / external insulation present

0%	25%	50%	75%	100%
0	1	2	3	4

Exposure

	Not exposed	Slightly exposed	Exposed	Very exposed
Is the **dwelling** in an exposed position?	1	2	3	4

	None or very little	Modest	Significant	Heavy
What is the average level of overshading of the **dwelling** windows?	1	2	3	4

	None or very little	Modest	Significant	Heavy
What is the level of overshading to the **module** roof?	1	2	3	4

20. Block

	Detached house/module	Specify number	More than 50
Number of houses/ modules in block	01		75

	Specify number
Approximate number of houses/modules in disrepair in block	

21. Structural defects

Any structural defects present? Y | N

IF YES, DESCRIBE BELOW

IF YES OR NO, COMPLETE **HHSRS** ASSESSMENT AT BOTTOM OF PAGE

	Defect	Action required?		Monitor/ examine further?		Action described elsewhere on form?		Action required on assumption problem is progessive Any additional action required that is not accounted for elsewhere Treatment?			Extent				
Roof sagging	Y	Y	N	Y	N	Y	N								
Roof humping	Y	Y	N	Y	N	Y	N								
Roof spreading	Y	Y	N	Y	N	Y	N	Tie-ing	Y	N	Number:				
								Other	Y	N	Specify				
Sulphate attack	Y	Y	N	Y	N	Y	N	Chimney-liner	Y	N	Linear metres		m		
								Other	Y	N	Specify				
Unstable parapets	Y	Y	N	Y	N	Y	N								
Wall bulging	Y	Y	N	Y	N	Y	N	Tie rods	Y	N	Number:				
								Strapping	Y	N	Number:				
								Other	Y	N	Specify				
Differential movement	Y	Y	N	Y	N	Y	N	Movement-joint	Y	N	Linear metres		m		
								Other	Y	N	Specify				
Lintel failure	Y	Y	N	Y	N	Y	N	Replace lintels	Y	N	Number:				
Wall tie failure	Y	Y	N	Y	N	Y	N	Insert wall ties	Y	N	Wall area:		m^2		
Unstable floors, stairs or ceilings	Y	Y	N	Y	N	Y	N								
Dry rot/Wet rot	Y	Y	N	Y	N	Y	N	Wall & timber treatment	Y	N	Basement 1	One room 2	One floor 3	Loft 4	Most of building 5
Wood-borer infestation	Y	Y	N	Y	N	Y	N	Timber treatment	Y	N	Basement 1	One room 2	One floor 3	Loft 4	Most of building 5
Adequacy of balconies / projections	Y	Y	N	Y	N	Y	N	Replace fixings	Y	N	Total number:				
								Other	Y	N	Specify				
Foundation settlement	Y	Y	N	Y	N	Y	N	Underpin	Y	N	Linear metres		m		
								Other	Y	N	Specify				
Integrity of structural frame	Y	Y	N	Y	N	Y	N	Making-good	Y	N	Wall area		m^2		
								Replace frame	Y	N					
Integrity of wall panels	Y	Y	N	Y	N	Y	N	Replace fixings	Y	N	Total number:				
								Other	Y	N	Specify				
Boundary wall - unsafe height	Y	Y	N	Y	N		N	} Repair	Y	N	Wall area		m^2		
Boundary wall - out of plumb	Y	Y	N	Y	N		N	} Replace	Y	N	Wall area		m^2		
Boundary wall - horizontal cracking	Y	Y	N	Y	N		N	} Demolish	Y	N	Wall area		m^2		
Unstable retaining wall	Y	Y	N	Y	N	Y	N								
Any other problems	Y	Y	N	Y	N	Y	N	Specify			Specify				

Housing Health and Safety Rating System (HHSRS)

Structural collapse and falling elements

Significantly lower risk than average	Average risk	Significantly higher risk than average	Extreme risk
1	2	3	4

Describe 'extreme risk' in Section 22

22. Housing Health and Safety Rating System

Refer back to all the HHSRS flags. Consider each of the following hazards in turn in relation to the dwelling as a whole. Decide whether any hazards are significantly worse than average and need to be scored individually on pages 29 - 30. Decide if there are any other hazards listed below which represent an extreme risk. If yes, indicate below and describe risk. If there are no hazards to score move to the Fitness outcome section on page 31.

HAZARDS WHICH MAY REQUIRE SCORING

Hazard	Review whole survey form, especially:	Significantly lower risk than average	Average risk	Significantly higher risk than average
Falling on stairs etc	Check flags on pages 3, 18, 20, 25	1	2	3
Falling on level surfaces	Check flags on pages 3, 18, 20, 25	1	2	3
Falling between levels	Check flags on pages 3, 18, 20, 25	1	2	3
Fire	Check flags on pages 3, 18	1	2	3
Flames, hot surfaces, etc	Check flags on pages 3, 18	1	2	3
Damp and mould growth	Check flags on pages 3, 18, 25		2	3

Are any hazards significantly higher than average (code 3)? Y N
If Yes, describe below and score hazard on pages 21-22

OTHER HAZARDS IDENTIFIED AS POSING AN EXTREME RISK

Hazard	Review whole survey form, especially:	Extreme risk?
Falls associated with baths etc	Check flag on page 4	Y
Entry by intruders	Check flag on page 3	Y
Noise	Check flag on page 3	Y
Collision and entrapment	Check flag on page 3	Y
Excess heat	Check flag on page 3	Y
Lighting	Check flag on page 3	Y
Water supply for domestic purposes	Check flag on page 4	Y
Food safety	Check flag on page 4	Y
Personal hygiene, sanitation and drainage	Check flags on pages 4, 26	Y
Position and operability of amenities	Check flag on page 4	Y
Uncombusted fuel gas	Check flag on page 5	Y
Explosions	Check flag on page 5	Y
Electrical safety	Check flag on page 5	Y
Carbon monoxide and fuel combustion products	Check flag on page 6	Y
Domestic hygiene, pests and refuse	Check flags on pages 3, 26	Y
Structural collapse and falling elements	Check flag on page 27	Y

If Yes, to any of the above, describe extreme risk below and specify treatment

Falling on stairs etc.

Significantly higher than average: Y / N

Likelihood of a person over 60 having a fall leading to harm				1800	1000	560	320	180	100	56	32	18	6	2
Likely outcome if a person over 60 should fall	Class 1 Extreme %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 2 Severe %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 3 Serious %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		

Must not add up to >100.2%

Action required

Action required?	Action	Coded elsewhere?		Quantity
Y	Install handrail	Y	N	Metres:
Y	Install balustrade	Y	N	Metres:
Y	Cover dangerous balustrade/guarding	Y	N	Metres:
Y	Repair/replace internal staircase (S5)	Y		
Y	Redesign internal, common or external staircase (design, not condition)		N	Number:
Y	Repair/replace external/common staircase (S9)	Y		
Y	Repair/replace external steps (S11, S18)	Y	N	Number:
Y	Cover slippery stairs	Y	N	Flights:
Y	Repair/replace/provide additional lighting (S5, S9, S11)	Y	N	Number:
Y	Remove obstacle		N	Number:

Falling on level surfaces etc.

Significantly higher than average: Y / N

Likelihood of a person over 60 having a fall leading to harm					1000	560	320	180	100	56	32	18	6	2
Likely outcome if a person over 60 should fall	Class 1 Extreme %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 2 Severe %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 3 Serious %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		

Must not add up to >100.2%

Action required

Action required?	Action	Coded elsewhere?		Quantity
Y	Repair floors (S5, S9)	Y		
Y	Repair paths/external surfaces (S11, S18)	Y		
Y	Remove trip steps (S5, S9)		N	Number:
Y	Redesign external pathways (S11, S18)		N	Metres:
Y	Cover slippery surfaces	Y	N	Sq m:
Y	Repair/replace/provide additional lighting (S5, S9, S11)	Y	N	Number:
Y	Remove obstacle		N	Number:

Falling between levels

Significantly higher than average: Y / N

Likelihood of a child under 5 having a fall leading to harm		5600	3200	1800	1000	560	320	180	100	56	32	18	6	2
Likely outcome if a child under 5 should fall	Class 1 Extreme %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 2 Severe %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
	Class 3 Serious %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		

Must not add up to >100.2%

Action required

Action required?	Action	Coded elsewhere?		Quantity
Y	Install window safety catches	Y	N	Number:
Y	Repair/replace/provide additional lighting (S5, S9, S11)	Y	N	Number:
Y	Brick-up dangerous opening / raise cill height		N	Number:
Y	Repair/replace balconies (S9, S18)	Y		
Y	Repairs to plot (S11, S18)	Y		
Y	Repair/replace existing guarding/balustrading (S5, S9, S11, S18)	Y		
Y	Install new guarding/balustrading/cover		N	Metres:
Y	Remove obstacle		N	Number:

Fire

Significantly higher than average: Y | N

Likelihood of a fire occurring leading to harm if occupied by a person over 60	5600	3200	1800	1000	560	320	180	100	56	32	18	6	2
Likely outcome if occupied by a person over 60 — Class 1 Extreme %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
Class 2 Severe %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
Class 3 Serious %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		

Must not add up to >100.2%

Action required

Action required?	Action	Coded elsewhere?		Quantity	
Y	Repair/replace electrical system (S5)	Y			
Y	Provide additional sockets		N	Number:	
Y	Repair/replace or reposition heater (S5)	Y	N	Number:	
Y	Relocate cooker		N	Number:	
Y	Re-fit, extend, re-site kitchen (S5)	Y	N	Number:	
Y	Repair/Install precautions to common areas (S9)	Y	N	Sq m:	
Y	Replace non fire resistant/smoke permeable structure/poly. tiles	Y	N	Sq m:	
Y	Upgrade stairway to protected route	Y	N	Flights:	
Y	Replace inadequate heating system		N		
Y	Provide fire stop wall to loft space		N	Number:	
Y	Provide self-closing doors	Y	N	Number:	
Y	Install smoke detection measures	Y	N	Number:	
Y	Provide suitable openable windows/doors for MOE (S5, S9)		N	Number:	
Y	Provide fire escape		N	Flights:	
Y	Remove obstacle		N	Number:	

Flames, hot surfaces etc.

Significantly higher than average: Y | N

Likelihood of a child under 5 being burnt/scalded				1000	560	320	180	100	56	32	18	6	2
Likely outcome if a child under 5 is burnt/scalded — Class 1 Extreme %	<0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
Class 2 Severe %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		
Class 3 Serious %	0.1	0.2	0.5	1	2.2	4.6	10	21.5	31.6	46.4	100		

Must not add up to >100.2%

Action required

Action required?	Action	Coded elsewhere?		Quantity	
Y	Repair, replace or reposition heater, heating or hot water pipes, or cover (S5)	Y	N	Number:	
Y	Relocate cooker		N	Number:	
Y	Re-fit, extend, re-site kitchen (S5)	Y	N	Number:	
Y	Remove obstacle		N	Number:	

Damp and Mould Growth

Significantly higher than average: Y | N

Likelihood of a person under 15 suffering illness					560	320	180	100	56	32	18	6	2

Action required

Action required?	Action	Coded elsewhere?		Quantity	
Y	Treat rising damp (S5, S18)	Y			
Y	Treat penetrating damp, leaking pipes and services (S5, S18)	Y	N	Number:	
Y	Condensation - extractor fans to install/repair (S5)		N	Number:	
Y	Condensation - repair/provide opening window (S9, S18)	Y	N	Number:	
Y	Repair/replace/improve heating system (S5)	Y	N	Number:	
Y	Improve Insulation (S5, S6, S16, S18)	Y			

23. Fitness Outcome

Review the survey form and assess whether the dwelling is fit for habitation against the following list of items. If the dwelling is unfit under any heading, describe the reasoning in the space provided.

	Unfit	Defective	Aceptable	Satisfactory	
1. Structural stability	1	2	3	4	
2. Disrepair	1	2	3	4	
3. Dampness	1	2	3	4	
4. Lighting	1	2	3	4	
5. Heating	1	2	3	4	
6.Ventilation	1	2	3	4	
7. Water Supply	1	2	3	4	
8. Food Preparation	1	2	3	4	
9. WC	1	2	3	4	
10. Bath / Shower / WHB	1	2	3	4	
11. Drainage	1	2	3	4	

Refer to the final fitness assessments above andconfirm whether the dwelling is fit for habitation

Unfit	Defective	Aceptable	Satisfactory
1	2	3	4

Is this a clear cut decision? Y | N

If unfit on one or more of these items above:

Are there any mitigating circumstances for unfitness decision?

None	Short-term refurbishment	Being made fit
1	2	3

If unfit or fit:
What is the most appropriate course of action?

RETAIN			DO NOT RETAIN	
No action	Repair/Improve single dwelling	Repair/improve block/ group of dwellings	Demolish/replace individual dwelling	Demolish/replace block/group of dwellings
1	2	3	4	5

24. Local area

Clearly define an area of manageable size before completing this page.

Number of dwellings in area	Under 25 1	25-49 2	50-99 3	100-299 4	300-499 5	500+ 6	Isolated 7	If isolated go to visual quality

Predominant age	Pre 1919 1	1919-1944 2	1945-1964 3	1965-1980 4	Post 1980 5	None 6		

Predominant residential building type	Houses				Flats				Mixed houses and flats
	Terraced 1	Semi-detached 2	Detached 3	Mixed houses 4	Converted flats 5	Low rise flats 6	High rise flats 7	Mixed flats 8	9

Predominant tenure as built	Privately built 1	HE built 2	Housing association built 3	Mixed tenure 4	Impossible to ascertain 9

Estate

Number of dwellings on estate	Not on estate 8	Same as area 1	Under 25 2	25-49 3	50-99 4	100-299 5	300-499 6	500+ 7

If area is HE estate, % of RTB dwellings	Not on HE estate 8	None (0%) 1	1-10% 2	11-25% 3	26-50% 4	51-75% 5	76-99% 6	100% 7

	Best						Worst
Visual quality of local area	1	2	3	4	5	6	7

Problems in local area

	No problems				Major problems
Litter/rubbish/dumping	1	2	3	4	5
Graffiti	1	2	3	4	5
Vandalism	1	2	3	4	5
Dog/other excrement	1	2	3	4	5
Condition of dwellings	1	2	3	4	5
Vacant sites	1	2	3	4	5
Intrusive industry	1	2	3	4	5
Non-conforming uses	1	2	3	4	5
Vacant/boarded-up buildings	1	2	3	4	5
Ambient air quality	1	2	3	4	5
Heavy traffic	1	2	3	4	5
Intrusion from motorways/main roads	1	2	3	4	5
Railway/aircraft noise	1	2	3	4	5
Nuisance from street parking	1	2	3	4	5
Scruffy gardens/landscaping	1	2	3	4	5
Scruffy/neglected buildings	1	2	3	4	5
Condition of road, pavements and street furniture	1	2	3	4	5
Painted kerbs	1	2	3	4	5
Graffiti (sectarian)	1	2	3	4	5
Street Lighting	1	2	3	4	5

Notes:

APPENDIX C: GLOSSARY

Aggregate fuel poverty gap

The fuel poverty gap for each individual household aggregated across all fuel poor households to produce a national total.

AHC

After Housing Costs

Average fuel poverty gap

The average (mean) fuel poverty gap across all fuel poor households.

Bedroom standard

In 2016 the NIHCS measured the bedroom standard using a threshold at age 16 or older to allocate a separate bedroom rather than at age 21 as in previous years. The primary reason for this change was to bring it in line with practices used in the area of Welfare Reform (Welfare Reform Act 2012) issued by the Department for Work and Pensions. Although, under Welfare Reform this convention applies to working-age people, the NIHCS measures the bedroom standard on the basis of all people living in households. In addition, a number of users of the NIHCS had requested information on the bedroom standard using age 16 or older.

The bedroom standard is calculated as follows:

- A separate bedroom is allocated to each married or co-habiting couple, any other person aged 16 or over, each pair of young persons aged 10-15 of the same gender and each pair of children less than 10 years old (regardless of gender).
- Any unpaired young persons aged 10-15 are paired with a child under 10 of the same gender or, if possible, allocated a separate bedroom.
- Any remaining unpaired children under 10 are also allocated a separate bedroom.
- The calculated standard for the household is then compared with the actual number of bedrooms available for its sole use to indicate deficiencies or excesses.
- Bedrooms include bed-sits, box rooms and bedrooms that are identified as such by interviewees even though they may not be in use as such.
- The bedroom standard does not take account of bedroom size.
- Overcrowding is defined as falling below the bedroom standard by one or more bedrooms.

Cavity wall insulation

For the purposes of this analysis the following classification has been adopted:

- Full cavity wall insulation - dwellings constructed with cavity walls where all walls contain cavity wall insulation.
- Partial cavity wall insulation - dwellings of cavity wall construction or partly of solid wall and partly of cavity wall construction, where at least one cavity wall contains insulation. A small number of dwellings were recorded as having no cavity walls but have cavity wall insulation. These dwellings have insulated concrete or timber panels and are classified as partial cavity wall insulation.
- Dry lining/internal/external insulation - dwellings originally built with solid wall construction, not included in the above category, but which have at least one wall with dry lining, external insulation or internal insulation.
- No wall insulation - the remaining dwellings (of cavity wall or solid construction or both) where there is no evidence of insulation.

Central heating system

Central heating was defined as a heating system with a distribution system sufficient to provide heat in at least two rooms. One of these may be to the room or space containing the boiler. For the purpose of this report, the definition also includes electric storage heaters that run on off-peak electricity.

Decent Homes

A decent home is one that is wind and weather tight, warm and has modern facilities. A decent home meets the following four criteria:

Criterion a: It meets the current statutory minimum standards for housing.

Criterion b: It is in a reasonable state of repair.

Criterion c: It has reasonably modern facilities and services.

Criterion d: It provides a reasonable degree of thermal comfort.

Double glazing

Factory made sealed window units. This does not include windows with secondary glazing or external doors with double or secondary glazing (other than double glazed patio doors which count as 2 windows).

Dwelling

A dwelling is a self-contained unit of accommodation where all rooms and facilities available for the use of the occupants are behind a front door. For the most part a dwelling will contain one household, but may contain none (vacant dwelling), or may contain more than one household in which case it is a House in Multiple Occupation (HMO).

Dwelling age

The age of the dwelling refers to the date of construction of the oldest part of the building.

Dwelling location

In 2016, the HCS moved to a new urban-rural classification. The new eight-band classification was the result of the 'Review of the Statistical Classification and Delineation of Settlements' published by the Northern Ireland Statistics and Research Agency (NISRA) in 2015. The Review was based on three sources: 2011 Census population estimates, November 2014 Settlement Development Limits, and the drive times to town centres within settlements of 10,000 people or more. This updated classification will allow comparison with other official statistics; however it will not be possible to make direct comparisons with previous published HCS figures. The 2016 report will only make urban-rural comparisons with revised 2011 figures.

The following table shows the eight band classification.

Due to small numbers in some of the eight bands they have been re-grouped into five bands in order to provide a meaningful analysis, as follows:

1	BMUA (Band A)	Urban
2	Derry Urban Area/Large Town (Bands B and C)	
3	Medium/Small Towns (Bands D and E)	
4	Intermediate Settlement/Village (Bands F and G)	Rural
5	Small village/Hamlet/Open Countryside (Band H)	

Employment status

- Working – self-employed, working full-time, working part-time
- Not working - not working but seeking work, not working and not seeking work, other (including student)
- Retired
- Permanently sick or disabled, looking after family/home

Energy efficiency rating (EER) bands

The 1-100 SAP energy efficiency rating is also presented in an A-G banding system for an Energy Performance Certificate, where Band A rating represents low energy costs (i.e. the most efficient band) and Band G rating represents high energy costs (i.e. the least efficient band).

Equivalisation

An adjustment factor to standardise spending and energy requirements across households

Equivalised AHC income

After housing costs income equivalised by household composition.

Equivalised fuel costs

Household fuel costs equivalised by the number of people in the house.

Fitness Standard

The current Fitness Standard is set out in Schedule 5 of the Housing (Northern Ireland) Order 1992. This schedule states that a dwelling is unfit for human habitation if it fails to meet one or more of the following requirements:

- It is structurally stable.
- It is free from serious disrepair.
- It is free from dampness prejudicial to the health of the occupants (if any).
- It has adequate provision for heating, lighting and ventilation.

Eight band definition

Urban					Rural		
B and A	B and B	Band C	B and D	B and E	Band F	Band G	Band H
Belfast Metropolitan Urban Area (BMUA)	Derry Urban Area	Large Town	Medium Town	Small Town	Intermediate Settlement	Village	Small Village, Hamlet, Open Countryside
1	2	3	4	5	6	7	8

- It has an adequate supply of wholesome water.
- There are satisfactory facilities in the house for the preparation and cooking of food, including a sink with a satisfactory supply of hot and cold water.
- It has a suitably located water closet for the exclusive use of the occupants (if any).
- It has, for the exclusive use of the occupants (if any), a suitably located fixed bath or shower and wash-hand basin, each of which is provided with a satisfactory supply of hot and cold water.
- It has an effective system for the draining of foul, waste and surface water.

In addition, flats may be classified as unfit if the building or part of the building outside of the flat fails to meet any of the following requirements and by reason of that failure is not suitable for occupation:

- The building or part is structurally stable.
- It is free from serious disrepair.
- It is free from dampness.
- It has adequate provision for ventilation.
- It has an effective system for the draining of foul, surface and waste water.

The Fitness Standard and the NIHCS

The terms Satisfactory, Acceptable, Defective and Unfit are somewhat artificial concepts used in House Condition Surveys to indicate the condition of a property on a 'sliding scale.'

The only true legal decision that the surveyors must make is whether the property is:

"so far defective in one or more of the 9 points [or headings or criterion] contained in the fitness standard as to be unreasonable for occupation in that condition".

This definition must guide the surveyor's decision in deciding if the property is legally Fit or Unfit. The three terms Satisfactory, Acceptable and Defective are degrees of fitness.

Surveyors are given the following guidance in assessing fitness in the NIHCS:

- Satisfactory means that there are NO or very, very insignificant faults in relation to each heading.
- Acceptable means that there are some faults of a minor nature that do not significantly impact on the overall condition or fitness judgements.
- Defective indicates quite serious faults that are bringing the property close to a judgement of unfitness but not quite enough to make that final jump to a decision that the property fails the standard.
- Unfit means the property fails the fitness standard, is unsuitable for occupation in that condition, and that statutory action by the Housing Executive is required.

Note:
Surveyors are told that if the condition of the property makes them start thinking that it could be unfit under any of the headings, then it cannot be any better than defective under that heading.

Floor space

The usable internal floor area of the dwelling as measured by the surveyor, rounded to the nearest square metre. The area under partition walls has been excluded, as has that for integral garages and stores accessed from the outside only.

Fuel poverty - 10% indicator

Under the 10% fuel poverty methodology, a household is considered to be in fuel poverty if, in order to maintain a satisfactory level of heating (21oC in the main living area and 18oC in other occupied rooms), it is required to spend in excess of 10% of its household income on all fuel use.

Fuel poverty - Low Income High Costs

The Low Income High Costs indicator (LIHC), considers a household to be fuel poor if:

- They have required fuel costs that are above average (the national median level);
- Were they to spend that amount, they would be left with a residual income below the official poverty line.

HCS

House Condition Survey

Household

Either one person living alone, or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or a sitting room or a dining room.

A household may consist of one or more family units

Household reference person

The household reference person is the member of the household who owns or pays the rent or mortgage on the property, or has the property as a perquisite or because of some relationship with the owner, where the owner is not a member of the household. Where two people have equal claim (e.g. husband and wife jointly owns the property) the household reference person is the person with the highest annual income. This definition is for analysis purposes and does not imply any authoritative relationship within the households.

Household types

Due to the smaller sample in 2016 Household Types were recoded into three groups as follows:

- Adult households

  Lone adult
  One adult below pensionable age (65 plus).

  Two adults
  Two people, related or unrelated, below pensionable age (65 plus).

  Large adult
  Three or more adults, related or unrelated, and no dependent children less than 16 years old.

- Households with children

  Lone parent
  One adult living with one or more dependent children, less than 16 years old.

  Small family
  Two adults, related or unrelated, living with one or two dependent children less than 16 years old.

  Large family
  Two adults, related or unrelated, living with three or more dependent children aged under 16; OR three or more adults living with one or more dependent children aged under 16.

- Older households

  Two person older
  Two people, related or unrelated, at least one of whom is of pensionable age (65 plus).

  Lone older
  One person of pensionable age or older (65 plus).

Housing Health and Safety Rating System (HHSRS)

The Housing Health and Safety Rating System (HHSRS) is a risk based system that identifies defects in dwellings and evaluates the potential effect of any defects or deficiencies on the health and safety of occupants, visitors, neighbours or passers-by. The System generates a score which represents the seriousness of any hazard. Any hazards that have a score of over 1,000 are described as 'Category 1' and are deemed to fail the statutory minimum standard. There are 29 categories of hazards, each of which is separately rated.

The NIHCS does not replicate the HHSRS assessment in full as part of a large scale survey. Its assessment employs a mix of hazards that are directly assessed by surveyors in the field and others that are indirectly assessed through modelling and flags in the survey form and a small number are assessed using external sources.

Repair costs

- Faults
  A fault is any problem which is not of a purely cosmetic nature and which either represents a health or safety hazard, or threatens further deterioration to the specific element or any other part of the building.
- Faults requiring urgent treatment
  Where surveyors recorded work to be carried out to an exterior building element, they indicated whether the work specified was urgent; defined as that needed to be undertaken immediately to remove threats to the health, safety, security and comfort of the occupants and to forestall further rapid deterioration of the building.
- Urgent repair costs
  These are any works specified to deal with an external fault where its treatment was specified as urgent (see above), plus all recorded work to internal elements.
- Basic repair costs
  These are all urgent repairs plus all other repairs/replacements to external elements where the surveyor indicated a fault, but where the work was not specified as urgent.
- Comprehensive repair costs
  This includes all basic repairs together with any replacements the surveyor assessed as falling due over the next 10 years. For all exterior elements, whether work was specified or not, the replacement period of that element was recorded i.e. the number of years before it would need replacing.

- Standardised costs
  These are costs in £ per square metre (£/sqm²) based on prices for Northern Ireland. It is assumed that all work is undertaken by contractors on a block contract basis. For flats, the size of the contract is assumed to be the whole block and for houses it is taken as a group of 5 dwellings. As such, the costs are more closely associated with those that may be incurred by a landlord organising the work on a planned programme basis. By reducing costs to a £sq/m² basis the effect of the size of buildings on the amount of disrepair recorded is negated, otherwise the extent of the disrepair measured is substantially driven by the size of the building.

SAP

Standard Assessment Procedure is the Government's standard method of rating the energy efficiency of a dwelling. The SAP rating is a logarithmic scale and provides a comparative measure of the energy efficiency of dwellings. The lower the score the lower the energy efficiency and the higher the score (up to a maximum of 100) the higher the efficiency.

Second home

A second home is a dwelling that is occupied by a household, but not as their primary residence. In Northern Ireland these are largely holiday homes, used solely for holidays or weekends, both for family use or as a commercial holiday let.

The House Condition Survey came across very few second homes for business purposes.

Tenure

The following categories are used for most reporting purposes:

- Owner occupied
  Includes outright owners, those buying with a mortgage and shared owners (people who are part renting and part buying their homes from the Northern Ireland Co-Ownership Housing Association). Includes anyone who is buying their home from a housing association or from the Housing Executive. Note: the Housing Executive has now sold more than 100,000 dwellings.
- Private rented (and others)
  Rented from a private landlord, private company, other organisation, relative or friend. Includes tied accommodation and any 'other' type of accommodation not covered by the standard tenure types.
- Social housing
  All occupied dwellings owned and managed by the Northern Ireland Housing Executive and all occupied dwellings owned and managed by housing associations (registered and unregistered) with the exception of NI Co-ownership Housing Association.
- Vacant dwellings
  Classified as a separate "tenure". The assessment of whether or not a dwelling was vacant was made at the time of the survey. Clarification of vacancy was sought from neighbours. Surveyors were required to gain access to vacant dwellings and undertake full inspections. The tenure when last occupied was noted for analysis purposes. However, in the private sector in particular, this does not mean it will be in this tenure when next occupied.

Type of dwelling

Dwellings are classified by surveyors as follows:

- Terraced house - a house forming part of a block where at least one house is attached to two or more other houses.
- Semi-detached house - a house that is attached to one other house.
- Detached house - a house where none of the habitable structure is joined to another building (other than garages, outhouses etc).
- Purpose built flat - a flat in a purpose built block. Includes cases where there is only one flat with independent access in a building which is also used for non-domestic purposes.
- Converted flat - a flat resulting from the conversion of a house or former non-residential building. Includes buildings converted into a flat plus commercial premises (typically corner shops).
- Bungalow (single storey dwelling) was defined as a house with all of the habitable accommodation on one floor i.e. no fixed internal staircase. It excluded chalet bungalows and bungalows with habitable loft conversions, which are treated as houses.

APPENDIX D: ESTIMATING REPAIR COSTS

Introduction

This appendix briefly outlines the methodology used to produce the repair costs quoted in the main report. It looks at how the primary data was collected by surveyors and its interpretation by the Building Research Establishment's repair cost model to produce the final estimates.

Primary data

Four types of information were used to calculate base repair costs:

- The surveyor's assessments of the types of internal repair needed and their extent. Much of this information was collected on the basis of how many tenths of a specific element required repair or replacement.
- External elements and items were assessed on the basis of materials and forms. Appropriate treatments were recommended. In both cases the information was entered on to the survey form in tenths.
- Building dimensions and forms were measured and entered in the survey form in metres.
- Unit prices for different types of jobs were taken from the National Schedule of Rates and inflated using a tender price index to current levels, with a further cost factor of 0.75 to reflect the regional price difference for Northern Ireland.

1. Normally the interior was surveyed first, then the exterior.
    - A number of rooms were selected to give a representative view of the dwelling as a whole: living room, kitchen, bedroom and bathroom.
    - The total number of rooms present was noted and the overall estimates for the dwelling increased accordingly.
    - All the internal facilities and services, bath, WC, wash hand basin, sink, etc. were surveyed individually.
2. For the common area of flats, only representative portions were surveyed and these were scaled up as appropriate.
3. Dwellings were assessed externally from two viewpoints, chosen so that, taken together, the whole of the exterior was seen.
4. Surveyors were instructed to make their assessments based on several assumptions:
    - Dwellings were assumed to have an indefinite life span.
    - Replacement was to be delayed if reasonable repairs could be carried out in the interim.
    - It was assumed that repairs rather than replacements would be carried out unless: (i) this was impossible or (ii) replacement would still be necessary within five years or (iii) the element would need replacement in any case e.g. because it was unsuitable for its intended purpose.
    - Functionality was the criterion i.e. not modernisation, upgrading, fashion or cosmetic improvement.
    - Economies of scale were not to be a criterion e.g. if total replacement would cost little more than, say, 80% of replacement, cost was nevertheless based on partial replacement.
5. The assessment was based on:
    - Proportion of area where appropriate e.g. roofs, walls etc.
    - Number of units e.g. doors, windows etc.
    - Linear amount for those for which area was inappropriate e.g. gutters.
6. For linear elements the quantity was multiplied by unit cost e.g. for gutters per metre, for discrete elements e.g. doors by unit cost (£) and for area-based elements by cost per square metre.
    - Replacement was on a like-for-like basis e.g. slate roof for slate roof, wooden window frame for wooden window frame where practical.
7. All the costs were calculated for individual dwellings
    - For flats, the common areas and exterior costs were divided by the number of flats and added to the individual costs of the interiors to give the total cost.

Missing data

8. Surveyors may have omitted some data or entered incorrect data.

   Where appropriate, this was referred back to the surveyor, but otherwise imputation was applied on the following basis:

- Dimensions, where implausible or missing, were corrected with the help of photographs, and surveyor diagrams. These sources were also used to validate cases with particularly high repair costs.
- Where data on components were missing e.g. where a roof had a pitched and flat section, and only the pitched section had its repair needs recorded, the same proportion needing repair was entered for the flat section.
- When an element, for which there was data on one view, was missing on the other view, it was assumed that both needed the same treatment.
- If whole elements were missing, e.g. windows the average for dwellings of a similar age and type was used.

Add-ons, up-lifts and preliminaries were used to modify base costs e.g. preliminary work before the specified work could begin, accessing equipment such as scaffolding and economies of scale. Economies of scale take account of the amount of work being done to one dwelling, say a call-out and whether more than one dwelling was likely to be included in one contract.

Repair costs

9. The two main types of costs measures were:

   a) The extent of disrepair in terms of elements or unit costs.

   b) Overall cost per dwelling so that aggregated costs could be assessed.

   - Standardised (unit) costs were based on £ per square metre on the assumption that a contract contained five dwellings.

   - Required expenditure was total costs per dwelling based on single dwellings in the private sector. Unless a dwelling was specifically noted as a stand-alone in the public sector the costs were based on the size of the estate the dwelling was on. For flats the basis was always the complete block.

   - Comparisons of cost may only be valid as an indication of relative condition if care is taken to ensure that all other factors are equal e.g. size and form.

10. The BRE model processed this detailed information to provide repair costs for each dwelling as a whole and for each of its main elements. The results were then aggregated and are presented in tabular form in the Annex and in the text of the main report.

11. In statistical terms, the distribution of repair costs per dwelling was not normal:

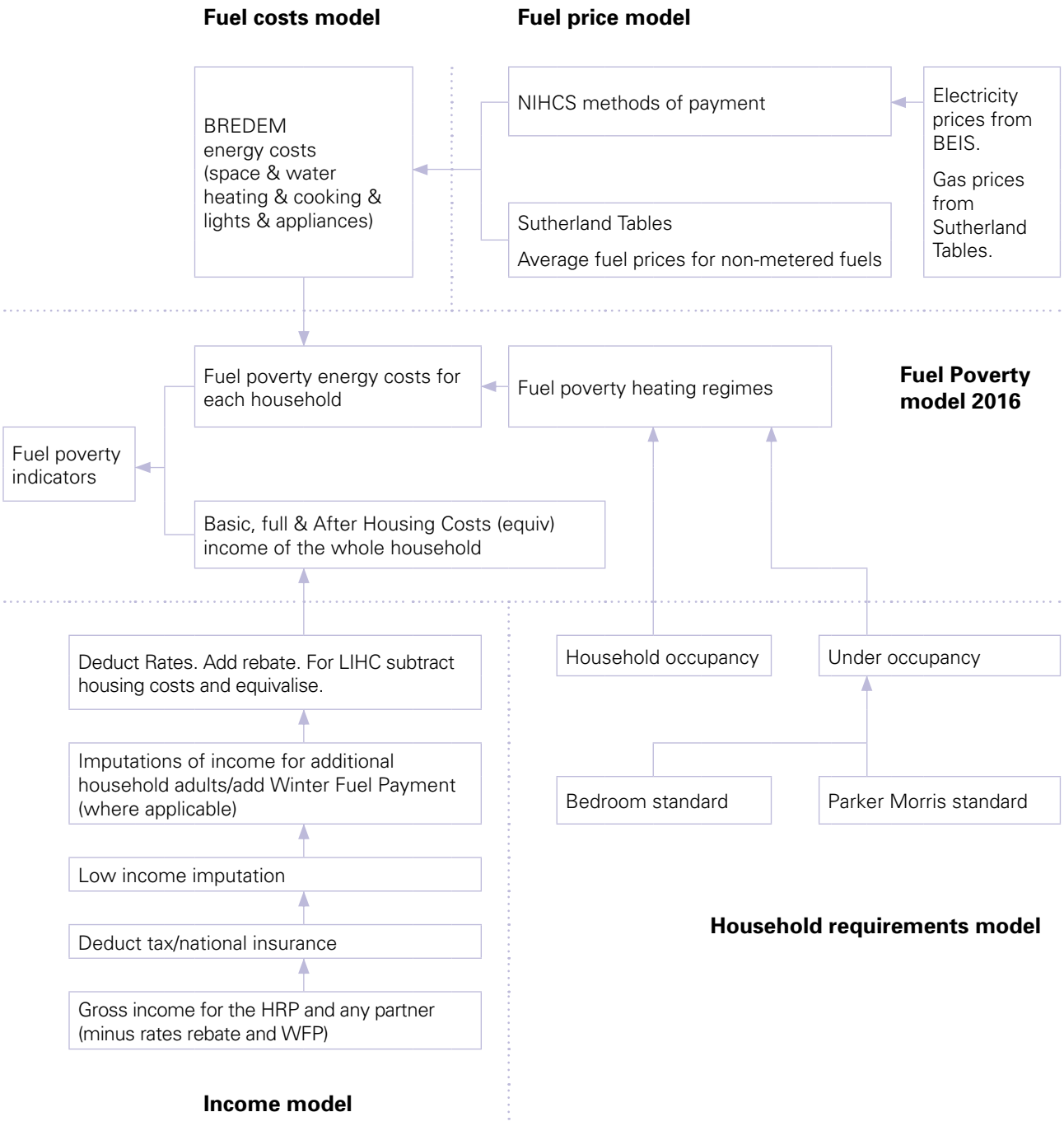
- Most dwellings required relatively little or no expenditure, but a few required a great deal.
- Thus the mean level of expenditure gave a less accurate indication of the typical level of expenditure required than the median.
- The median cost could not be used for grossing up to total expenditure requirements - the mean was used for this purpose.

Repair costs 2011 - 2016

The surveyors collecting the data were all briefed in the same manner in 2011 and 2016. However, surveyors' opinions can vary over time and consequently any comparisons made between the two surveys will include some unquantifiable error due to surveyor judgement shift.

A final stage of data validation compared the mean repair costs for 2011 and 2016 for different elements and in total. The results were checked to ensure a reasonable level of consistency between the surveys, or that any larger discrepancies could be explained through changes in the data collected, rather than in the data collection or modelling methodologies.

APPENDIX E: SCHEMATIC DIAGRAM OF THE 2016 NORTHERN IRELAND FUEL POVERTY MODEL



Northern Ireland income calculation summary

Gross annual income is collected for the Household Reference Person (HRP) and Partner (where present) in each household. In 2016, the gross annual income question now excludes housing related benefits, and therefore should include: all income from employment, benefits (excluding Housing Benefit / Local Housing Allowance), credits, pension income, and income from other sources.

Rates are calculated for each household, based on the capital value of the property (the value of the property in 2005), and a district rate subsidy is applied if applicable. Winter Fuel Payment is calculated based on receipt of benefits and number of qualifying adults in the household, then this is subtracted from the total gross income. In addition, rates rebate (in the form of housing benefit for rates, and rates relief) is deducted from the total gross income, and then Income Tax and National Insurance are deducted where applicable.

Where a household on certain benefits has a net income below what they should be entitled to under income support, their income is raised to that level. The income of additional adults is not collected and so an income amount for each additional adult in a household is imputed by a 'hot decking' technique using additional adult income data from the 2014 English Housing Survey special licence data, adjusted to reflect Northern Ireland wages and 2016 data. The variables used for the additional adult income imputations are sex, banded age and employment status. This additional adult income along with Winter Fuel Payment (where applicable) is added to the net income of the Primary Benefit Unit (HRP and Partner) to create a 'basic' income variable. Housing Benefit and Rates Rebate are added to the basic income, and then the net rates payable are deducted to create a 'full' income variable.

In 2016, information is collected for the first time on mortgage amounts for those buying a dwelling with a mortgage. In addition, rents are calculated and adjusted for households who state that the rent includes the rates. A total 'housing cost' variable is then produced from the mortgage and rent costs, and an 'After Housing Cost' income (AHC income) variable is produced by deducting the housing costs from the full income. Finally, an 'Equivalised After Housing Cost' income (AHCIncomeEQ) variable is produced by dividing the AHC income by the OECD equivalisation factor for the household (which is based on the number and age of household occupants). This equivalised after housing cost income variable is then used in the calculation of fuel poverty under the Low Income High Costs (LIHC) indicator.

Calculation of fuel prices

The fuel price element of the fuel poverty model generates a case by case output to be fed into the energy consumption model.

For the NIHCS Fuel Poverty modelling, average prices are assigned for each fuel type. For gas and electricity prices, different averages are used dependent on the method of payment (i.e. pre-payment, standard credit or direct debit).

Electricity fuel prices are provided by the UK Department of Business, Energy and Industrial Strategy (BEIS) and are average prices for 2016 shown in Quarterly Energy Prices (QEP) table 2.2.4. Prices for all other fuels, including mains gas and oil, are obtained from the Sutherland Tables publication. Gas prices are a 2016 average, with all non-metered fuels being a retrospective three-year average.

Household Requirements Model - extent of heating, under occupancy, bedroom standard & Parker Morris Standard

Some dwellings are considered excessive in size for the number of occupants that live there. In this case the house is assumed to be "under-occupied" that is, only a proportion of the dwelling will need heating. In order for a dwelling to be considered under-occupied it must fulfil the following criteria that depend on both the number of bedrooms in a dwelling and the total floor area of the dwelling:

Bedroom standard

A dwelling is considered to have surplus bedrooms if:

- a) there are one or more extra bedrooms than required for homes without dependent children (children under 16 years): or
- b) there are two or more extra bedrooms than required for homes with dependent children.

The number of bedrooms required depends on the household constitution. The standard states that:

- A bedroom is required for each couple.
- Children of different sexes below the age of 11 years can share a room.
- Children/adolescents below the age of 16 years of the same sex can share a room.

Floor area

There is surplus floor area in a property if the floor area of the property is over 200% of that considered to be the "standard" living area required for the number of occupants, as defined by the Parker Morris Standard. Table 1 defines this standard.

Table 1: Parker Morris Standard

Occupants	Standard living area required (m^2)
1	33
2	48.5
3	61
4	79
5	89.5
6	97
7	114.5
8	128
9	140

For the purposes of fuel poverty, a dwelling is considered to be under-occupied if there are both surplus bedrooms and surplus floor area.

If a dwelling is under-occupied then it is assumed that approximately half of the dwelling (based on the total floor-area of the dwelling and the layout of the floors) is heated, that is:

Aheated ≈ 0.5A

where A is the total floor area of the dwelling.

Heating regime

The following heating regimes are defined and used to calculate the energy consumption of a household. Different heating period lengths and timings are applied to households based on their working status.

For households indicating they are working, a standard heating regime is applied, assuming that the occupants are not occupying the dwelling during normal working hours. In this case it is assumed that the occupant heats the dwelling for two hours first thing in the morning and then for seven hours from late afternoon. During the weekend it is assumed that the property is heated throughout the day for 16 hours.

For those households where there are non working members, all day heating is assumed throughout the week (defined below as a full heating regime).

In dwellings that are under occupied, it is assumed that some of the rooms in the dwelling are not heated and a "half-house" partial heating regime is applied. For example, where a single person occupies a four bedroom house, it would be assumed that some of the bedrooms are not heated.

A summary of these regimes is shown below.

Having defined the heating regime used by each household, the energy use for space heating can be approximated using the BREDEM model which calculates the energy required to bring each dwelling to the designated temperatures and for a set period of time each day and across the year.

This calculation needs to take on board details about the heating systems, applied insulation and dwelling construction and materials.

Energy consumption/fuel costs

The amount of fuel consumed to provide the energy needs of each household is required as one of the components of the fuel poverty ratio, to assess whether a household is fuel poor. Under the fuel poverty definition, the energy required to heat and power a home includes energy for:

1. Space heating - ES (GJ).
2. Water heating - EW (GJ).
3. Lights and appliances - EL&A (GJ).
4. Cooking - EC (GJ).

The BREDEM 2012 model[1] is used to predict the energy use of a household where:

Total household fuel consumption = ES + EW + EL&A + EC.

Heating Regime Details

	Heating Pattern (hours of heating)			Demand Temperature Living Zone	
	Weekday	Weekend	Heating Extent	Primary	Secondary
Standard	9	16	Whole house	21°C	18°C
Full	16	16	Whole house	21°C	18°C
Partial Standard	9	16	Half house	21°C	18°C
Partial Full	16	16	Half house	21°C	18°C

1. https://www.bre.co.uk

Total household energy-use includes space and water heating (to meet defined standards) and energy for lights, appliances and cooking. The amount of energy required to heat a dwelling will depend on the building specification such as insulation levels, heating systems and the geographical location of the dwelling. A household's demand for energy will depend on the number of people within the household and the habits of these individuals. Information from the NIHCS is used to provide details about both dwellings and households. The calculation method for each component of energy consumption is consistent with standard energy models such as the Standard Assessment Procedure (SAP) for calculating energy use in dwellings and the more general model from which SAP is derived (BREDEM).

Finally, fuel prices from the fuel price model are combined with the fuel consumption model to provide modelled fuel costs for each household.

Calculating the 10% fuel poverty indicator (fuel poverty ratio) for each household

In order to produce the headline 10% indicator, the final task in the estimation of fuel poverty is to combine the fuel costs with the incomes to calculate the Fuel Poverty Ratio (FPR).

For each case on the NIHCS, a 'fuel poverty ratio' is calculated. This calculation has three components - energy prices (unit and standing charges), fuel consumption and income.

FPR = (Fuel Price * Fuel Consumption)/Income (For each household)

If the fuel poverty ratio is greater than 0.1 (i.e. a household spends more than 10% of their income on fuel) then the household is considered to be fuel poor.

Calculating the Low Income High Costs fuel poverty measure

Fuel poverty has also been measured using the Low Income High Costs (LIHC) indicator, a household is considered to be fuel poor if:

- They have required fuel costs that are above average (the national median level);
- Were they to spend that amount, they would be left with a residual income below the official poverty line.

The LIHC definition is a relative indicator as it compares households to the national median fuel costs and income - thereby reflecting contemporary trends.

The Low Income High Costs indicator is a *dual* indicator consisting of:

i) The **number** of households that have both low incomes *and* high fuel costs and

ii) The **depth** of fuel poverty among these fuel poor households. This is measured through a **fuel poverty gap**, which represents the difference between the required fuel costs for each household and the nearest fuel poverty threshold.

Households with required fuel costs that are above average (the national median level) are calculated by:

1. Taking the required fuel costs for the household
2. Applying the corresponding equivalisation factor for each household. These are shown in Table 2 below.

Table 2: Equivalisation Factors for Fuel Costs under the Low Income High Costs indicator

Number of people in the household	Equivalisation factor
One	0.82
Two	1.00
Three	1.07
Four	1.21
Five or more	1.32

3. Dividing the required fuel costs by the equivalisation factor to get the equivalised required fuel costs for that particular household. Equivalising effectively increases the costs of single person households, and decreases the costs of multiple person households, with the aim of making them comparable.
4. To calculate the fuel cost threshold, take the weighted median of all of these equivalised required fuel costs.

   Households are below the income threshold if fuel spend leaves the household with a residual income below the official poverty line[2].

This is calculated by:

1. Taking the full income for the household from the fuel poverty dataset.
2. Subtracting housing costs from the income to arrive at After Housing Costs (AHC) income. Housing costs consist of:

   a. Weekly mortgage payments

   b. Weekly rent payments

2. Relative low income (or poverty) is defined as 60% of the median equivalised disposable income.

3. Divide the After Housing Costs income by the relevant After Housing Costs income equivalisation factor. Equivalising effectively increases the incomes of single people, and reduces the incomes of larger households, again with the intention of making them comparable. The equivalisation factors for each person in the household are shown in Table 3 below.

Table 3: After housing costs income equivalisation factors for the LIHC indicator

Number of people in the household	After Housing Costs (AHC) income equivalisation factor
First adult in the household	0.58
Subsequent adults (includes partners and children aged 14 or over)	0.42
Children under 14	0.20

For fuel poor households, the fuel poverty gap is then calculated, using the expression below:

Fuel poverty gap = $(y–y_m – \max\{[x–(x_m+y_m)],0\}$

Where:

x = equivalised household income

x_m = 60% of equivalised AHC median income

y = equivalised household fuel costs

y_m = median equivalised fuel costs (fuel cost threshold)

APPENDIX F: THE DECENT HOMES STANDARD (NORTHERN IRELAND) - A SUMMARY

A decent home is one that is wind and weather tight, warm and has modern facilities. A decent home meets the following four criteria:

Criterion a: It meets the current statutory minimum standard for housing.

This current minimum standard for Northern Ireland is set out in schedule 5 of the Housing (Northern Ireland) Order 1992 (see Chapter 5). In England, the Unfitness Standard has been replaced by the Housing Health and Safety Rating as the first criterion in the Decent Homes Standard. In Northern Ireland the Department for Communities is currently considering whether this should happen in Northern Ireland as well.

Criterion b: It is in a reasonable state of repair.

A dwelling satisfies this criterion unless:

- one or more key building components are old and, because of their condition need replacing or major repair; or
- two or more of the other building components are old and, because of their condition, need replacing or major repair.

Key building components are those which, if in poor condition, could have an immediate impact on the integrity of the building and cause further deterioration in other components. They are the external components plus internal components that have potential safety implications and include:

- external walls
- roof structure and covering
- windows/doors
- chimneys
- central heating boilers
- electrics

If any of these components are old and need replacing, or require immediate major repair, then the dwelling is not in a reasonable state of repair and remedial action is required.

Other building components are those that have a less immediate impact on the integrity of the dwelling. Their combined effect is therefore considered, with a dwelling not in a reasonable state of repair if 2 or more are old and need replacing or require immediate major repair.

The terms 'old' and 'in poor condition' are also quite tightly defined as below:

- **'old'** - the component is older than its expected or standard lifetime. The component lifetimes are listed in Table 1.
- **'in poor condition'** - the component needs need major work, either full replacement or major repair. The definitions used for different components are as listed in Table 2.

Table 1 shows the lifetimes of building components used to assess whether the components are 'old' in the terms of the disrepair criterion. These lifetimes are used to construct the national estimates of the number of dwellings that are decent and those that fail.

Table 1: Component lifetimes used in the disrepair criterion

Building components (key components marked*)	Houses and bungalows	All flats in blocks of below 6 storeys	All flats in blocks of 6 or more storeys
Wall structure*	80	80	80
Lintels*	60	60	60
Brickwork (spalling)*	30	30	30
Wall Finish*	60	60	30
Roof structure*	50	30	30
Roof finish*	50	30	30
Chimney*	50	50	N/A
Windows*	40	30	30
External doors*	40	30	30
Kitchen	30	30	30
Bathrooms	40	40	40
Heating - central heating gas boiler*	15	15	15
Heating - central heating distribution system	40	40	40
Heating - other	30	30	30
Electrical system*	modern	modern	modern

As age of electrical system is not collected in the NIHCS it is considered to be 'old' if it is not modern, i.e. it has lead or rubber covered wiring, there are separate fuse boxes for each circuit or earthing wires are unsheathed/green covered.

Table 2 sets out the definitions used within the disrepair criterion to identify whether building components are 'in poor condition'.

Table 2: definition of 'poor condition' used in disrepair criterion

	Definition of 'in poor condition' used in NIHCS
Wall structure	Replace 10% or more, or repair 30% or more
Wall finish	Replace/repoint/renew 50% or more
Chimneys	One chimney needing partial rebuilding or more
Roof structure	Replace 10% or more or strengthen 30% or more
Roof covering	Replace or isolated repairs to 50% or more
Windows	Replace at least one window or repair/replace sash or member to at least two (excluding easing sashes, re-glazing, painting)
External doors	Replace at least one
Kitchen	Major repair or replace three or more items out of six (cold water drinking supply, hot water, sink, cooking provision, cupboards, worktop)
Bathroom	Major repair or replace two or more items (bath, wash hand basin, WC)
Electrical system	Replace or major repair to system
Central heating boiler	Replace or major repair
Central heating distribution	Replace or major repair
Storage heaters	Replace or major repair

Criterion c: It has reasonably modern facilities and services.

Dwellings that fail to meet this criterion are those that lack three or more of the following:

- A reasonably modern kitchen (20 years old or less);
- A kitchen with adequate space and layout;
- A reasonably modern bathroom (30 years old or less);
- An appropriately located bathroom and WC;
- Adequate insulation against external noise (where external noise is a problem);
- Adequate size and layout of common areas for blocks of flats.

Criterion d: It provides a reasonable degree of thermal comfort.

This criterion requires dwellings to have both effective insulation and efficient heating.

Efficient heating is defined as any gas or oil programmable central heating or electric storage heaters or programmable LPG/solid fuel central heating or similarly efficient heating systems that are developed in the future. Heating sources that provide less energy efficient options fail the decent home standard.

Because of the differences in efficiency between gas/oil heating systems and the other heating systems listed, the level of insulation that is appropriate also differs:

For dwellings with gas/oil programmable heating, cavity wall insulation (if there are cavity walls that can be insulated effectively) or at least 50mm loft insulation (if there is loft space) is an effective package of insulation.

For dwellings heated by electric storage heaters/ LPG/programmable solid fuel central heating a higher specification of insulation is required: at least 200mm of loft insulation (if there is a loft) and cavity wall insulation (if there are cavity walls that can be insulated effectively).

For the purposes of analysis all dwellings built since 1990 are assumed to meet the thermal comfort criterion.

APPENDIX G: MODELLING HOUSING HEALTH AND SAFETY RATING SYSTEM CATEGORY 1 HAZARDS

This section presents an overview of the Housing Health and Safety Rating System (HHSRS) and how the various hazards are measured and modelled using data from the Northern Ireland House Condition Survey (NIHCS). It is divided into 3 sections:

- What is the HHSRS?
- How does NIHCS measure and model Category 1 hazards?
- Data quality and reliability

What is the HHSRS?

The HHSRS is a means of identifying defects in dwellings and of evaluating the potential effect of any defects on the health and safety of occupants, visitors, neighbours and passers-by. The System provides a means of rating the seriousness of any hazard, so that it is possible to differentiate between minor hazards and those where there is an imminent threat of major harm or even death. The emphasis is placed on the potential effect of any defects on the health and safety of occupants and visitors; particularly vulnerable people. Altogether 29 hazards are included (Table 1).

The HHSRS scoring procedure uses a formula to generate a numerical Hazard Score for each of the hazards identified at the property - the higher the score, the greater the severity of that hazard. Potential hazards are assessed in relation to the most vulnerable class of person who might typically occupy or visit the dwelling. For example, for falls on stairs the vulnerable groups are children and the elderly (65+ years), for falls on the level it is the elderly, and for falls between levels it is children under 4 years old.

The hazard score formula requires the surveyor to make two judgements.

- The likelihood of the occurrence which could result in harm to a vulnerable person over the following twelve months. The likelihood is to be given as a ratio -e.g., 1 in 100, 1 in 500, etc.
- The likely health outcomes or harms which would result from the occurrence. From any occurrence there may be a most likely outcome, and other possible ones which may be more or less severe. For example, a fall from a second floor window could result in a 60% chance of a severe concussion, but there may also be a 30% chance of a more serious injury and a 10% chance of something less serious. The 4 classes of harms and associated weightings are listed in Table 2.

Table 1: The 29 hazards covered by HHSRS

Physiological Requirements	**Protection Against Infection**
Damp and mould growth etc	Domestic hygiene, pests and refuse
Excessive cold	Food safety
Excessive heat	Personal hygiene, sanitation and drainage
	Water supply
Asbestos etc	
Biocides	**Protection Against Accidents**
CO and fuel combustion productions	Falls associated with baths etc
Lead	Falling on level surfaces
Radiation	Falling on stairs etc
Uncombusted fuel gas	Falling between levels
Volatile organic compounds	Electrical hazards
Psychological Requirements	**Fire**
Crowding and Space	
Entry by intruders	Flames, hot surfaces etc
Lighting	Collision and entrapment
	Explosions
Noise	Position and operability of amenities etc
	Structural collapse and falling elements

Table 2: Classes of harms and weightings used in the HHSRS

Class	Examples	Weightings
Class I	Death, permanent paralysis below the neck, malignant lung tumour, regular severe pneumonia, permanent loss of consciousness, and 80% burn injuries.	10,000
Class II	Chronic confusion, mild strokes, regular severe fever, loss of a hand or foot, serious fractures, very serious burns and loss of consciousness for days.	1,000
Class III	Chronic severe stress, mild heart attack, regular and persistent dermatitis, malignant but treatable skin cancer, loss of a finger, fractured skull, severe concussion, serious puncture wounds to head or body, severe burns to hands, serious strain or sprain injuries and regular and severe migraine.	300
Class IV	Occasional severe discomfort, chronic or regular skin irritation, benign tumours, occasional mild pneumonia, a broken finger, sprained hip, slight concussion, moderate cuts to face or body, severe bruising to body, 10% burns and regular serious coughs or colds.	10

From the judgements made by the surveyor, a hazard score can be generated for each hazard as illustrated below:

Class of Harm Weighting			Likelihood 1 in		Spread of Harm %		
I	10,000	÷	100	X	0	=	0
II	1,000	÷	100	X	10	=	100
III	300	÷	100	X	30	=	90
IV	10	÷	100	X	60	=	6
					Hazard Score	=	196

To provide a simple means for handling and comparing the potentially wide range of Scores and avoid placing too much emphasis on the exact numbers, a series of ten Hazard Score Bands have been devised as shown in Table 3:

Table 3: Hazard scores by band

Band	Equivalent Hazard Scores	Overall Severity
A	5,000 or more	Category 1
B	2,000 - 4,999	
C	1,000 - 1,999	
D	500 - 999	Category 2
E	200 - 499	
F	100 - 199	
G	50 - 99	
H	20 - 49	
I	10 - 19	
J	9 or less	

The reporting focuses on Category 1 hazards (those in Bands A, B or C). There are currently a large number of worked examples available for training and assessment purposes. MHCLG have also published a number of guidance documents detailing the matters to be taken into consideration in assessing each hazard and the average likelihoods and spread of outcomes for each hazard[1].

How does NIHCS measure and model Category 1 hazards?

Details of how the HHSRS assessments were undertaken for previous NIHCS can be found in the 2011 Northern Ireland House Condition Survey Report, Appendix G.

Of the 29 HHSRS hazards only three (which occur very rarely in the stock) are not assessed by the NIHCS. These are asbestos (and manufactured mineral fibres), biocides and volatile organic compounds.

In line with the EHS, the NIHCS uses three different methods to assess whether any of the 26 Category 1 hazards exist in dwellings:

- Fully measured hazards as part of the physical survey for the most common types of hazards. The surveyor first assesses whether the risks presented for each of these hazards are significantly worse than average for the age and type of dwelling concerned. If this is the case, they then score both a likelihood of an incident occurring and the expected range of outcomes. An actual HHSRS score is calculated by the NIHCS survey app and fed back to the surveyor as part of their validation in the field. In 2016 surveyors fully measured six hazards.

1. https://www.gov.uk/government/publications/hhsrs-operating-guidance-housing-act-2004-guidance-about-inspections-and-assessment-of-hazards-given-under-section-9

- Hazards flagged only when an 'extreme' risk is found as part of the physical survey. This approach is used for some of the rarer hazards where surveyors are instructed that 'extreme risk' equates to a Category 1 hazard. In 2016 surveyors assessed 16 hazards by this approach.
- Four hazards modelled post fieldwork from other data collected on the physical survey form. This approach is used where the surveyor is less able to directly assess the risk from these hazards.

The six HHSRS hazards measured directly were:

- Falls on stairs etc.
- Falls on level surfaces
- Falls between levels
- Fire
- Flames, hot surfaces, etc
- Damp and mould growth

The 16 hazards, where surveyors were asked to assess whether they represented an 'extreme risk' which would be the equivalent of a Category 1 hazard were:

- Falls associated with baths etc.
- Entry by intruders
- Noise
- Collision and entrapment
- Excess heat
- Lighting
- Water supply for domestic purposes
- Food safety
- Personal hygiene, sanitation and drainage
- Position and operability of amenities
- Uncombusted fuel gas
- Explosions
- Electrical safety
- Carbon monoxide and fuel combustion products
- Domestic hygiene, pests and refuse
- Structural collapse and falling elements

The HHSRS guidance specifies, for each hazard, the group of occupants who are most likely to be at risk from the particular hazard; to have an increased likelihood of an incident happening and/or suffer more serious harms as a result (Table 4).

Table 4: Specified vulnerable group for each hazard

Hazard	Most vulnerable group
Dampness and mould growth	Age under 15
Excess cold	Age 65 or over
Carbon monoxide	Age 65 or over
Lead	Age under 3
Radon	Age 60-64
Crowding and space	None
Noise	None
Domestic hygiene etc.	None
Personal hygiene etc.	Age under 5
Falls on the level	Age 60 or over
Falls – stairs or steps	Age 60 or over
Falls between levels	Age under 5
Electrical hazards	Age under 5
Fire	Age 60 or over
Hot surfaces and materials	Age under 5
Collision and entrapment	Age under 5

NIHCS surveyors were clearly informed about the most vulnerable group for this hazard and they were instructed to assess the property ignoring the current occupancy and assume that the home was occupied by a member of that vulnerable group.

An additional four hazards were modelled using other data from the survey. The assumptions are broadly the same as those used for modelling these hazards in the English Housing Survey (EHS). As with the measured hazards, current occupancy was ignored and the assumptions are summarised in Table 5.

Table 5: Methods used to model HHSRS hazards using NIHCS data

Risk	Definition of category 1 hazard used
Excess Cold	The methodology for modelling excess cold was changed in 2016 following changes to the SAP methodology (from SAP09 to SAP2012)[2]. This latest version of SAP is different to that used by the 2016 EHS; the latter used the version of SAP2012 which does not incorporate the updated U values. As a specific value of SAP09 does not equate to a specific value of SAP2012 it was no longer appropriate to use the SAP09 excess cold threshold value to model excess cold. A two stage approach was implemented. Firstly a new 'equivalent' threshold value of SAP2012 (old U value assumptions) was derived that ensured that the number and % of dwellings failing on excess cold would be the same as SAP09. Then a new 'equivalent' threshold value of SAP2012 (new U value assumptions) was derived that ensured that the number and % of dwellings failing on excess cold would be the same as the previous SAP2012 methodology. This new equivalent threshold value under SAP2012 is 35.02 and all dwellings with a SAP2012 rating less than this are categorised as posing a Category 1 excess cold hazard.
Radon	Dwelling located in post code sectors critical based on radon exposure map AND was a house built before 1980.
Lead	Dwelling built before 1945 AND with lead piping present either before or after the mains stop cock.
Overcrowding	The occupants per habitable room ratio was calculated. If this exceeded 2 the dwelling had a Category 1 hazard regardless of size. If it was equal to 2 and the number of habitable rooms was 2 or more the dwelling also had Category 1 hazard.

Table 6: Summary of how NIHCS collects and models information about HHSRS hazards 2016

Hazard	2016
Dampness and mould growth	Fully measured
Excess cold	Modelled
Excess heat	Flagged
Asbestos (and MMF)	NOT COVERED
Biocides	NOT COVERED
Carbon monoxide	Flagged
Lead	Modelled
Radon	Modelled
Uncombusted fuel gas	Flagged
Volatile organic compounds	NOT COVERED
Crowding and space	Modelled
Entry by intruders	Flagged
Lighting	Flagged
Noise	Flagged
Domestic hygiene etc.	Flagged
Food safety	Flagged
Personal hygiene etc.	Flagged
Water supply	Flagged
Falls - baths	Flagged
Falls on the level	Fully measured
Falls - stairs or steps	Fully measured
Falls between levels	Fully measured
Electrical hazards	Flagged
Fire	Fully measured
Hot surfaces and materials	Fully measured
Collision and entrapment	Flagged
Explosions	Flagged
Ergonomics	Flagged
Structural collapse	Flagged

Data quality and reliability

Surveyors working on the HCS have received training and support to help ensure their HHSRS assessments are consistent and robust. They were given refresher training sessions in 2016 explaining the principles, how the form should be completed as well as conducting practical exercises with feedback sessions.

While these measures ensure a good level of consistency in judgements, some surveyor variability is to be expected. The HCS approach to the HHSRS provides surveyors with a systematic approach with which to make these judgements.

2. Following the release of version 9.93 of RdSAP 2012, U-values for solid brick, stone and cavity walls have been updated to more accurately reflect their thermal performance. As a result of these changes, SAP has been recalculated for 2016 using the updated U-values.

APPENDIX H: STANDARD ASSESSMENT PROCEDURE (SAP 2012)

The Standard Assessment Procedure (SAP) is the Government's recommended system for home energy ratings. SAP ratings allow comparisons of energy efficiency to be made, and can show the likely improvements to a dwelling in terms of energy use. The Building Regulations require a SAP assessment to be carried out for all new dwellings and conversions. A SAP rating must also be produced as part of an Energy Performance Certificate (EPC) when an existing dwelling is sold. Rented properties must also have a valid EPC. The SAP rating for an existing dwelling is produced using a framework known as Reduced Data SAP (RdSAP). This framework provides a method for inferring values that cannot be ascertained from a non-intrusive inspection of an existing dwelling (such as wall U-values).

SAP is updated periodically to reflect developments in the understanding of dwelling thermal heat transfers and to incorporate emerging technologies. The current version of SAP is SAP 2012, effective from April 2014. The similarities between the data collection method used for the NIHCS and EPCs mean that it is appropriate to use the RdSAP method in order to produce the SAP rating for NIHCS data. RdSAP was recently updated (to SAP 2012, version 9.93) and this came into use for the calculation of SAP for EPCs in November 2017. This is the version used throughout this report.

The SAP ratings give a measure of the annual unit energy cost of space and water heating and lighting for the dwelling under a heating regime, assuming specific heating patterns and room temperatures. The fuel prices used are averaged over the previous three years across the regions in the UK. The SAP takes into account a range of factors that contribute to energy efficiency, which include:

- thermal insulation of the building fabric;
- the shape and exposed surfaces of the dwelling;
- materials used for construction of the dwelling;
- efficiency and control of the heating system;
- the fuel used for space and water heating, ventilation and lighting;
- ventilation and solar gain characteristics of the dwelling;
- renewable energy technologies.

SAP is not affected by the individual characteristics of the household occupying the dwelling or by the geographical location.

The SAP scale

The SAP 2012 rating is expressed on a logarithmic scale, which normally runs from 1 (very inefficient) to 100, where 100 represents zero energy cost. The rating can be above 100 for dwellings that are net exporters of energy. However, this is currently an unlikely scenario for NIHCS dwellings. In extremely inefficient cases the formula that defines the rating can result in negative values when applied to the NIHCS sample. Negative values are set to 1 following conventions used in practice when issuing SAP ratings.

Calculation of SAP ratings from NIHCS data.

A computerised version of the SAP 2012 methodology is used to calculate the SAP rating for each dwelling included in the NIHCS physical survey. Most of the data required for the calculation of the SAP rating are available from the survey, either directly from the questions asked or as a result of further modelling. Those data items that are not collected have very little impact on the final calculated rating. Where data items are missing these are dealt with using default information based on information from dwellings of the same age, built form, tenure, number of floors and size.

The original SAP procedure was first specified in 1996. Since this time, the procedure has been modified and updated. This has included updating the prices of each of the fuels used in the calculation.

However, it is desirable to attempt to neutralise the effect of changing fuel prices over time. This allows each version of SAP to be comparable to all earlier versions, and enables SAP to be a measure of changing energy consumption over time. Therefore, each new version of the Standard Assessment Procedure (SAP) attempts to remove the effect of changing fuel prices by multiplying the total cost of energy by an energy-cost-deflator (Ecf).

To remove the effect of fuel price changes between a 1996 calculation of SAP and a 2012 calculation, it is necessary to ensure that:

Ecf(96) x Total Cost of energy for SAP 96 prices = Ecf(12) x Total Cost of energy for SAP 2012 prices

Where:

Total Cost of energy for SAP 96 prices = Qp £p(96) + Qs £s(96) + Qw £w(96) + Qe £e(96)

Total Cost of energy for SAP 2012 prices = Qp £p(12) + Qs £s(12) + Qw £w(12) + Qe £e(12)

and

Qp , Qs, Qw , Qe :

is the energy (kWh/yr) associated with primary heating, secondary heating, water heating and electrical energy required for pumps, fans and lighting.

Ecf(96) is the energy-cost-deflator for SAP 1996;

Ecf(12) is the energy-cost-deflator for SAP 2012;

£p(96) is the SAP price of the primary fuel in 1996 (p/kWh);

£p(12) is the SAP price of the primary fuel in 2012 (p/kWh);

£s(96) is the SAP price of the secondary fuel in 1996 (p/kWh);

£s(12) is the SAP price of the secondary fuel in 2012 (p/kWh);

£w(96) is the SAP price of the water-heating fuel in 1996 (p/kWh);

£w(12) is the SAP price of the water-heating fuel in 2012 (p/kWh);

£e(96) is the SAP price of the electricity in 1996 (p/kWh);

£e(12) is the SAP price of the electricity in 2012 (p/kWh).

That is, if we calculate a SAP for one set of data based on the SAP 1996 prices and then recalculate the SAP using the same set of data but this time using SAP 2012 prices, the SAP ratings will remain broadly the same (though this tends to vary depending on the main heating fuel). In this way the Ecf ensures that there will be no change in SAP due to fuel price changes alone.

In the published SAP 2012 procedure, a deflator is published for the whole of the UK. However, when examining Northern Ireland alone, it is not particularly suitable. The published UK deflator is calculated by assuming that the fuel mix is dominated by mains gas (and mains gas prices). However, in Northern Ireland, fuel oil is dominant and mains gas is a relative minority fuel. Therefore, in the calculation of the NIHCS SAP 2012 ratings, a new deflator with a value of 0.30 has been used. The deflator has been calculated by examining the mix of fuels used across all households in Northern Ireland and looking at the average spend on each fuel using 1996 and 2012 SAP prices.

Updates to the SAP model (2001 - 2016)

'Housing in Northern Ireland, Chapter 7: Housing conditions transformed[1] outlines the reasons for modifications to the SAP model for Northern Ireland.

2001 HCS: In 2001 a modified SAP model was developed for Northern Ireland to take into account the greater prevalence of solid fuel and electrical heating compared to England. This BRE model was comparable to the English model in all other aspects and provided the basis for the analysis of the data from the 2001 House Condition Survey.

2006 & 2009 HCS: In 2005 the SAP model was modified to take into account, in particular, thermal bridging. SAP05 was used to analyse date from the 2006 and 2009 House Condition Surveys, with 2001 figures recalculated to provide a consistent time series.

2011 HCS: The SAP model was again updated to SAP09 and this new methodology (SAP09) was used to derive the energy efficiency rating for the 2011 House Condition Survey. Revisions included a move from annual calculations of space and water heating and boiler efficiency, to monthly calculations. This provided a more accurate assessment of energy use and boiler efficiency in terms of seasonal changes throughout the year. Other modifications to the methodology included weather data updates, internal heat gains and the cost of energy in the light of rising fuel prices. For comparison purposes, data from 2009 was recalculated using SAP09.

2016 HCS: The Energy Efficiency Rating for the 2016 House Condition Survey data has been derived from SAP 2012 (the first version of which was published in 2013). At that time the main differences between SAP09 and SAP 2012 were that in SAP 2012:

- Climatic data had been extended to allow calculations using regional weather

1. Shanks, P and Mullins, D. 2016 Housing in Northern Ireland. Coventry: CIH

- An allowance for height above sea level was incorporated into external temperature data
- CO2 emission factors had been extensively revised
- Fuel price and primary energy factors had been revised
- The options for heat losses from primary pipework had been extended

There was a further revision to the SAP 2012 which was published in November 2017 (version 9.93). This revision updated the U-values for solid brick, stone and cavity walls to more accurately reflect their thermal performance.

In addition to the revision of wall U-values, there was an improvement to the way concrete wall types were modelled. Previously, concrete walls were modelled using the same assumptions as for solid walls, due to the similar thermal performance of the two wall types under the original SAP 2012 assumptions. However, following the updates to solid wall U-values, the assumptions for the two wall types diverged and it became necessary to model concrete and solid wall types separately.

The changes implemented between the first and second versions of SAP 2012 had a minor effect on final SAP ratings. Further information about both versions of SAP 2012 is available on the BRE website: https://www.bre.co.uk/sap2012

Energy efficiency rating (EER) bands

The 1-100 SAP energy efficiency rating is also presented in an A-G banding system for an Energy Performance Certificate, where Band A rating represents low energy costs (i.e. the most efficient band) and Band G rating represents high energy costs (i.e. the least efficient band).