EN6570/3

Appendix B: Recent Movers Energy Survey

Final

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About This Report

Title

Appendix B: Recent Movers Energy Survey

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Abstract

A postal survey of 724 homeowners found that recent movers resist significant investment in retrofitting but attempt to select resource efficient houses. They spend a relatively high amount on renovation but are not aware of low cost options to increase energy efficiency and comfort. Their retrofits tend to include complex appliances and systems rather than address the basics such as draught control and efficient heating.

Reference

Saville-Smith, K. June 2008. Appendix B: Recent Movers Energy Survey.Report EN6570/3 for Beacon Pathway Limited.

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1 Introduction

1.1 This working paper provides a preliminary analysis of the data generated by a postal survey of 724 home owners that moved into their current dwellings for the first time between 1 April 2006 and 31 March 2007. This survey has been undertaken for the Beacon Pathway as one component of its energy research programme. That programme seeks to transform the energy efficiency of New Zealand's residential built environment. This working paper is designed to be an input into the team's deliberations and is intended to provide the basis for future public reporting.

1.2 The paper is structured as follows:

- Section 2 positions the Recent Mover Survey in the context of Beacon's Energy Research Programme.
- Section 3 sets out the purpose of the Recent Mover Survey.
- Section 4 sets out the survey methods including the survey instrument, the sampling and the analysis.
- Section 5 presents the data related to the socio-demographic characteristics of the participants in the survey and the dwelling characteristics of participant dwellings.
- Section 6 considers the data related to the energy efficiency of dwellings, and identifies the extent of statistically significant associations between dwelling or household characteristics and energy efficiency characteristics.
- Section 7 presents data relating to participant renovation and retrofit activities and intentions.
- Section 8 presents data relating to participant attitudes to retrofit.
- Section 9 provides a preliminary comment on the implications of these findings for Beacon.

1.3 The data presented in this working paper should not be released beyond the research team and the Research Guidance Committee.

2 Beacon's Energy Research

2.1 Beacon's current research on energy is directed to a market transformation that will ensure that both suppliers and consumers act to improve the energy efficiency of New Zealand's housing stock. The Energy Retrofits - Best Practice research recognises that improving the energy performance of the housing stock is primarily a matter of changing the performance of the existing stock through retrofitting. The research overall involves:

- establishing the relationship between retrofit and building typology
- identifying how to stimulate take-up among key consumers in the housing market, and
- identifying a set of evidence-based, robust retrofit promotional approaches, packages and tools.

2.2 The key research questions for Workstrand 2 (the context of this Recent Movers Survey) are:

- What user/consumer segments are best targeted to achieve maximum take-up of energy efficiency retrofits of New Zealand homes?
- What are the motivations of these user segments and how should they be targeted?
- Are there common features of building typology of the priority user segments?
- What benefits do other end-users in the supply chain gain through retrofit?

3 Purpose of the Recent Mover Survey

3.1 The Recent Mover Survey is one of three surveys to be undertaken which focus on energy and retrofit take-up in key consumer segments in the housing market. The focus of the surveys is to establish the perceptions, awareness and motivations of home owners in relation to the energy-related performance of their homes.

3.2 The Recent Mover Survey is important because it targeted home buyers. This group is unique in two ways. Firstly, home buyers have immediate selection choices. The factors that inform those choices regarding the energy efficiency and their assessment of the performance of their new home give a very real insight into the:

- value home owners place on energy efficiency, warmth and healthy living conditions
- characteristics of homes that home buyers use to assess the likely performance of a dwelling
- probability of accurate assessments by buyers of the performance of a new dwelling.

3.3 Secondly, home buyers are often in situations in which they chose a home which requires renovation and they finance their purchase to allow for renovation. That tendency allows us to better understand the extent to which energy and associated dwelling performance and retrofitting are elements within any renovation planning and financing.

4 Method

4.1 Data was collected from recent movers through a national postal survey using a structured questionnaire of predominantly close-ended questions. The questionnaire was developed by the Centre for Research, Evaluation and Social Assessment (CRESA) and includes a number of questions from previous research projects in the energy and retrofit areas. A copy of the questionnaire is presented in Annex A.[1]

4.2 Participants for the survey were selected randomly from a data extract of recent movers generated from the New Zealand Post Household Postal Address Directory. For the purpose of this survey a 'recent mover' was defined as someone who had changed address between 1 April 2006 and 31 March 2007. The data extract was also limited to those households who identified themselves as owner occupiers. The data extract included some 33,700 households, divided into 11 broad regions using post code data.[2]

4.3 The final sample of 3,000 households was a stratified random sample where the number of households included in the sample from each region was intended to be broadly proportional to the total number of recent mover households in that region for the survey period. Surveying took place over a four week period beginning late September 2007. In all 724 completed surveys were received before the due date of 19 October 2007. Table 1 sets out the regional distribution of the respondent households.

[1] ***Other than some minor wording and the content of the instrument used for the Recent Mover Survey is the same as that used for the High Energy User Survey.***

[2] ***The 11 broad regions were: Northland, Auckland, Bay of Plenty, Waikato, Gisborne, Taranaki, Hawkes Bay, Wellington/Manawatu, Nelson/Marlborough, Canterbury/West Coast, Otago/Southland.***

Table 1: Regional Distribution of Respondent Recent Mover Householders*

Region	Respondents	
	n	%
Northland	23	3.2
Auckland	157	21.7
Bay of Plenty	48	6.6
Waikato	74	10.2
Gisborne	4	0.6
Hawkes Bay	23	3.2
Taranaki/Wanganui	31	4.3
Wellington/Manawatu	133	18.4
Nelson/Marlborough	34	4.7
Canterbury/West Coast	130	18.0
Otago/Southland	65	9.0
Total	*722*	*99.9*

* 2 missing cases

4.4 The data has been entered and analysed in the Statistical Package for the Social Sciences (SPSS). For the purpose of this working paper, data has been subject to univariate and bivariate analysis. Statistical testing – usually chi-square tests – was also undertaken to establish whether there was systematic and statistically significant relationships between selected key variables.

5 Survey Participants: Socio-demography & Dwelling Characteristics

5.1 In this section we present socio-demographic and dwelling characteristics of the participants in the survey compared, where possible, to the national profile of households. We also comment on the representativeness of the sample and the generalisability of the findings.

Socio-demographic Characteristics of Recent Movers

5.2 The survey collected socio-demographic data related to:

- householder age
- household income
- household size
- dependent household members.

5.3 The largest single category of recent mover householders were those aged 31 years to 40 years (Table 2). That data cannot currently be compared to the national age profile of householder because we have disaggregated the age categories below the standard reporting of census data. A customised table of disaggregated age data from the 2006 census will need to be requested from Statistics New Zealand to make a census comparison. However, it should be noted that this set of households has a younger age profile than the households participating in the High Energy User Survey. This is consistent with the pattern of younger people entering home buying due to family formation.

Table 2: Age Profile of Recent Mover Householders*

Ages	Respondents	
	n	%
24 years and under	6	0.8
25-30 years	48	6.7
31-40 years	189	26.3
41-50 years	178	24.7
51-60 years	136	18.9
61-65 years	50	6.9
66 years or over	113	15.7
Total	*720*	*100*

* 4 missing cases

5.4 Among the Recent Mover Survey participants there is a pronounced under-representation of low income groups and over-representation of high income groups. Twenty-two percent of the survey respondents reported household incomes in excess of $100,000 compared to 16.2 percent of the households reported in the 2006 census (Table 3). This is consistent with the owner-occupier status of recent movers and their ability to purchase dwellings when the housing market is still overheated and interest rates are rising.

Table 3: Annual Household Income Profile of Recent Mover Respondents Compared to the 2006 Census

Annual Household Income	Respondent Households		2006 Census	
	n	%	n	%
$20,000 or Less	60	8.3	200,790	13.8
$20,001 - $30,000	78	10.8	155,661	10.7
$30,001 - $50,000	126	17.4	238,431	16.4
$50,001 - $70,000	116	16.0	197,868	13.6
$70,001 - $100,000	160	22.1	189,720	13.0
$100,001 or More	159	22.0	235,644	16.2
Not Stated	25	3.5	235,992	16.2
Total	*724*	*100.1.1*	*1,454,106*	*99.9*

5.5 The average household size of respondent households was 2.8 people. This is smaller than the households in the High Energy Users Survey. Table 4 compares the household size of the respondents with the national profile of household size apparent in the 2006 census. The over-representation of 2-person households is consistent with the recent mover status of these households. It is likely that many of the households are first entry households into owner-occupation.

Table 4: Household Size Profile of Recent Movers' Dwellings

Compared to the 2006 Census*

Household size	Dwellings		2006 Census	
	n	%	n	%
1 person	92	12.7	328,313	22.6
2 person	292	40.8	494,044	34.0
3 person	119	16.6	240,291	16.5
4 person	134	18.6	221,667	15.2
5 or more people	82	11.3	169,860	11.7
Total	*719*	*100*	*1,454,175*	*100*

* 5 missing cases

Number of Bedrooms

5.6 Table 5 shows that the majority of dwellings (78.4 percent) in the sample are either 3- or 4- bedroom houses. This is consistent with the national profile.

Table 5: Bedroom Profile of Recent Mover Respondent Dwellings

Compared to the 2006 Census*

Bedrooms	Dwellings		2006 Census	
	n	%	n	%
1 bedroom	10	1.4	81,246	5.8
2 bedrooms	104	14.4	278,145	19.8
3 bedrooms	354	49.0	651,066	46.3
4 bedrooms	212	29.4	303,804	21.6
5+ bedrooms	42	5.7	91,902	6.5
Total	*722*	*99.9*	*1,406,163*	*100*

* 2 missing cases

Dwelling Construction and Type

5.7 Just under half (46.7 percent) of the participants reported that their houses were built on concrete slabs. Sixty-one percent of the dwellings were stand-alone, fully detached, single-storey dwellings. Only 2.5 percent were semi-detached dwellings (Table 6).

Table 6: Dwelling Type of Recent Movers*

Dwelling Type	Dwellings	
	n	%
A detached single-storey house	443	61.7
A detached multi-storey house	190	26.5
A semi-detached single-storey house	18	2.5
A purpose built flat or a flat in a converted building	19	2.6
A semi-detached multi-storey house	16	2.2
Other	19	2.6
An apartment (in a block two or more storeys high)	7	1.0
A terrace house	6	0.8
Total	*718*	*99.9*

* 6 missing cases

Sample Representativeness

5.8 The sample shows some deviation from the socio-demographic and dwelling characteristics of New Zealand's population in the 2006 Census. However, those differences are consistent with a sub-population of owner occupiers who are likely to be moving with the home owner market, including those entering homeownership for the first time.

5.9 As such, the sample appears to be well targeted and the findings generalised to recent mover households. The margin of error for the recent mover dwelling population is 3.7 percentage points at the 95 percent confidence interval.

6 The Energy Efficiency of Recent Movers' Dwellings

6.1 This section presents three different sorts of data related to the energy efficiency of recent movers' dwellings. They are:

- Data related to householder perception of energy use
- Householders energy expenditure data
- Data related to the characteristics of dwellings known to be associated with dwelling efficiency.

Householder Perceptions

6.2 A higher proportion of recent movers self-assess their households as in the 'high' and 'very high' energy use categories than those surveyed in July 2007 by CRESA. Almost a quarter (23.8 percent) report that they do not know whether their dwelling is energy efficient or not (Table 7). Of those that do, 57.8 percent report an energy efficient dwelling and 42.2 percent report that their dwelling is not energy efficient.

Table 7: Recent Movers' Assessment of the Energy Efficiency of Home

Do you live in an energy efficient home?	Respondents	
	n	%
Yes	311	43.0
No	227	31.4
Don't know	186	25.7
Total	*724*	*100.1*

6.3 Of those that report that their energy use is 'high' or 'very high', 60.3 percent cite difficulties heating their house as a contributing factor to their high energy use (Table 8). Respondents were asked whether they considered the set of energy-related issues set out in Table 9 when they bought or built their current dwelling.

6.4 Recent movers showed much higher levels of dwelling performance aspirations and awareness than the respondents to the High Energy User Survey. Among the High Energy Survey participants only 59.9 percent considered comfort and warmth in their house selection process and less than half considered whether the roof space of under floors were insulated. Among the recent movers the vast majority were concerned with warmth and comfort while almost two thirds were concerned with ceiling and under-floor insulation.

Table 8: Recent Movers' Assessment of Likely Reasons for Their Households High Energy Use

(n=156)*

Reasons	Respondents	
	n	%
Our house takes a lot of energy to heat	94	60.3
House has many lights	69	44.2
Large number of appliances	66	42.3
Household members are wasteful with energy	49	31.4
We have old hot water tanks	40	25.6
We have many hot water tanks	6	3.8
Our house takes a lot of energy to cool	4	2.6

* Multiple response

Table 9: Energy Issues Considered When Buying or Building Current House

(n=724)*

Energy issues	Respondents	
	n	%
Your comfort or warmth within the house	604	83.4
Whether it had insulation in the roof space or under the floor	469	64.8
Whether the windows and doors were tight fitting or draught-proofed	321	44.3
What the energy bill might be like	260	35.9
Whether it had double glazing	160	25.4

* Multiple response

Energy Expenditure

6.5 While energy expenditure data has been collected, household expenditure, as a measure of energy expenditure has both problems of validity and problems of reliability. Those issues are noted in the working paper on High Energy Users and are not rehearsed again here.

6.6 The average electricity bill reported by participants in the previous month was $194. The median was $170. This contrasts to the average and median winter month energy bills of the high users which were $282.45 and $250 respectively. Both groups were surveyed around the same time. However, there may be some variation between the months reported by respondents.

Dwelling characteristics

6.7 The High Energy Users working paper presents energy efficiency related data on:

- The integrity of the thermal envelope. In particular:
  - insulation
  - glazing systems
  - draughts and gaps
- How householders heat or cool and the level of comfort they seek through heating or cooling.
- The efficiency and type of water heating householders use.
- Householders use of energy efficient lighting.
- This section presents similar data for recent movers.

Insulation

6.8 The majority (81.6 percent) of recent movers reported that they had insulation in the roof space of their current dwellings. Over half (52.8 percent) reported exterior wall insulation.[3] Around a quarter (24.9 percent) of participants reported under floor insulation (Table 10). In all, only 16.3 percent of participants reported insulation in the roof space, in exterior walls and under floor – i.e. that their house was fully insulated.

[3] ***This is higher than the proportion in CRESA's 2007 survey. Saville-Smith, K. and R. Fraser (2007) Analysis Report on Telephone and Physical Survey Data, Report prepared for East Harbour, CRESA Ltd, Wellington***

Table 10: Reported Insulation Profile of Recent Movers' Dwellings

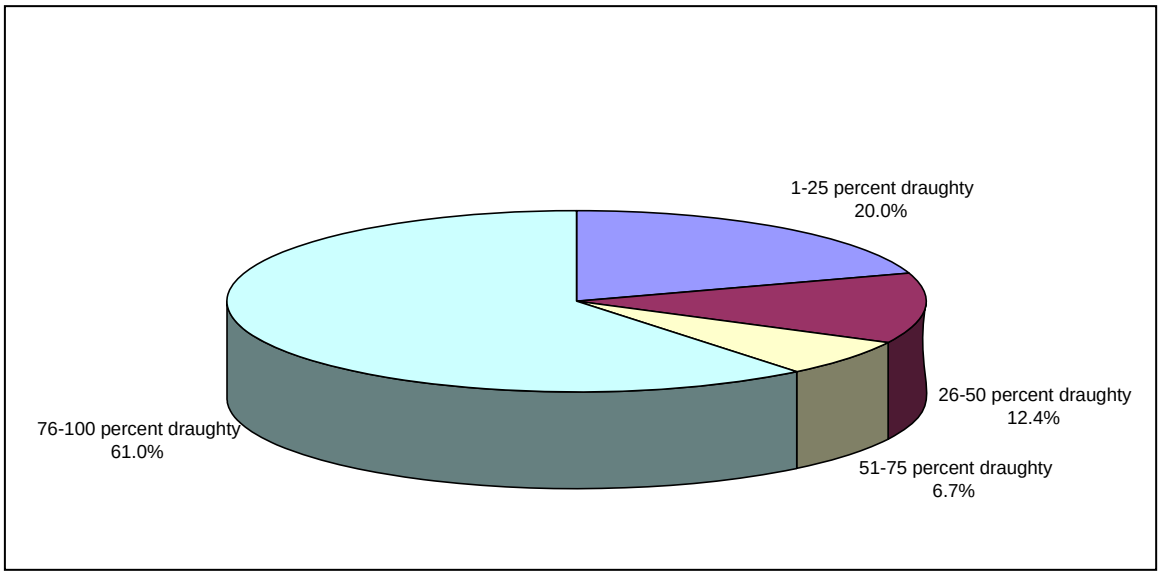
Insulation	Dwellings	
	n	%
No insulation	46	6.4
Roof space only	187	25.8
Floors only	9	1.2
External walls only	25	3.5
Roof space and floor	50	6.9
Roof space and exterior walls	236	32.6
Floor and exterior walls	3	0.4
Fully insulated	118	16.3
Not sure	50	6.9
Total	*724*	*100*

6.9 In general, it may be concluded that recent movers appear to acquire houses with higher levels of insulation than the New Zealand housing stock. Certainly the insulation profile of recent mover's dwelling is higher than the dwellings of high energy users. Among the latter, 13.3 percent reported no insulation.

Double-glazing

6.10 A minority (14.6 percent) of participants reported some level of double glazing. Of the 105 participants reporting double-glazing, almost a third of those respondents reported that double glazing was used in less than 50 percent of their dwelling's windows (Figure 1).

Figure 1: Proportion of Windows Double Glazed for Dwellings (n=105)

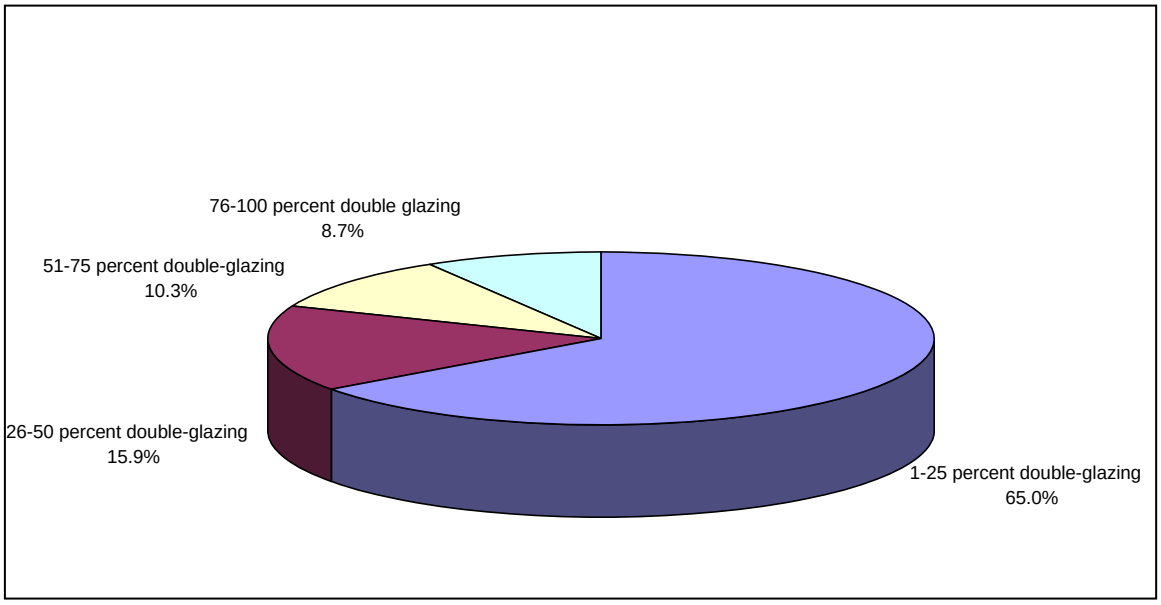


Draughts

6.11 A considerable proportion[4] of participants (53.7 percent) report that they have draughty windows or doors. As Figure 2 shows, over half of those participants reported that up to a quarter of their doors and windows are draughty.

[4] ***Less than the proportion of high energy users with draughty doors and windows. For that group the proportion is 58.4 percent.***

Figure 2: Proportion of Draughty Windows/Doors for Dwelling with Draughts (n=389)



Heating

6.12 Electric heaters such as fan, bar, convection or night store heaters are most likely to be reported by participants as a source of space heating. As Table 11 shows, around two-fifths of the survey participants report that they use fixed electric heaters, with similar proportions using portable electric heaters and just under a third using enclosed wood burners.

Table 11: Space Heating Used in Recent Mover Dwellings

Heater Type	Heater Used (n=724)		Heater Mainly Used for Heating*	
	n	%	n	%
Enclosed woodburner	239	33.0	168	25.9
Heat pump	194	37.4	144	22.2
Electric heater e.g. fan, bar, convection heater	271	37.4	68	10.5
Fixed electric radiator or oil column heater	238	32.9	65	10.0
Fixed and flued gas heater	112	15.5	58	8.9
Portable gas heater e.g. LPG	119	25.1	50	7.7
Open fire	46	6.4	26	5.7
Underfloor heating	61	8.4	15	4.0

Fixed unflued gas heater	49	6.8	17	3.3
Other	58	8.0	35	2.6
No heating used	3	0.4	*3*	*1.3*
Total			*649*	*102.1*

* Multiple response

6.13 Only 44 percent of recent mover households reported that their dwellings were consistently warm enough, despite the high proportion that considered warmth and comfort when they purchased. About the same population (44.6 percent) of households reported being warm enough most of the time. A tiny minority (1.2 percent) reported never achieving comfortable warmth and 10.1 percent of recent mover households reported being warm enough only some of the time. Compared to the high energy users, this group appeared more likely to be satisfied with their comfort and warmth levels. They are also less likely to express extreme dissatisfaction with indoor temperatures.

6.14 A relatively high proportion (36.7 percent) report having made changes in their recently acquired house to address problems of mould, damp or cold.

Cooling

6.15 Overall, over half (51.7 percent) of participants reported that they used summer cooling devices. The most common of those was a fan (36 percent) followed by heat pumps (16 percent), dehumidifiers (9.8 percent) and air conditioning (3.2 percent) (Table 12).

Table 12: Appliances Used for Cooling in Summer in Recent Mover Dwellings (n=724)*

Cooling Appliance	Respondents	
	n	%
Fans	261	36.0
Heat pumps	116	16.0
Dehumidifier	71	9.8
Air conditioning	23	3.2
No cooling appliances used	350	48.3

* Multiple response

6.16 It is notable that while heat pump use for cooling is more prevalent among recent movers, compared to the high energy users they are less likely to use air conditioners, fans and dehumidifiers.

Hot Water

6.17 As Table 13 shows, the predominant method of water heating is electricity. Eighty-five dwellings were reported as using no electricity for hot water heating.

Table 13: Fuels Used for Heating Hot Water in Recent Mover Dwellings (n=724)*

Source of Water Heating	Respondents	
	n	%
Electricity	565	78.0
Gas	148	20.4
Wood wetback	69	9.5
Solar	21	2.9

* Multiple response

6.18 Information was provided about the primary hot water cylinder by 569 respondents. Almost half of those were more than ten years old (Table 14).

Table 14: Age of Hot Water Cylinder in Recent Mover Dwellings

Age of Hot Water Cylinder	Respondents	
	n	%
Less than 1 year	62	10.9
1-4 years	100	17.6
5-10 years	140	24.6
More than 10 years	267	46.9
Total	*569*	*100*

6.19 Most (61.3 percent) of the primary hot water cylinders have no insulation wrapping. A further 8.9 percent of participants reported that they did not know whether their hot water cylinder is wrapped. Table 15 also shows a substantial minority of cylinders are poorly wrapped. Overall, then, around two-thirds of respondents reported hot water cylinders with either no or poor insulation wrapping.

Table 15: Hot Water Cylinder Wrapping in Recent Mover Dwellings

Type of Wrapping	Respondents	
	n	%
Hard foam	37	6.4
New well-fitted jacket	107	18.6
Older poorly-fitted jacket	28	4.9
No wrapping	353	61.3
Unsure	51	8.9
Total	*576*	*100.1*

6.20 Over a third (38.9 percent) of participants reported that the pipes from their primary hot water cylinder are not lagged. This is a substantially smaller proportion than among the high energy users. A small proportion of dwellings have poorly lagged pipes. Over a quarter (27.5 percent) of respondents reported that their pipes are wrapped with new, well-fitting lagging (Table 16).

Table 16: Hot Water Cylinder Pipe Lagging in Recent Mover Dwellings

Type of Lagging	Respondents	
	n	%
Wrapped with new and well-fitted lagging	157	27.5
Wrapped with older poorly-fitted lagging	64	11.2
Not lagged at all	222	38.9
Unsure	128	22.4
Total	*571*	*100*

Energy Efficient Light Bulbs

6.21 A large majority (70.4 percent) of participants reported using energy efficient light bulbs. However, only 14.9 percent of householders reported that energy efficient light bulbs make up 76 percent or more of the light bulbs in their dwelling. Almost two-thirds (61.4 percent) of respondents report that half or less of their light bulbs are energy efficient.

7 Renovation and Retrofit Activities

7.1 Survey participants were asked to report on any renovations they had undertaken in the year prior to surveying. That is, renovations or retrofit undertaken in the first year of their occupation of the new house.

7.2 Of the 724 dwellings, almost a half (46.3 percent) are reported as having been subject to renovation or retrofit work in excess of $2,000. Table 17 sets out the nature of the renovations and retrofitting undertaken. Table 17 also sets out the nature of the renovations and retrofitting that are likely to be undertaken by the 43.6 percent of households intending to expend more than $2,000 on renovations and retrofitting in the coming year.

7.3 The average reported expenditure on renovations/retrofit is $22,477 and the median is $7,000. The profile of expenditure is set out in Table 18.

7.4 Eighty-three percent of recent movers describe their dwellings as currently in good or excellent condition. As for the high energy users, the recent movers reporting that their house is in good condition are over-represented among those intending to make expenditures of $2,000 or more on their dwelling in the coming year.

7.5 There is a strong reliance on dehumidifiers and installing HRV/DVS or similar systems to deal with problems of cold, damp and mould (Table 20).

Table 17: Renovation & Retrofitting Activities and Intentions for Recent Mover Households

Renovation or Retrofit	Previous Year (n=339)*		Intended Next Year (n=324)*	
	n	%	n	%
Interior repainting and/or wallpapering	155	45.7	123	38.0
Replacement of kitchen appliances	117	34.5	53	16.4
Carpeting	104	30.7	81	25.0
Replacement of kitchen cabinetry	90	26.5	67	20.7
Installing a heat pump	81	23.8	50	15.4
Replacement of bathroom whiteware	77	22.7	73	22.5
Replumbing	66	19.5	29	9.0
Installing an extractor fan in the bathroom	64	18.9	36	11.1

Installing a rangehood/extractor fan in the kitchen	64	18.9	31	9.6
Full exterior re-paint	63	18.6	82	25.3
Replacement of bathroom cabinetry	62	18.3	70	21.6
Rewiring full or significant part of the dwelling	54	15.9	28	8.6
Installing ceiling insulation	46	13.6	31	9.6
Installing wall insulation	46	13.6	29	9.0
Installing a new hot water cylinder	44	13.0	16	4.9
Replacement of interior cladding	41	12.1	24	7.4
Installing a ventilation system e.g. HRV, DVS	40	11.8	19	5.9
Installing underfloor insulation	35	10.3	37	11.4
Adding rooms	31	9.1	28	8.6
Installing a wood burner	26	7.7	18	5.6
Roof replacement	25	7.4	16	4.9
Polishing floors	24	7.1	23	7.1
Upgrading hot water systems to instant gas	24	7.1	17	5.2
Venting drier to the outside	23	6.8	24	7.4
Installing a low flow showerhead	21	6.2	13	4.0
Replacement of significant amounts of exterior cladding	20	5.9	12	3.7
Installing double glazing	17	5.0	24	7.4
Installing a rainwater tank	11	3.2	11	3.4
Installing a pellet burner	7	2.1	5	1.5
Installing a solar hot water system	6	1.8	12	3.7
Installing a wet back hot water system	3	0.9	12	3.7
Installing a heat pump hot water system	2	0.6	12	3.7
Installing passive vents in windows	1	0.3	4	1.2

* Multiple response

Table 18: Expenditure on Renovation and Retrofit Activities*

Expenditure	Respondents	
	n	%
$3,000 or less	66	20.1
$3,001 to $5,000	61	18.6
$5,001 to $8,000	49	14.9
$8,001 to $10,000	31	9.5
$10,001 to $15,000	29	8.8
$15,001 to $20,000	17	5.2
More than $20,000	75	22.9
Total	*328*	*100*

* 14 missing cases

Table 19: Householder Assessed House Condition*

House condition	Respondents	
	n	%
Excellent – no immediate repair and maintenance needed	328	45.6
Good – minor maintenance needed	269	37.4
Average – some repair and maintenance needed	109	15.2
Poor – Immediate repairs and maintenance needed	12	1.7
Very poor – Extensive repairs and immediate repair and maintenance needed	1	0.1
Total	*719*	*100*

* 5 missing cases

Table 20: Recent Movers Trying to Reduce Cold, Damp and Mould (n=231)*

Renovations	Respondents	
	n	%
Using a dehumidifier	66	28.6
Putting in an HRV/DVS or similar ventilation system	45	19.5
Installing heat pump	41	17.7
Using other heating appliances or systems	37	16.0
Installing an extractor fan in the bathroom	25	10.8
Installing underfloor insulation	17	7.4
Installing insulation/batts in the ceiling	15	6.5
Draught stopping the doors and windows	15	6.5
Installing efficient wood burner	14	6.1
Installing insulation in the walls	13	5.6
Installing a rangehood/extractor fan in the kitchen	6	2.6
Installing double glazing	5	2.2
Putting heavy thermal curtains with pelmets	5	2.2
Installing HWC insulation	3	1.2
Venting the drier to the outside	2	0.9
Putting in a wetback hot water system	1	0.4

* Multiple response

8 Awareness and Attitudes to Retrofitting

8.1 The survey explored with recent movers:

- Their awareness of retrofit.
- Their perceptions of the benefits associated with various retrofit activities.
- Their desire to retrofit.
- Barriers and prompts to take-up retrofit.

Awareness of Retrofit

8.2 Forty-one percent of recent movers had heard of the term 'retrofit'. This is a higher proportion than found among the high energy users.

8.3 Of the 296 respondents that had heard of the term, there was considerable variation in the proportion of recent movers identifying certain activities as retrofit. As Table 21 shows, installation of ceiling insulation is associated with retrofitting by substantial proportions but many of the lowest cost and most basic options such as use of curtains are less likely to be associated by householders with retrofitting.

Table 21: Activities Identified by Recent Movers as Associated with Retrofit (n=296)*

Activities	Respondents	
	n	%
Installing insulation/batts in the ceiling	238	80.4
Installing double glazing	220	74.3
Installing underfloor insulation	218	73.6
Installing insulation in the walls	213	72.0
Draught stopping the doors and windows	192	64.9
Installing heat pump	167	56.4
Putting in an HRV/DVS or similar ventilation system	158	53.4
Upgrading hot water systems to solar hot water	148	50.0
Installing an extractor fan in the bathroom	148	50.0
Venting the drier to the outside	143	48.3
Installing efficient wood burner	143	48.3
Installing a low flow shower head	139	47.0
Putting heavy thermal curtains with pelmets	139	47.0

Installing a rangehood/extractor fan in the kitchen	133	44.9
Installing passive vents on the windows	121	40.9
Upgrading hot water systems to instant gas	121	40.9
Putting in a wetback hot water system	113	38.2

* Multiple response

8.4 The range of benefits that might emerge from particular forms of retrofitting are not equally recognised. The benefits of retrofitting in relation to damp and mould are less likely to be recognised than temperature and energy efficiency benefits (Table 22).

Table 22: Benefits of Retrofit Activities Identified by Recent Movers (n=724)*

Benefits	**Retrofit Activities**					
	Insulation		Double Glazing		Heating Appliances	
	n	%	n	%	n	%
Energy Efficient house	535	73.9	565	78.0	471	65.0
Warmer house	524	72.4	557	76.9	519	71.7
Less damp	357	49.3	325	44.9	375	51.8
Less mould	342	47.2	302	41.7	344	47.5
Healthier home	472	65.2	419	57.9	421	58.1
More comfort	449	62.0	448	61.9	453	62.6

* Multiple response

8.5 In relation to heating there is a preference for heat pumps (Table 23).

Table 23: Preferred Low Emission Heating Appliances (n=724)*

Heating Appliances	**Respondents**	
	n	%
Heat pumps	443	61.7
Low emission enclosed wood fire	234	32.3
Flued gas	133	18.4
Pellet burners	65	9.0

* Multiple response

Desire for Retrofitting

8.6 Recent movers were asked to identify the statements set out in Table 24 that best reflect their attitude to retrofit.

Table 24: Attitudes and/or Activities of Recent Movers in Retrofitting their Current House

	Respondents	
	n	%
Retrofit for comfort, warmth and health if power bill savings	277	38.3
Retrofit for comfort, warmth and health even if no power bill savings	195	26.9
Will not retrofit current house	159	22.0
Already retrofitted	57	7.9
Don't know	36	5.0
Total	*7724*	*100.1*

8.7 It is notable that recent movers appear more amenable to retrofitting for comfort where no power cost savings are expected to be involved. This attitude is also evident when recent movers are asked to identify barriers to retrofits. Table 25 shows that the proportion of recent movers concerned with expense is less than half although expense remains the barrier cited most often by respondents. A substantial number of respondents also, however, identified an inability to assess value for money as a barrier to retrofit. The patterns displayed by recent movers are, thus, quite different to those apparent among high energy users.

Table 25: Barriers to Undertaking Retrofit (n= 670)*

	Respondents	
	n	%
Too expensive	276	41.2
I don't know what my particular house needs and/or how to get the best value for money from a retrofit	187	27.9
I don't know how to do it myself	63	9.4
I can't get access to credible information	38	5.7

It would be inconvenient	33	4.9
I can't get trades people	17	2.5
I have other priorities	0	0

* Multiple response

8.8 The preoccupation with direct costs of retrofit and the desire for savings on power bills is also evident when recent movers are asked to assess a series of factors that might prompt their take-up of retrofit options (Table 26).

Table 26: Likelihood of Recent Movers Improving Energy Efficiency in Their Homes by Selected Prompts

Prompts	Likely		Unlikely		Don't know/Not applicable		Total
	n	%	n	%	n	%	
Savings on my power bills	606	83.7	70	9.7	48	6.6	724
Making my home healthier	578	79.8	83	11.5	63	8.7	724
Improved comfort or warmth	563	77.8	100	13.8	61	8.4	724
Adding to the value of my home	524	72.4	125	17.3	75	10.4	724
Financial assistance from the Government	512	70.7	141	19.5	71	9.8	724
Knowing it is better for the environment	469	64.8	174	24.0	81	11.2	724
Making my home easier to sell	452	62.4	185	25.6	87	12.0	724
A retailer promotion	323	44.6	301	41.6	100	13.8	724

8.8 Financial preoccupations are, however, evident in the relatively low investment recent movers want to make to improve their dwelling's energy efficiency (Table 27). Almost two-thirds (63.9 percent) of respondents would spend $5,000 or less. This is similar to the high energy users. However, it should be recalled that recent mover dwellings are more likely to have insulation in ceilings and/or under the floor.

Table 27: Amount Willing to Spend on Measures Identified to Improve Energy Efficiency

	Respondents	
	n	%
Less than $100	53	7.3
$101-$500	61	8.4
$501-$1,000	116	16.0
$1,001 to $3,000	144	19.9
$3,001 to $5,000	89	12.3
$5,001 to $8,000	29	4.0
$8,001 to $10,000	21	2.9
$10,001 to $15,000	12	1.7
$15,001 to $20,000	6	0.8
More than $20,000	10	1.4
I am unlikely to act on recommended measures	126	17.4
Unsure	57	7.9
Total	*724*	*100*

9 Some Implications for Beacon and Retrofit

9.1 It is clear that recent movers are resistant to significant investment in retrofitting but attempt to select dwellings that are likely to be resource efficient. Despite this, less than half of the recent movers believe their dwellings to be energy efficient. The most common problems is difficulty in space heating. Like high energy user households, recent movers live in dwellings in which basic energy efficiency is neglected. Most dwellings, for instance, do not have hot water cylinder wraps and the use of energy efficient light bulbs is low.

9.2 Recent movers commit relatively high levels of expenditure to renovation. In addition, they are more likely than high energy users to be amenable to expenditure on retrofitting for comfort (reducing cold, damp and mould) even when those improvements are not accompanied by cost savings on power bills. However, the data suggest that recent movers' investments in renovation are not well targeted to increased energy performance or achieving associated comfort benefits. They are, in that way, very much like the high energy user households.

9.3 Overall:

- Most recent mover users' dwellings have basic energy deficiencies easily retrofitted at low cost including:
  - draughty doors and windows
  - poor insulation of hot water cylinders and pipes
  - partial roof and underfloor insulation
  - low use of energy efficient and low electricity use heating and lighting.
- There is low awareness of many low cost options to increase energy efficiency and comfort.
- Attempts by householders to address mould, cold and damp are frequently misdirected and are ineffective.
- It appears that where householders do undertake work that might be considered 'retrofit' they undertake to put in complex appliances and systems rather than address basic issues of thermal performance such as draught control and efficient heating.
- There is significant renovation work undertaken that could allow extensive retrofitting opportunities at minimal marginal costs.

9.4 Like the data from the High Energy Users Survey, the data from the Recent Movers Survey suggests that the pathway to improved energy efficiency lies in connecting retrofitting to the renovation decisions and investments. There is a need for a range of low cost as well as higher cost retrofit packages and advice around the relative impacts and appropriate sequencing of retrofit products and packages.

10 Annex A: Recent Movers Survey

Beacon is a research consortium funded by the Foundation for Research, Science and Technology and committed to improving the quality of life for New Zealanders in their neighbourhoods and homes. To do so we need to know how your home works for you in terms of comfort, energy and performance.

You have been selected to participate because you have moved house within the last two years. We would appreciate you filling in this questionnaire.

GETTING THE QUESTIONNAIRE BACK TO US: CRESA is running this survey for the Beacon Research Energy Team. You can:

- Either send this questionnaire back to us in the self-addressed envelope provided by 19 October 2007
- Or we can interview over the telephone and fill it in for you - Ring the free-call number 0508 427 372**..** Talk with Sam Mortlock or Margie Scotts. They are nice folks and they will help.

COMPLETE YOUR QUESTIONNAIRE AND HAVE THE CHANCE OF SELECTION FOR A $30 VOUCHER

Every completed questionnaire returned to us will have the opportunity to be selected for a $30 book or music or petrol or garden voucher.

Tick one of the boxes to tell us which you would prefer, **if selected**: $30 book voucher ☐; $30 music voucher ☐; $30 petrol voucher ☐; $30 garden voucher ☐.

In each region we will have up to 10 vouchers available. You will be eligible for random selection if you get your completed questionnaires back to us by 19 October 2007

CONFIDENTIALITY – All data collected in this survey will be aggregated and used for research purposes only. Your responses are confidential. No individual details will be used in reports or research summaries.

QUESTIONS? If you have any questions ring Margie Scotts, Sam Mortlock at CRESA on the free-call number - Phone: 0508 427 372.

FURTHER INFORMATION: If you want further information on:

- Beacon, its website is: www.beaconpathway.co.nz
- CRESA, its website is: www.cresa.co.nz

First we need to ask you some questions about your house

Q.1 Do you own or rent the home you are living in? *Please tick (✓) <u>one</u> box only*

❑$_1$ Own → Go to Question 2
❑$_2$ Rent → Thanks – Please send the questionnaire back without continuing
❑$_3$ Other → Thanks – Please send the questionnaire back without continuing

Q.2 When was the home built? *ESTIMATE IF UNSURE*. *Please tick (✓) <u>one</u> box only*

❑$_1$ Before 1970
❑$_2$ 1970-1977
❑$_3$ 1978-1990
❑$_4$ 1991-2000
❑$_5$ 2001-2007

Q.3 How many bedrooms in your home? _____

Q.4 How many bathrooms in your home? *Don't include separate toilets* _____

Q.5 Is the property built on a concrete slab? *Please tick (✓) <u>one</u> box only*

❑$_1$ Yes ❑$_2$ No ❑$_3$ Don't know

Q.6 What is the floor area of your house? *You can put this in sq metres or sq feet. PLEASE ESTIMATE IF UNSURE.*

Square metres_____ ***OR*** Square feet_____

Q.7 What sort of dwelling do you live in? *Please tick (✓) <u>one</u> box only*

❑$_1$ A detached single-storey house
❑$_2$ A detached house with more than one storey
❑$_3$ A semi-detached single-storey house
❑$_4$ A semi-detached house with more than one storey
❑$_5$ A terrace house
❑$_6$ A purpose built flat
❑$_7$ A flat in a converted building
❑$_8$ An apartment in an apartment block with more than two floors
❑$_9$ Other *If 'other', please specify:*_____

Q.8 In the last year, have you undertaken any renovations or major maintenance on your dwelling costing in excess of $2,000? *Please tick (✓) <u>one</u> box only*

❑$_1$ Yes ❑$_2$ No → If NO, go to Question 11

Q.9 What did those renovations or major maintenance involve? *Please tick (✓) <u>any</u> that apply.*

- ❑1 Roof replacement
- ❑2 Full exterior re-paint
- ❑3 Replacement of significant amounts of exterior cladding
- ❑4 Replacement of interior cladding
- ❑5 Interior repainting and/or wallpapering
- ❑6 Carpeting
- ❑7 Polishing floors
- ❑8 Adding rooms (*Please specify and indicate number)* _____
- ❑9 Replace bathroom whiteware
- ❑10 Replace kitchen appliances
- ❑11 Replace bathroom cabinetry of
- ❑12 Replace kitchen cabinetry
- ❑13 Rewiring full or significant part of the dwelling
- ❑14 Replumbing
- ❑15 Install underfloor insulation
- ❑16 Install ceiling insulation
- ❑17 Install wall insulation
- ❑18 Install double glazing
- ❑19 Install wood burner
- ❑20 Install pellet burner
- ❑21 Install heat pump
- ❑22 Install solar hot water system
- ❑23 Install heat pump hot water system
- ❑24 Install wet back hot water system
- ❑25 Install ventilation systems, such as HRV/DVS
- ❑26 Install rainwater tank
- ❑27 Install new hot water cylinder
- ❑28 Installing a rangehood/ extractor fan in the bathroom
- ❑29 Installing an extractor fan in the bathroom
- ❑30 Venting the drier to the outside
- ❑31 Installing passive vents in the windows
- ❑32 Upgrading hot water system to instant gas
- ❑33 Uprgrading hot water system to solar hot water
- ❑34 Putting in a wetback hot water system
- ❑35 Installing a low flow shower head
- ❑36 Polishing floors
- ❑37 Other

*If 'other', please specify:*_____

_____

Q.10 How much did those renovations cost? PLEASE ESTIMATE IF UNSURE

_____

Q.11 In the next year, do you intend to you undertake any renovations or major maintenance on your dwelling costing in excess of $2,000? *Please tick (✓) <u>one</u> box only*

❑$_1$ Yes ❑$_2$ No → If NO, go to Question 14

Q.12 What will those involve? *Please tick (✓) <u>any</u> that apply.*

- ❑$_{1}$ Roof replacement
- ❑$_{2}$ Full exterior re-paint
- ❑$_{3}$ Replacement of significant amounts of exterior cladding
- ❑$_{4}$ Replacement of interior cladding
- ❑$_{5}$ Interior repainting and/or wallpapering
- ❑$_{6}$ Carpeting
- ❑$_{7}$ Polishing floors
- ❑$_{8}$ Adding rooms (*Please specify and indicate number)* _____
- ❑$_{9}$ Replace bathroom whiteware
- ❑$_{10}$ Replace kitchen appliances
- ❑$_{11}$ Replace bathroom cabinetry of
- ❑$_{12}$ Replace kitchen cabinetry
- ❑$_{13}$ Rewiring full or significant part of the dwelling
- ❑$_{14}$ Replumbing
- ❑$_{15}$ Install underfloor insulation
- ❑$_{16}$ Install ceiling insulation
- ❑$_{17}$ Install wall insulation
- ❑$_{18}$ Install double glazing
- ❑$_{19}$ Install wood burner
- ❑$_{20}$ Install pellet burner
- ❑$_{21}$ Install heat pump
- ❑$_{22}$ Install solar hot water system
- ❑$_{23}$ Install heat pump hot water system
- ❑$_{24}$ Install wet back hot water system
- ❑$_{25}$ Install ventilation systems, such as HRV/DVS
- ❑$_{26}$ Install rainwater tank
- ❑$_{27}$ Install new hot water cylinder
- ❑$_{28}$ Installing a rangehood/ extractor fan in the bathroom
- ❑$_{29}$ Installing an extractor fan in the bathroom
- ❑$_{30}$ Venting the drier to the outside
- ❑$_{31}$ Installing passive vents in the windows
- ❑$_{32}$ Upgrading hot water system to instant gas
- ❑$_{33}$ Uprgrading hot water system to solar hot water
- ❑$_{34}$ Putting in a wetback hot water system
- ❑$_{35}$ Installing a low flow shower head
- ❑$_{36}$ Polishing floors
- ❑$_{37}$ Other

*If 'other', please specify:*_____

_____

Q.13 How much do you intend to spend on renovations? _____

Q.14 With your past renovations or your intended renovations, how are you most likely to finance them? *Please tick (✓) <u>any</u> that apply.*

- ❑$_1$ Not applicable – no past or intended renovations
- ❑$_2$ Savings
- ❑$_3$ Mortgage
- ❑$_4$ Interest free loan
- ❑$_5$ Interest bearing loan
- ❑$_6$ On credit card
- ❑$_7$ From my ongoing earnings
- ❑$_8$ Other (*Please Specify)*_____

Now some questions about energy

Q.15 Compared with other households, would you say your household energy consumption is…?" *Please tick (✓) <u>one</u> box only*

- ❑$_1$ Very High → *Go to Question 15b*
- ❑$_2$ High → *Go to Question15b*
- ❑$_3$ About Average → *Go to Question 16*
- ❑$_4$ Low → *Go to Question 16*
- ❑$_5$ Very Low → *Go to Question 16*

Q.15b What do you think are the most likely reasons for your higher energy use? *Please tick (✓) <u>any</u> that apply*

- ❑$_1$ Large number of appliances
- ❑$_2$ House has many lights
- ❑$_3$ We have old hot water tanks
- ❑$_4$ We have many hot water tanks
- ❑$_5$ Our house takes a lot of energy to heat
- ❑$_6$ Our house takes a lot of energy to cool
- ❑$_7$ Household members are wasteful with energy
- ❑$_8$ Other (*Please Specify)*_____

Q.16 What was your last month's energy bill? *Please report either dollar amount or kWh as on your last power bill.*

$_____ kWh_____

Q.17 Did you consider any of the following energy issues when you bought the home that you are currently living in? *Please tick (✓) Yes or No for each.*

	Yes	No
a. What the energy bill might be like	❑1	❑2
b. Your comfort or warmth within the home	❑1	❑2
c. Whether it had insulation in the roof space or under the floor	❑1	❑2
d. Whether it had double glazing	❑1	❑2
e. Whether the windows and doors were tight fitting or draught-proofed	❑1	❑2
f. Other energy issues (*Please specify below*)	❑1	❑2

_____

_____

Q.18 Are any of the following areas in your home insulated? *Please tick (✓) Yes or No for each.*

	Yes	No	Don't know
a. The roof space	❑1	❑2	❑3
b. External Walls	❑1	❑2	❑3
c. Under the floor	❑1	❑2	❑3

Q.19 Do you live in an energy efficient home? *Please tick (✓) <u>one</u> box only*

❑1 Yes ❑2 No ❑3 Don't know

Q.20 Do you live in a water efficient home? *Please tick (✓) <u>one</u> box only*

❑1 Yes ❑2 No ❑3 Don't know

Q.21 Which of the following do you use for water heating? *Please tick (✓) Yes or No or Don't Know for each.*

	Yes	No	Don't know
a. Electricity	❑1	❑2	❑3
b. Gas	❑1	❑2	❑3
c. Wood wetback	❑1	❑2	❑3
d. Instantaneous gas or electricity	❑1	❑2	❑3
e. Solar	❑1	❑2	❑3
f. Other (please specify)	❑1	❑2	❑3

_____

Q.22 Which of those do you <u>mainly</u> use for water heating? _____

Q.23 How many electric hot water cylinders are there in the home? _____ *If NONE → Go to Question 27*

Q.24 How old is the MAIN Hot Water Cylinder in your dwelling? *Please tick (✓) <u>one</u> box only*

- ❑$_1$ More than 10 years old
- ❑$_2$ 5 to 10 years old
- ❑$_3$ 1 to less than 5 years old
- ❑$_4$ Less than 1 year old

Q.25 Is the cylinder wrapped with hard foam, a new well-fitted jacket or an older poorly-fitted jacket? *Please tick (✓) <u>one</u> box only*

- ❑$_1$ N/A – no wrapping
- ❑$_2$ Hard foam
- ❑$_3$ New well-fitted jacket
- ❑$_4$ Older poorly-fitted jacket
- ❑$_5$ Don't know

Q.26 Are the pipes from the hot water cylinder…..?

- ❑$_1$ Wrapped with new and well-fitted lagging
- ❑$_2$ Wrapped with older poorly-fitted lagging
- ❑$_3$ Not lagged at all
- ❑$_4$ Don't Know

Q.27 Which of the following types of heater do you use to heat your home? *Please tick (✓) Yes or No for each.*

		Yes	No
a.	Electric heaters such as fan, bar, convection and night store heaters	❑$_1$	❑$_2$
b.	Fixed electric radiators or oil-filled column heaters	❑$_1$	❑$_2$
c.	Fixed unflued gas heater	❑$_1$	❑$_2$
d.	Fixed and flued gas heaters	❑$_1$	❑$_2$
e.	Portable gas heaters such as an LPG heater	❑$_1$	❑$_2$
f.	Heat pumps	❑$_1$	❑$_2$
g.	Under floor heating	❑$_1$	❑$_2$
h.	Enclosed wood burner	❑$_1$	❑$_2$
i.	Open log fire	❑$_1$	❑$_2$
j. Or if something else? *Please Specify* _____			

Q.28 Which of the above heaters do you mainly use for home heating?_____

Q.29 During the winter months, do you generally find that your heating keeps you warm enough? *Please tick (✓) <u>one</u> box only*

- ❑1 Yes, always
- ❑2 Yes, most of the time
- ❑3 Only some of the time
- ❑4 No, never
- ❑5 Don't know

Q.30 Do you use any of the following appliances to cool your home in summer? *Please tick (✓) Yes or No for each.*

	Yes	No
a. Fans	❑1	❑2
b. Heat pumps	❑1	❑2
c. Dehumidifier	❑1	❑2
d. Air conditioning	❑1	❑2
e. Or something else *Please Specify* _____		

Q.31 What proportion of doors and windows in your house are draughty? *Please tick (✓) <u>one</u> box only*

- ❑1 None are draughty
- ❑2 1% to 25% are draughty
- ❑3 26% to 50% are draughty
- ❑4 51% to 75% are draughty
- ❑5 76% to 100% are draughty

Q.32 What proportion of the windows in your house are double glazed? *Please tick (✓) <u>one</u> box only*

- ❑1 None are double-glazed
- ❑2 1% to 25% are double-glazed
- ❑3 26% to 50% are double-glazed
- ❑4 51% to 75% are double-glazed
- ❑5 76% to 100% are double-glazed

Q.33 Of all the light bulbs in your home, what proportion are energy efficient light bulbs? *An energy efficient light bulb looks like the ones in the picture*

Please tick (✓) <u>one</u> box only

- ❑1 None are energy efficient
- ❑2 1% to 25% are energy efficient
- ❑3 26% to 50% are energy efficient
- ❑4 51% to 75% are energy efficient
- ❑5 76% to 100% are energy efficient

Now some questions about your house

Q.34 How would you describe the condition of your house? *Please tick (✓) <u>one</u> box only*

- ❑1 Excellent – No immediate repair and maintenance needed
- ❑2 Good – Minor maintenance needed
- ❑3 Average – Some repair and maintenance needed
- ❑4 Poor – Immediate repairs and maintenance needed
- ❑5 Very poor – Extensive and immediate repair and maintenance needed

Q.35 Do you find that you get mould in any of the following rooms? *Please tick (✓) <u>any</u> box that applies*

- ❑1 Bedroom 1
- ❑2 Bedroom 2
- ❑3 Bedroom 3
- ❑4 Bedroom 4
- ❑5 Sitting Room/Lounge
- ❑6 Dining Room
- ❑7 Kitchen
- ❑8 Laundry
- ❑9 Bathroom with Toilet
- ❑10 Bathroom without Toilet
- ❑11 Separate Toilet
- ❑12 Other (please specify)_____

Q.36 Have you made any renovations, repairs, or acquired appliances in your house to reduce cold, damp or mould? *If none → please go to Question 37*

Please Specify

_____

_____

_____

_____

Q.36a Can you estimate the cost of those changes? $_____

Q.36b Is this amount included in the amounts you reported paying for renovations earlier (e.g. Question 10 and/or Question 13)?

❑1 Yes ❑2 No ❑3 Partially, the following amount was not included $_____

Now some questions about retrofit

Q.37 Have you heard of the term 'retrofit'?

❑1 Yes → *Go to Question 38*

❑2 No → *Go to Question 39*

Q.38 Which of the activities listed below do you think retrofitting involves? *Please tick (✓) <u>any</u> box that applies*

❑1 Draught stopping the doors and windows
❑2 Installing insulation/batts in the ceiling
❑3 Installing underfloor insulation
❑4 Installing insulation in the walls
❑5 Installing double glazing
❑6 Putting heavy thermal curtains with pelmets
❑7 Installing heat pump
❑8 Installing efficient wood burner
❑9 Installing a rangehood./ extractor fan in the kitchen
❑10 Installing an extractor fan in the bathroom
❑11 Venting the drier to the outside
❑12 Installing passive vents on the windows
❑13 Putting in an HRV/DVS or similar ventilation system
❑14 Upgrading hot water system to instant gas
❑15 Upgrading hot water systems to solar hot water
❑16 Putting in a wetback hot water system
❑17 Installing a low flow shower head
❑18 Other (please specify)_____

Q.39 Insulation can be part of a retrofit package. What benefits might it have for you?

Please tick (✓) Yes or No for each.

	Yes	No
a. A warmer house	❑1	❑2
b. A more energy efficient house	❑1	❑2
c. A less damp house	❑1	❑2
d. Less mould in the house	❑1	❑2
e. A healthier home	❑1	❑2
f. A more comfortable home	❑1	❑2
i. Or something else? *Please Specify* _____		

Q.40 Double-glazing can be part of a retrofit package. What benefits might it have for you?

Please tick (✓) Yes or No for each.

	Yes	No
a. A warmer house	❑1	❑2
b. A more energy efficient house	❑1	❑2
c. A less damp house	❑1	❑2
d. Less mould in the house	❑1	❑2
e. A healthier home	❑1	❑2
f. A more comfortable home	❑1	❑2
i. Or something else? *Please Specify* _____		

Q.41 Heating appliances such as pellet burners, low emission enclosed wood burners or heat pumps can be part of a retrofit package. What benefits might it have for you?

Please tick (✓) Yes or No for each.

	Yes	No
a. A warmer house	❑1	❑2
b. A more energy efficient house	❑1	❑2
c. A less damp house	❑1	❑2
d. Less mould in the house	❑1	❑2
e. A healthier home	❑1	❑2
f. A more comfortable home	❑1	❑2
i. Or something else? *Please Specify* _____		

Q.42 Of the efficient low emissions heating appliances which do you prefer? *Please tick (✓) <u>any</u> box that applies*

- ❑$_1$ Heat pumps
- ❑$_2$ Pellet burners
- ❑$_3$ Low emission enclosed wood fire
- ❑$_4$ Flued gas
- ❑$_5$ Other *Please specify*_____

Q.43 Which of the following statements best reflects your views about retrofitting? *Please tick (✓) <u>one</u> box only*

- ❑$_1$ I do not want to retrofit this house
- ❑$_2$ I have already retrofitted my house → *Go to Question 45*
- ❑$_3$ I have partially retrofitted my house and will do more to get greater comfort, warmth and health, but ONLY if I got savings on my power bill
- ❑$_4$ I have partially retrofitted my house and will do more to get greater comfort, warmth and health, even if I DO NOT save on my power bill
- ❑$_5$ I would retrofit my house to get greater comfort, warmth and health, but ONLY if I got savings on my power bill
- ❑$_6$ I would retrofit my house to get greater comfort, warmth and health, even if I DO NOT save on my power bill

Q.44 What stops you retrofitting your home? *Please tick (✓) <u>any</u> box that applies*

- ❑$_1$ It would be inconvenient
- ❑$_2$ I don't know what my particular house needs and/or how to get the best value for money from a retrofit
- ❑$_3$ Too expensive
- ❑$_4$ I can't get trades people
- ❑$_5$ I don't know how to do it myself
- ❑$_6$ I can't get access to credible information
- ❑$_7$ I have other priorities

Q.45 If a professional helped you identify a range of measures to improve energy efficiency, warmth and comfort which of the following is most likely to describe your response?

I am likely to carry out measures that cost…

- ❑1 Less than $100
- ❑2 $101 to $500
- ❑3 $501 to $1000
- ❑4 $1001 to $3,000
- ❑5 $3,001 to $5,000
- ❑6 $5,001 to $8,000
- ❑7 $8,001 to $10,000
- ❑8 $10,001 to $15,000
- ❑9 $15,001 to $20,000
- ❑10 More than $20,000
- ❑11 I am unlikely to act on the recommendations

Q.46 How likely are the following things to prompt you to improve the performance of your home? *Please tick (✓) one for each*

	Very likely	Likely	Unlikely	Not at all likely	Don't know
a. Improved comfort or warmth	❑1	❑2	❑3	❑4	❑5
b. Savings on my power bills	❑1	❑2	❑3	❑4	❑5
c. Adding to the value of my home	❑1	❑2	❑3	❑4	❑5
d. Making my property more valuable	❑1	❑2	❑3	❑4	❑5
e. A retailer promotion, for example on light bulbs or heat pumps, pellet fires or insulation	❑1	❑2	❑3	❑4	❑5
f. Financial assistance from the Government	❑1	❑2	❑3	❑4	❑5
g. Knowing it is better for the environment	❑1	❑2	❑3	❑4	❑5
h. Making my home healthier	❑1	❑2	❑3	❑4	❑5
i. Making my home easier to sell	❑1	❑2	❑3	❑4	❑5

The final questions ask for some details that describe yourself and your household.

Q.47 Which age group do you fall into? *Please tick (✓) <u>one</u> box only*

- ❑1 24 years or under
- ❑2 25 to 30 years
- ❑3 31 to 40 years
- ❑4 41 to 50 years
- ❑5 51 to 60 years
- ❑4 61 to 65 years
- ❑5 66 or over

Q.48 What is your household's <u>total</u> annual income before tax? *Please tick (✓) <u>one</u> box only*

- ❑1 $10,000 or less
- ❑2 $10,001 to $20,000
- ❑3 $20,001 to $30,000
- ❑4 $30,001 to $40,000
- ❑5 $40,001 to $50,000
- ❑6 $50,001 to $70,000
- ❑7 $70,001 to $100,000
- ❑8 Over $100,000

Q.49 Including yourself, how many people live in your household? _____

Q.50 How many are aged 65 years and over? _____

Q.51 And how many children aged 5 and under live in the household? _____

THANK YOU FOR COMPLETING THE QUESTIONNAIRE.

Please place in the enclosed reply-paid envelope or ring us to come and collect it.

Remember return by 19 October 2007 and be eligible for possible random selection to receive a $30 gift voucher.