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Quantitative Study: Household Uptake of Sustainable Solutions

Final

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About This Report

Title

Quantitative Study: Household Uptake of Sustainable Solutions

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Abstract

This study assesses the engagement of householders in adopting sustainable technologies and solutions for their homes and identifies barriers faced by householders in making these changes. The features most likely to have changed are, on the whole, low cost and easy to change without professional help. There is substantial interest in high cost energy efficiency features. Barriers include a lack of awareness whether homes contain sustainable features or not.

Reference

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1 Executive Summary

1.1 Background

Beacon Pathway Ltd is a research consortium that aims to encourage and improve sustainability by researching building technologies, construction industry practices, urban planning, policy and regulation and consumer understanding and needs. Its goal is to achieve sustainability features in 90% of New Zealand houses by 2012.

1.2 Purpose

The aim of this study is to:

1) Assess the engagement of householders in adopting sustainable technologies and solutions for their homes.
2) Identify barriers faced by householders in making these changes.
3) Provide a baseline of data against which future progress towards the goal of achieving sustainability features in 90% of New Zealand households by 2012 can be assessed.

1.3 Method

Questionnaires were sent to a random sample of 20,000 people selected from the database of subscribers to *Consumer* magazine in October 2005.

The questionnaire gathered information about the location of the house, the type and age of the house, and the type of household. Respondents were asked which sustainable features and technologies they had in their home, which had been in the dwelling since they arrived, and which they had installed. Finally respondents were asked whether they had made any changes to their homes and about any features they were most likely to add or, if renting, which they would like their landlord to add in the next 12 months.

The final response rate was 64.9%. The margin of error at the 95% confidence level is less than around 1%.

1.4 Limitations

Respondents have a different profile from that of the general population. The data has been weighted to align it more closely with the household income structure of the New Zealand population.

1.5 Results

1.5.1 Features of the Homes

Respondents were provided with a set list of features associated with sustainability and asked whether their homes had any of these features.

- The most commonly reported features were access to a private outdoor area (93.6%), ceiling insulation (87.8%), an A-grade hot water cylinder (72.5%), an extractor fan in the kitchen (71.4%) and a hot water cylinder set at 60 degrees celcius.
- Householders were least to likely report having heat pumps, double glazing or solar water heating in their homes.
- Most respondents reported having ceiling insulation (87.8%), over half had wall insulation (56.9%), and just over one-quarter (28.0%) had under-floor insulation.
- A small percentage (11.2%) of respondents reported having double glazing. Almost five percent (4.8%) had had it installed it in the dwelling after moving in.
- Most householders (55.4%) had an A-grade hot water cylinder in their dwelling when they moved in. A further 17% had subsequently installed one.
- Although few respondents said that there were energy saving light bulbs in their dwellings when they arrived, over one-third said that they had been subsequently installed.
- 17.7% of respondents reported having a heat pump in their home. Over one-quarter of those who had moved into a new house (built after 2000) had a heat pump in their home on arrival.
- Two-thirds (66.2%) of respondents had dual flush toilets in their homes and half (44.0%) had low flow shower heads and tap ware in their homes.
- When asked about features associated with the quality of the indoor environment, 33.4% of respondents had homes with under-floor damp proofing and around one quarter of respondents had had an extractor fan installed in the kitchen (26.2%) and/or bathroom (25.4%).
- In relation to home security, almost two-thirds (65%) of householders had security locks and alarms in their homes. Almost half (48.5%) of respondents reported having windows opening on a secure latch. Most respondents (60.2%) did not have an emergency preparedness kit.
- Most householders (93.6%) had access to a private outdoor area.

1.5.2 Adding features to their homes

- The top three priorities for homeowners in the short term are emergency preparedness kits (18.2%), heat pumps (10.0%) and energy-saving light bulbs (9.8%).
- Renters were most likely to want to see their landlord add solar heating (10.0%), a wrapped hot water cylinder (8.3%), an extractor fan in the bathroom (7.3%) and/or a heat pump (7.2%).

1.5.3 Changes to homes

- Overall, 68.0% of respondents had made changes to their homes.
- Although respondents found information on improving their home was 'fairly' or 'very easy' (61.2%) to get, only one-quarter (26.9%) found getting information on environmental products easy (26.9%).

1.5.4 The most important thing about their homes

- Respondents felt that the warmth of their home in winter (47.9%), a well-built house (41.1%) and a low maintenance home (39.8%) were the most important things about their homes.

1.6 Implications

- Currently many householders are unaware whether their homes contain sustainable features or not. These features need to be identified and promoted.
- Sustainability may have little practical appeal to householders. This issue needs to be more clearly understood and, if this is indeed the case, addressed.
- Sustainability features need to be linked more closely to renovations and home upgrades so that householders understand the options and benefits at every stage of the process, from planning to completion.
- There is an opportunity to promote a range of sustainable products that are low cost, provide cost benefits to homeowners and renters, and are easy to install without professional help.
- The substantial interest in installing high cost measures, such as heat pumps, creates an opportunity to promote these, particularly to homeowners in colder climates.[1]
- There is an opportunity to promote energy efficient features that are relatively low cost to install, such as a wrapped hot water cylinder, more widely to householders as there are low adoption rates and there is low interest in these features.
- There is a strong opportunity to promote water efficiency features to households as these currently have a low uptake and they are seen by householders as low in priority.
- Those renting are least likely to have extractor fans installed in their homes. Renters rated extractors as a high priority. There is an opportunity to promote the long term benefits of sustainable features such as extractors to landlords by focusing on the benefits to the property and the cost/benefits to the landlords of installing these.
- Sustainability does not appear to be linked to the way householders feel about their homes, or to the aspects of their homes that are important to them. There is an opportunity to build positive associations between sustainability and the emotional connection that they have to their homes.

[1] ***Note – although there appears to be a greater interest in heat pumps from homeowners in colder region it is important to note that regional differences have not been tested to see whether they are statistically significant.***

2 Introduction

Beacon Pathway Ltd is a research consortium that is working to find affordable, attractive ways to make New Zealand homes more sustainable. It aims to encourage and improve sustainability by researching building technologies, construction industry practices, urban planning, policy and regulation and consumer understanding and needs.

Beacon has set a goal of achieving sustainability features in 90% of New Zealand houses by 2012.

3 Purpose

The aim of this study is to:

1) Assess the engagement of householders in adopting sustainable technologies and solutions for their homes
2) Identify barriers faced by householders in making these changes
3) Provide a baseline of data against which future progress can be assessed
4) Provide a set of indicators that can be used to measure progress towards the goal of achieving sustainability features in 90% of New Zealand households by 2012.

This report presents the findings of this study.

4 Method

4.1 Methodology

Postal questionnaires were sent to a random sample of 20,000 people selected from the database of *Consumer* magazine subscribers in October 2005.

A reminder and second questionnaire were sent to those who had not responded two weeks later. Both questionnaires offered the chance to go into a draw for $500 as an incentive to return the questionnaire. The survey was closed off four weeks after the first posting.

A total of 10,146 subscribers returned the first questionnaire and 2,841 returned the second, giving an overall total return of 12,987. The final response rate was 64.9%. The margin of error is at the 95% confidence level and less than around 1%.

There are, however, key differences between the sample and the general population.[2]

The percentage of respondents from low income households compared was low (7.3%). However, 838 respondents from low income households responded generating a margin of error of around 3.4% at the 95% confidence level.

As this group could provide valuable insights into the attitudes and behaviours of lower income New Zealand householders, it was decided to include their responses and weight the data in order to correct the under-representation of this group. The data set was weighted on household income so that the distribution of the sample aligned more closely with that of New Zealand households. Target weights were provided by Statistics New Zealand.

4.2 Questionnaire

The questionnaire was four pages in length and asked 15 questions in two sections.[3] The majority of the questions comprised more than one part (e.g. sub questions) and used a closed, multi choice format.

The first section, 'About your household' was designed to gather information about the location of the house, the type and age of the house, and the type of household.
This section also aimed to gather information about the age groups and household income groups of the respondents, and their tenure.[4]

A second section, 'About your home' asked respondents which, if any, of a list of 21 sustainable features and technologies they had in their home. They were then asked which of these had been in the dwelling since they arrived, and which had been subsequently installed. Respondents were also asked whether they had made any changes to their homes, which features they were most likely to add, or if renting, that they would like their landlord to add, in the next 12 months. Those who had made changes were asked how difficult they had found the changes to make.

This section also explored the features that the respondents considered to be most important about their homes and about living in their homes.

Lastly, respondents were asked if they would be willing to be contacted by the Consumers' Institute and/or by Beacon Pathway Limited to participate in any future research.

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[2] See Appendix Two for details.

[3] See Appendix One to view the questionnaire.

[4] Respondents were told that these questions were of a personal nature and it was their choice whether they completed them or not.

4.3 Data analysis

The data has been analysed using SPSS (Statistical Package for the Social Sciences). Miscodes were recoded as missing data. .All missing data has been excluded from the analysis.

The weight variable has been used in the analysis for the frequency tables. Weighted data has not been used for cross tabulations.[5] Note that due to roundings, some of the percentages do not add up to 100.

Where respondents have given more than one response to a question, both the percentage of responses and the percentage of respondents who gave a response have been reported.

The tables were cross-tabulated by tenure, household income and age of home. Where differences were significant, these have been reported.

5 Limitations

5.1 Sample

A response rate of 64.9% is high for a postal questionnaire. Nevertheless the results may be affected by some element of non-response bias.[6]

The extent of non-response bias is dependent on the level of non-response (as indicated by the response rate) and the difference in characteristics between those *Consumer* magazine subscribers who responded and those who did not respond.

The difficulty in measuring the extent of non-response bias is that it is not possible to measure how different the non-respondents' responses would have been from those who did participate.

Previous Consumer Institute surveys suggest that subscribers tend to be from older age groups, have a higher household income and possibly have higher disposable income than those in the general population.[7] The data from this survey showed a similar pattern of responses.[8]

[5] It is unnecessary to use weighted data in cross tabulations and three-way tables as the tables already reflect the relationship between the variables.

[6] Non-response bias occurs where the characteristics of the non-responding group, along with the responses they might have given differ from the responses from those who did participate.

[7] See Appendix Two for details.

[8] Although it is possible that the non-response bias is consistent across Consumer Institute surveys.

The profile of respondents from the Consumer Institute survey, however, has a different profile from that of New Zealand householders.

Despite weighting the data, the characteristics of the respondents differ from those of the national population on a number of key variables. The age structure of the sample differs considerably from that of New Zealand householders.

Overall, those surveyed tend to be older than householders nationally. They are more likely to own their own home, either free hold or with a mortgage and are less likely to rent than New Zealanders as a whole.

Moreover, it was expected that *Consumer* magazine subscribers would reflect a section of the community most likely to have the resources and commitment to adopt new and existing technologies for their homes. If this is indeed the case, the results are more likely to reflect the attitudes and behaviours of 'early adopters' and those most likely to have the resources and commitment to adopt new and existing sustainable technologies for their homes.

It should be cautioned that if generalising the results beyond the population of *Consumer* magazine subscribers, these limitations will need to be considered as the results are more likely to reflect the attitudes, behaviours and intentions of New Zealand householders sharing these characteristics.

5.2 Questionnaire Design

The questionnaire has been designed to elicit information on whether the respondents' homes have sustainable features and technologies, which of these they have installed, whether they have had difficulties finding professional help and about their future plans.

Due to the size of the sample, to reduce the need for extensive coding, there are few open-ended alternatives. Hence homes and dwellings may have installed features or adopted technologies that have not been identified in this survey.

Moreover, although the questionnaire explores what features the respondents have already, or have installed or adopted, it does not explore the underlying reasons for their decisions. Hence it not designed to understand 'why' householders have chosen to install certain sustainable features in their homes, why they are considering adopting particular features over the next 12 months, or why they may have experienced difficulties in finding professional help to make changes to their homes.

Lastly, the respondents were asked whether various sustainable features were installed. It is unclear, particularly in the case of renters, who installed the features, e.g. whether it was the landlord or the tenants themselves.

5.3 Data Analysis

The raw data set linking the respondents' addresses to their local authority and region was unavailable to the author, hence council and regional differences have not been explored. Data assessing regional differences from an earlier report has been appended (see Appendix Four). It is important to note that the differences have not been tested to determine if they are statistically significant.

6 Results

6.1 The respondents

6.1.1 Age and income

The age structure of the respondents differed from those of New Zealand adults. Only 9.8% of respondents were under the age of 40 years, compared with 38.2% of those nationally.[9] Half the respondents (49.7%) were aged between 40 and 64 years.

The data was weighted on income to match the 2006 Census of Population and Dwellings so it reflects the income groups of New Zealand households.[10]

Table 1: Age and Income groups (%)

Participants Characteristics		Frequency	Percentage	2006 Census
Age group	Under 40 years	1,115	9.8	38.2
	40-64 years	5,673	49.7	44.5
	65-75 years	2,761	24.2	9.3
	Over 75 years	1,869	16.4	8.1
Household income	Less than $20,000	1,882	16.5	16.5
	$20,000 to $39,999	2,689	23.5	23.5
	$40,000 to $59,999	2,130	18.6	18.6

[9] *Aged 20-39 years according to the 2006 Census.*

[10] *See Appendix Two for weightings.*

	$60,000 to $79,999	1,347	11.8	11.7
	$80,000 to $99,999	1,175	10.3	10.3
	More than $100,000	2,210	19.3	19.3

6.1.2 Home Ownership

Two-thirds (66.9%) of New Zealand households living in private occupied dwellings own the dwelling they live in or hold that dwelling in a family trust. Just over half (54.5%) of households own the dwelling, with or without a mortgage, and 12.3% hold that dwelling in a family trust.

Home ownership rates (90.7%) were considerably higher amongst the survey respondents.

Almost two-thirds (63.3%) of respondents owned their own home freehold and a further quarter (27.4%) owned their home with a mortgage. Just under five percent (4.8%) of respondents said that they were renting their home.

Table 2: Tenure (%)

	Frequency	Percent
Owned with a mortgage	3,126	27.4
Owned and freehold	7,230	63.3
Rented	549	4.8
Other	515	4.5
Total	11,420	100.0

Respondents were asked how long they had lived in their home.

The length of occupation was associated with the tenure of the respondent. For homes that were owned freehold the median length of occupation was 15 years. For homes owned with a mortgage the median was six years, and for rented homes it was two years.

6.1.3 About your household

Respondents were asked to describe the area where they lived. Over half (53.3%) lived in a city suburb.

Table 3: Type of location (%)

	Frequency	Percent
City central	727	6.4
City suburban	6,067	53.3
Town	2,147	18.9
Rural	2,432	21.4
Total	11,373	100.0

6.2 The home

The respondents were asked about the type of home they lived in. Most respondents lived in a free standing house (90.3%). Only a small percentage of respondents lived in a unit or townhouses (6.8%), or apartments (2.4%).

'Other' types of homes in which our respondents lived included retirement homes (10) and a house bus (1).

Those renting (68.8%) were much less likely than home owners (93.2%) to live in free standing houses. Overall, the higher the respondent's income group the more likely the respondent was to live in a free standing house.[11]

Table 4: Type of dwelling (%)

	Frequency	Percent
House - free standing	10,299	90.3
House - connected e.g. unit or town house	777	6.8
Apartment - in a block of flats	213	1.9
Apartment - within a house	53	0.5

[11] $p < .05$.

Other	62	0.5
Total	11,404	100.0

Over half (58.4%) of the respondents lived in a house built prior to 1978.

There was no association between factors such as the age group of the respondent, household income or the type of home ownership and the age of the dwelling they lived in.[12]

Table 5: Age of dwelling (%)

	Frequency	Percent	Cumulative Percent
Before 1960	3,367	29.6	29.6
Between 1960 and 1977	3,270	28.8	58.4
Between 1978 and 2000	3,578	31.5	89.9
After 2000	1,007	8.9	98.7
Don't know	142	1.3	100.0
Total	11,365	100.0	

6.2.2 House Size

Half the respondents (50.0%) lived in three bedroom houses. Homes built after 2000 were more likely to be larger, with 48% of homes built since 2000 having four or more bedrooms compared with 37.4% of homes built before 1960.[13]

The higher the respondents' income group, the more likely they were to live in larger houses.[14]

[12] $p > .05$.
[13] $p < .05$
[14] $r=3.29\ p < .05$.

Table 6: Number of bedrooms (%)

Number of bedrooms	Frequency	Percent	Cumulative Percent
0	1	0.0	0.0
1	166	1.5	1.5
2	1,533	13.5	14.9
3	5,695	50.0	64.9
4	3,201	28.1	93.0
5	678	6.0	99.0
6	102	0.9	99.9
7	13	0.1	100.0
8	3	0.0	100.0
9	1	0.0	100.0
Total	11,393	100.0	

6.2.3 Household composition

Respondents were asked to state the number of people, including themselves, in their household and to describe the composition of the household.

The most common type of household was a two-person household with no dependent children. This group comprised 50.2% of respondents[15]. Single-person households made up the next largest group at 20.2%, compared with 23.0% of households in the 2006 Census.

Table 7: Number of people living in household (%)

Number of people in household	Frequency	Percent	Cumulative Percent
1	2,290	20.2	20.2
2	5,678	50.2	70.4
3	1,367	12.1	82.5
4	1,265	11.2	93.7

[15] ***Note: at the 2006 Census 25.7% of households were couple-only. However, a direct comparison cannot be made as respondents from the Consumer survey living in two person households may not be a couple.***

5	520	4.6	98.3
6	140	1.2	99.5
7	38	0.3	99.8
8	15	0.1	100.0
9	4	0.0	100.0
Total	11,317	100.0	

The younger the age group of the respondent, the larger the respondent's household.[16] Those with a mortgage or renting were also more likely to live in larger households.[17]

Table 8: Average (mean) size of household by age group

Age group	Mean	No	Standard Deviation
Under 40 years	3.2	1,114	1.3
40-64 years	2.6	5,657	1.3
65-75 years	1.9	2,737	0.7
Over 75 years	1.6	1,824	0.7
Total	2.4	11,332	1.2

Most respondents (72.4%) lived in households with no dependent children. Seven percent of households had dependent children aged under six years, 8.6% children aged six to twelve years and 12.6% had children aged over 12 years.

Table 9: Dependent children (%)

	Frequenc	Percent
No dependent children	8,274	72.4
Under 6 years	800	7.0
6-12 years	986	8.6
over 12 years	1,437	12.6

[16] ***r=-.451 p < .05.***

[17] ***p < .05.***

6.3 About your home

6.3.1 Sustainable features

Respondents were asked whether their homes had any of 21 features listed. These features were associated with sustainability. If their homes had the feature listed, they were asked whether it had been in the dwelling when they arrived or whether they had installed it.

The most commonly reported features were, access to a private outdoor area (93.6%), ceiling insulation (87.8%), an A-grade hot water cylinder (72.5%), an extractor fan in the kitchen (71.4%) and a hot water cylinder set at 60 degrees celcius (70.2%).

Householders were least likely to report having heat pumps, double glazing or solar water heating in their homes.

Over one-quarter (29.9%) of respondents did not know whether environmentally-friendly building products had been used in their homes or not. A substantial minority were unaware whether their homes had under-floor damp proofing (17.9%), an A-grade water cylinder (15.6%), or whether the hot water cylinder was set at 60 degrees celcius (14.3%).

Table 10: Features (%)

Features	In Home	Not in Home	Don't know	Total
Access to private outdoor area	93.6	6.2	0.2	11,232
Insulation ceiling	87.8	8.5	3.7	11,302
A-grade hot water cylinder	72.5	11.9	15.6	11,054
Extractor fan in kitchen	71.4	28.5	0.1	11,232
Hot water cylinder set at 60 degrees celcius	70.2	15.5	14.3	11,052
Dual flush	66.2	33.4	0.3	11,230
Security locks and alarms	62.0	37.6	0.4	11,113
Insulation walls	56.9	31.8	11.3	11,112
Extractor fan in bathroom	56.7	n/a	0.2	11,162

Energy saving light bulbs	52.0	46.8	1.1	11,094
Environmentally-friendly building materials	43.6	18.4	29.9	10,905
Windows open on a security latch	48.5	50.9	0.6	11,108
Low flow shower heads and tap ware	44.0	43.0	13.0	11,016
Under-floor damp-proofing	33.4	48.7	17.9	10,942
Wrapped hot water cylinder	29.8	68.0	2.2	10,832
Emergency preparedness kit	28.2	60.2	1.0	10,882
Insulation under-floor	28.0	64.1	7.9	10,862
Tank to collect rain water	17.7	81.5	0.8	10,984
Heat pump	17.7	80.1	2.2	10,862
Double glazing	11.2	87.9	1.0	10,849
Solar water heating	4.3	94.7	0.9	10,910

6.3.2 Energy Efficiency Features

6.3.2.1 Insulation

Most respondents (87.8%) reported having ceiling insulation in their homes. Just over half (56.9%) said that they lived in a dwelling that had wall insulation and a quarter (28.0%) had under-floor insulation.

Table 11: Insulation (%)

Type of Insulation	In dwelling when arrived	Installed since arrived	No	Don't know	Total
Insulation ceiling	63.1	24.7	8.5	3.7	11,302
Insulation walls	44.5	12.4	31.8	11.3	11,112
Insulation under-floor	20.0	8.0	64.1	7.9	10,862

While most respondents knew whether there was insulation in the ceiling or under the floor, some (11.3%) were unsure whether their dwelling had insulation in the walls.

Those renting were least likely to know whether there was insulation in their dwellings.[18]

6.3.2.2 Ceiling Insulation

Although householders reported high levels of ceiling insulation, one-quarter of respondents (24.7%) said that it had been installed since they had arrived in their dwelling.

Those living in older houses were more likely to have had ceiling insulation installed subsequent to their arrival. Over one quarter (28.1%) of respondents living in dwellings built between 1960 and 1977, and almost half (45.3%) the respondents living in houses built before the 1960s reported having had it installed in their homes.

Those with freehold homes (27.0%) and a mortgage (22.6%) were also more likely to have had it installed than those renting (6.8%).[19]

6.3.2.3 Wall Insulation

Just under half of the respondents (44.5%) said that they already had wall insulation in their home when they arrived. Only 12.4% reported that wall insulation had been installed in their homes since their arrival.

Those in houses built before 1960 (24.4%) and between 1960 and 1977 (12.8%) were most likely to have had wall insulation installed.[20]

6.3.2.4 Under-floor Insulation

Overall, respondents reported low levels of under-floor insulation in their dwelling when they arrived (20.0%). Those in newer dwellings were more likely to report having this feature (49.9% of respondents living in houses built after 2000).

6.3.3 Double Glazing

A small percentage (11.2%) of respondents reported having double glazing. Almost five percent (4.8%) had installed it in the dwelling since arrival.

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[18] $p < .05$.
[19] $p < .05$.
[20] $p < .05$.

Those on incomes over $60,000 were slightly more likely to have had double glazing in their homes (both having had it on arrival and having had it installed) than those on lower incomes.[21]

Table 12: Double glazing (%)

Double Glazing	Frequency	Percent
In dwelling when arrived	692	6.4
Installed since arrived	520	4.8
No	9,532	87.9
Don't know	105	1.0
Total	10,849	100.0

6.3.4 Hot water

Most householders (55.4%) had an A-grade hot water cylinder in their dwelling when they arrived. A further 17.1% had installed one since arrival.

Over two thirds of respondents (70.2%) said that their hot water cylinder was set at 60 degrees celcius.

Those with dependent children were slightly more likely (31.5%) to have the hot water cylinder set at 60 degrees celcius[22].

Although A-grade hot water cylinders are considered to be well insulated and do not need wrapping only 10.1% of those who did not have an A-grade water cylinder had wrapped it. This compares with 30.2% of householders who had both installed an A-grade hot water cylinder and wrapped it since arriving in their home.

Only less than 5% (4.3%) of respondents lived in a home with solar water heating.

[21] $p < .05$.
[22] $p < .05$.

Table 13: Hot water (%)

Feature	In dwelling when arrived	Installed since arrived	No	Don't know	Total
A-grade hot water cylinder	55.4	17.1	11.9	15.6	11,054
Hot water cylinder set at 60 degrees Celcius	41.2	29.0	15.5	14.3	11,052
Wrapped hot water cylinder	16.1	13.7	68.0	2.2	10,832
Solar water heating	2.1	2.2	94.7	0.9	10,910

6.3.5 Light Bulbs

Although few respondents said that there were energy saving light bulbs in their dwelling when they arrived, over one-third (37.9%) said that these had been subsequently installed.

There was little variation between the uptake of this feature and the age or income groups of the respondents, however those renting (31.5%) were less likely than homeowners (38.0%) to have had energy efficient light bulbs installed since arriving in their home.[23]

Table 14: Energy saving light bulbs (%)

Energy saving light bulbs	Frequency	Percent
In dwelling when arrived	1,565	14.1
Installed since arrived	4,209	37.9
No	5,195	46.8
Don't know	126	1.1
Total	11,094	100.0

6.3.6 Heat Pumps

Some respondents (17.7%) reported having a heat pump in their home. Eleven percent (10.6%) moved into a home with a heat pump. Over one-quarter (27.1%) of respondents living in houses built after the year 2000 had heat pumps in the dwelling when they arrived.

[23] $p < .05$

Table 15: Heat pumps (%)

Heat Pumps	Frequency	Percent
In dwelling when arrived	766	7.1
Installed since arrived	1,156	10.6
No	8,702	80.1
Don't know	239	2.2
Total	10,862	100.0

6.3.7 Water Efficiency

Respondents were asked whether their homes had features associated with water efficiency, such as dual flush toilets, low flow shower heads or tanks to collect rainwater.

Two-thirds (66.2%) of respondents had dual flush toilets in their homes. One-quarter (26.5%) reported that these had been installed since they arrived. The higher the income the more likely the householder was to have installed this feature.

Dual flush toilets were more likely to have been reported by those living in newer houses and on higher incomes, both on arrival in a home and as a feature installed subsequent to moving in. The higher the income and the newer the house the more likely the householder was to have a dual flush toilet on arrival in their home, or to have had it subsequently installed.[24]

Although it would appear that fewer than half (44.0%) of the respondents lived in homes with low flow shower heads and tap ware, this may be higher as 13% did not know whether their homes contained these.

The lower the household income, the more likely the householders were to report having low flow shower heads and tap ware when they moved in.[25] Although newer houses were more likely to have this feature, there was no association between household income and the installation of the low flow shower heads and tap ware.

One-quarter of rental homes (25.8%) had these features when the respondent arrived, few had had these features installed subsequent to arrival (5.3% compared with 19.0% of homeowners).

[24] *$p < .05$.*
[25] *$p < .05$.*

Most of the respondents' homes (81.5%) did not have a tank to collect rain water. Of those who had moved into a dwelling with an existing rain water tank, most (75.6%) lived in rural areas. Of respondents who reported having had a tank installed since moving in, 42.0% lived in rural areas and 42.0% lived in suburban areas in the city.

Table 16: Water efficient features (%)

	In dwelling when arrived	Installed since arrived	No	Don't know	Total
Dual flush toilet	39.7	26.5	33.4	0.3	11,230
Low flow shower heads and tap ware	25.8	18.2	43.0	13.0	11,016
Tank to collect rain water	12.1	5.6	81.5	0.8	10,984

6.3.8 Indoor Environment Quality

A total 33.4% of respondents had under-floor damp proofing installed. Most of these said that this feature had been in their dwelling on arrival.

Around one-quarter or respondents had had an extractor fan installed in the kitchen (26.2%) and bathroom (25.4%). Once again homeowners were more likely to have had these features installed than those renting.[26]

Table 17: Indoor environment features (%)

	In dwelling when arrived	Installed since arrived	No	Don't know	Total
Under-floor damp-proofing	27.1	6.3	48.7	17.9	10,942
Extractor fan in kitchen	45.2	26.2	28.5	0.1	11,232
Extractor fan in bathroom	31.3	25.4	n/a	0.2	11,162

[26] $p < .05$.

6.3.9 Other Security

Almost two-thirds (65%) of householders had security locks and alarms in their homes. Overall high income households were more likely to have had these features installed in their houses on arrival, however they are also more likely to have had these installed subsequent to their arrival. Renters (11.0%) were much less likely than homeowners (34.6%) to have had these features installed.

Almost half (48.5%) of the respondents reported having secure latches on windows. This suggests the ability of respondents to leave windows open, enabling passive ventilation, without compromising home security).

Most (60.2%) respondents did not have an emergency preparedness kit. Homeowners (28.7%) were slightly more likely to say they had a kit than those renting (25.9%).[27] Of those who didn't know whether they had a kit, over half (59.3%) were homeowners.

Table 18: Security features (%)

	In dwelling when arrived	Installed since arrived	No	Don't know	Total
Security locks and alarms	29.0	33.0	37.6	0.4	11,113
Emergency preparedness kit	10.7	28.2	60.2	1.0	10,882
Windows open on a security latch	24.1	24.4	50.9	0.6	11,108

6.3.10 Other – Environment Quality

Most householders (93.6%) had access to a private outdoor area. Those who were living in an apartment within a block of flats were least likely to have access to such an area with almost one–third (31.7%) having no access compared with only 5.1% of those living in free standing houses or town houses (8%).[28]

Respondents in free standing houses were most likely to have installed a private outdoor area since they arrived in their dwelling.

[27] $p < .05$.
[28] $p < .05$.

Table 19: Private outdoor area (%)

	Frequency	Percent
In dwelling when arrived	8,866	78.9
Installed since arrived	1,646	14.7
No	699	6.2
Don't know	21	0.2
Total	11,232	100.0

Although half (51.8%) of the respondents said that environmentally sustainable building materials had been used in their homes, few (7.8%) had installed them since arrival. However, over one-quarter of householders (29.9%) did not know whether or not their homes had used these products.

Table 20: Environmentally sustainable building materials (%)

	Frequency	Percent
In dwelling when arrived	4,753	43.6
Installed since arrived	892	8.2
No	2,004	18.4
Don't know	3,255	29.9
Total	11,432	100.0

6.3.11 Adding features to the home

Respondents were asked to list the three features they would be most likely to add to their home, in order of priority. The section was divided into two sections: for homeowners and for renters.

6.3.11.1 Homeowners

Of the 11,700 people who said they owned their own home, 7,735 provided a first priority, 6,200 provided a second priority and 4,899 extended to a third.

Overall, the features that received the highest percentage of responses were the emergency preparedness kit (18.2%), heat pump (10.0%) and energy-saving light bulbs (9.8%).

Table 21: Homeowners' Priorities (% Responses)

Overall Priorities	Percent	First Priority	Percent
Emergency preparedness kit	18.2	Emergency preparedness kit	21.1
Heat pump	10.0	Heat pump	11.1
Energy-saving light bulbs	9.8	Energy-saving light bulbs	10.4
Solar water heating	8.8	Solar water heating	8.1
Wrapped hot water cylinder	7.5	Wrapped hot water cylinder	6.3
Window open on a security latch	6.0	Security locks and alarms	5.8
Insulation - under floor	5.5	Insulation - under floor	5.7
Security locks and alarms	5.5	Window open on a security latch	5.1
Extractor fan in bathroom	5.0	Extractor fan in bathroom	5.0
Tank to collect rain water	3.4	Extractor fan in kitchen	3.0
Dual flush toilets	3.1	Dual-flush toilets	2.9
Extractor fan in kitchen	3.1	Double glazing	2.7
Double glazing	3.1	Tank to collect rain water	2.7
Low flow shower heads & tap ware	2.6	Insulation - ceiling	2.4
Insulation - ceiling	2.1	Low flow shower heads & tap ware	2.0
Under-floor damp proofing	1.6	"A" grade hot water cylinder	1.5
"A" grade hot water cylinder	1.4	Under-floor damp proofing	1.2
Insulation - walls	1.3	Insulation - walls	1.1
Access to private outdoor area	1.0	Access to private outdoor area	1.1
Hot water cylinder set at 60 º C	0.7	Hot water cylinder set at 60 º C	0.7
Environmentally friendly building materials	0.3	Environmentally friendly building materials	0.2
Total	100.0	Total	100.0

6.3.11.2 Renters

People who rented their homes were asked which features they would like their landlord to add in the next 12 months. Of the 553 respondents, 462 listed a first priority, 432 listed a second and 411 a third.

For those renting, overall solar heating (10.0%), a wrapped hot water cylinder (8.3%), an extractor fan in the bathroom (7.3%) and/or a heat pump (7.2%) were the features that received the highest percentage of responses.

Table 22: Renters' priorities (%)

Overall Priorities	Percent	First priority	Percent
Solar water heating	10.0	Solar water heating	12.2
Wrapped hot water cylinder	8.3	Insulation - ceiling	9.3
Extractor fan in bathroom	7.3	Heat pump	8.5
Heat pump	7.2	Wrapped hot water cylinder	8.1
Extractor fan in kitchen	7.0	Extractor fan in bathroom	7.8
Insulation - under floor	6.9	Extractor fan in kitchen	7.4
Security locks and alarms	6.0	Security locks and alarms	6.8
Window open on a security latch	5.7	Insulation - under floor	6.6
Insulation - walls	5.4	Window open on a security latch	6.0
Insulation - ceiling	5.1	Double glazing	5.0
Double glazing	4.9	Insulation - walls	4.8
Low flow shower heads & tap ware	4.6	Emergency preparedness kit	3.0
Under-floor damp proofing	3.8	Energy-saving light bulbs	2.3
Tank to collect rain water	3.5	Under-floor damp proofing	2.3
Emergency preparedness kit	3.1	"A" grade hot water cylinder	2.2
Dual flush toilets	3.0	Dual flush toilets	2.2
Hot water cylinder set at 60 º C	2.4	Low flow shower heads & tap ware	2.0
Energy-saving light bulbs	2.0	Tank to collect rain water	1.4
"A" grade hot water cylinder	1.7	Access to private outdoor area	1.1
Environmentally friendly building materials	1.3	Hot water cylinder set at 60 º C	0.8
Access to private outdoor area	0.6	Environmentally friendly building materials	0.3
Total	100.0	Total	100.0

6.3.12 Making Changes to the Home

Overall, most (68.0%) respondents had made changes to their home.

Those with houses built prior to 2000 were more likely to have made changes.[29] Similarly homeowners (70.7%) were more likely than renters (20%) and those on higher incomes were more likely to make changes than those on lower incomes.[30]

[29] $p < .05$.

Table 23: Made changes to homes (%)

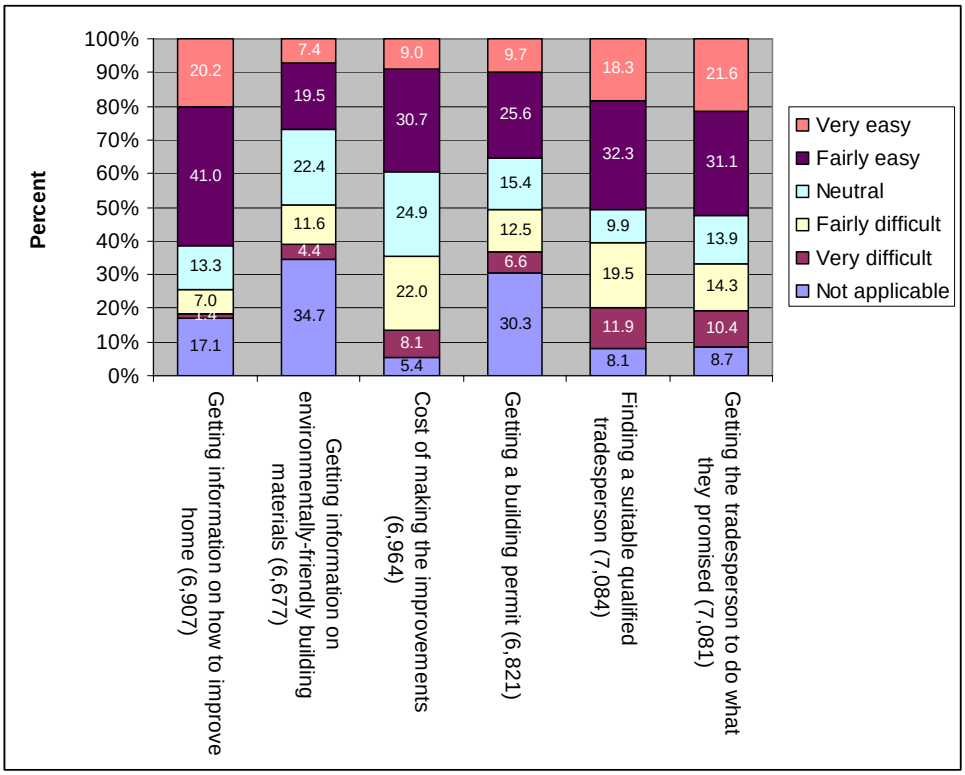
	Frequency	Percent
Yes	7,380	68.0
No	3,467	32.0
Total	10,846	100.0

6.3.13 Rating the Changes

Those who had made the changes were asked to rate the ease of different aspects of the task.

Respondents were most likely to find information on improving their home 'fairly' or 'very easy' (61.2%) to obtain. Respondents were least likely to say that they found getting information on environmental products easy (26.9%). One-third of respondents (34.7%) said that getting information on environmentally-friendly building materials had not been applicable to the changes that they had made in their homes.

Figure 1: Ease of making changes (%)



[30] *p < .05.*

6.3.14 Respondents' Homes

Respondents were asked to select the three most important things about their home from a list of ten features.

Almost half (47.9%) of the respondents considered that the warmth of their home in winter was one of the most important factors. Many respondents also considered a well built house (41.1%) and a low maintenance home (39.8%) key.

Table 24: Most important thing about home (%)

	Frequency	Percent of Responses	Percent of Respondents
Warm in winter	5,436	16.0	47.9
Well built	4,662	13.8	41.1
Low maintenance	4,515	13.3	39.8
Dry	4,175	12.3	36.8
Private	3,611	10.7	31.8
Good natural light	3,599	10.6	31.7
Quiet	2,383	7.0	21.0
Cool in summer	1,978	5.8	17.4
Good air flow	1,639	4.8	14.4
Spacious	1,591	4.7	14.0

A total of 586 people listed 'other' features that were important to them. The aspects most frequently mentioned were location of their home (99), the view (89) and the sunniness (57).

6.3.15 The Three Most Important Things about Living in their Homes

They were then asked to identify the three most important things about living in their homes.

Two-thirds (66.7%) of the respondents said that comfort was the most important thing to them about living in their home. Many respondents also rated privacy (42.4%) and security (40.8%) as important factors.

Respondents prioritised features such as privacy and security over personal expression and style. Only 14.9% of respondents said that sustainability was important to them about their home. Those on low to moderate incomes and those who owned a home with a mortgage were more likely to feel this way.[31]

'Other' features reported included the location (95), view (66) and functional (27) aspects of their homes.

Table 25: Most important things about living in home (%)

	Frequency	Percent of Responses	Percent of Respondents
Comfort	7,468	22.4	66.7
Private	4,742	14.2	42.4
Secure	4,570	13.7	40.8
Peaceful	4,076	12.2	36.4
Healthy	3,542	10.6	31.6
Relaxing	2,948	8.8	26.3
Independent	2,446	7.3	21.9
Sustainable	1,664	5.0	14.9
Express my/our personality	1,202	3.6	10.7
Stylish	359	1.1	3.2
Other	353	1.1	3.2
	33,368	100.0	298.2

[31] ***P < .05.***

7 Discussion

Overall, householders are most likely to report living in homes with sustainable features such as access to a private outdoor area (93.6%), ceiling insulation (87.8%), an A-grade hot water cylinder (72.5%), and/or an extractor fan in the kitchen (71.4%). These are also the features that are most likely to have already been installed in homes prior to the respondent moving in.

The features that the respondents are most likely to have changed are, on the whole, low cost and easy to change without professional help, such as energy saving light bulbs (37.9%), security locks and alarms (33%), hot water cylinders set at 60 degrees celcius and an emergency preparedness kit.

Householders have also installed a range of higher cost features, or those that may require professional input to install, such as dual flush toilets (26.5%), extractor fans in the kitchen and extractor fans in the bathrooms.

These are items that tend to be installed during home renovations. The higher the household income, the more likely the householder is to report having installed these items since moving into their dwelling.[32]

Table 26: Features most likely to have changed

Energy saving light bulbs	37.9
Security locks and alarms	33.0
Hot water cylinder set at 60 degrees Celcius	29.0
Emergency preparedness kit	28.2
Dual flush	26.5
Extractor fan in kitchen	26.2
Extractor fan in bathroom	25.4
Insulation ceiling	24.7
Windows open on a security latch	24.4
Low flow shower heads and tap ware	18.2
A-grade hot water cylinder	17.1
Access to private outdoor area	14.7

[32] $p < .05$.

Wrapped hot water cylinder	13.7
Insulation walls	12.4
Heat pump	10.6
Insulation under-floor	8.0
Under-floor damp-proofing	6.3
Tank to collect rain water	5.6
Double glazing	4.8
Solar water heating	2.2

7.1 Energy Efficiency

Measures designed to increase energy efficiency, such as ceiling, wall and under-floor insulation, are much more likely to have been installed prior to the respondent moving into the dwelling.

High cost energy efficient features, such as solar water heating and double glazing, have been installed at lower rates. Of those who have these features, many have had them installed after moving into their home.

There is substantial interest in these high cost energy efficiency features. Homeowners have identified the installation of a heat pump as the second (overall) highest priority based on a list of features that they would like to add in the next year. Renters, too, see this as a priority having identified heat pumps as the fourth highest priority for features that they would like to see the landlord add in the next 12 months.

Those energy efficiency measures that are relatively low cost to install, such as a wrapped hot water cylinder, or the installation of energy saving light bulbs, have not been widely adopted by householders.

It is interesting to note that the largest group that have wrapped their water cylinder (30.2%) are those who have had an A-grade water cylinder installed in their home. These cylinders do not normally need wrapping as they are already well-insulated.

Although energy saving light bulbs are the feature most likely to have been adopted by householders subsequent to moving in, they only feature in half (52.0%) of respondents' homes. Only 9.8% of homeowners and 2.0% of renters see this as an overall priority that they would like to see added to their home in the next 12 months.

7.2 Water efficiency

Water efficiency features have been installed in limited numbers and appear to be a low priority for householders.

Respondents are less likely to have installed low flow shower heads and tap ware, and dual flush toilets (18.2% and 26.5% respectively) than other features listed.

The higher the income and the newer the house, the more likely the householder is to have a dual flush toilet when they moved in, or to have had it installed subsequent to moving in.

The lower the income group, the more likely the householder is to live in a dwelling with low flow shower heads and tap ware.

Both these products are fairly low on the list of priorities relating to features to be added over the next 12 months. Of the 21 priorities listed (excluding 'other') dual flush toilets are the 11th priority of homeowners and 16th priority of renters. Low flow shower heads and tap ware are similarly low in priority, at 14th place for homeowners and 12th for renters.

Tank water is another feature associated with water efficiency.

Only 17.7% of respondents said they had a tank to collect rainwater and most of these were from rural areas. However 5.6% had had it installed since arrival.[33] Rural dwellers are much more likely to have limited mains water supply than urban residents, hence tanks are more likely to be found in rural areas. However, it would appear that city dwellers may be becoming more sensitive to water efficiency concerns. Of the tanks installed subsequent to the householder moving in, 42.9% were in rural areas and 42.0 % were in suburban areas.

7.3 Indoor environment

Some features that can improve the quality of the indoor environment, such as an extractor fan in the kitchen, have been installed in a high percentage of households (71.4%). They are not a particularly high priority amongst homeowners (12th). They are however 5th on the overall priority list of renters.

Fewer respondents reported having extractor fans in their bathrooms (56.7%), although one-quarter (25.4%) installed them after moving in. Although these are low on the list of priorities of homeowners (9th) they are high on the priority list for renters (3rd).

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[33] Note an earlier analysis of data suggested that Northland residents were far more likely to have rainwater tanks installed (50%), with Canterbury and Wellington residents reporting the lowest incidence of installation (5% and 7% respectively).

There appears to be a poor understanding of environmentally friendly building materials. Although half (51.8%) of the respondents said their home used environmentally friendly building materials, a further 29.9% did not know whether or not this was the case. This was last (21st) on the list of priorities of homeowners looking at making changes over the next 12 months and the second to last (20th) priority of those renting and wanting their landlord to add.

7.4 Other – security

Most respondents reported having some form of security in their homes. Almost two-thirds (65%) of householders had security locks and alarms in their homes. Half (48.5%) had security latches, which in addition to security allows householders to safely leave windows open enabling passive ventilation.

Low cost safety measures, however, such as emergency preparedness kits are installed in relatively low numbers. Over half (60.2%) did not have an emergency preparedness kit. Although it was highest on the homeowners list of priorities to install over the next 12 months, it was only 15th of the 21 features listed by renters.[34]

7.5 Making Changes

Most (66%) respondents said they had made changes to their home, suggesting that there is a substantial amount of alteration work happening in New Zealand homes.[35] The nature and degree of these changes, or their 'sustainability,' was not determined.

Some found cost (30.1%) and finding a suitably qualified tradesperson (31.5%) a barrier to the changes that they had made.

Only 16% reported finding it difficult to get information on environmentally-friendly building materials.

However, one-third of the householders that had made changes said that this information was not applicable to the changes that they had made. It is unclear whether this was because the projects did not actually require environmentally-friendly building materials, or because there is a lack of connectedness between householders' views of sustainability and the projects that they are undertaking.

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[34] This, however, might not be because it is a low priority. The question asked renters which features they would like to see landlords provide over the next 12 months. This may be a feature that renters see themselves providing.

[35] Note that there was no time line on these changes so the changes could have happened many years ago.

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7.6 What is important

There are further indications that respondents may not be connecting the features of their home with the concept of sustainability.

When asked what three things were most important to them about their home, respondents were most likely to rate the value of winter warmth, being well-built and low maintenance as important. Dryness and privacy were also felt to be important factors.

Householders were also asked about what was important to them about living in their home. Comfort was the most commonly reported feature.

Despite wanting to live in a warm, well-built and comfortable home, sustainability was low on householders' list or features selected (8th).

8 Implications

8.1 Issues to address

8.1.1 Promote greater awareness of sustainable products to householders

Householders cannot consciously change what they are unaware of. Currently many householders are unaware whether their homes contain sustainable features or not.

Some of these features can be quickly and easily identified and sustainable changes can be implemented – such as setting a hot water cylinder to 60 degrees celcius.

These features need to be identified and promoted.

8.1.2 Information not applicable to projects

Sustainability may have little practical appeal to householders. The difficulty in finding information on environmentally friendly products was not identified as an issue by householders. This may be because they do not currently connect the opportunity to make sustainable changes with the changes that they are making to their homes. This issue needs to be more clearly understood and, if this is indeed the case, addressed.

8.1.3 Link sustainability to renovations and upgrades

Environmental friendly building materials are currently last on the list of homeowners priorities. Sustainability features need to be linked more closely to renovations and home upgrades so that householders understand the options and benefits at every stage of the process, from planning to completion.

Householders need to be aware of the ways in which sustainable features are relevant to their project at every stage of their project. This is particularly important when promoting higher cost sustainable items that may require professional input such as dual flush toilets and extractor fans as these are likely to be installed during one-off renovations.

8.1.4 Promote low cost products for immediate progress towards improving household sustainability

There is currently little interest and low uptake amongst householders in installing a number of low cost sustainable products.

This creates an opportunity to promote a range of sustainable products that are low cost, provide cost benefits to homeowners and renters, and are easy to install without professional help. These could include energy saving light bulbs, security locks and alarms, hot water cylinders set at 60 degrees celcius and emergency preparedness kits.

8.1.5 Progress towards more sustainable energy efficient homes (high cost features)

The high level of interest in installing high cost measures such as heat pumps creates an opportunity to promote these, particularly to homeowners in colder climates.[36]

8.1.6 Progress towards more sustainable energy efficient homes (low cost features)

There is an opportunity to promote energy efficient features that are relatively low cost to install, such as a wrapped hot water cylinder, more widely to householders as there are low adoption rates and low interest in these features.

[36] *Note – although there appears to be a greater interest in heat pumps from homeowners in colder regions it is important to note that regional differences have not been tested to see whether they are statistically significant.*

8.1.7 Progress towards more water efficient homes

There is a strong opportunity to promote water efficiency features to households as these currently have a low uptake and they are seen by householders as low in priority. There may be an emerging 'readiness' for water conservation messages with suburban households starting to install water tanks.

8.1.8 Progress towards improving the quality of the indoor environment

Renters are least likely to have extractor fans installed in their home and these are a high priority. There is an opportunity to promote these features to landlords by highlighting the long term benefits to dwellings and the cost/benefits of installing these products.

8.1.9 Connect the concept of sustainability to the home attributes valued by consumers

Sustainability does not appear to be linked to the way householders feel about their homes, or the aspects of their homes that are important to them.

Householders want homes that are warm, well-built, low maintenance and comfortable. They do not currently appear to be connecting these attributes to sustainable housing. There is an opportunity to build positive associations between sustainability and the emotional connection that they have to their homes.

9 Appendix One: Questionnaire

CONSUMER 2005 survey

Housing

Dear Subscriber

- Does your home bake in summer and freeze in winter?
- Do you face water shortages this summer?
- What is important to you when improving your home?

There are many practical and affordable steps you can take to meet these challenges. Our questionnaire asks you about some of them.

Consumers' Institute is working with Beacon Pathway* to find out how well-equipped New Zealand homes are. The information you provide will help Beacon Pathway to focus their research on the issues that matter most to you. Of equal importance, you will be providing valuable information which will be used in planning future articles on housing topics. We'll report our findings in ***Consumer*** early next year.

Please take a few minutes to complete this survey and return it to us by Friday, 4 November. To show our appreciation we'll put you in a **draw to win $500 cash**.

Thank you for your help.

Yours sincerely

David Russell
Chief Executive
Consumers' Institute

Be in the draw to win $500 cash!

* Beacon Pathway

Beacon Pathway is a research group working to find affordable, attractive ways to make New Zealand homes more sustainable. It aims to encourage and improve sustainability by researching building technologies, construction industry practices, urban planning, policy and regulation as well as consumer understanding and needs.

YOUR PRIVACY
The information collected in this survey will be kept fully confidential. Information will only be reported in aggregate form and personal details will not be shared with any outside organisation.

Please return this questionnaire by **FRIDAY 4 NOVEMBER**

About your household

1 Which best describes the area where you live?

- ☐ 1 City - central
- ☐ 2 City - suburban
- ☐ 3 Town
- ☐ 4 Rural

2 Which best describes your home?

- ☐ 1 House – free-standing
- ☐ 2 House – connected, eg unit or townhouse
- ☐ 3 Apartment – in a block of flats
- ☐ 4 Apartment – within a house
- ☐ 5 Other – please specify below

3 When was your home built?

- ☐ 1 Before 1960
- ☐ 2 Between 1960 and 1977
- ☐ 3 Between 1978 and 2000
- ☐ 4 After 2000
- ☐ 5 Don't know

4 How long have you been living in your home?

☐ years

5 How many bedrooms are there in your home?

☐ bedrooms

6 How many people are there in your household, including yourself?

☐ people

7 Which best describes your household?

Tick all boxes that apply

- ☐ 1 No dependent children
- ☐ 2 Includes dependent children, under 6 years
- ☐ 3 Includes dependent children, 6 to 12 years
- ☐ 4 Includes dependent children, over 12 years
- ☐ 5 Other - please specify below

The following questions (8 to 10) are of a personal nature and it is your choice whether you complete them or not.

All replies are strictly confidential and the information will be used only to group different types of household for analysis.

8 What is your age group?

- ☐ 1 Under 40
- ☐ 2 40 - 64 years
- ☐ 3 65 - 75 years
- ☐ 4 Over 75 years

9 What is your total household income, before tax?

- ☐ 1 Less than $20,000
- ☐ 2 $20,000 to $39,999
- ☐ 3 $40,000 to $59,999
- ☐ 4 $60,000 to $79,999
- ☐ 5 $80,000 to $99,999
- ☐ 6 More than $100,000

10 Is your home ….?

- ☐ 1 Owned by you with a mortgage
- ☐ 2 Owned by you freehold
- ☐ 3 Rented by you
- ☐ 4 Other – please specify below

About your home

11 Does your home have any of these features?
Tick one box on every line

		YES – in the dwelling when I arrived	YES - installed since I arrived	NO	Don't know
Access to private outdoor area	A	☐ 1	☐ 2	☐ 3	☐ 4
"A" grade hot water cylinder	B	☐ 1	☐ 2	☐ 3	☐ 4
Energy-saving light bulbs	C	☐ 1	☐ 2	☐ 3	☐ 4
Double glazing	D	☐ 1	☐ 2	☐ 3	☐ 4
Dual-flush toilets	E	☐ 1	☐ 2	☐ 3	☐ 4
Emergency preparedness kit	F	☐ 1	☐ 2	☐ 3	☐ 4
Environmentally-friendly building materials	G	☐ 1	☐ 2	☐ 3	☐ 4
Extractor fan in bathroom	H	☐ 1	☐ 2	☐ 3	☐ 4
Extractor fan in kitchen	I	☐ 1	☐ 2	☐ 3	☐ 4
Heat pump	J	☐ 1	☐ 2	☐ 3	☐ 4
Hot water cylinder set at 60°C	K	☐ 1	☐ 2	☐ 3	☐ 4
Insulation - ceiling	L	☐ 1	☐ 2	☐ 3	☐ 4
Insulation - under-floor	M	☐ 1	☐ 2	☐ 3	☐ 4
Insulation - walls	N	☐ 1	☐ 2	☐ 3	☐ 4
Low-flow shower heads and tapware	O	☐ 1	☐ 2	☐ 3	☐ 4
Security locks and alarms	P	☐ 1	☐ 2	☐ 3	☐ 4
Solar water heating	Q	☐ 1	☐ 2	☐ 3	☐ 4
Tank to collect rain water	R	☐ 1	☐ 2	☐ 3	☐ 4
Under-floor damp-proofing	S	☐ 1	☐ 2	☐ 3	☐ 4
Windows open on a security latch	T	☐ 1	☐ 2	☐ 3	☐ 4
Wrapped hot water cylinder	U	☐ 1	☐ 2	☐ 3	☐ 4
Other feature you have installed		☐			

12 If you own your home please answer **[A]**, then go to question 13.

If you are renting, please answer **[B]**, then go to question 15.

[A] Which of the above features (that your home does not currently have) are you most likely to add in the next 12 months?

Please list them in order of priority, using the letter following each feature, eg Q for Solar water heating.

First priority ☐

Second priority ☐

Third priority ☐

[B] Which of the above features (that your home does not currently have) would you like your landlord to add in the next 12 months?

Please list them in order of priority, using the letter following each feature, eg Q for Solar water heating.

First priority ☐

Second priority ☐

Third priority ☐

13 Have you made ANY changes at all to your home?

☐ 1 YES — Go to Question 14

☐ 2 NO — Go to Question 15

14 How easy or difficult did you find making the changes?

Please rate by coding each box as follows:

0 = Not applicable
1 = very difficult
2 = fairly difficult
3 = neutral
4 = fairly easy
5 = very easy

☐ 1 Getting information on how to improve my home

☐ 2 Getting information on environmentally-friendly building materials

☐ 3 Cost of making the improvements

☐ 4 Getting a building permit

☐ 5 Finding a suitably qualified tradesperson

☐ 6 Getting the tradesperson to do what they promised.

☐ 7 Other (Please specify below)

15 What **THREE** things are most important to you about your home?

Tick 3 boxes only

☐ 1 Cool in summer

☐ 2 Dry

☐ 3 Good air flow

☐ 4 Good natural light

☐ 5 Low maintenance

☐ 6 Private

☐ 7 Quiet

☐ 8 Spacious

☐ 9 Warm in winter

☐ 10 Well built

☐ 11 Other (please specify)

16 What **THREE** things are most important to you about living in your home?

Tick 3 boxes only

☐ 1 Comfort

☐ 2 Expresses my/our personality

☐ 3 Healthy

☐ 4 Independent

☐ 5 Peaceful

☐ 6 Private

☐ 7 Relaxing

☐ 8 Secure

☐ 9 Stylish

☐ 10 Sustainable

☐ 11 Other (please specify)

ANY OTHER COMMENTS?

☐ **YES** I would be willing to be contacted by Consumers' Institute and/or Beacon Pathway to take part in future research about my home.

Please tick the box and fill in your name and contact details if you agree to being contacted.

Name: _____

Daytime phone: ( ) _____

Email: _____

THANK YOU FOR YOUR HELP

CONSUMER 2005 survey

Housing

Reminder

Dear Subscriber

A few weeks ago we sent you a copy of this questionnaire. As we have not received a reply we are sending you a second copy, in case the first didn't arrive or was lost

The information you provide will be used to inform readers of ***Consumer*** magazine and subscribers to Consumer Online. It will help Beacon Pathway* to focus their research on the issues that matter most to you.

Please take a few minutes to complete this survey and return it to us by **Friday, 18 November**. The more responses we receive, the better the information we can provide. And you'll have a chance to win $500.

Thank you for your help

If you have already mailed your response please discard this copy.

Yours sincerely

David Russell

Be in the draw to win $500 cash!

YOUR PRIVACY
The information collected in this survey will be kept fully confidential. Information will only be reported in aggregate form and personal details will not be shared with any outside organisation.

**** Beacon Pathway***

Beacon Pathway is a research group working to find affordable, attractive ways to make New Zealand homes more sustainable. It aims to encourage and improve sustainability by researching building technologies, construction industry practices, urban planning, policy and regulation as well as consumer understanding and needs.

Please return this questionnaire by Friday, 18 November

10 Appendix Two: Sample structure

A comparison was made between the survey sample obtained and 2006 Census data on household income. The data was then weighted to better represent the household income of New Zealand households.

Table 27: Sample structure by household income

	Frequency	Percent	2006 Census	Weighting
Less than $20,000	836	7.3	16.5	2.3
$20,000 to $39,999	2,506	21.9	23.5	1.1
$40,000 to $59,999	2,137	18.7	18.6	1.0
$60,000 to $79,999	1,892	16.5	11.7	0.7
$80,000 to $99,999	1,393	12.2	10.3	0.8
More than $100,000	2,685	23.5	19.3	0.8
Total	11,449	100.0	100.0	

May not equal 100% due to rounding

11 Appendix Three: Features by age of dwelling

A-grade hot water cylinder	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	38.4	47.9	69.6	69.0	41.9	53.9
Installed since arrived	28.5	20.2	8.5	6.2	11.3	17.6
No	15.6	12.3	7.6	19.2	14.5	12.4
Don't know	17.5	19.6	14.3	5.6	32.3	16.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,448.0					

Energy- saving light bulbs	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	9.1	11.0	16.6	23.9	10.4	13.4
Installed since arrived	43.1	42.3	33.7	17.5	36.8	37.5
No	46.6	46.1	48.4	55.8	51.2	47.9
Don't know	1.1	0.6	1.3	2.8	1.6	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,499.0					

Double-glazing	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	1.7	2.7	8.0	31.4	2.5	6.6
Installed since arrived	6.8	5.7	3.2	3.8	1.7	5.0
No	90.8	90.9	87.7	63.3	86.7	87.3
Don't know	0.7	0.7	1.1	1.5	9.2	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,273.0					

Dual flush toilets	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	20.5	24.7	57.3	88.0	41.4	39.9
Installed since arrived	40.3	36.9	14.6	6.1	10.9	27.7
No	38.8	38.2	27.8	5.5	46.1	32.1
Don't know	0.3	0.2	0.3	0.4	1.6	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,677.0					

Emergency preparedness kit	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	5.6	8.2	13.2	21.5	4.9	10.2
Installed since arrived	34.4	31.0	24.8	13.2	18.9	28.3
No	59.4	59.6	61.1	63.6	74.6	60.5
Don't know	0.7	1.2	0.9	1.7	1.6	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,290.0					

Environmentally-friendly building materials	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	30.0	40.2	49.9	56.5	22.6	41.6
Installed since arrived	13.0	8.2	4.8	5.0	1.6	8.2
No	26.1	19.2	13.9	11.2	22.6	18.8
Don't know	30.9	32.3	31.4	27.3	53.2	31.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,284.0					

Extractor fan in bathroom	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	17.4	18.6	43.9	83.0	23.8	32.3
Installed since arrived	37.4	33.5	18.2	6.7	9.5	27.1
No	45.0	47.7	37.6	10.2	66.7	40.4
Don't know	0.3	0.2	0.3	0.1	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,605.0					

Extractor fan in kitchen	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	24.3	38.6	63.1	85.6	33.1	46.5
Installed since arrived	39.7	33.5	16.1	6.8	10.2	27.1
No	35.7	27.8	20.8	7.6	56.7	26.3
Don't know	0.2	0.1	0.1	0.0	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,684.0					

Heat pump	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	2.4	3.0	9.2	27.1	2.5	6.9
Installed since arrived	11.0	11.5	10.9	7.5	4.1	10.7
No	84.3	83.8	77.6	62.5	84.4	80.1
Don't know	2.3	1.8	2.3	2.8	9.0	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,264.0					

Hot water cylinder set at 60 degrees celcius	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	25.6	35.9	52.5	56.3	27.6	39.9
Installed since arrived	41.3	35.0	19.4	7.8	17.9	29.2
No	18.3	14.3	13.1	22.6	14.6	15.8
Don't know	14.8	14.8	15.0	13.3	39.8	15.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,445.0					

Insulation - ceiling	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	39.1	58.4	85.4	89.5	38.3	64.0
Installed since arrived	45.3	28.1	7.5	7.1	10.2	24.5
No	12.6	9.5	3.7	1.0	22.7	7.9
Don't know	3.0	4.0	3.4	2.3	28.9	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,744.0					

Insulation - under floor * Age of House Crosstabulation	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	3.1	11.0	37.3	49.9	8.2	20.5
Installed since arrived	13.2	9.1	4.6	4.4	1.6	8.4
No	79.7	72.8	45.8	36.8	58.2	62.9
Don't know	4.0	7.1	12.3	8.9	32.0	8.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,283.0					

Insulation - Walls	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	11.4	31.6	76.9	87.6	18.4	45.4
Installed since arrived	24.4	12.8	5.9	6.6	3.2	13.3
No	54.2	40.5	7.4	1.8	31.2	30.1
Don't know	10.1	15.1	9.8	4.0	47.2	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,557.0					

Low flow shower heads and tap ware	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	13.9	20.8	33.1	40.0	23.4	24.4
Installed since arrived	25.8	22.5	11.2	4.7	10.5	18.2
No	48.0	44.4	41.0	37.1	43.5	43.7
Don't know	12.3	12.3	14.6	18.2	22.6	13.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,403.0					

Security locks and alarms	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	15.3	19.8	42.2	63.2	26.8	29.6
Installed since arrived	43.2	41.2	26.0	9.1	18.9	33.8
No	41.0	38.8	31.5	27.3	53.5	36.2
Don't know	0.4	0.3	0.2	0.4	0.8	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,551.0					

Solar water heating	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	0.5	1.4	2.9	6.5	0.0	2.0
Installed since arrived	2.3	2.2	2.0	2.4	0.8	2.2
No	96.4	95.4	94.3	90.4	97.6	94.9
Don't know	0.8	1.0	0.8	0.7	1.6	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,343.0					

Tank to collect rain water	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	10.2	10.3	14.4	17.1	4.8	12.1
Installed since arrived	7.9	4.8	4.7	3.9	3.2	5.6
No	81.2	84.0	80.2	78.3	89.5	81.5
Don't know	0.6	0.8	0.7	0.6	2.4	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,415.0					

Under-floor damp proofing	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	5.7	18.2	47.1	59.9	6.5	27.4
Installed since arrived	9.4	6.5	4.7	5.7	0.8	6.7
No	73.5	56.7	25.1	13.6	46.0	47.6
Don't know	11.4	18.5	23.2	20.8	46.8	18.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,358.0					

Windows open on a security latch	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	Before 1960
In dwelling when arrived	11.8	19.6	34.2	44.8	28.3	24.3
Installed since arrived	28.1	32.1	20.4	7.9	13.4	24.8
No	59.6	47.7	44.8	46.5	56.7	50.3
Don't know	0.5	0.6	0.5	0.7	1.6	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,516.0					

Wrapped hot water cylinder	Before 1960	Between 1960 and 1977	Between 1978 and 2000	After 2000	Don't know	
In dwelling when arrived	9.6	12.6	20.9	23.8	14.9	15.3
Installed since arrived	18.5	17.4	8.4	3.3	12.4	13.6
No	69.9	68.3	68.2	70.6	60.3	68.9
Don't know	2.0	1.7	2.6	2.4	12.4	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
	12,218					

12 Appendix Four: Home features by region

Tables A to S show the percentage of people in each region whose homes possess each feature. Regions that differ substantially from the average (overall) are shown by '+' (greater than average) or '-' (less than average).37

Table A **Table B**

A-Grade hot water cylinder			Energy-saving light bulbs		
Auckland	70%		Auckland	44%	-
Bay of Plenty/Waikato	71%		Bay of Plenty/Waikato	50%	
Canterbury	67%		Canterbury	53%	+
East Coast	71%		East Coast	53%	
Manawatu/Wanganui/Taranaki	69%		Manawatu/Wanganui/Taranaki	47%	
Nelson/Marlborough	68%		Nelson/Marlborough	65%	+
Northland	76%	+	Northland	56%	+
Otago/Southland	74%	+	Otago/Southland	45%	-
Wellington	62%	-	Wellington	51%	
Westland	69%		Westland	60%	
Overall	69%		Overall	49%	

Table C **Table D**

Double glazing			Dual-flush toilets		
Auckland	4%	-	Auckland	78%	+
Bay of Plenty/Waikato	6%	-	Bay of Plenty/Waikato	68%	+
Canterbury	29%	+	Canterbury	59%	-
East Coast	5%	-	East Coast	60%	-
Manawatu/Wanganui/Taranaki	6%	-	Manawatu/Wanganui/Taranaki	60%	-
Nelson/Marlborough	15%	+	Nelson/Marlborough	64%	
Northland	5%	-	Northland	78%	+
Otago/Southland	22%	+	Otago/Southland	49%	-
Wellington	11%		Wellington	65%	
Westland	12%		Westland	53%	-
Overall	11%		Overall	66%	

[37] ***Note that these differences have not been significantly tested.***

Table E

Emergency kit		
Auckland	28%	-
Bay of Plenty/Waikato	32%	-
Canterbury	37%	
East Coast	40%	
Manawatu/Wanganui/Taranaki	38%	
Nelson/Marlborough	39%	
Northland	29%	-
Otago/Southland	30%	-
Wellington	57%	+
Westland	44%	
Overall	37%	

Table F

Bathroom fan		
Auckland	60%	+
Bay of Plenty/Waikato	58%	
Canterbury	61%	+
East Coast	55%	
Manawatu/Wanganui/Taranaki	55%	
Nelson/Marlborough	55%	
Northland	48%	-
Otago/Southland	50%	-
Wellington	61%	+
Westland	51%	
Overall	58%	

Table G

Kitchen fan		
Auckland	72%	
Bay of Plenty/Waikato	74%	
Canterbury	77%	+
East Coast	71%	
Manawatu/Wanganui/Taranaki	70%	
Nelson/Marlborough	69%	
Northland	63%	-
Otago/Southland	71%	
Wellington	71%	
Westland	69%	
Overall	72%	

Table H

Heat pump		
Auckland	10%	-
Bay of Plenty/Waikato	18%	
Canterbury	27%	+
East Coast	21%	+
Manawatu/Wanganui/Taranaki	11%	-
Nelson/Marlborough	32%	+
Northland	10%	-
Otago/Southland	26%	+
Wellington	12%	-
Westland	21%	
Overall	17%	

Table I

Hot water at 60ºC		
Auckland	64%	-
Bay of Plenty/Waikato	70%	+
Canterbury	67%	
East Coast	71%	+
Manawatu/Wanganui/Taranaki	70%	+
Nelson/Marlborough	73%	+
Northland	68%	
Otago/Southland	70%	+
Wellington	61%	-
Westland	69%	
Overall	67%	

Table J

Insulation - ceiling		
Auckland	84%	-
Bay of Plenty/Waikato	88%	
Canterbury	92%	+
East Coast	86%	
Manawatu/Wanganui/Taranaki	88%	
Nelson/Marlborough	94%	+
Northland	80%	-
Otago/Southland	92%	+
Wellington	85%	-
Westland	95%	+
Overall	87%	

Table K

Insulation - under-floor		
Auckland	27%	
Bay of Plenty/Waikato	28%	
Canterbury	31%	+
East Coast	23%	-
Manawatu/Wanganui/Taranaki	23%	-
Nelson/Marlborough	28%	
Northland	24%	
Otago/Southland	31%	+
Wellington	26%	
Westland	27%	
Overall	27%	

Table L

Insulation - walls		
Auckland	56%	
Bay of Plenty/Waikato	61%	+
Canterbury	61%	+
East Coast	56%	
Manawatu/Wanganui/Taranaki	55%	
Nelson/Marlborough	63%	+
Northland	56%	
Otago/Southland	55%	
Wellington	53%	-
Westland	64%	
Overall	57%	

Table M

Low flow shower heads and tap ware		
Auckland	38%	-
Bay of Plenty/Waikato	42%	
Canterbury	41%	
East Coast	45%	+
Manawatu/Wanganui/Taranaki	45%	+

Table N

Security locks & alarms		
Auckland	75%	+
Bay of Plenty/Waikato	58%	-
Canterbury	57%	-
East Coast	61%	
Manawatu/Wanganui/Taranaki	63%	

Nelson/Marlborough	47%	+	Nelson/Marlborough	43%	-
Northland	46%	+	Northland	49%	-
Otago/Southland	42%		Otago/Southland	40%	-
Wellington	37%	-	Wellington	67%	+
Westland	36%		Westland	16%	-
Overall	41%		Overall	62%	

Table O

Solar water heating		
Auckland	4%	
Bay of Plenty/Waikato	6%	+
Canterbury	4%	
East Coast	5%	
Manawatu/Wanganui/Taranaki	2%	-
Nelson/Marlborough	7%	+
Northland	6%	+
Otago/Southland	2%	-
Wellington	2%	-
Westland	1%	-
Overall	4%	

Table P

Tank to collect rain water		
Auckland	23%	+
Bay of Plenty/Waikato	15%	-
Canterbury	5%	-
East Coast	22%	+
Manawatu/Wanganui/Taranaki	23%	+
Nelson/Marlborough	16%	
Northland	50%	+
Otago/Southland	18%	
Wellington	7%	-
Westland	27%	+
Overall	17%	

Table Q

Under-floor damp-proofing		
Auckland	31%	
Bay of Plenty/Waikato	36%	+
Canterbury	38%	+
East Coast	31%	
Manawatu/Wanganui/Taranaki	30%	-
Nelson/Marlborough	37%	+
Northland	34%	
Otago/Southland	30%	
Wellington	27%	-
Westland	36%	
Overall	33%	

Table R

Window security		
Auckland	57%	+
Bay of Plenty/Waikato	47%	
Canterbury	41%	-
East Coast	48%	
Manawatu/Wanganui/Taranaki	44%	-
Nelson/Marlborough	41%	-
Northland	42%	-
Otago/Southland	33%	-
Wellington	52%	+
Westland	18%	-
Overall	48%	

Table S

Wrapped hot water cylinder		
Auckland	27%	
Bay of Plenty/Waikato	25%	-
Canterbury	26%	
East Coast	32%	+
Manawatu/Wanganui/Taranaki	22%	-
Nelson/Marlborough	34%	+
Northland	29%	
Otago/Southland	35%	+
Wellington	25%	
Westland	36%	
Overall	27%	