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**MT102**

# **Qualitative Study: Perceptions of 'Sustainability' and Uptake of Sustainable Solutions by Householders**

**Final**

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## About This Report

### Title

Qualitative Study: Perceptions of ‘Sustainability’ and Uptake of Sustainable Solutions by Householders

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### Abstract

*This report presents the findings of a qualitative study that investigates what sustainability means to householders, assesses their engagement in adopting sustainable solutions for their home and perceived barriers in doing so. It also identifies some indicators to measure household uptake of sustainable solutions.*

### Reference

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## Contents

1	Executive Summary.....	1
2	Introduction.....	5
3	Purpose .....	5
4	Methodology.....	5
5	Data limitations.....	7
6	Results .....	8
7	Implications .....	21
8	Key potential indicators of sustainability uptake.....	28
9	Appendix One: Sustainability Features Checklist .....	30
10	Appendix Two: Interview Guide .....	31
11	Appendix Three: Beacon Footprint .....	32

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## Tables

Table 1 Profile of participating households .....	8
Table 2: Attractors to a house .....	9
Table 3: Problems experienced .....	10
Table 4: Unprompted perceptions of a sustainable house .....	11
Table 5: Responses to the Beacon Footprint .....	12
Table 6: Sustainability Features Checklist Ratings .....	13
Table 7: Average sustainability ratings by income level .....	14
Table 8: Easier sustainability features to adopt.....	15
Table 9: Harder features to adopt.....	16
Table 10: Significance of sustainability gap .....	17
Table 11: Bridging the sustainability gap .....	18
Table 12: What would success look like? .....	20
Table 13: Positive associations to link with sustainability features .....	23
Table 14 Potential indicators of sustainability uptake.....	28

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# 1 Executive Summary

## 1.1 Purpose

Beacon Pathway Limited aims to achieve sustainability features in 90% of New Zealand houses by 2012. This requires understanding how householders perceive “sustainability”, including their knowledge of sustainability features and what supports and inhibits the uptake of these features.

This report presents the findings of a qualitative study that investigates what sustainability means to householders, assesses their engagement in adopting sustainable solutions for their home and perceived barriers in doing so. It also identifies some indicators to measure household uptake of sustainable solutions.

## 1.2 Method and limitations

In-depth interviews of up to two hours were held with representatives from 43 households. As part of the interview each household was asked to complete a Sustainability Features Checklist, which asks whether particular sustainability features exist in the home now and whether particular sustainability behaviours were almost always practised.

A range of households from Auckland, Napier and Christchurch participated, involving a range of ethnicities, urban, provincial and rural areas, income levels, housing types and household composition. Households which were not already sustainability oriented were also targeted. Recruitment occurred by ConsumerLink Ltd searching their database of 15,000 households nationwide.

The findings are based on summaries of interview transcripts (secondary data) and are limited to the material supplied. Almost all of the homes in the study were owned, so no comparison can be made between owned and rented homes, and no information on householder age was available. Also, given its small scale and qualitative nature, no claims of generalisability can be made to the wider population. The aim instead is to highlight themes and areas of potential in supporting householders to make their homes more sustainable, and to identify indicators to measure this uptake over time.

## 1.3 Results

While reasonably mixed, the profile of participating households leans slightly more towards urban contexts, detached free standing houses, couples, European backgrounds and households with middle to higher incomes.

Although a wide range of factors attracted people to their existing house, the most significant were affordability, quality of construction, good design and desirable features, ease of maintenance, proximity to shops, being sunny, airy, dry and warm, spacious, a good return on investment and location within a “good” neighbourhood.

Common problems experienced by households were lack of space (especially for growing families), cold or lack of insulation, lack of storage and poor design. The most common single change made was improving heating, and 13 households had undertaken major renovations, 12 had completed minor renovations and seven each had added on or made very few changes.

Almost half of the participating households were unsure as to how to describe a sustainable house. Those who offered a description tended to focus on durability, quality of construction and use of energy, water and natural resources. Responses were favourable to the Beacon Footprint, which lists features of sustainable housing, although some concerns were expressed as to affordability and feasibility.

Average ratings against the Sustainability Features Checklist were 70% identification of these features existing in their house, 68% undertaking of sustainability behaviours identified and total average sustainability ratings of 69%. Nine sustainability features were in place for less than 60% of households; these tended to be more expensive features such as insulation, water recycling, double glazing and solar/wind power.

When looking at trends for overall sustainability uptake based on the checklist:

- 1) Uptake of sustainability features and behaviours was highest among low income households, and lowest among higher income households.
- 2) Uptake was higher among single person households, and lowest among households with children.
- 3) Uptake was higher in units/apartments than freestanding apartments. This may be at least partly attributable to many of these apartments being newer and more likely to incorporate some sustainability features such as insulation.

Perceived easier sustainability changes to make often involved security improvements and energy saving light bulbs. Easier changes tend to be lower cost and smaller scale, and several people mentioned that they can more easily do very basic practical changes. The top five hardest perceived sustainability changes to make were double glazing, larger budget items, water recycling, solar energy and structural changes. In general a lack of urgency and drivers to make changes were expressed, plus perceived doubtful returns or weak benefits from doing so. Cost is also seen as a significant disincentive.

The majority (34 households) considered the gap between their house now and a more sustainable house to be significant or major. Reasons for this centred on affordability, concerns

about overcapitalising and not getting a return on the investment, having other spending priorities and/or being unclear as to the value of making changes.

When asked how their “sustainability gap” might be bridged, almost a third stated that they would focus on sustainability in their next house, and nine households that they would prioritise features that would add most value, especially in terms of energy and water efficiency, and/or would make cosmetic changes only. Key perceived methods to overcome barriers and gaps were seeking information, influencing developers, employing experts to assess and make the changes needed, government incentives, toolkits and supporting people to do “DIY” (do it yourself) sustainability uptake.

One fifth of households felt that sustainability changes would make little difference in their lives. Key benefits identified however were cost savings, comfort, health benefits, being more energy efficient and self sufficient, a more balanced lifestyle, improved quality of house and standard of living, better resale and good for entertaining.

Success of sustainability features would be judged mainly through improved comfort, enjoyment, convenience, quality of life, warmth, health, happier family and home life, enhanced socialising and supporting life balance and ease of living.

## 1.4 Implications

While most people are aware of basic sustainability concepts for housing, such as energy efficiency and recycling, these concepts are not currently closely linked with sustainability features. More needs to be done to inform and educate people on what sustainability means for houses and households, and to build positive associations with sustainability uptake.

Key drivers for people to make changes to their home include perceived problems with the home, upgrading to increase its value, home maintenance, change in lifestyle, expression of ownership and self through renovation and demonstrating environmentally friendly principles. People need to be persuaded that sustainability features are a good investment and that their benefits outweigh their costs.

The greatest perceived barrier to uptake is cost, although interestingly uptake was higher among lower income households in this study. Strategies for overcoming barriers include:

- Positively associating sustainability features with comfort, higher standard of living, enjoyment and ease, convenience, health, quality, cost savings, return on investment and contributing and being self sufficient.
- Presenting sustainability features as the answer to common problems with housing, especially cold, poor design and flow, damp, mould, condensation and leaking.
- Mainstreaming and “normalising” sustainability features.

- Making sustainability features visible and stylish, for example through logos, hallmarks and art features.
- Linking sustainability features with renovation and upgrading.
- Supporting greater ease and convenience of uptake and focusing on assisting uptake of key sustainability features as identified in this study.
- Working to address affordability issues by investing in businesses that provide housing sustainability products and services and advocating for government incentives and subsidies.
- Advocating for regulatory and financial incentives while working to improve the social desirability of sustainability features.
- Supporting DIY sustainability assessment and installation.
- Adapting the Beacon Footprint for a wider range of contexts, including rural, provincial and apartment dwellings.
- Developing a sustainability housing “warrant of fitness” and certification.

Key indicators of household sustainability uptake are:

- Uptake of various sustainability features, focusing on highest sustainability impact features.
- Increase in existence and funding of housing sustainability assessment.
- Use of sustainability house assessment experts.
- Growth of sustainability feature suppliers and installers.
- Householder perceptions of affordability of sustainability features, their value, impact on resale, impact on housing choice, of who uptakes them and why, how mainstream these features are and the level of uptake in their house.

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## 2 Introduction

Beacon Pathway Limited is a research consortium that aims to enhance the sustainability of New Zealand households and neighbourhoods. Beacon has set a goal of achieving sustainability features in 90% of New Zealand houses by 2012.

To move towards this goal, Beacon is interested in how to increase demand for sustainability features in both new and existing homes. This requires exploring how householders perceive “sustainability”, their knowledge of household sustainability features, and what influences their demand for them and what inhibits their uptake.

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## 3 Purpose

The aim of this research study is to qualitatively:

- 1) Investigate what sustainability means to householders.
- 2) Assess the engagement of householders in adopting sustainable technologies and solutions for their home.
- 3) Identify barriers faced by householders in doing so.
- 4) Identify indicators to measure household uptake of sustainable solutions.

This report presents the findings of this study.

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## 4 Methodology

In-depth face to face interviews were held with representatives from 43 households. As part of the interview each household was asked to complete a Sustainability Features Checklist (see Appendix One). Both processes are described below.

### 4.1 Qualitative interviews with householders

In-depth face to face interviews of up to two hours were undertaken in late 2005 with householders in 43 homes, using a semi-structured interview guide (see Appendix Two). The interviews were undertaken separately by two people (a male and female), who also took photographs of particular household features. Participants were assured anonymity and confidentiality, and permission to record the interview and take photographs of their house was obtained. Each interview was taped, transcribed and then summarised.

## 4.2 Interview content

The first part of the interview established the type of dwelling involved and who lived in the household. The interview then progressed along the following structure.

- 1) Establishing why the householders came to live in this dwelling (why they chose it or otherwise came to be living there; what they like about it).
- 2) What problems they may have encountered with the house and any changes they have made to it.
- 3) Questions on their perceptions of “sustainability” (before showing participants the Sustainability Features Checklist).
- 4) Completion of the Sustainability Features Checklist.
- 5) Discussion of any changes they would like to make to their house in terms of sustainability features, including what could be done easily and what would be harder to do.
- 6) Perceived significance of the gap between the current situation and greater sustainability of their house.
- 7) Probing how this gap might be bridged, including what difference this would make and what success would look like.

## 4.3 Sustainability Features Checklist

The Sustainability Features Checklist (Appendix One) was adapted from the Beacon Footprint which sets out core features of a sustainable home (see Appendix Three for this footprint). Reference was also made to a range of other eco-friendly housing and sustainability checklists. The Sustainability Features Checklist is not exhaustive, and was designed to provide a means for assessing base householder orientations to sustainability.

Householders were asked to complete this checklist as part of the interview process. Participants were also shown the Beacon Footprint and photos of the Beacon NOW Home®, a demonstration sustainable home.

## 4.4 Household identification and recruitment

A range of household types to include were sought against the following criteria.

- Regions that provide climate and population variation, including urban, provincial and rural contexts (Auckland, Napier and Christchurch).
- A range of housing types in terms of construction, maintenance and renovation histories and requirements.
- Varied household composition in terms of life cycle and life styles (for example single people, couples, families, younger and older people).
- A range of income levels and ethnic and cultural backgrounds.

- Households that are not already strongly sustainability oriented (i.e. not early adopters of sustainable household technologies).

Census data (2001) was used to construct a case frame reflective of national diversity across regions, house types, household types and ethnicities. This was then adjusted to reflect projected demographic trends identified in Statistics New Zealand population and housing data, and scaled down to a minimal sample of 40 households (see section 5.1 for a profile of participating households).

Recruitment was undertaken by ConsumerLink Ltd, by searching their database of 15,000 households nationwide, and then networking from these initial contacts to identify households who met the specific criteria and were willing to take part. An incentive of \$100 was offered to participants.

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## 5 Data limitations

This report is based entirely upon interview summaries (secondary data) undertaken by people other than the author, not the full interview transcripts (primary data).

This means that direct quotes are limited and that the analysis, findings and implications are based on the summarised material supplied.

Almost all of the households in this study were owned by participants rather than rented. This means that the findings of this study are more reflective of home owners and no comparison can be made of any differences in views and perceptions among those who rent or own their homes.

Also, no information on householder age was available, so that no reflections can be made on differences in perceptions and findings in relation to the age of participants.

The Sustainability Features Checklist involves two checklists: one listing household sustainability features and one listing sustainable behaviours to do with households. Neither of these lists is comprehensive, and once introduced within the interview process would have tended to shape responses regarding sustainability features. This should be kept in mind when considering the findings.

Given its qualitative nature and small scale, no claims of generalisability to the wider population can be made through this study. Rather the aim is to highlight themes and areas of potential in supporting householders to make their homes more sustainable, and to help develop robust indicators to measure sustainability uptake in households over time.

## 6 Results

The results are presented in the order of questions asked of participants. Direct quotes as provided in the interview summaries are interspersed to illuminate key points.

### 6.1 Profile of participant households

A total of 43 households participated, with the following characteristics. Note that information on the mix of home owners versus renters was not available from the information supplied.

**Table 1 Profile of participating households**

CRITERIA		NUMBER OF H/H
Hub	Auckland	18
	Napier	10
	Christchurch	15
Region	Urban	23
	Provincial	10
	Rural	10
House Type	Detached	29
	Apartment/Unit	14
House Age	Before 1979	21
	After 1979	22
Household Profile	Single	8
	Couple with children	14
	Solo Parent/Couple without children	21
Ethnicity*	European	29
	Maori	12
	Pacific Islands	3
	Asian	5
Household Income	Under \$30,000	9
	\$30-60,000	16
	Above \$60,000	18

*\*Note that ethnicity numbers were higher than 43, as there were several couples involving more than one ethnic group heading the household, and where this occurred both ethnic groups were counted. Children and other adult family members other than “heads of households” were not counted.*

Though reasonably mixed, the profile of participating households leans more towards urban contexts, detached free standing houses, couples, European backgrounds and households with middle to higher incomes. Where possible any discernible differences in response according to the elements above such as ethnic group and income level are highlighted in the forthcoming sections.

## 6.2 Why this house?

Householders were asked why they originally came to be living in this house, including features that attracted them. Table Two presents the top ten factors mentioned.

**Table 2: Attractors to a house**

ATTRACTING FACTORS	NUMBER OF MENTIONS
Affordability	22
Solid, durable, good materials, sound, good quality, well built	17
Close to shops/town	17
Low maintenance	16
Good interior layout and specific features (e.g. open plan, high ceilings, two toilets, separate toilet and bathroom, bath, conservatory, separate laundry/toilet, walk in wardrobe, one level, garage connected, fireplace, pool)	16
Dry, sunny, light, airy, north facing	15
Warm	13
Large size, spaciousness	13
Good investment, resale, rent, value for money	11
Good neighbours/neighbourhood	8

The following appealing factors were mentioned by four to six households:

- Indoor/outdoor living or indoor/outdoor flow.
- Close to transport (motorway, key corridor).
- Close to public transport.
- Close to schools.
- Good garden/good for gardening.
- Down a right of way/cul de sac.
- Family/friends live close by.
- Privacy.

- Quiet and peaceful.
- Safe and secure, low crime.
- Good for life stage (e.g. young family or retirement).
- Good for entertaining and having people to visit or stay.

The following factors were mentioned by one to three households: small size, room to extend or add on, close to marae, university, jobs or church, part of a complex, good views, good feel to it, aesthetically pleasing, can see children play from the house, comfortable, close to river, beach and/or bush, good access for disability or elderly, large section and big garage.

While a wide range of factors drew people to their house, the most significant were affordability, quality of construction, good design and desirable features, ease of maintenance, proximity to shops, sunny, airy, dry and warm, spacious, good return on investment and location within a “good” neighbourhood.

### 6.3 Problems experienced with their house

Participants were asked what problems they have had with their house since moving in (if any). Problems stated by five households or more are listed below in order of mention.

**Table 3: Problems experienced**

PROBLEM	NUMBER OF MENTIONS
Too small, cramped	21
Cold	20
Lack of storage	14
Poor design, layout, flow	10
Outdated, tired looking	9
Damp, condensation and mould	7
Too hot in summer	7
Poor construction and finishing	6
Flooding, stormwater, drainage, leaking	5

Problems experienced by three households or less were traffic noise, wood rotting, too much maintenance, not fenced, road width too narrow, poor ventilation, no garage/carport, carpet bad for asthma and lack of power points.

Main problems experienced by households were lack of space (especially for growing families), cold/lack of insulation, lack of storage and poor design.

## 6.4 What changes have been made?

Participants were asked what changes they have made to their house since they moved in. The most common single change made was improving heating (16 households), typically by purchasing a heat pump. Around 13 households had undertaken major renovations, around 12 had undertaken minor renovations, seven households had added on to their house and seven had done nothing or made very few changes.

Three households each had improved ventilation, installed security or fencing and addressed damp or leaks.

## 6.5 What is a sustainable house (unprompted)?

Householders were asked what they felt a sustainable house was in their own words. No prompts were given to influence people's responses (i.e. participants had not been shown the Sustainability Features Checklist, Beacon Footprint or Beacon NOW Home®).

**Table 4: Unprompted perceptions of a sustainable house**

RESPONSE	NUMBER OF MENTIONS
Don't know/not sure	20
Stands the test of time, is going to last, future proof	7
A quality house, low maintenance, solid	7
Relates to use of water, energy and natural resources	7
Living within your means, affordable	3
Eco housing/eco friendly	2
Healthy house	1
Everyone's concept would be different	1

Almost half of the participating households were unsure as to how to describe a sustainable house. Those who offered a description tended to focus on durability, quality of construction and use of energy, water and natural resources.

## 6.6 Response to the Beacon Footprint

Participants were then presented the Beacon Footprint (as shown in Appendix Three), which lists features of sustainable housing in key categories. After discussing the Footprint,

householders were asked for their response and any changes in their perception of what a sustainable house involves.

**Table 5: Responses to the Beacon Footprint**

RESPONSE	NUMBER OF MENTIONS
Makes sense, can go along with it, positive responses	15
About quality of life	5
About use of resources, materials, recycling	5
A dream home, getting the whole package right	4
Good idea but too expensive to achieve	4

Further comments made by at least one household each were:

- It's about a good rate of return on investment.
- I want to enhance household quality but not compromise my lifestyle.
- Can risk overcapitalising by doing this [adding sustainability features].
- It's up to you to do it [add sustainability features] for your personal satisfaction.
- Like to do it but may be constrained by body corporate.
- User friendly, affordable, allows me to stay in my own home rather than go to an old folks' home.

Thus around a third of households made explicit positive responses to the sustainability features in the Beacon Footprint and felt that they “made sense”. Smaller numbers made a connection with improved quality of life and more efficient use of resources. Several others interpreted the Footprint as a complete “dream” package (and thus possibly less attainable), or felt that it was “too expensive” to achieve.

## 6.7 Ratings against the Sustainability Features Checklist

Householders were asked to rate their houses and their household behaviour against two checklists (see Appendix One). The first lists 33 sustainability features such as north facing, double glazing, a cylinder wrap and so on and asked whether their house definitely had these features. Note that this is not an exhaustive list and does not contain some key sustainability features (for example it lists insulated exterior walls but not insulated ceilings or under floor).

The second lists 18 sustainability behaviours (such as switching off lights when not needed, energy efficient appliances, cold water for washing clothes), and asked whether their household “almost always” does each behaviour. Note that this is also not a comprehensive list of sustainability behaviours and that most of the behaviours are at the lower end of the

sustainability behaviours spectrum (i.e. they are easier to do rather than harder, and are generally less expensive, common sense actions).

Also, note that only final percentage ratings were available, and not detailed information on how many households undertook which behaviours or had various sustainability features. This limits the analysis able to be undertaken of this checklist aspect of the interviews.

**Table 6: Sustainability Features Checklist Ratings**

<b>% RATING GIVEN BY EACH HOUSEHOLD</b>	<b>A: NUMBERS IDENTIFYING THIS % LEVEL OF 33 SUSTAINABILITY FEATURES IN THEIR HOUSE</b>	<b>B: NUMBERS IDENTIFYING THIS % LEVEL OF 18 IDENTIFIED SUSTAINABLE BEHAVIOURS</b>	<b>TOTAL SUSTAINABILITY RATING (A &amp; B)</b>
31-40		3	
41-50	4	5	4
51-60	3	6	5
61-70	17	9	10
71-80	12	9	19
81-90	8	9	4
91-100		2	1

In terms of ratings against 33 identified sustainability features existing in their house, the greatest proportion of households listed between 61-70% of these features existing in their house, followed by 71-80%. Around one fifth of households had 81-90% of these features in their house, and almost one fifth had fewer than 61% of these features. The average rating was 70%.

In terms of the 18 identified sustainable behaviours, ratings of these behaviours in the house were reasonably spread between 60-90%. The average rating was 68%.

In terms of sustainability ratings overall, two thirds of households rated themselves between 61-80%. Few rated themselves overall above 80%. The average rating was 69%.

Sustainability features used by under 60% of households are as follows. Many of these features provide significant sustainability benefits and opportunities exist to focus on these features in the medium term in terms of supporting household uptake.

- Insulated walls, ceilings and floors.
- Security locks and alarms.
- An insulated water cylinder set at 60°C.

- Reflective glazing or blinds on north facing windows.
- Security latches.
- Low flow showerheads and tap ware.
- Recycling of waste water.
- Double glazing.
- Solar power and wind power.

The table below shows average sustainability ratings by income level.

**Table 7: Average sustainability ratings by income level**

INCOME LEVEL	AVERAGE EXISTING SUSTAINABILITY FEATURES %	AVERAGE EXISTING SUSTAINABILITY BEHAVIOURS %	AVERAGE TOTAL SUSTAINABILITY RATING %
Under \$30,000	76	72	75
\$30,000 to \$60,000	69	70	69
\$60,000+	68	63	66

\* Percentages are rounded above.

When looking at trends for overall sustainability uptake:

- 1) Uptake of sustainability features and behaviours was higher among low income households, and lower among higher income households.
- 2) Uptake was higher among single person households, and lowest among households with children.

Uptake was higher in units/apartments than freestanding apartments. This may be at least partly attributable to many of these apartments being newer and more likely to incorporate some sustainability features such as insulation.

## 6.8 What are the easier household sustainability changes to make?

Participants were asked what sustainability features are easier for them to do, and which are harder. Easier things as mentioned by five households or more are listed below in order of highest to lowest mention. Note that these potential changes tend to be drawn from the sustainability features checklist, thus are limited to what is in this checklist.

**Table 8: Easier sustainability features to adopt**

SUSTAINABILITY FEATURE	NUMBER OF MENTIONS
Security*	20
Energy saving light bulbs	17
Insulation/improving warmth**	12
Emergency survival kit	11
Low flow shower	8
Cylinder wrap/check water temperature	7
Composting	5

\*Includes alarm, window latches, locks

\*\*Includes double glazing and new blinds and curtains

The easier changes mentioned most often involved security improvements and energy saving light bulbs. Easier changes tend to be lower cost and smaller scale, and several people mentioned that they can more easily do very basic practical changes. General comments included some scepticism over whether the benefits were worth the investment, that motivation to make changes was needed and that making these changes is a habit that people need to get into.

## 6.9 What are the harder household sustainability changes to make?

The perceived top five hardest sustainability changes to make were as follows, from highest to lowest mention.

**Table 9: Harder features to adopt**

SUSTAINABILITY FEATURE	NUMBER OF MENTIONS
Double glazing	13
Larger budget items	12
Water recycling	11
Solar energy	8
Structural changes	4

Key reasons given for not making sustainability changes were as follows (in no order).

- Affordability, especially for those on lower incomes.
- Concern that expense is not warranted: “It’s cheaper to put on a heater than to double glaze”.
- Concern that return on investment will not be gained.
- Rather invest in a new house.
- May consider making changes if staying long term in this house (less incentive for those not planning to stay in their current house).
- No drivers now for any significant change, need to see gains against status quo.
- Happy with current level of sustainability.
- Focus in terms of spending now is on leisure activities and lifestyle.
- No incentive when benefits take a while to show and there are no quick direct benefits.
- Don’t need changes when there is good electricity and water supply.
- Future buyers might not like changes made.

In general a lack of urgency and drivers to make changes was expressed, plus perceived low or doubtful returns or benefits from doing so. Cost is also seen as a significant disincentive.

## 6.10 How significant is the gap between now and greater household sustainability?

Householders were asked the significance of the gap between where they are at now and greater sustainability for their home.

**Table 10: Significance of sustainability gap**

HOW SIGNIFICANT	NUMBER OF MENTIONS	KEY COMMENTS
Insurmountable	2	Not really interested Have cheap house, not worth it
Significant/major	32	Won't get return on investment/worried about overcapitalising Current comfort level is high Shift in values required, no reason to change our focus on leisure and lifestyle Don't feel it is worthwhile, won't add value Against anything "greenie" Too expensive The NOW Home® concept is for people in urban settings Prefer to put money into upgrading to a better house Involves a lot of time House low on priority list for spending My age means benefits may be in doubt (i.e. a concern that benefits will not be realised in their lifetime) Unwilling to change lifestyle
Medium significance	4	Have an interest in self-sufficiency and more traditional Maori values Can see benefits but limited ability to afford
Not significant	6	Just need to get motivated and do it (complacency, apathy) Not in terms of interest and understanding but I need a good case for value/return on investment Cost benefit ratio needs to be developed for urban versus rural settings Want more information on how to include in new houses and renovations

Overall barriers relate to budget, concerns about overcapitalising and costs outweighing the benefits, whether the changes will add value or be significant and competing priorities for spending. Others can see the value but are complacent or lack motivation to make changes.

There is also some perception that sustainability features are more appropriate for new or more modern houses. Several respondents expressed a desire to know more about what changes to make and how, and suggested web based toolkits and advice in a range of formats to help people plan and finance changes.

One person commented that the Beacon Footprint doesn't account for space and how adequate space impacts on quality of life, especially for families. This links with earlier feedback in Section 5.2 on the importance of spaciousness for some households, especially those with large or growing families.

One respondent felt that the NOW house “lacks warmth and character”. Another person preferred “a back to basics lifestyle version of sustainability not a new fangled one”, involving an emphasis on simplicity and basic comfort rather than sophisticated sustainability technologies.

## 6.11 How might this gap be bridged?

When asked how their “sustainability gap” might be bridged (the gap between their current house and the sustainability features they would like to add), key responses were as follows.

**Table 11: Bridging the sustainability gap**

HOW TO BRIDGE THE SUSTAINABILITY GAP	NUMBER OF MENTIONS
Will focus on sustainability in our next house/a new house: “Will keep upgrading until we can have the dream house”	13
Will prioritise features that most add value, especially energy and water efficiency, and/or are cosmetic only: “Will make changes to the present house in an ad hoc fashion that would add value, then move to a better and more sustainable house”.	9

Six households would not try to bridge this gap, due to lack of motivation or not wanting to: “I have lifestyle priorities over housing ones”.

In terms of how people might overcome gaps and barriers, the following methods were suggested (in no order):

- Seek information (especially on the web).
- Ask friends.
- Prioritise projects and budget for them.
- Better to influence developers at the front end.
- Employ experts to assess what is needed and make changes.
- Like to see a toolkit of possible changes with benefits and cost estimates.
- Change the Building Code to be more green.
- Combine renovation/decoration with sustainability features [link to aesthetic benefits].
- Government incentives would help.
- Support people to do DIY.

## 6.12 What difference sustainability changes might make

One fifth of householders felt that sustainability changes would make little difference in their lives. While some difference in power and water bills were acknowledged several people commented that their power and water costs were already low. Two households felt that they would make no difference, with one of these making no connection between these features and better quality of life:

“You want quality of life, not spending your money on the house and doing maintenance around the home”.

Key benefits households identified that sustainability features would make, from highest to lowest mention were as follows:

- Cost savings, cheaper to run.
- Comfortable.
- Healthier, warmer, drier.
- More energy efficient and self sufficient.
- More balanced lifestyle: “would make the whole family life easier”.
- Spacious.
- Improved quality of house and standard of living.
- Improve life span of the house, good long term benefit but “the focus is on today and nothing needs immediate attention”.
- Good house for entertaining.
- Better resale.
- A contented home.

“An ideal house, probably too good to be true”.

One respondent referred to changes contributing to a clearer conscience: “Better on the environment, better on my conscience”.

## 6.13 How would they know sustainability changes have been successful?

Householders were asked what success would look like in terms of a more sustainable house.

**Table 12: What would success look like?**

SUCCESS FACTOR	NUMBER OF MENTIONS	COMMENTS
Comfort	17	Spacious Enjoyable lifestyle Warm, sunny, dry, no draughts Affordable, higher standard of living at lower cost Efficient Healthier Modern and new
Easy/easy lifestyle	12	Low maintenance Easy, convenient Well designed and functional “A lazy, comfortable life”
Great for family and social life	10	Happy healthy family Balanced home life Stress free Good place to entertain, be who you are Work to live
Safe	3	
Reflect affluence	2	Well off, an expensive house “The joy of spending, a new spacious large home with a spa pool”
Self sufficiency/ contributing	2	Less dependent, not a burden, doing your bit for the country, less polluting, more self-sufficient Simple, back to basics alternative rural lifestyle

Key associations with sustainability features were comfort, enjoyment, convenience, quality of life, warmth, health, supporting happy family and home life, socialising and supporting life balance and ease of living.

One respondent equated sustainability more with a rural than urban lifestyle. Another householder expressed a perception that sustainability might be “emotionally featureless, lacking in character and diversity/richness of forms”, although this may be a personal response to the NOW Home®.

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## 7 Implications

### 7.1 Issues to address

#### 7.1.1 *Need to increase understanding of household sustainability*

When unprompted, half of the participants in this study did not know or were unsure what a “sustainable house” referred to. Those who offered a description linked sustainability with durability (i.e. that the house will last), quality, low maintenance and efficient use of water, power and other resources. This indicates a low level understanding of the term “sustainability” or what makes houses more sustainable, yet respondents were familiar with associated concepts such as warmth, dryness and reducing water and energy use.

The implication is that while most people are aware of basic sustainability concepts for housing, that these concepts are not currently closely linked with sustainability features. More needs to be done to inform and educate people on what sustainability means for houses and households, and to build positive associations with sustainability uptake, as outlined in Section 6.2.1 below.

#### 7.1.2 *Key drivers of change and sustainability uptake*

Key drivers for people to make changes to their home, including to uptake sustainability features are:

- Perceived problems with the home.
- Upgrading to increase the value of the home (for resale, rental or return on investment).
- Self-expression and expression of ownership through renovation and upgrading.
- Home maintenance.
- Change in lifestyle, for example retirement, birth of children, children leaving home.
- Demonstrating principles such as self-sufficiency, a desire to contribute and be less polluting.

In general those intending to sell their house in the short to medium term are less inclined to make sustainability changes than those planning to stay a longer time.

At the same time, people need persuading that sustainability features are a good investment and that their benefits will outweigh their costs. A better or more convincing case needs to be made for their value.

Associations between sustainability features and the factors above need to be made.

### 7.1.3 Barriers to sustainability uptake

*“We live for today, I don’t care if I get the savings in the long run, I’ve got to see the savings now...in the pocket”.*

*“It’s really up to the planners, the Council, the developers in the first place. It’s a bit late once it’s built, as you’ve got all sorts of people owning [apartments] here and many won’t see the point, let alone any value from it, especially the ones that don’t actually live here” (Interview 37).*

Price or affordability was the single greatest expressed barrier to uptake of sustainability features, although interestingly uptake was higher among lower income households in this study. Overall barriers to uptake of sustainability features as expressed by respondents are as follows:

- Affordability, too expensive.
- Risk of overcapitalising.
- Poor investment compared to mainstream renovation and aesthetic changes.
- Other spending priorities.
- Would rather put money into our next house (or upgrade to a better home rather than investing in this one).
- Benefits won’t outweigh costs or will take too long to be realised.
- Don’t want to compromise current lifestyle and behaviour.
- Too much time and effort.
- Body corporates may constrain uptake.
- It’s the responsibility of Councils and developers, not us.
- Very little incentive for those renting to uptake sustainability features.
- It’s only for new or modern houses.
- It involves new fangled technologies; is too complicated.
- It’s only for Greenies or “other people”.
- That sustainability and spaciousness don’t mix (spaciousness is highly desirable for some, especially families).

## 7.2 Strategies for overcoming barriers

Based on the feedback from respondents, key strategies for reducing or overcoming barriers to the uptake of household sustainability features are as follows.

### 7.2.1 Make sustainability features desirable

Feedback on what attracted participants to their current house, what difference sustainability changes might make and what success would look like build a strong picture as to positive associations to link with sustainability to support uptake. These associations below can build on

existing perceptions of sustainability features as generally positive and “common sense” (see Section 5.6), to form the core of communications and marketing campaigns.

**Table 13: Positive associations to link with sustainability features**

Key positive association or benefit	Components or aspects
Comfort/higher standard of living	Better quality of life for lower cost Warmer, drier, air flow, no draughts Great for families Well designed and functional Safety and security
Enjoyment and ease	Supports entertaining and social interaction Easy, convenient More balanced lifestyle Less stress, promotes harmony
Healthier	Health benefits Better for children Better for those with health and disability issues
Quality	Improve house quality Improve life span of the house Supports low maintenance Solid, durable, good quality
Cost savings	More efficient Less energy use Cheaper to run Can put savings to other uses
Return on investment	Upgrades the house Better for resale and rental Good investment
Contributing and self sufficient	Doing your bit Less polluting More self sufficient

Spaciousness was also highly sought after, but is not generally a feature associated with sustainability.

Emotional drivers to make the home better for children, other family members and for home life overall are fundamental to increasing associations between sustainability and better quality of life (health and happiness in the home) and supporting uptake.

### **7.2.2 Present sustainability features as the answer to common problems**

Sustainability features will address many common household problems that have multiple impacts on home and family life (power and energy bills causing stress, health problems and so

on), and can be presented in this manner. Relevant problem areas identified in this study were (see Section 5.3):

- Cold in winter, hot in summer
- Poor design and flow
- Damp, condensation and mould
- Flooding, stormwater problems, drainage, leaking

Associations need to be made between problems in the home, how they impact on families and occupants, and how sustainability features can address these in an affordable and effective way.

A guide can also be provided to assist people in what to look for in a healthy and sustainable home. This is likely to hold particular appeal for people with children and for people with health problems.

Improving heating was a common change made by households in this study and is a key area to target in terms of sustainable heating options.

Different communications, information and support are needed for those undertaking minor or cosmetic renovations or changes, versus those undertaking major renovations, including structural changes, additions or building new.

### **7.2.3 Mainstream and “normalize” sustainability features**

A small number of participants implied that sustainability features were something for “Greenies” or other people, not for the mainstream. Sustainability features need to be presented as the foundation of a good home, rather than as optional extras. This means linking these features with mainstream appealing house qualities, and most particularly:

- Feelings such as ease, comfort, enjoyment, relaxation, health and a balanced, stress free life.
- Experiences such as solidity, quality and year round warmth, dryness and comfort.

### **6.2.4 Make sustainability features visible and stylish**

Many core sustainability features such as insulation, solar heating, water recycling and double glazing are hidden or invisible, thus harder to sell as a desirable feature. This raises the issue of how to make these features more visible within the home, ideally linked to renovation features and stylish or desirable home features. This can be achieved through logos, hallmarks and trademarks, and exploring how to make these features into art features, for example rainwater tanks. Potential business opportunities exist through this avenue.

#### **7.2.4 Link sustainability uptake with renovation and upgrading**

Linked to the above, potential exists to capitalise on the New Zealand penchant for house renovation and upgrading by linking sustainability products with resale value, adding value and aesthetics as far as possible. A list of sustainability features to look for when buying a home can be developed for prospective buyers.

Key opportunities also exist to link sustainability with renovation and normal maintenance, thus turning conventional tasks to sustainability ones. Sustainability features can be promoted at all levels of renovations and home upgrades, for example use of more environmentally friendly paints, to insulating when adding on a new room, to building sustainability features into a new house.

#### **7.2.5 Convenience and focus**

*“This all works as long as what you do to be sustainable doesn’t become a burden, as we’re both very busy, so if the changes are less convenient or more time-consuming, it’s not going to work...So we might wait till the price or technology is right and then do it, but on the other hand we don’t mind coming across as a bit eccentric if it means we’re actually more resourceful and self-sufficient”.*

Current perceptions of sustainability features as being time consuming, onerous and a lot of effort need to be addressed. Sustainability uptake needs to be made as easy as possible.

The sustainability features used by under 60% of households in this study below provide potential focus areas for sustainability uptake in the medium term, especially as many of these features provide significant sustainability benefits.

- Insulated walls, ceilings and floors.
- Security locks and alarms.
- An insulated water cylinder set at 60°C.
- Reflective glazing or blinds on north facing windows.
- Security latches.
- Low flow showerheads and tap ware.
- Recycling of waste water.
- Double glazing.
- Solar power and wind power.

#### **7.2.6 Addressing affordability and cost/benefit**

*“Maybe part of this is setting up cost-benefit information so people can see the increase on the total cost of the house against the operating cost or savings...You have to stress the benefits” (Interview 20).*

Many households can not currently afford to make sustainability changes and/or have higher priority spending priorities. Some people also separate quality of life from a sustainable home, or perceive that making sustainability changes will adversely impact on their lifestyle or quality of life.

Perhaps the three most effective methods to address these issues are:

- 3) Work to bring the price of sustainability features down.
- 4) Make the benefits versus the cost of sustainability features far clearer – i.e. present the “case” for making the changes.
- 5) Normalise and incentivise as discussed in this section.

Two mechanisms that can address affordability issues are:

- Invest in supporting businesses that provide sustainability products and services, to bring the cost down.

Advocate for government subsidies for solar power and water tanks and for other more expensive but high impact sustainability features.

### **7.2.7 Providing information and raising awareness is not enough**

While several households suggested providing information and tools on sustainability features and their benefits, and a sector of the population will use this information, others need assistance to interpret the information, see its applicability to themselves and be supported to make changes.

Regulatory and financial instruments and incentives are needed to support household sustainability uptake, at least until such time as social desirability and affordability of these features increases markedly.

### **7.2.8 Self-help design and assessment and DIY support**

A significant proportion of people like to renovate and upgrade their household themselves, for autonomy, satisfaction and/or cost reasons. Information about sustainability features, self-assessment tools, tasks to improve sustainability ratings and support to install sustainability features are needed for this sector of the population. Specifically, such tools might include:

- A description of each sustainability feature in terms of the benefits it will provide and which “problem area” it will address or help to address (such as health problems caused by damp, cold or poor ventilation, reduce waste bill by composting food scraps, reduced power bill and so on).

- A self-assessment checklist or rating tool, such as an on-line checklist or calculator, which allows people to identify problem areas and highest to lowest priority features for their household.
- A financial tool that will allow for calculation of costs savings over time for each feature.
- A project management tool that can help set a budget and timetable for making changes.
- Invest in courses for DIY sustainability installation.

### **7.2.9 House assessment function and Beacon Footprint**

The Beacon Footprint is currently perceived by some to suit more urban contexts, as in provincial and rural households some features such as public transport are lacking, and others such as water tanks and composting are more common. Also, in newer apartment developments sustainability features are ideally built in by developers or retrofitted by body corporates. Thus the Beacon Footprint can be adapted for various contexts to present ideal sustainable household scenarios for urban, rural and provincial contexts, and for different housing types (new, existing, apartment, detached and so on). The Footprint can then be held up as a standard or warrant of fitness that households can aspire to, and should be presented as fundamental to quality of life within the home.

House assessment for “fit with sustainability” is of great interest to homeowners. This can be an educational tool, linking sustainability features with quality of life, and supporting householders to identify their current problem areas and how sustainability features can address these while upgrading their home and enhancing its resale or rental value.

Expert assessments would ideally:

- Be a service offered by local authorities or the private sector to developers and those building a new house.
- Be undertaken by local authorities when approving new housing.
- Be a service that real estate agents could offer to prospective buyers, undertaken by appropriately qualified people.
- Be free, subsidised or very cheap.
- Be part of government provided housing and built in from the start (government should be modelling sustainable housing in its housing provision and leading the market).

### **7.2.10 Warrant of fitness/certification**

*“Maybe you need a certificate when it’s sold to state what the house has and doesn’t have, so that drives the price of poorer quality homes down and people aren’t shocked when they find out they don’t have insulated walls or something, or their kids get asthma” (Interview 17).*

Linked to the assessment function above, the following initiatives could help ease concerns about return on investment and linking sustainability features with upgrading of housing.

- A certifier or assessor who can assess for sustainability and/or rate work completed.
- A certificate, such as a warrant of fitness, as proof for future house buyers. This could be promoted as a major selling point and standard for developers, prospective home buyers, real estate agents and vendors.
- A house service record (such as that used with cars) that might also go into a LIM report.
- A register of appropriately qualified trades people and professionals who can advise and assist uptake and installation of sustainability features.

## 8 Key potential indicators of sustainability uptake

Based on the findings of this study, high level potential indicators of household sustainability uptake are as follows. In each case the indicator is given, along with a rationale and potential data collection methods.

**Table 14 Potential indicators of sustainability uptake**

Indicator	Rationale	Data collection sources
Uptake of various sustainability features, focusing on highest sustainability impact features	Gauge uptake levels and trends	Product sales Housing surveys New housing audits Local authority data Government procurement
Increase in existence and funding of housing sustainability assessment	Reflects increasing demand for assessments	Web search Service directories Green Building Council
Use of sustainability house assessment experts	Reflects increasing demand for assessments	Provider data
Growth of sustainability feature suppliers and installers	Reflects demand for products and services	Business surveys Directories Business Associations

<p>Householder perceptions of: Affordability of sustainability features Perceived value of sustainability features (cost versus benefits) Identification of these features Impact on resale or rental of sustainability features Impact on housing choice Mainstream nature of sustainability features Who uptakes them and why Level of uptake in their house</p>	<p>Gauge changes in perceptions and behaviour, understanding of sustainability, how mainstream or “normal” these features are and level of uptake</p>	<p>Quantitative and qualitative surveys</p>
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## 9 Appendix One: Sustainability Features Checklist

*How do you rate your house and household?*

Does your house definitely have ...

- Main living areas facing the sun/ north
- Windows open on a security latch
- Privacy from the street and neighbours
- Trees, fences and insulation help block road noise
- Insulated (exterior) walls
- Double glazing
- Building materials and furnishings that don't give off fumes
- Security locks and alarms
- Good ventilation
- Separation of sewage and storm water
- Recycling of waste water
- Fits in with the neighbourhood
- Good access to parks and reserves
- Good access to public transport
- A weathertight exterior (no leaks)
- Durable construction and materials
- A design that is easily renovated
- Extra phone and internet sockets for future users
- All stormwater re-cycled
- Good access down the drive to the house
- A low maintenance exterior
- Good access to schools, shops, hospitals etc
- An ordinary or conservative design
- Good affordability for other people to easily buy and live in it
- A design that suits its location (e.g. beach/ weather)
- Reflective glazing or blinds on north-facing windows
- An insulated water cylinder set at 60°C
- Solar water heating, solar power or wind power
- Blinds/ drapes over windows and glass doors
- Good eaves and other ways to keep rain away from house
- Low-flow showerheads and tapware
- Building materials that are all water-resistant
- Good indoor-outdoor flow

Does your household almost always ...

- Switch off lights when not needed
- Use compact fluorescent light bulbs
- Paint/ paper rooms in light colours
- Use energy efficient appliances (such as whiteware)
- Use cold water for clothes washing
- Dry clothes outside
- Maintain house, car and appliances regularly
- Take showers (not baths)
- Have an emergency survival kit
- Walk, cycle or use public transport
- Use your own bags when shopping
- Buy products with recyclable packaging
- Compost/ re-use household waste
- Set up and manage DIY projects expertly, or using experts
- Try to reduce living costs
- Try to reduce water use
- Have good quality of life from living in your house
- Try to reduce rubbish collected

What's Your Total?

For your house? \_\_\_\_\_ / 33

For your household? \_\_\_\_\_ / 18

Overall? \_\_\_\_\_ / 51

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## 10 Appendix Two: Interview Guide

### Introduction – 5 minutes

- From recruitment guide

### Warm-Up Chat: Present Home – 10 minutes

- Why did you choose this home? What are the pros/cons now that you know what it's like? What problems have you had with it? What effects has it had on your household? How have you changed it? What problems did you have making these changes?

### Sustainability – 45 minutes

- What does “sustainability” mean for you? What’s a “sustainable home” for you? What would you call it in your own words? [= X home]
- Imagine time-traveling 15 years from now: there are many choices, and you’ve chosen to live in an X home. What would convince you to make that choice? What would you love about the house? What would you love about living in it?
- What difference would it make for you? What might you and your household need to do differently to live in that sort of house?
- [Provide Beacon Footprint of sustainable house and discuss – see next page] Here’s one view of X houses – what difference does this make to your X house? What would you call it in your own words? [= Y home]?

### Uptake – 45 minutes

- What are the differences between Y and the house you’re in now? How big a difference is it for you?
- How would you imagine bridging the gap between the two? How would you go about changing from this house to a more Y one? You might change this one over time, or buy one, or build one – how would you personally go about it?
- What would completely and totally convince you to start moving towards a more Y house within the next six months? What would it take?
- What would make it easier to go for, and what would get in your way? How would you want things to work?
- How do you know you are getting more Y?
  - When appropriate during interview, check:
  - Current financing arrangements
  - Interest in “green” mortgages, “green” insurance,
  - Interest in having house assessed for its sustainability rating,
  - Price expectation for this service

### Tour + Questionnaire – 10 minutes

- Profile sustainability (see further overleaf) and take relevant pictures.

### Ending – 5 minutes

- Summary – paraphrase what we understand them to have said

Give token of thanks

# 11 Appendix Three: Beacon Footprint

