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**HR2420/2**

**HomeSmart Renovations Project**

# **Best Practice Policy Approaches to Encourage Sustainable Residential Building and Renovation: Survey and Literature Review Results**

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## About This Report

### Title

Best Practice Policy Approaches to Encourage Sustainable Residential Building and Renovation: Survey and Literature Review Results.

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### Abstract

This report documents the findings of the first stage of research to identify existing successful policy approaches and the preferred provisions to be modelled as part of the HomeSmart Renovations *Best Practice Policy Approaches* project. The first stage comprised a literature review and questionnaire-based interviews with officers from 17 local authorities.

The research identifies that there is strong interest in sustainable building within the interviewed councils, and a number of good examples of policy initiatives already in place. However there are limited resources, knowledge gaps, and a generally piecemeal approach to such initiatives. The implication is that there is potential for a much more coordinated and supportive policy environment for sustainable building. A proposed Resource Manual, to be developed as part of the *Best Practice Policy Approaches* project, was generally welcomed by the interviewed councils, particularly if the Manual were to be actively introduced to councils, via training sessions or similar processes.

### Reference

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# 1 Executive Summary

This report documents the findings of the first stage of research within the *Best Practice Policy Approaches* project. The overall purpose of the project is to provide a systematic evaluation of policy provisions, and develop a package of model provisions for uptake by other councils. It will help to clarify what measures are feasible and effective for local government to undertake, and encourage more councils to introduce appropriate provisions to support sustainable new homes and renovation.

The project is intended to develop resources for local Government, providing the most up-to-date approaches and methods being used for encouraging a more sustainable housing sector within the New Zealand context in a user friendly and readily accessible format.

This first stage of research set out to identify existing successful policy approaches and to gauge preferences as to the type of provisions to be modelled in the subsequent stages of the project. The research comprised a literature review and questionnaire-based interviews with officers from 17 local authorities.

The research has identified that there is strong interest in sustainable building within those councils, and a number of good examples of policy initiatives already in place. It also finds that there are limited resources, knowledge gaps, and a generally piecemeal approach to such initiatives. There is also some uncertainty as to the parameters of possible interventions—particularly around what can be specified in a District Plan (due to the relationship between the Resource Management Act and the Building Act), and the scope of application of financial incentives. An international literature review has identified numerous relevant examples of policies for sustainable building, which will be drawn upon in subsequent stages of research.

The implication of all of these findings is that there is potential for a much more coordinated and supportive policy environment for sustainable building. In this light, the proposal for a Resource Manual, to be developed as part of the *Best Practice Policy Approaches* project, was generally welcomed by the interviewed councils, particularly if the Manual were to be actively introduced to councils, via training sessions or similar processes.

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## 2 Introduction

### 2.1 The Beacon HomeSmart Renovations Project

The Beacon HomeSmart Renovations project (formerly Retrofit 1000) is a large scale demonstration and research project involving the renovation of 1,000 dwellings around New Zealand. These renovations will be designed to meet Beacon’s HSS High Standard of Sustainability™. The HSS™ is a set of performance benchmarks for sustainable homes and requires whole-of-house solutions that include:

- energy efficiency initiatives (insulation, space heating, lighting, hot water and other appliances)
- water efficiency initiatives (low flow shower heads, dual flush toilets and urban rainwater tanks)
- improved waste management
- improved performance in relation to indoor environment quality.

The project is set up in four parts:

- 1) Development of Sustainable Home Renovation Assessment Tool and Packages
- 2) Development of Best Practice Policy Approaches to Support Sustainable Renovation (and Sustainable New Homes)
- 3) Development of Sustainable Home Renovation Procedures
- 4) HomeSmart Renovation Pilot Project

This report is the first of a series that will contribute to the second part of the HomeSmart Renovations project—development of *Best Practice Policy Approaches to Support Sustainable Renovation (and Sustainable New Homes)*.

The HomeSmart Renovations project involves robust monitoring of the actual performance of homes in relation to key sustainable building indices (energy and water use, indoor temperature and humidity)—before and after renovation. It will also include a Home Energy Rating Scheme (HERS) assessment as a means of assessing the “match” between the HSS™ and existing star ratings, and, perhaps most importantly, the actual performance of dwellings after renovation.

The experience of the home occupiers participating in the HomeSmart Renovations project will also be assessed as part of the project.

The HomeSmart Renovations project has a parallel in the NOW 100 (HomeSmart Homes) Project. This project is aiming to build 100 new homes to meet Beacon’s HSS High Standard of Sustainability™. By potentially improving local government procedures for sustainable building, the results of this *Best Practice Policy Approaches to Support Sustainable Renovation* will also support the development of new homes.

## 2.2 Local Government Research Objectives

The *Best Practice Policy Approaches* research is predicated on the view that people would find it easier to build and renovate their homes sustainably if council policies and processes were more supportive of sustainable design. The main objectives of the overall research project are:

- To develop best practice local government policy mechanisms which will support the greater uptake of sustainable new and renovation of homes; and
- To confirm that these are effective in supporting and promoting these outcomes at a local level.

A number of councils are already experimenting with various forms of support for more sustainable building. Examples include EECA's renovating programmes, the BRANZ Eco Advisor, the ECan Clean Heat Programme, Waitakere City Council's development contribution rebates, and Wellington City Council's practice of fast-tracking consents for sustainable building. The initiatives are, however, being implemented in a piecemeal manner, generally by the "sustainability leader" councils. There is little analysis to suggest which measures are more effective in promoting sustainable homes, and little coherent support for councils looking to introduce supporting provisions.

Beacon's research into local government barriers to sustainable building has identified that, quite often, it is the council processes, rather than the policies per se, that act as barriers (Easton et al., 2006). To this end, this Local Government Policy component of the HomeSmart Renovations project has a secondary objective:

- To increase the understanding and capability of local government staff to deliver more sustainable outcomes by providing them with appropriate information and upskilling via engagement with the project.

This research will provide an evaluation of policy provisions, and develop a package of model provisions for uptake by other councils. It will help to clarify what measures are feasible and effective for local government to undertake, and encourage more councils to introduce appropriate provisions to support sustainable new homes and renovation.

It will result in the development of guiding material for local government, potentially in a manual that will provide the most up-to-date approaches and methods being used for encouraging a more sustainable housing sector within the New Zealand context in a user-friendly and readily accessible format.

This report presents the first stage of the research, and identifies the ways in which councils encourage sustainable building.

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## 3 Why Focus on Local Government?

### 3.1 Beacon Research

Beacon has undertaken several research projects to understand local government policy and regulatory frameworks (O’Connell, 2005, O’Connell, 2006), to review potential barriers to sustainable building within those frameworks, particularly district plans (Easton et al., 2006, Trenouth & Mead, 2007), and to consider in greater depth the policy and regulatory frameworks for market transformation (Stancu et al., 2007) water conservation and water use efficiency through demand management (Lawton et al., 2007).

Several reports have also been prepared looking at the scope for renovation interventions, including a review of worldwide sustainability related renovation interventions and an overview of the existing knowledge regarding the New Zealand market (Storey et al., 2004). This has been expanded on in the development of the Renovations Project Scope (Karlik-Neale & Gibbons, 2008), with information sourced from interviews with a range of external stakeholders.

Of particular note for this research, Easton et al. (2006, p.8) concluded that:

*“the barriers to sustainable building within Auckland City and a local government context are generally more at the generic (e.g. lack of information) level than as a result of specific policies, plans or practices of the individual council. The key exceptions to this are around the Building Act administration and interpretation of the New Zealand Building Code, and in the infrastructure standards, particularly for water, of the Council. This has been the experience for other councils such as Waitakere (Tony Miguel pers. comm.) where it was found that a negative staff attitude and inflexible conventional infrastructure standards were the major barriers to sustainable building”*

Trenouth & Mead (2007, p.1) extended the research undertaken by Easton et al. (2006), reviewing a wider range of District Plans, and identifying the following “common barriers”:

- **Traditional development controls** (height, yard, height-in-relation-to-boundary, building coverage, etc.) where there is no exemption or allowance for features such as rain water tanks, solar panels or small-scale energy generation.
- Solar orientation is often constrained by **yard and height-in-relation-to-boundary rules** which push buildings into the middle of lots so as to protect sunlight to adjoining properties. There is no requirement to orientate buildings on lots for sunlight.
- **Low impact approaches** to stormwater management **are restricted** to areas of particular environmental sensitivity, or where there are infrastructure constraints.
- **Process issues** were highlighted as a major barrier to the incorporation of sustainability features, with the costs, uncertainty and delays of getting consent for discretionary and non-complying activity consents (including the need for written approvals) generally deterring people from incorporating sustainable features.

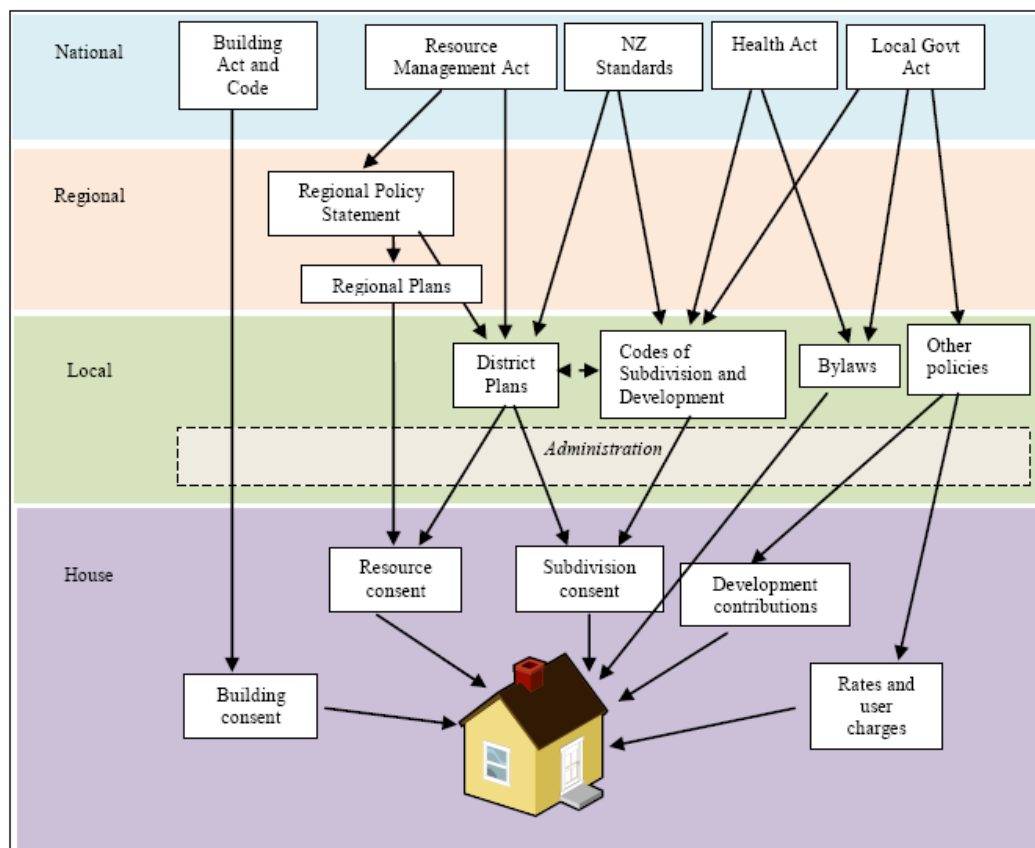


- **Codes of Practice** were similarly identified as a barrier, although Kapiti has illustrated a positive way of addressing alternative solutions.

Key (District Plan) methods identified by Trenouth & Mead (2007) for addressing potential barriers and encouraging sustainable features were:

- **Objectives, policies and assessment criteria** that recognise and provide for sustainability and enable the wider positive benefits to be taken into consideration through resource consent processes.
- **Allowance within standards** for features like rain tanks, but also providing exemptions where sustainable features are included.
- **Non-regulatory methods** such as guidelines or information that assists in designing development appropriately to reflect sustainability matters.
- **Development controls** that require sustainability features, such as requiring appropriate building orientation for solar gain and natural ventilation.

The findings from Easton et al. (2006) and Trenouth & Mead (2007) have been used as the beginnings of a “Local Government Toolkit” for overcoming barriers to sustainable residential building. It was concluded that further research was needed, focused on solutions, before a toolkit could be constructively developed. The draft toolkit work has been folded into this *Best Practice Policy Approaches* project. The following diagram (Figure 1) was developed as part of the draft toolkit, to illustrate the range of legislative and policy mechanisms that have an influence on sustainable housing construction and renovation.



**Figure 1 Local government legislative and policy mechanisms that affect sustainable housing**

In early March 2007 Waitakere City Council (WCC) hosted a Beacon Pathway “Barriers to Sustainability” workshop. The workshop was facilitated by David Mead, a director at environmental consultancy, Hill Young Cooper. Other participants were drawn from those councils that had been involved in earlier Beacon research (Christchurch City Council, Hamilton City Council, Auckland City Council, and Kapiti Coast District Council (KCDC)), Beacon Pathway, Hill Young Cooper and Waitakere City Council.

Some of the positive and negative features of the RMA were identified by participants in Table 1 below:

Summary of RMA barriers identified by attendees	
RMA Positives	RMA Negatives
<p>Water tanks—allowances for height and height-in-relation-to-boundary</p> <p>Comprehensive subdivision plan @ WCC</p> <p>Structure plans @ KCDC—masterplans down to the design working well (i.e. dual plumbing, rain tanks)</p> <p>TUSC—Tools for Urban Sustainability Code of practice offered at application stage</p>	<p>Solar panels—visual impact</p> <p>Water tanks—height-in-relation-to-boundary, often required to be elevated above the ground</p> <p>No exemptions for sustainability—costs/time/notification</p> <p>Slow speed of policy changes (i.e. plan change process)</p> <p>Processing and processes—staff turnover</p> <p>Communication</p> <p>Standard engineering</p> <p>Discretion in criteria lacking</p>
Additional Comments	
	<p>Electricity likely to feed back to network, why individuals treated differently to network utility</p> <p>Mechanical ventilation, affordability issue (central operation)</p>

**Table 1 Summary of RMA barriers identified by Beacon workshop participants**

Participants were also asked to discuss what types of tools were required by local government and what approaches any toolkit might need to take. These are summarised in Table 2 below:

Specific tools/considerations	Toolkit approaches
Need to consider regional differences	Urban design protocol—integration
Maximum controls/rules (minimum density)—bonuses	Provide a range of solutions
Risk management	Checklist (case studies/best practice/guidelines)
Asset management	Process-based approaches
Building Act—RMA relationship (erratic court decisions and ultra vires)	RMA/Brookers type digest of provisions and examples
Urban design—sustainability linkage	Guidelines—identifying what is a particular barrier to a particular set of problems (i.e. rain tanks)
Address three levels: House (insulation) > neighbours (solar access) > networks/community (provision)	Green Building Code
Planning considerations could look roughly the same (i.e. roof tank: roof area)	Similar process to Urban Design Panel (non-stat) e.g. peer review of sustainability features of a development
Principles to incentivise/promote	

**Table 2 Tools for local government, as identified by Beacon workshop participants**

Other ideas for overcoming barriers and other possible incentives include:

■ **Overcoming barriers**

- use of non-statutory processes (encourage change)
- piggy back on urban design initiatives
- use of climate change mandate
- consistency among the disciplines

■ **Incentives**

- Rain tanks exempt from earthworks (certain size)
- Development contributions reduction (TUSC)
- Rating system of sustainability features (stars)
- More efficient home more saleable (Australia)
- Whole of life costings

The HomeSmart Renovations project scope (Karlík-Neale & Gibbons, 2008) included interviews with 13 external stakeholders as well as the project team. External stakeholders included central and local government officials<sup>1</sup>, renovation organisations and tradespeople. The scoping study found that:

- Sustainable renovations are currently fragmented and ad hoc.
- Full-scale renovations are generally limited to small groups of environmentally active people and usually privately funded.
- Government funded renovation is limited to insulation for low and middle income households.
- Local councils and some other organisations such as utilities support renovations aimed at certain issues such as reducing energy or water use.
- Renovation organisations compete to obtain some of this funding, and the renovations they offer are limited as a result.

The study also identifies other barriers to sustainability renovation include low financial incentives and intangible benefits, public acceptance of low quality housing, and lack of regulation or government intervention.

## 3.2 Other Research

### 3.2.1 Sustainable Renovations

Alison Hall's Masters of Planning thesis "Barriers to Sustainable Renovations and the Incentives Local Government Can Provide to Encourage Sustainable Renovations" (2007) funded in part by Beacon Pathway, provides some further background information. Hall surveyed 200 homeowners who had applied for and been granted a Building Consent for Additions and Alterations in Waitakere City and North Shore City during 2006.

Of particular relevance for this research, Hall asked respondents "what is the best way for local government to encourage sustainable renovations?" From a list of six "possible Council incentives that would encourage them to act more sustainably if they were to undertake a similar renovation in the future" (Hall, 2007, p.8), most homeowners selected financial incentives and discounts on products and services (see Table 3). Regulation was the least-selected incentive. This is perhaps not a surprising result, given that respondents also identified that the biggest barrier between residents and sustainable renovation is the cost of the product and installation. However, it provides a useful consumer perspective, to be tested in the course of this research project.

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■ <sup>1</sup> *Including Waitakere City Council, Kapiti Coast District Council and Environment Canterbury—also interviewed for this report.*

Preferred Council Incentives	Percentage
Financial incentives	29%
Discount on products and services	26%
In-house advice	16%
Education	12%
Demonstration	10%
Regulation	7%
TOTAL	100%

**Table 3 Council incentives preferred by home renovators (Hall, 2007)**

A survey of homeowners and designers who have made use of the pilot Eco Design Advisors (EDA) scheme (Christie & Mathews, 2007) concluded that “a person who visits an EDA is more likely to include environmental technologies than those who don’t.” The change was particularly notable for designers, with 100% of those surveyed now discussing eco design options with their clients, compared to 41% of designers in a control group (who did not meet with an Eco Design Advisor).

### **3.2.2 Low Impact Urban Design and Development**

The FRST-funded Low Impact Urban Design and Development (LIUDD) project (managed by Landcare Research) is addressing similar issues of policy interventions for that different, but related, aspect of sustainable urban development. A review of international best practice identified the following policy instruments used to promote the uptake of LIUDD (Puddephatt & Heslop, 2007):

- design flexibility within local planning provisions
- stormwater modelling credits (for use of low impact solutions)
- density bonuses and development incentives (e.g. building height, floor area, car-parking requirements)
- technical advisory service
- fast track permitting and reduced permit fees
- reduced user fees (e.g. rates)
- stormwater offsets and credit trading
- financial assistance and capacity building
- regulation

As part of his Masters in Resource and Environmental Planning, Mark Bishop (2006) examined the barriers to LIUDD. He concluded that:

*Even though there are no explicit existing planning or policy barriers as to the full uptake of the LIUDD approach, a number of implicit barriers exist. This is mainly due to the fact the LIUDD is a reasonably new approach, and as such, a LIUDD type proposal would face greater scrutiny than a ‘traditional’ development approach. Many of the impediments to the wide-spread uptake of LIUDD principles and practices appear to be mainly socio-politically-based, not technically based, since there is accumulating technical evidence of LIUDD’s multiple benefits to improve urban sustainability. Also, LIUDD is still often viewed as being predominately focused on stormwater management issues only, as opposed to incorporating the many facets of urban sustainability.*

Bishop identified the review of the District Plan and Engineering Standards for Subdivision as good opportunities for inserting LIUDD principles into council policy.<sup>2</sup>

### **3.2.3 Building Act and RMA Interrelationships**

One of the key concerns identified in previous Beacon research and workshops is the interrelationship between the Building Act 2004 and the Resource Management Act 1991. Specifically, section 18 of the Building Act<sup>3</sup>, which specifies that:

*s. 18 (1) A person who carries out any building work is not required by this Act to –*  
*(a) achieve performance criteria that are additional to, or more restrictive than, the performance criteria prescribed in the Building Code in relation to that building work: or*  
*(b) take any action in respect of that building work if it complies with the Building Code.*  
*(2) Subsection (1) is subject to any express provision to the contrary in any Act.*

This would suggest that District Plan provisions, prepared under the RMA, cannot specify standards that are higher than the standards contained in the Building Code. There has been only one legal test of this provision, in *Christchurch International Airport Ltd v Christchurch City Council*<sup>4</sup>. Summarising the findings of the High Court’s decision in that case, Ceri Warnock, a barrister and lecturer in the Faculty of Law at Otago University (See Appendix 2 for the full paper) concludes that:

*“a territorial authority will be free to promulgate conditions and rules concerning the use of a building even if those rules affect the construction of buildings, provided of course that*

■ \_\_\_\_\_  
*2 Note that Bishop’s argument regarding the technical evidence to support LIUDD is somewhat contested, with anecdotal evidence of concern amongst Councils about the uncertainty of cost and need for more complicated ongoing maintenance arrangements (pers comm, Maggie Lawton, June 2008).*

*3 A carry-over from s.7 of the 1991 Building Act.*

*4 [1997] 1 NZLR 573, concerning noise attenuation in a development close to Christchurch Airport, where the buildings could have been constructed to Building Code standards, but would not have received a resource consent as they were not fit for use.*

*such rules are ‘appropriate and necessary’ to ‘promote the sustainable management of natural and physical resources’.*”

There are some limitations to the decision, particularly given that the requirement under the RMA was not contained within the Building Code at that stage. It is not clear what would happen if the RMA provision is also specified in the Building Code (although the Court has given some indication that the more stringent requirement will apply). Warnock (2005, p.360) concludes:

*“To date, in the absence of clear authority to the contrary, it is apparent that local authorities will be able to introduce rules to ensure the sustainable management of natural and physical resources even if these directly influence the construction process. Carefully drafted rules, emphasising their valid resource management function, are likely to be safe from legal challenge despite s 18 BA04. To further safeguard any rules, local authorities would be well advised to tie or to link the rule to the use of the building if possible.”*

### **3.3 Implications for this Research**

The previous research undertaken in this field has helped to structure the clustering of policy options for this research, and to inform the development of the questionnaire. It also demonstrates that there is a range of local government policy initiatives already underway to encourage sustainable building practices, but that the approach is piecemeal, ad hoc, and not as effective as it could be.

Introducing some incentives, particularly regulatory and financial incentives appears to be more challenging than non-regulatory programmes, but there may potentially be more widespread rewards from effective introduction of such measures. This is an issue for further research, and an area where the international literature review points to potential solutions from other countries. It will be important that the research team liaises with other projects underway in similar spaces to the *Best Practice Policy Approaches* project, in order to maximise research benefits.

On the basis of the background review, the range of policy initiatives has been clustered into five interrelated incentive areas:

- Regulation: district plan provisions (policies, rules, assessment criteria, height bonuses etc.)
- Standards: Council Codes of Practice and Engineering Standards
- Financial: development contributions, rates remissions, other funding and grants
- Process: officer training, process “smoothing”, guidelines, practice notes
- Education: advice, assessment, guidelines, (i.e. education offered to the public)

Each of the clusters was considered against Beacon’s five key performance areas (as defined in the HSS High Standard of Sustainability™), with a preliminary assessment of likely value to that particular performance area (see Figure 2). It was considered that process improvements and educational initiatives would be of value across all of Beacon’s key performance areas.



Some other incentives, such as financial incentives for improving indoor environment quality, or expanding the scope of standards such as Codes of Practice to achieve energy efficiency outcomes, may be more difficult for Councils to justify in terms of their “core business.”

The clusters were also considered against the types of “applicants” that councils engage with. The applicants were divided into three:

- **home renovators** who may need to engage with council on a limited basis as part of a renovation (single project) in their home. In such instances the applicant may be trying to secure a building consent and resource consent for a partial home renovation, and is subsequently only in a position to improve some aspects of the overall sustainability of their home.
- **home builders** who may need to engage with council on a limited (single-project) basis, for example to secure a building consent and resource consent for their home, but will have greater potential to include sustainable features within their design.
- **large-scale developers** who engage with council to secure multi-dwelling consents, including subdivision consents, and may also be developing apartment buildings or medium density housing.

It must be underscored that these are preliminary assessments. Further research will help to evaluate and firm up whether these preliminary assessments are adequate and/or need to be refined further or reconsidered.

Incentive cluster	Regulation	Standards	Financial	Process	Education
Issues					
Water	★	★	★	★	★
Energy	★			★	★
Waste	★	★	★	★	★
Materials				★	★
IEQ	★			★	★
Applicants					
Home renovators	★		★	★	★
Home builders	★		★	★	★
Large-scale developers	★	★	★	★	

**Figure 2 Preliminary clusters of incentive areas, issues and audiences**

The background review suggested a stronger focus should be placed on Territorial Local Authorities (District and City Councils), rather than Regional Councils, as the TLAs tend to have more direct engagement in building processes.

The intention of the questionnaire was principally to follow on from Beacon's barriers research. Having established what some of the principle barriers were, it seemed important to establish what councils are doing to overcome these. In most instances it has been felt that in the main, councils see themselves at the beginning of the journey, rather than the end. For this reason there are few examples of programmes that have been up and running and can demonstrate clear results. Beacon also wanted to understand what councils would like to be doing—and what seem to be the barriers to that.

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## 4 Method

### 4.1 Best Practice Policy Approaches—Project Overview

The research will be delivered in five parts, with an interim report from each stage contributing to the final report and Sustainable Building Resource Manual for Local Government. The five stages are:

- 1) **Scoping:** a review of the range of potential local government policy provisions to incentivise and promote sustainable new homes and renovated homes.
- 2) **Evaluation:** developing criteria and identifying five policy provisions to model for wider council uptake.
- 3) **Drafting:** developing model text and supporting documentation for five policy provisions.
- 4) **Application:** piloting the five policy provisions with councils.
- 5) **Analysis and Integration:** providing a summary and analysis of the research findings, and ensuring that findings are meshed into Beacon’s wider work programmes.

### 4.2 Stage I: Scoping

This report covers Stage I of the project, Scoping. The research outputs for this stage are as follows:

- 1) Literature review of national provisions and, to a lesser extent, international examples. As a starting point, this included:
  - Beacon reports (Storey et al., 2004, Easton et al., 2006, Trenouth & Mead, 2007, and Lawton et al., 2007) and the material drafted for a “Barriers to Local Government” toolkit
  - insights from the development of the HomeSmart Home and HomeSmart Renovations procedures (Karlik-Neale & Gibbons, 2008); and
  - other relevant projects such as the ECan Clean Heat programme.
- 2) Working framework of classification for the range of interventions, e.g. regulation, financial provisions, community education, officer upskilling, etc.
- 3) Survey of at least 12 local councils across New Zealand which are engaged in the issues of sustainable building to:
  - identify existing successful policy approaches, and
  - gauge preferences as to the type of provisions to be modelled by Beacon.

This will involve developing a questionnaire and personally contacting council officers.

- 4) Long-list of 10–20 policy provisions to be evaluated in Stage II: Evaluation.

The research for Stage I was conducted in three parts: a background review of relevant New Zealand research, an international literature review, and questionnaire-based interviews with councils.

#### **4.2.1 Review of New Zealand Research**

A background review of New Zealand research into local government and sustainable housing was conducted to help structure the clustering of policy options, and informed development of the questionnaire.

#### **4.2.2 International Literature Review**

An international literature review was conducted by Ceri Warnock, a Barrister and Lecturer in the Faculty of Law, University of Otago. It identified policy options that have been trialled in other parts of the world, with a particular focus on North America and the United Kingdom.

#### **4.2.3 Questionnaire-based Interviews**

Based on the background research, a simple questionnaire was developed to guide interviews with council officers. The questionnaire focuses first on establishing the level of interest in promoting improvements in sustainable residential building. It then attempts to drill down into the types and level of activity each council is involved in, identifying particular programmes, policies, incentives, or other means being employed. Drivers for programmes are identified and barriers to implementation are also discussed. A full copy of the questionnaire can be found in Appendix 1.

In line with Beacon practice, criteria for selection was at first the 20 largest councils in the country (on a population basis), as well as a select number of councils that were known to be experiencing significant population growth and/or which had appointed an Eco Design Advisor. These councils were considered to be the most likely to have the resources required to pursue strategic change in the residential built environment.

The final list of councils where officers were approached is listed in Table 4.

Council	Basis for inclusion	Response
Auckland City Council	Top 20 council in population size + EDA	Y
Christchurch City Council	Top 20 council in population size	Y
Manukau City Council	Top 20 council in population size	Y
North Shore City Council	Top 20 council in population size + EDA	Y
Waitakere City Council	Top 20 council in population size + EDA	Y
Wellington City Council	Top 20 council in population size + EDA	Y
Hamilton City Council	Top 20 council in population size + EDA	Y
Dunedin City Council	Top 20 council in population size	Y
Tauranga City Council	Top 20 council in population size + EDA	Y
Lower Hutt City	Top 20 council in population size	N
Rodney District Council	Top 20 council in population size	N
Palmerston North City	Top 20 council in population size	Y
Whangarei District Council	Top 20 council in population size	N
New Plymouth District Council	Top 20 council in population size	N
Rotorua District Council	Top 20 council in population size	Y
Franklin District Council	Top 20 council in population size	Y
Far North District Council	Top 20 council in population size	Y
Napier City	Top 20 council in population size	N
Invercargill City Council	Top 20 council in population size	Y
Queenstown Lakes District Council	EDA	Y
Western Bay of Plenty	EDA	Y
Kapiti Coast District Council	EDA	Y

**Table 4 Councils approached to take part in the survey**

For the purposes of the interviews the following types of council officers were identified as suitable for taking the survey:

- Officers who were working in a strategic role in terms of developing council responses to sustainable housing—at least at some level

- Eco Design Advisors (Note EDAs are independent advisors who work on behalf of councils.)
- Building Consent Officers or Managers where there were no appropriate strategic roles within the organisation.

In a number of cases, identified officers discussed responses to the questionnaire with other personnel within the organisation, or had several staff members take part in the interview. It's important to acknowledge that the results from the survey therefore represent the views of one or more council officers from each organisation, rather than elected councillors. In each case the best possible effort was made to identify and talk with the most suitable representative but Beacon can not guarantee with any degree of certainty that this was achieved in every case. It follows that statements given by respondents do not necessarily reflect a particular council's official approach or views to the wider promotion of residential sustainable building.

Having identified the appropriate officer, potential respondents were then sent a copy of the questionnaire to prepare answers. Roughly one to two weeks later this was followed up with an interview either in person where possible or else by telephone. Interviews took on average between 30 minutes and one hour to complete.

As identified in Table 4, a number of councils chose not to participate in the research as they felt they had little to offer.

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## 5 Findings of Questionnaire

This section sets out the responses to the questionnaire, as captured during interviews with council officers. The purpose of the questionnaire was to first capture the level of interest and commitment to sustainable building amongst councils, and then to determine the level, type and scope of programmes being implemented to achieve results in this field. It was also of interest to see what the principle drivers were for such initiatives within councils.

### 1) Is encouraging more sustainable building and/or renovation something your council actively sets out to do in some capacity?

	Number
A Yes	14
B No	2
<i>No response</i>	1
TOTAL	17

**Table 5 Response to Question 1**

Actively encouraging sustainable building and renovation was something almost all the councils interviewed set out to do. However nearly all respondents noted that their endeavours could be significantly improved and so couched their response accordingly. It should also be noted that three of the councils approached declined the opportunity to participate in this project on the basis that there was insufficient activity within the sustainable building area to warrant a reply. They are therefore not included in the results discussed here.

### 2) How relevant do you perceive the promotion of more sustainable building approaches to be to your organisation?

	Number
A Very relevant	7
B Relevant but not imperative	9.5
C Not very relevant	0.5
D Irrelevant	0
<i>No response</i>	0
TOTAL	17

**Table 6 Response to Question 2**

All of the councils identified that promoting more sustainable building approaches is “very relevant”, or “relevant but not imperative” to their organisations. One council believed that promoting sustainable building was relevant but not imperative to the strategy team, but not very relevant to the building team (hence the “half marks” awarded in the table).

**3) In which of the following ways is sustainable building being encouraged by your council? Please provide some details regarding your answer to the above, for example, what is working best; how easy was the initiative to implement; what has been the rate of uptake; what monitoring has been done?**

	Number
Through the use of regulation such as District Plan changes which specifically promote sustainability innovations	12
Through the use of rules within the subdivision Codes of Practice and/or other building standards such as engineering standards	9
Providing eco advice to home renovators when they come to the council for consent and or the use of other guidelines	9
Through collaboration and support of other organisations such as energy efficiency trusts that provide insulation renovations or similar into homes	9
Through the use of incentives such as: rebates, fast track permitting/consenting, reduced or nil fees for consents, other incentives	6
Through the use of other policy interventions such as development contributions, rates remissions, floor area ratio bonuses or similar	3
Other means (please elaborate)	8
<i>No response</i>	0

**Table 7 Response to Question 3**

All of the councils interviewed identified multiple answers for this question. The most frequently identified answer was “through the use of regulation”. It should be noted that councils have interpreted the categories in their own ways, meaning that in some cases, the same activity has been included by different councils under different answers. For example, many of the responses under “Other Means” could have been clustered as part of “other policy interventions” or “collaboration”. This is not considered to be a significant concern to the integrity of the research, as the value of the responses is in drawing out the range of initiatives underway.

Regulation

Regulation was the most commonly identified means of councils encouraging sustainable building, particularly through District Plans and dealing with issues that have effects beyond the site (e.g. stormwater).



- Manukau City Council is working on plan changes to the District Plan that will introduce Urban Design Guidelines for residential buildings and neighbourhoods and changes to subdivision rules to ensure sustainable practices for the design and layout of subdivisions including lots sizes, deep soil zones, orientation, connectivity and boundary definition. More particularly the Council will introduce new standards for residential units including cross ventilation, light penetration, orientation, and communal space.
- Christchurch City Council's Cleanfill Licensing Bylaw (2003) increased the price of disposing of cleanfill within the city thus significantly increasing the economic viability of recycling any such materials.
- Auckland City Council currently refers to Residential Design Guidelines in its District Plan, but has no firm requirements. The Guidelines require a development to consider: neighbourhood character, site layout, energy efficiency, access, scale/bulk and street frontages.
- North Shore City has introduced new stormwater controls, via Plan Changes 22–25. Rainwater tanks are mandatory for some catchments.
- Waitakere City Council has introduced Plan Changes 13–18 for the Northern Area of the City, which make reference to a range of sustainable design criteria in promoting the way new and existing town centres are to be developed. This includes:
  - design criteria requiring a demonstration of the extent to which building design includes principles of passive solar design and walkable neighbourhoods.
  - Demonstrable linkages to public transport are required as is the need to cater for pedestrian and cycle linkages.
  - Urban design principles including the need for permeability, design interest in the streetscape, walkable access to services, safe and high quality amenities.
  - The use of stormwater management features such as rain gardens, swales, and permeable paving are incorporated in roading design.<sup>5</sup>
- Wellington City Council's 2007 Central Area Plan Change exempts buildings' double skin from building mass calculations. This equates to a floor area bonus.
- Far North District Council is introducing an energy chapter into its District Plan which will allow the installation of wind turbines as a permitted activity at a domestic scale, and community scale energy generation projects as a restricted discretionary activity. They are also considering a water use bylaw requiring new houses to install a rainwater tank.
- Franklin District Council is employing MOUs with local developers before significant development sites are developed to provide scope for discussion around the use of building materials, options to require rainwater tanks, solar hot water heating, and/or other sustainable building materials.

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 5 The Waitakere City Council district plan changes 13–18 are available from:

<http://www.waitakere.govt.nz/AbtCnl/pp/districtplan/districtplanchanges.asp#changes13-18>.

Accessed: 9/4/2008.

- Queenstown Lakes District Council (QLDC, 2008) has introduced an affordable housing strategy (HOPE—Housing our People in Our Environment) which includes a plan change that will include a requirement to take into consideration housing quality and energy efficiency standards for affordable housing.

#### Rules within Subdivision Codes of Practice (CoP) and other Building Standards

Answers to this question identified:

- Auckland City Council Residential Design Guidelines
- Wellington City Council’s Subdivision Design Guide (c.1998) includes provisions for Low Impact Design. However, it is undermined by the Code of Infrastructure Development. The CoP has been amended to allow scope for other solutions, but the onus is still on the developer to prove an alternative solution works (e.g. issues of ongoing maintenance).
- Waitakere City Council—Ecowater is developing sustainable Codes of Practice for stormwater management.
- Dunedin City Council recently approved consents for 300m<sup>2</sup> lot sizes for a centrally located brownfields subdivision rather than the larger standard 500m<sup>2</sup> sites. Dunedin City is keen to encourage more higher density brownfields development in central locations.
- Kapiti Coast District Council is preparing sustainable subdivision guidelines.

#### Eco advice to home renovators

This answer was identified by the seven councils who have employed Eco Design Advisors (EDA), through the BRANZ scheme. A number of councils also indicated their interest in being part of the scheme in the future. In most instances where a council employs an EDA this was who was spoken to for the purposes of the survey. The only two exceptions were Auckland City and North Shore City who had not yet appointed their EDAs (both councils have subsequently filled these positions). EDAs who had been in their role for some time identified significant success with the scheme, with consistent increases in both interest and the uptake of the service. The popularity of the service with the wider community appears to be high, with EDAs also having a beneficial effect for suppliers of sustainable products and services within each locality.

Queenstown District Council has also created a document called “Sustainable Building in the Queenstown Lakes” which is available from its website. In a similar vein, Waitakere City Council has developed “Sustainable Home Guidelines” and also partly funds the Sustainable Living Centre which provides a range of eco-friendly education opportunities.

Hamilton City produces “City Scope” a strategic document principally for internal use with guidelines as to how the city should be developed sustainably with direct references to a more sustainable built environment. Hamilton also runs a “Sustainable Urban Design” programme which includes a network of community members which hold workshops, and produce brochures and information booklets.

### Collaboration and support of other organisations

- Auckland City Council supports the Snug Homes project providing ecowise renovation installations to about 300 houses per year with EECA, ACC, Health Board and the ASB Trust. The Council pays between \$60,000–80,000 per year.
- North Shore City Council offers Waitemata District Health Board insulation grants of up to \$50,000 per year.
- In Waitakere City another renovation programme delivered by EcoMatters is called “EcoWise West”—and includes the renovation of at least 360 houses per year, using funding under the EECA grant scheme. This programme has been running for a number of years but finishes in June 2008.
- Dunedin City Council is working with Energy Smart to provide insulation renovations in a number of houses throughout the city each year.
- Manukau City Council provides an annual grant of \$25,000 annually to the “Snug Homes” project.
- Waitakere City is running a renovation programme within its Project Twin Streams called the “Sustainable Living—Sustainable Household Programme” (see Figure 3). The programme has a vision for all Waitakere City Council houses to be renovated up to a sustainable performance standard. The programme will be delivered in partnership with EcoMatters Trust, the ARC and other key stakeholders.
- Wellington City Council is investing \$220m from central government and council funds to renovate/upgrade 3,000+ social housing units including above-code standards of double glazing and insulation.

### **Waitakere City's Sustainable Living—Sustainable Household Programme**

The Sustainable Living—Sustainable Household Programme provides an example of one of the more ambitious renovation programmes in operation across the country. The programme builds on the community development model of the city's very successful Project Twin Streams restoration project. The first stage of the programme (to June 2008) will involve 200 households in the catchment area taking part in identifying and implementing actions to live more sustainably—in particular through reducing the use of energy, water, waste and encouraging people to use their cars less. Participating households will also receive a free water audit and renovation and an energy renovation. A total of 45 eligible houses will also receive an energy renovation.

- The programme will initially be delivered through three Project Twin Streams community organizations in Glen Eden, Swanson and Ranui.
- One of the assumptions of using a community development model and working through locality based community based organisations is that local people will inspire their friends and families to get involved in living more sustainably.

The Demonstration Programme will be monitored and evaluated and if successful will role out to 1,000 households in the next financial year and up to 3,000 households per year over the next 10 years. This will be dependent on developing partnerships and external funding.

**Figure 3 Waitakere City's Sustainable Living—Sustainable Household Programme**

#### Incentives

Identified incentives focused on solar hot water (SHW) and rain water tanks and were offered as rebates, nil-fee consents and fast-track consents.

- Auckland City Council is considering waiving consent fees for SHW installations.
- Christchurch City Council is looking at fast tracking consent applications for SHW, and possibly waiving fees. There are issues around the need for a plan change to achieve this.
- Waitakere, Auckland and North Shore City Councils offer a financial incentive in the form of a \$500 rebate on the purchase of a rain tank.
- Wellington City Council is proposing a grant scheme for SHW installation this year.
- Hamilton and Waitakere City Councils have waived consent fees for households wanting to install solar hot water heating (normally \$215 for Hamilton).
- Hamilton City Council has set up an Urban Design Panel for substantial or repeat projects to assist in speeding up consent processes and provide developers with a “one-stop shop”. Hamilton's EDA will be part of this Panel and will provide eco advice at the design stage.

- Waitakere is considering fast track permitting and consents for larger developments that can demonstrate a sustainable focus through the use of an online “Tool for Urban Sustainability Code of Practice” (TUSC).
- Christchurch City Council identified its heritage grants programme as part of its sustainable building initiatives—supporting the continued use of existing building stock.
- Franklin District identified that it does not encourage discounts or no-fees approaches, because it is council policy to recover fees if at all possible.

#### Other policy interventions

Waitakere City Council identified its TUSC tool in this category, an online design and assessment tool that rates the sustainability of urban residential buildings, subdivisions, and neighbourhoods. TUSC calculates the energy and water savings and the wider stormwater and transport-related impacts of both existing sites and sites at the concept or design stage. TUSC also includes a remissions tool which enables developers to obtain a rebate on development contributions if a development can demonstrate a number of sustainability features. The tool is currently being reviewed to assess why take up has not been as high as the council had hoped. Dunedin City Council has allocated some economic development funds to examine housing quality.

#### Other means

- Auckland, Waitakere and Manukau City Councils were sponsors of the Sustainable Buildings SB07 conference.
- Christchurch City Council has an energy efficiency show home, and provides sustainable living programme talks about eco design and innovation. It runs two events—an eco expo and a sustainability expo, and also a Sustainable Initiatives Fund (SIF)—seed funding for technology. Christchurch is looking at a smart metering initiative alongside Meridian Energy and is also looking at how it might promote modular design for housing in a bid to minimise waste.
- Waitakere City Council is looking at producing guidelines to assist with correctly installing solar hot water systems.
- North Shore City Council has developed a “Good Solutions Guide” which provides advice on how to achieve high quality medium density housing.
- Tauranga City Council has developed a Built Environment Strategy. The aim of the strategy is to improve the District Plan’s Code of Practice. A structure plan review should be finished by the end of the year.
- A number of councils have joined the Communities for Climate Protection (CCPNZ) looking at how to reduce their own energy use.
- Franklin District Council sees that it is promoting sustainable building by enforcing the minimum provisions of the Building Code quoting section 18 and 3(d).
- Queenstown Lakes District Council is supporting the Sustainable Wanaka Organisation.

- Palmerston North has a policy of upskilling building consent staff to ensure there is awareness of new building products and any new regulations e.g. double glazing.

**4) What are the top three measures presently being taken by Council to promote sustainable building that you would recommend to others and why?**

A total of 14 councils provided a response to this question. Their answers, in order of priority, are listed in the following table. It is worth noting that nearly all of the councils with an Eco Design Advisor identified the EDA as one of their top three measures—most frequently as their number one choice.

	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Auckland City*	EDA	Supporting Renovation projects	Developing incentives for green building (up and coming)
Christchurch City	Clean fill bylaw	Energy efficiency showhome	REBRI guidelines
Manukau City	District Plan changes	Incentives	Education
North Shore City*	Plan changes	Insulation renovation	Good solutions guides
Waitakere City*	EDA	Home energy retrofits	Incentives for devt
Wellington City*	EDA—sits with building team. Needing to be clear that EDA is for advice, not regulatory confirmation. Practicality is key—policy promoting bells & whistles but would be better to promote thermal drapes	–	–
Hamilton City*	EDA scheme	Urban Design Panel	Sustainable Urban Design Programme
Dunedin City	Renovation programme	Eco-advisor to come	SHW programme
Western BOP District*	Built Environment Strategy	EDA	Review of Code of Practice
Far North District	Trying to lead by example	DP as a regulatory tool	Education and advocacy
Franklin District	Press release & website communicating Residential Urban Design Guide	Rules for new growth areas	
Queenstown Lakes District*	EDA	Sustainable Building guidelines	Affordable Housing Work
Palmerston North City Council	Capped building consent charge for SHW	Upskilling staff	
Kapiti Coast District*	EDA	Sustainable Subdivision Guidelines	Push the envelope with plan changes e.g. rainwater tanks
Invercargill City Council	District Plan rules	Subdivision Code of Practice	New trust for renovating & associated energy audits
* indicates Councils with an Eco-Design Advisor			

**Table 8 Response to Question 4**

Public education is by far the most recommended current measure, followed by regulation and other (non-regulatory) policy development. Financial incentives and Standards are much lower in terms of recommendation to other councils. No process initiatives were identified.

**5) Are there any specific plans or programmes to assist would be home renovators to undertake more sustainable renovation of homes in your area planned over the next three years? What are these plans and/or programmes? (Please tell us something about them.)**

	Number
A Yes	11
B No	5
<i>No response</i>	1
TOTAL	17

**Table 9 Response to Question 5**

Out of the 17 respondent councils 11 identified that they do have plans to develop initiatives to assist sustainable home renovations in the next three years. Plans included further development of District Plan provisions, renovation programmes and inclusion of sustainable building principles in council projects, such as Manukau City Council’s Wiri Rata Vine Community Renewal Project—a social programme fostering a stronger community.

**6) What are the main drivers for Council’s promotion or encouragement of sustainable building?**

	Number
Perceived social benefits	12
Perceived environmental benefits	11
Political support from council	9
The potential for long-term financial benefits	8
Community expectations	5
Regulatory necessity	4
Other (please describe further)	5
<i>No response</i>	0

**Table 10 Response to Question 6**



Councils were able to identify multiple answers for this question. The most frequently identified drivers were the social and environmental benefits of sustainable building. Long-term financial benefits and political support from council were closely behind. Community expectations and regulatory necessity were less significant drivers.

“Other” drivers identified included staff awareness, lack of money to implement programmes especially with inadequate prioritisation of the need for such programmes with council, pressure from other councils and organisations, commitment to regional strategies, and a feeling that: “there is no necessity”.

**7) Is there any particular approach to encouraging more sustainable building that the council has tried but found difficult to achieve a positive result? What was this and what did you find? (e.g. incentives offered that haven’t been taken up).**

	Number
A Yes	4
B No	13
<i>No response</i>	0
TOTAL	17

**Table 11 Response to Question 7**

Only four councils identified areas of difficulty, with financial incentives appearing to be particularly difficult to obtain uptake of from consumers. The interviews found that the high number of “no” answers to this question wasn’t so much due to the fact programmes had been successful but rather because in the main councils saw themselves at the “beginning of the journey” towards sustainability rather than at the end. Most programmes aimed at stimulating more sustainable homebuilding hadn’t been around long enough to know with any confidence how successful or otherwise they had been. Some of the few exceptions to this however are the following:

- Auckland City Council and Waitakere City Council both found that uptake of their incentive for installing rain water tanks had been very low and they did not appear to be well promoted.
- Waitakere City Council’s Tool for Urban Sustainability Code of Practice (TUSC), while still in development, is also reviewing the level of incentive required to improve desirability within the development community to utilise the tool.
- Hamilton City Council said that the waiving of the consent fee for solar hot water systems had not driven a demonstrable increase in applications for such systems.
- Wellington City Council could not identify any difficulties that it has experienced, but did perceive difficulty with connecting greenfield subdivision and the quality of green building—could a development be stopped because the site is unsuitable? They also

identified the issue of specifying building outcomes above those established in the Building Code.

**8) From a council perspective what are the biggest obstacles to achieving improvements in residential household performance? Please elaborate on the nature of the most significant of these obstacles and what you believe is required to overcome them?**

	Number
Regulatory	10
Issues to do with how the property market functions	9
Political	8
Consumer reluctance	6
Institutional	5
Issues about how the building industry is regulated and managed	3
Other (please describe what)	9
<i>No response</i>	0

**Table 12 Response to Question 8**

All 17 councils responded to this question. Regulatory obstacles featured as the most commonly selected option. The reasons for their choices are listed below.

Regulatory

- The inability of councils to specify anything higher than the minimum standards of the Building Code was often mentioned.
- Regulations aren't stringent enough while some rules make it more difficult to build sustainably.
- At present the onus is on the homeowner to choose to build more sustainably.
- Concern that regulations under the Building Act are becoming quite onerous for renovating older houses—will be a significant cost for areas with old housing stock (e.g. Invercargill).

Property Market

- No premium for developers and developers don't bear lifetime costs of the house.
- Land values are so high that developers can build anything and it will still sell.
- Higher upfront costs for longer term benefits are not valued adequately.
- Cities with a high proportion of rentals have to work with a market where there is no willingness by landlord to improve.

### Political

- Reluctance of politicians to put a stake in the ground and take a position—sustainability is seen as an extra cost.
- Officers need the political mandate to be proactive.

### Consumer Reluctance

- Home owners and buyers are driven by immediate costs and generally not by longer term considerations. The benefits may also not be well understood by consumers. Costs can also be an obstacle and greater government support may be needed.
- People are confused about options; the process needs to be simplified.
- Having NOW Homes® is important—physical demonstrations of sustainability in the market—could even possibly drive regulatory change.
- In colder climates, people are reluctant to rely solely on electricity for heating. Security of supply is a more serious issue.

### Institutional

- Institutional reluctance to change—that it is easier to maintain the status quo whereas sustainability initiatives require change.
- Need to upskill officers.
- Lack of connection between environmental and building sustainability and the LTCCP—no clear outcomes.

### Building Industry

- Building industry is driven by immediate costs and not by longer term considerations.
- Lack of experienced tradespeople to install SHW and other sustainable products.

### Other

- Finding resources within the organisation can be an issue—where resourcing is required to support initiatives, plus there is a lack of in-house knowledge.
- Council lacks the rating base to provide subsidies meaning there is a lack of funding to do the things that need to be done—greater financial reflection of health benefits would be useful and getting hospitals on board.
- Clearer determination of who is the biggest receiver of benefits is needed also.
- Lack of providers of key services e.g. installers, technicians, experts in any given field and retailers often lack information or don't understand which products are best.

**9) Is there anything else you believe your council should be doing? What is the main obstacle to its doing this?**

A total of 15 councils provided a response to this question. Two councils felt that there was nothing further that they should be doing at this stage, although one noted that they are now starting to engage more thoroughly with the issues. The other 13 identified a range of possibilities, including:

- Supporting more physical community projects to promote sustainable building.
- More financial incentives, including grants for sustainability features in buildings, reducing consent fees for SHW, development bonuses and targeted rates.
- Changing the internal culture of councils including doing more to remove bureaucratic obstacles, possibly by having an “Account Manager” (or sustainability advocate or client representative) on staff to lead a developer through the process, with the ability to cut through red tape.
- More rules about the standards of renovations and new homes, as it is hard to specify things under current District Plans.
- More effort to raise community awareness, and community education including about demand management and long-term benefits (one suggestion: a fortnightly publication).
- More to promote retention of the existing building stock.
- Securing greater political buy-in and support.
- Greater regional cooperation and focus on sustainable building.
- More council effort on water conservation—currently management is too fragmented.

**10) Are there any elements to the sustainable building agenda that you feel are important to councils but which haven't been mentioned here?**

Responses focused on three key areas: the information to support and communicate the benefits of sustainable housing choices, wider-scale concerns regarding neighbourhoods and transport and the need for education and central/local government roles.

Sustainable Housing

- Any extra resources would be useful.
- Reinforcing the health benefits of sustainable housing.
- Materials choices, particularly regarding embodied energy (felt to be missing from the whole debate around sustainable building), and the use of timber as the most sustainable form of making large spans.
- The quality/amount of information about renovating is very low. Benefits are not well calculated especially against conventional choices and when being careful where to put money e.g. into insulation or subsidised additional heat source.
- That councils can't require more than the Building Code allows as an acceptable solution.

- One council felt that sustainable building is being addressed by DBH in the revision of the Building Code.
- Charging for water.

#### Wider urban and transport issues

- The connection between transport, housing and sustainability was mentioned by a number of councils and also the role and importance of quality urban design.
- Issues of sustainable street and block patterns, sustainable subdivision patterns, higher density housing to support public transport and how the suburban model is fossil fuel dependent were raised. Connectivity to services was also considered important.
- Neighbourhoods provide the context for the house and the distance between house and services is also an important consideration.
- Some councils felt they can have more influence in the neighbourhoods surrounding the house than they can on the actual building.

#### Education and Governmental Roles

- Emphasis on the educational element. The EDA scheme is very popular—the-one-on-one focus, very positively received, people really appreciate the advice.
- Connections with other council programmes, e.g. the Travelwise Programme—public transport schemes, walking school buses, cycle lanes, environmental education programmes, waste minimisation programmes, and enviroschools programmes.
- People need incentives to change—best encouragement.
- Need for more central government support.

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## 6 International Literature Review

Given that many councils identified themselves as being at the “beginning of the journey” in developing policy provisions for sustainable building, Beacon recognised that there were likely to be learnings in the sector to be had from studying overseas experience and adapting successful policies, regulation, programmes and initiatives to local conditions. Ceri Warnock, Otago University, has prepared a paper (attached in full at Appendix 2), that describes a number of regulatory and policy tools, utilised by local authorities abroad, that seek to promote sustainable buildings. The paper “concentrates on policies and practices from abroad that are *likely* to be readily applicable to the New Zealand context and capable of adoption by local authorities.”<sup>6</sup>

The paper clusters tools into two main roles for local authorities, and provides numerous examples within each cluster:

- Regulatory and Policy Making Role:
  - planning measures at policy setting levels—green development zoning, bylaws, and infrastructure development
  - planning measures in processing applications—sustainability checklists, fast tracking, applications for rezoning and planning permission, offering planning gains (e.g. density bonuses), covenants, and monitoring
  - fiscal measures—pricing policies (e.g. water metering), relief of tax and rates, development charges, building fees, and financial grants; and
- Leadership, Partnership and Educational Role:
  - leading by example through public buildings
  - training council staff
  - public education through web-pages, sponsoring competitions, demonstration sites
  - working with industry and the tertiary education sector

One of the more significant findings of the paper is the effect of different regulatory frameworks:

*Local authorities that achieve the greatest environmental results often have powers to impose direct amendments to building regulations ... or have considerable latitude in directly influencing the performance of sustainable buildings via the planning approval process (for example in the UK where the national building regulations contain a minimum standard of performance and there is no bar on authorities requiring higher standards).*

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*6 The author does however include a waiver at this point: she is not purporting to and indeed does not proffer a legal opinion as to the legality in a New Zealand context of the examples contained in this paper.*

This is certainly a key issue for New Zealand councils, both in terms of the continuing uncertainty about the potential scope of initiatives (particularly when the Building Code is set nationally), and also the general level of comfort with imposing more stringent requirements, as opposed to softer (educational) approaches.

Also of interest is the United Kingdom government's (Communities and Local Government, 2007, pp.17–18) recognition that:

*There will be situations where it could be appropriate for planning authorities to anticipate levels of building sustainability in advance of those set out nationally. When proposing any local requirements for sustainable buildings planning authorities must be able to demonstrate clearly the local circumstances that warrant and allow this. These could include for example, where:*

- there are clear opportunities for significant use of decentralised and renewable or low-carbon energy; or*
- without the requirement, for example on water efficiency, the envisaged development would be unacceptable for its proposed location.*

Similar provisions in the Building Code here could provide greater scope for locally appropriate council policy initiatives.

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## 7 Discussion

### 7.1 Overview

This report summarises some of the initial work being undertaken within Beacon that will contribute to the development of policy tools to support the implementation and likelihood of success for the HomeSmart Renovations project as well as the NOW 100 (HomeSmart Homes) project. The resource manual proposed to be developed in subsequent stages will provide local government with an array of ideas and information sources to assist a transition towards more sustainable residential building throughout New Zealand.

The undertaking of a questionnaire of local councils coupled with the literature review has enabled the policy team to identify the current level of commitment to sustainable building as well as identifying barriers and critical areas of concern. The work to date has also opened up a dialogue between Beacon and most of the country's larger councils, in many cases identifying possible champions within these organisations while raising the profile of the HomeSmart Renovations project more generally. There appears to be a high level of enthusiasm from many councils and a real wish to see the project succeed. Many councils were particularly interested in the proposed Resource Manual, believing it would be a constructive contribution to their efforts in sustainable building.

Nearly all the interviewed councils recognise the importance of driving change in the way New Zealand houses are designed and function. They also recognise that programmes to drive change have, to date, been piecemeal and not an integral part of managing their part of the building process. Some councils noted that sustainability is still not part of the culture of their organisation but recognised that it was an essential change that needed to take place.

Responses to the questionnaire identified that the main drivers for council activity on sustainable building are the social, environmental and long-term financial benefits, as well as political drivers where councils are committed to sustainability. This suggests that the Resource Manual that results from this project should contain supporting cases for initiatives that are linked to councils' responsibilities to promote well-being under the Local Government Act.

Parallel international efforts have highlighted the range of potential initiatives that could be undertaken in New Zealand and the important constraint of the regulatory frameworks that local government must operate within.

### 7.2 Current Activity and Identified Needs

Almost all respondents to the questionnaire saw themselves at the beginning of a transition pathway to improved residential sustainability. That said, there was also an encouraging number and diversity of projects underway. It is possible to identify activities within all five incentive areas proposed at the beginning of this report, but most predominantly in the regulation and education areas. A sixth incentive area—working with others—was identified through the



course of the research. The interviews also highlighted the range of initiatives that would need further development if they are to be widely adopted.

### **7.2.1 Regulation**

Regulation encompasses Plans and Policy Statements under the RMA, the Building Code, and bylaws. Amendments to District Plans were one of the main identified mechanisms for councils to encourage sustainable building. Some councils already have some measures in place in their District Plans (e.g. reference to urban design guidelines, stricter stormwater provisions, or specific provisions for building mass). Others are looking at introducing plan changes to address such issues as on-site energy generation. Kapiti Coast, Queenstown and Waitakere in particular are all leading the way in being prepared to challenge their development communities to extend the scope of what has traditionally been built through the use of regulation in their District Plans. Future work in this space will drill more deeply into what these and other councils are going to be requiring.

Councils have little influence over the content of the Building Code, except through advocacy to central government. Their role is simply one of administration (issues arising within that process are addressed in the process incentives section, below). A few councils are of the opinion that meeting the requirements of the revised Building Code, when it is released, will be enough to encourage sustainable building, and if followed will provide their districts with a sustainable residential built environment outcome. In this instance they see that further work to promote sustainable building is unnecessary.

The relationship of the RMA and the Building Act is an important area of uncertainty, with differing opinions as to the scope of efforts possible under the RMA, where it addresses issues also covered by the Building Code. Even if there is a sense of possibility, the risk of court challenges and extensive legal proceedings is a strong reason for councils to shy away from developing policy initiatives in this space.

Bylaws have not been extensively used as part of councils' sustainable building toolkit. There were examples identified relating to waste (Christchurch City Council) and water (Far North District Council). The reasons for low use of bylaws were not tested with interviewees, but it is noted that there are some limitations to the scope of bylaws under the Local Government Act (e.g. being for purposes of protecting, promoting and maintaining public health and safety, and demonstration that a bylaw is the most appropriate way of addressing the perceived problem), which may have the effect of limiting their value for sustainable building. It may also be considered preferable to incorporate provisions into existing processes wherever possible rather than creating new ones. This is an issue that might be picked up in the next stage of research.

### **7.2.2 Non-regulatory Policy Initiatives**

As noted in section 5, the preliminary grouping of policy initiatives needed to be revised, to include a cluster of non-regulatory policy initiatives. Councils identified various non-regulatory policies that work to encourage sustainable building choices, including design guidelines,

heritage policies, and policies to support affordable housing. There would be value in understanding how effective these policies are when compared to regulatory interventions.

### **7.2.3 Standards**

Little work had been undertaken in terms of standards (council Codes of Practice and engineering standards), although it was acknowledged by some interviewees as an area where improvements could be greatly influential. A number of councils have developed (or are in the process of developing) specific code provisions for stormwater management (e.g. North Shore City Council and Waitakere City Council).

As noted above, several councils have developed softer design guides which include some sustainability features. For example, Wellington City Council's subdivision design guide includes low-impact design principles. However, it has been undermined by the Code of Infrastructure Development, which has a process for alternative solutions—placing the onus on the developer to prove that their solution is acceptable.

### **7.2.4 Financial Incentives**

The interviews uncovered examples of small financial incentives, such as rebates and low (or no) building consent fees for rain water tanks and solar hot water installation. However, it also revealed that these financial incentives have generally been poorly taken up, and often appear to be difficult for consumers to access.

This finding is in stark contrast to the finding of Alison Hall's research with home renovators, where "financial incentives and discounts on products and services" was the top-scoring council incentive (at 29%) that were identified as being likely to encourage them to act more sustainably if they were to undertake a similar renovation in the future. This is an issue that merits further research and identification of possible process improvements (for example, the threshold level to get wide uptake of incentives).

A number of councils felt that cost is a significant barrier for people wanting to build or renovate more sustainably. They felt that there is a perception that sustainable innovation can have a higher price tag up front and that the benefits are not always well quantified to the consumer. Tools that enable consumers to calculate reductions in their resource demands on council assets and/or which demonstrate significantly improved built outcomes through a commitment to sustainable design might assist in this space, and tools such as Waitakere City Council's TUSC are a step in the right direction. But the research tends to suggest that there is probably still significant scope to improve the value cases for the individual home owner/renovator while offering some form of incentive or reward for taking on any additional upfront costs. However the issue of private versus public benefit for sustainability and who should ultimately pay to make improvements for household performance was mentioned by some councils. Continuing development of robust social, environmental and economic assessments of the contribution that a more sustainable housing stock can make in reducing demands on the national health, energy and water resource bases is likely to assist.

### **7.2.5 Process Improvements**

Process improvements encompass such activities as officer training, practice notes, one-stop shops, and fast-tracking consents. Capacity remains a significant issue for most councils with a number of medium sized councils feeling inadequately resourced to tackle the issue in any meaningful way. Previous Beacon reports have identified challenges with inconsistent administration of building consents.

The issue of fast tracking consents remains difficult for some, with most consenting departments in councils already facing high workloads and application turnover rates. Christchurch believes that fast-tracking consent applications for solar hot water will require a plan change and is therefore not a simple measure. Future outputs from this research project will need to consider how other councils have achieved success in this area.

### **7.2.6 Education**

Another strong message from the questionnaire and interviews was the continuing role that education must play including education of the consumer, the wider building industry, and council staff. Those councils that have Eco Design Advisers were uniformly positive about their role, and recommended the same approach to other councils. This finding is complemented by the survey undertaken by Christie and Mathews (2007) which demonstrates the value to homeowners and designers.

Other education opportunities for councils included home shows and expos and through guidelines and council publications.

### **7.2.7 Working with Others**

Many of the interviewed councils are part of energy efficiency programmes, such as EECA's Energywise Programme, or programmes run locally by District Health Boards.

### **7.2.8 Connections Between Initiatives**

Perhaps one other key learning from this initial spread of findings is recognition of how little is still being done to incentivise home owners to go further with both new-build situations and renovations. Those councils that are making an effort are only managing to do so in a fragmented manner. For example, while EDAs play an essential role in terms of assisting home owners through the design phase, this service is generally not being supported at the other end of the building process with incentives that make consenting processes easier, or provide financial recognition of the wider community benefits of individuals' sustainable choices.

## **7.3 Long List of initiatives**

The information gathered through the background research, international literature review and questionnaire has identified the following long list of initiatives:

- 1) District Plan changes—subdivision controls
- 2) District Plan changes—development controls
- 3) Development bonuses
- 4) Bylaws
- 5) Council Codes of Practice and engineering standards
- 6) Design guidelines
- 7) Consent fee rebates and waivers
- 8) Grants
- 9) Development contribution reductions
- 10) Discounts on sustainable products and services
- 11) Pricing policies (e.g. rates and user pays)
- 12) Co-funding of renovation initiatives
- 13) Fast-tracking consents
- 14) One-stop shops/consent managers
- 15) Sustainability checklists
- 16) Practice notes (e.g. to improve consistency of Building Consent inspections)
- 17) Officer training
- 18) Eco Design Advisers
- 19) Community education
- 20) Leading by example

The next phase of this research project will review this list against a set of criteria—including the council preferences expressed in this report—to determine which five will be further developed for inclusion as part of the resource manual.

## 7.4 Options for Further Research

Findings from this phase of research suggest that the *Best Practice Policy Approaches* research project could focus in the following ways:

- ***Sharing experience of already-successful incentives:*** The Resource Manual could compile examples from councils that are already implementing sustainable building incentives.
- ***Clarifying uncertainties:*** Research could focus, for example, on the scope of District Plans to specify matters that are also considered within the Building Code.
- ***Strengthening under-utilised incentives:*** The Resource Manual could better explain the potential of mechanisms such as bylaws. It could also identify process improvements to secure greater uptake of financial incentives.
- ***Broadening the scope of the Resource Manual to include regional councils:*** As with ECan, there is potential for regional councils to set standards within their Regional Policy Statements and Regional Plans, particularly for those issues that are of regional-scale significance, e.g. water conservation, energy security of supply, and waste management.

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## 8 Conclusions and Recommendations

This report has described the research undertaken for stage I of the *Best Practice Policy Initiatives* component of Beacon’s HomeSmart Renovations project. It has outlined the results of the background research, literature review, questionnaire-based interviews, and supplementary interviews. The interviews in particular give a picture of where the largest and the leading councils are currently at with sustainable building policies and programmes.

As outlined in section 4, the main objectives of this research project are:

- To develop best practice local government policy mechanisms which will support the greater uptake of sustainable new and renovation of homes; and
- To confirm that these are effective in supporting and promoting these outcomes at a local level.

A secondary objective is:

- To increase the understanding and capability of local government staff to deliver more sustainable outcomes by providing them with appropriate information and upskilling via engagement with the project.

The findings of this stage of the research suggest that there are some policy initiatives which are already well underway and—with some guidance—could be replicated by other councils e.g. the Eco Design Advisors and some District Plan provisions. Other initiatives, such as the range of potential financial incentives have not been so successfully implemented to date. Further work is needed to understand why this is the case and to identify whether practice could be improved.

It is a firm conclusion of the report that councils are increasingly aware of their role in encouraging sustainable building practices, and that they are making connections between sustainable buildings and wider community and environmental benefits. A total of 85% of the councils interviewed responded that they were actively encouraging more sustainable forms of building. More than 95% saw it as either “relevant but not imperative” or “very relevant”.

However it is clear that, in many cases, councils lack the resources to either develop or operate programmes that can make a difference. A number of initiatives are successfully underway and are helping to build council capacity in the sustainable building field. However initiatives tend to be piecemeal and a full range of incentives is far from being implemented. Knowledge gaps are also an issue.

In that respect, nearly all the councils that were spoken to were highly receptive to the idea of a Resource Manual, as proposed within this project. Some councils also stated an interest in Beacon providing an educative process for them to learn how to make the most of the manual, as well as improve their own internal understanding and capacity.

The recommendations of this report are therefore:

- That the proposed Resource Manual be developed to document the range of potential policy initiatives, with an emphasis on information to support sustainable building policies, model text, and guidelines for implementation as appropriate.
- That the next stage of research include a mixture of:
  - profiling existing successful policy initiatives for replication; and
  - researching and improving currently under-developed policy initiatives, where they have been identified as being of interest to councils and where successful examples exist elsewhere (as identified within the literature review).
- That a clear strategy be developed to ensure the learning generated from the *Best Practice Policy Initiatives* project is successfully communicated to the local government audience.

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## References

- Bishop, M. (2006). *Low Impact Urban Design and Development: An Application of its Principles and Methods to a Future Greenfield Site in Palmerston North City* (thesis). Palmerston North: Massey University.
- Christie, L. & Matthews, I. (2007). *Eco Design Advisors: How Effective have these Roles Been?* (Presentation to SB07 Conference, Auckland, 15 November, 2007). Available <http://www.sb07.org.nz/>. Accessed February 2008.
- Communities and Local Government (2007). *Planning Policy Statement: Planning and Climate Change Supplement to Planning Policy Statement 1*. London: The Stationery Office.
- Easton, L., Mead, D., Trenouth, C., Fulbrook, D. & Arnold, P. (2006). *Local Council Sustainable Building Barriers and Incentives—Auckland City Case Study*. Report PR200 for Beacon Pathway. Auckland: Beacon Pathway.
- Hall, A. (2007). *Barriers to Sustainable Renovations, and Incentives that Local Government can Offer* (MPlan thesis). Auckland: The University of Auckland.
- Karlik-Neale, M. & Gibbons, A. (2008). *HomeSmart Renovations Project Scope*. Report for Beacon Pathway.
- Lawton, M., Birchfield, D., Kettle, D. & Trenouth, C. (2007). *Best Practice Water Efficiency Policy and Regulations*. Report SH4705 for Beacon Pathway. Auckland: Beacon Pathway.
- O’Connell, M. (2005). *Regulatory Framework Development: Understanding Current Sustainability Regulations and Policy*. Report PR101 for Beacon Pathway. Auckland: Beacon Pathway.
- O’Connell, M. (2007). *Regulatory Framework Development: Understanding Current Sustainability Regulations and Policy (updated version)*. Report PR107 for Beacon Pathway. Auckland: Beacon Pathway.
- Puddephatt, J., & Heslop, V. (2007). *Policy Instruments to Promote the Uptake of Low Impact Urban Design and Development: An International Review of Best Practice Transferability to New Zealand*. Auckland: MWH.
- QLDC (2008). *Queenstown Lakes District Council: Plan Change 24—Affordable and Community Housing*. Web-site, available: <http://www.qldc.govt.nz/Portal.asp?contentid=1728&nextscreenid=201.102.103.101&categoryid=2406&screenid=201.102.101.101&sessionx=F0B4AE48-3356-4EFE-97E2-A475534BEEC2> Accessed 10/4/2008.
- Stancu, C., Finlay, G., & Gunn, S. (2007). *Market Transformation Interventions: Creating Demand and Supply for Sustainable Housing*. Report PR107 for Beacon Pathway. Auckland: Beacon Pathway.

Storey, J., Page, I., van Wyk, L., Collins, M., Kreil, T. (2004). Housing Retrofit—Housing Interventions, Stock, and Markets. Report RF1 for Beacon Pathway. Wellington: BRANZ

Trenouth C., & Mead D. (2007). District Plan Barriers and Incentives to Sustainable Residential Building—Case Studies. Report PR201 for Beacon Pathway Limited. Auckland: Beacon Pathway.

Warnock, A.C. (2005). “Sustainable Construction in New Zealand” in New Zealand Journal of Environmental Law Vol 9, pp.337–376.

Warnock, A.C. (2007). “The Role of Local Authorities in Promoting Sustainable Buildings”, Otago, 2007.



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## Appendix A: Questionnaire



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### LOCAL GOVERNMENT QUESTIONNAIRE

# RETROFIT 1000 PROJECT

**1. Is encouraging more sustainable building and/or renovation something your council actively sets out to do in some capacity?**

- A Yes
- B No

**2. How relevant do you perceive the promotion of more sustainable building approaches to be to your organisation?**

- A Very relevant
- B Relevant but not imperative
- C Not very relevant
- D Irrelevant

**3a. In which of the following ways is sustainable building being encouraged by your council**

- A Through the use of incentives such as: rebates, fast track permitting/consenting, reduced or nil fees for consents, other incentives
- B Providing eco-advice to home renovators when they come to the council for consent and or the use of other guidelines
- C Through the use of regulation such as District Plan changes which specifically promote sustainability innovations
- D Through the use of other policy interventions such as development contributions, rates remissions, floor area ratio bonuses or similar
- E Through the use of rules within the subdivision Codes of Practice and/or other building standards such as engineering standards
- F Through collaboration and support of other organisations such as energy efficiency trusts that provide insulation retrofits or similar into homes
- G Other means (please elaborate)

**3b. Please provide some details regarding your answer to the above, for example, what is working best; how easy was the initiative to implement; what has been the rate of uptake; what monitoring has been done?**

**4. What are the top three measures presently being taken by Council to promote sustainable building that you would recommend to others and why?**

**5a. Are there any specific plans or programmes to assist would be home renovators to undertake more sustainable retrofitting of homes in your area planned over the next 3 years?**

A Yes

B No

**5b. What are these plans and/or programmes? (please tell us something about them)**

**6. What are the main drivers for Council's promotion or encouragement of sustainable building?**

A The potential for long-term financial benefits

B Political support from council

C Perceived environmental benefits

D Perceived social benefits

E Community expectations

F Regulatory necessity

G Other (please describe further)

**7. Is there any particular approach to encouraging more sustainable building that the council has tried but found difficult to achieve a positive result? What was this and what did you find? (eg incentives offered that haven't been taken up)**

**8a. From a council perspective what are the biggest obstacles to achieving improvements in residential household performance? Are they:**

A Regulatory

B Institutional

C Political

D Issues to do with how the property market functions

E Issues about how the building industry is regulated and managed

F Consumer reluctance

G Other (please describe what)

**8b. Please elaborate on the nature of the most significant of these obstacles and what you believe is required to overcome them?**

**9. Is there anything else you believe your council should be doing? What is the main obstacle to its doing this?**

**10. Are there any elements to the sustainable building agenda that you feel are important to councils but which haven't been mentioned here?**

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## Appendix B: International Literature Review

### THE ROLE OF LOCAL AUTHORITIES IN PROMOTING SUSTAINABLE BUILDINGS

(DRAFT PAPER)

Ceri Warnock<sup>7</sup>

#### INTRODUCTION

This paper describes a number of regulatory and policy tools, utilised by local authorities abroad, that seek to promote sustainable buildings.

A universally accepted definition of sustainable building is, of course, an unachievable goal but for present purposes the concept is defined to mean *buildings that are designed to minimise the use of natural resources and the emission of pollutants in their construction and use.*

Accordingly, the concept is interchangeable with the phrase “green building”.<sup>8</sup> In compiling apt examples, consideration has been given to legal and policy strategies that influence the design of individual buildings and also those that promote green infrastructure design<sup>9</sup> (where this can be provided by the developer). Particular attention has been paid to practices in Canada, the

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<sup>8</sup> Thus, the focus of this paper is upon buildings that minimise adverse environmental effects as opposed to the use of buildings in promoting issues of economic or social parity.

<sup>9</sup> “Green infrastructure design” has been described as “engineering design that takes a ‘design with nature’ approach to both mitigate the potential impacts of existing and future development and growth and to provide valuable services. This includes such designs as: disconnected roof leaders, grassy swales and rain gardens, which promote infiltration and groundwater recharge; roadside curb cuts that direct road runoff onto grassy swales and rain gardens; permeable pavements and green roofs, which reduce runoff; rock pits and other catch basins and detention ponds to detain rain water; water conserving infrastructure such as low flow fixtures metering systems and systems for reclamation and redistribution; energy conserving systems such as direct heat distribution, landfill gas recovery, sewer heat recovery and industrial process heat recovery; and green building features”. See Rutherford, S. (2007) *The Green Infrastructure Guide: Issues, Implementation Strategies and Success Stories*, West Coast Environmental Law, British Columbia, Canada, p 5, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).

United Kingdom and the United States although various other jurisdictions are mentioned where appropriate.<sup>10</sup>

It is important to note that all jurisdictions operate different regulatory frameworks. Local authorities that achieve the greatest environmental results often have powers to impose direct amendments to building regulations (for example, Malamo in Sweden, Vancouver in Canada and municipal governments in Germany) or have considerable latitude in directly influencing the performance of sustainable buildings via the planning approval process (for example in the UK where the national building regulations contain a minimum standard of performance and there is no bar on authorities requiring higher standards).

The regulatory framework in New Zealand is complicated somewhat by the interrelationship between the Building Act 2004 and the Resource Management Act 1991. Specifically, there is some residual uncertainty as to the degree to which territorial authorities policies can influence the performance of buildings. This uncertainty arises from judicial analysis of the relationship between section 7 of the 1991 Building Act and the Resource Management Act.

Section 7 of the Building Act 1991 precluded the imposition of performance standards for building work additional to or more restrictive than those specified in the Building Code and this section has, in essence, been replicated in section 18 of the 2004 Building Act:

- s. 18 (1) A person who carries out any building work is not required by this Act to –
  - (a) achieve performance criteria that are additional to, or more restrictive than, the performance criteria prescribed in the building code in relation to that building work: or
  - (b) take any action in respect of that building work if it complies with the building code.
- (2) Subsection (1) is subject to any express provision to the contrary in any Act.

In *Christchurch International Airport Ltd v Christchurch City Council* [1997] 1 NZLR 573 the High Court found that a territorial authority will be free to promulgate conditions and rules concerning the *use* of a building even if those rules affect the construction of the building, provided that such rules are “appropriate and necessary” to “promote the sustainable management of natural and physical resources” in the district.<sup>11</sup> There has not been any further case law on this issue and the degree to which authorities may promulgate rules to promote sustainable building is still a moot point.<sup>12</sup> Accordingly, given the degree of uncertainty as to this issue (that may only be resolved through law reform or further judicial clarification) this

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**10** Note that within Australia the focus appears to be upon federal or state level measures to promote sustainable building and thus limited examples were available at local level.

**11** Specifically, the operative section considered in the case was s 7 of the Building Act 1991.

**12** For a more detailed analysis see Warnock, A. C. “Sustainable Construction in New Zealand” (2005) 9 NZJEL pp 337–376 at 354–360.

paper concentrates on policies and practices from abroad that are *likely* to be readily applicable to the New Zealand context and capable of adoption by local authorities.<sup>13</sup>

The paper considers the role that local authorities play overseas to promote sustainable building, in their capacity as regulators, policy makers, educators and “exemplary citizens”.

## **REGULATORY AND POLICY MAKING ROLE**

### Planning Measures

#### Sustainability Checklist

A sustainability checklist is a framework for discussing the standards of sustainability that a particular development might achieve. A checklist should contain a condensed version of the community’s goals and ideally should follow a relatively simple format that developers can complete with ease. Developers use the checklist to identify community goals for development and to report which goals the proposal will meet, to what degree and how. Checklists can require developers to report upon the sustainability of the proposed development in terms of the design and structure of individual buildings, in addition to addressing wider site issues. Many local authorities in different jurisdictions use sustainability checklists. Within British Columbia, Canada, sustainability checklists have been described as follows:

“A sustainability checklist is a non-regulatory measure that can help encourage energy efficient or green buildings. Completion of the checklist is required as part of a development permit application and/or an application for an amendment to the zoning bylaw (rezoning). Completion of the checklist is mandatory, but pursuing specific actions is not mandatory. For this reason, the checklist is not regulatory in nature and is very developer friendly. The checklist is part of the municipal development review process and helps council to ensure development proceeds in accordance with the community’s values” (and this is achieved by linking the checklist to objectives specified in planning documents).<sup>14</sup>

In the UK, the *London Plan* requires the completion of a sustainability checklist for regionally significant projects that will be considered by the Mayor of London,<sup>15</sup> and many Boroughs within Greater London also have versions of sustainability checklists that are required in

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*13 The author does however include a waiver at this point: she is not purporting to and indeed does not proffer a legal opinion as to the legality in a New Zealand context of the examples contained in this paper.*

*14 Community Action on Energy and Emissions (2007) Energy Efficiency and Buildings: A Resource for BC’s Local Governments, British Columbia, Canada, p 35, available at [http://www.bcclimateexchange.ca/doc/FBC\\_Manual\\_ONLINE.pdf](http://www.bcclimateexchange.ca/doc/FBC_Manual_ONLINE.pdf) (last accessed 31 January 2008).*

*15 Mayor of London, London Sustainability Checklist, available at <http://www.londonchecklist.co.uk/page/faq/what#what> (last accessed 31 January 2008).*



relation to smaller developments. The Ealing Borough Council advises that their checklist will be used to help determine planning applications and “it has the legal status of a ‘material consideration’ which the local authority is entitled to take into account in making decisions.”<sup>16</sup> The drafters of the *London Plan* describe the “Regional Sustainability Checklist for Developments” as follows:

“The checklist is a tool which looks at the sustainability of developments and is used by decision makers within the planning approval process, whether they are in the developer team, the local authority, the client team or are potential purchasers. It looks at a range of sustainability issues by expressing the standards that are outlined in the London Plan’s Supplementary Planning Guidance (SPG) on Sustainable Design and Construction by a series of questions. The checklist also indicates the level of performance that the development achieves for each issue. A high level summary highlights how the development performs in each of the ten sections, and also indicates issues which are deemed not applicable or where the minimum standard has not been achieved. The checklist provides a simple way to help deliver sustainable design and construction policy (and standards) through the planning system in a regionally specific but nationally consistent way.”<sup>17</sup>

It is important that checklists are available to development teams at the very beginning of the development process and may, accordingly, be used to guide the design and planning for the development. Checklists can provide a useful template for structuring discussions between developers and local authorities, for guiding agreements as to where good or best practice standards would be appropriate rather than minimums, and for agreeing in advance which issues may not apply. The checklist may also play an important role as a foundation document for fast-tracking the planning process or for obtaining various financial incentives for green building. Examples of specific sustainability checklists may be found on local authority websites around the world.<sup>18</sup>

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<sup>16</sup> *Ealing Borough Council, London, United Kingdom, Supplementary Planning Guidance 1: Sustainability Checklist p.1, available at*

*[http://www.ealing.gov.uk/ealing3/export/sites/ealingweb/services/environment/planning/planning\\_policy/sustainable\\_planning/\\_docs/01sustainability.pdf](http://www.ealing.gov.uk/ealing3/export/sites/ealingweb/services/environment/planning/planning_policy/sustainable_planning/_docs/01sustainability.pdf) (last accessed 31 January 2008).*

<sup>17</sup> *Mayor of London, London Sustainability Checklist, available at*

*<http://www.londonchecklist.co.uk/page/faq/what#what> (last accessed 31 January 2008).*

<sup>18</sup> *See for example: City of Port Coquitlam, BC, Canada, Sustainability Checklist available at*

*[http://www.city.port-coquitlam.bc.ca/\\_\\_shared/assets/Sustainability\\_Checklist2040.pdf](http://www.city.port-coquitlam.bc.ca/__shared/assets/Sustainability_Checklist2040.pdf) (last accessed 31 January 2008). City of New Westminster, BC, Canada, Smart Growth Development Checklist available at*

*<http://66.51.172.116/AboutUs/Issues/AlternativeDevelopmentStandards/NewWestminsterSmartGrowthChecklist/tabid/135/Default.aspx> (last accessed 31 January 2008). Note: as it may be appropriate for there to be different checklists proportional to the scale of the development, the City of New Westminster is currently working on another checklist designed specifically*

## Fast Tracking Planning Approvals

Many local authorities have a process linked to a sustainability checklist or rating tool assessment that enables the fast tracking of development permits and planning approval.<sup>19</sup> Research for the City of Toronto suggested that “developers prefer a process that speeds up planning approvals, as compared to cash incentives, which typically represent a very small percentage of the total project costs [as] a faster approvals process can reduce the financial risks and costs associated with project delays. A fast track process for green buildings also has the added benefit of developing greater in-house expertise within a municipality to negotiate with developers for green features”.<sup>20 21</sup>

## Zoning For Green Developments

Around the world, examples of local authorities setting aside land specifically for green developments abound. The regulatory framework dictates to what degree zoning can provide for green development. By way of example, in Canada local authorities may, given particular

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■ *for single-family developments. Ealing Borough Council, London, United Kingdom, Supplementary Planning Guidance 1: Sustainability Checklist available at [http://www.ealing.gov.uk/ealing3/export/sites/ealingweb/services/environment/planning/planning\\_policy/sustainable\\_planning/\\_docs/01sustainability.pdf](http://www.ealing.gov.uk/ealing3/export/sites/ealingweb/services/environment/planning/planning_policy/sustainable_planning/_docs/01sustainability.pdf) (last accessed 31 January 2008). Mayor of London, London Sustainability Checklist, available at <http://www.londonchecklist.co.uk/page/faq/what#what> (last accessed 31 January 2008).<sup>19</sup> See for example: County of San Diego, California, US, Green Building Incentive Programme, <http://www.sdcounty.ca.gov/dplu/docs/DPLU%20273.pdf> (last accessed 31 January 2008) fast tracking saves 7–10 days on average; City of Issaquah, Washington, US, Sustainable Building Incentives <http://www.ci.issaquah.wa.us/page.asp?navid=327> (last accessed 31 January 2008). Note: It is considered preferable to use a well-known national standard or rating tool as opposed to one created by the locality. It is also important that any tool is not unnecessarily prescriptive and should not stifle innovation.*

*20 City of Toronto (June 2006) Making a Sustainable City Happen: The Toronto Green Development Standard Discussion Paper, Chapter 5 “Where do we go from here?” at p.56–57, City of Toronto, Canada available at <http://www.toronto.ca/environment/greendevlopment.htm#why> (last accessed 31 January 2008).*

*21 It is difficult to assess whether this incentive would be feasible in New Zealand and this is a question for individual authorities to answer. The Building Act 2004 mandates that building consents must be processed within 20 working days of receipt in any event (New Zealand Building Act 2004, s 48) although in practice this time frame may be difficult to achieve for many building consent authorities. Significant delay can occur in the event that a development requires notified resource consent however in such circumstances it may prove difficult to provide any form of fast tracking or predict an accurate timeframe for approval. One way to avoid the delay associated with the resource consent process is of course for the proposed development to comply with any relevant zoning rules.*

circumstances, establish comprehensive development (CD) zones within which authorities have a great deal of latitude towards land uses and approaches that do not accord with existing zoning schedules.<sup>22</sup> Alternatively, development permit areas (DPA) may be created (i.e. areas within which a developer must obtain a permit before the land is subdivided or building commences).

In CD zones, authorities can mandate that all buildings achieve a high standard of sustainability and may, for example, utilise a rating tool as a measure. The United States Green Building Council has spearheaded the *LEED for Neighborhood Development* programme<sup>23</sup> in which over 238 local authorities in Canada, USA, Mexico, Korea, the Bahamas and China have established “green development zones”.<sup>24</sup> Building in such zones must reach a particular sustainability rating on the LEED scale (although the *LEED for Neighborhood Development* tool encompasses more than just the sustainability of individual buildings).

Within DPA, development permit guidelines (somewhat akin to “permitted” status activities in New Zealand) may also be used to promote sustainable building, although there are greater limitations in terms of what might be achieved in DPAs as opposed to CD zones. The development permit guidelines can include requirements about landscaping, drainage systems, the siting, form, exterior design and finish of buildings but cannot promulgate energy efficiency requirements unrelated to form and character (although guidelines may indicate that these are desirable<sup>25</sup>). The City of Richmond in British Columbia has introduced mandatory permit guidelines within DPAs to provide for solar access, minimum north-south spacing, orientation

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*22 For a simple explanation of CD zones in the Canadian context see West Coast Environmental Law Urban Growth and Development “Smart Bylaws Guide - Mixing Uses – Comprehensive Development Zoning” available at <http://www.wcel.org/issues/urban/sbg/Part3/mixeduse/CD-Zoning.htm> (last accessed 31 January 2008).*

*23 US Green Building Council, LEED for Neighborhood Development available at <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148>. A list of participating pilot authorities is available at <http://www.usgbc.org/ShowFile.aspx?DocumentID=3546> (last accessed 31 January 2008).*

*24 Outside Canada, another well-known example of a green development area concerns Vauban in Friburg, Germany. Only highly energy efficient buildings are permitted in the zone; there are also a number of “plus energy houses” that create more energy than they need. Vauban is “car free” and parking free”. Cars must be parked in community car parks on outskirts of development and distances are carefully calculated so that for most short journeys it proves quicker to walk, cycle or take public transport. There is a biogas plant for sewage, co-generation plant and effective community grey water recycling systems. See Vauban District, Friburg English Introduction, available at <http://www.vauban.de/info/abstract.html> (last accessed 31 January 2008).*

*25 Rutherford, S. (2006) The Green Buildings Guide: Tools for Local Governments to Promote Site Sustainability, West Coast Environmental Law, British Columbia, Canada, p.26, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).*



of windows, operable windows and other facets of natural ventilation; the District of Saanich guidelines also provide for energy efficiency via “shading, natural ventilation and building orientation”.<sup>26</sup> These are prime examples of the planning process working in tandem with building regulations to maximise the sustainability of buildings.

### **Applications for re-zoning and planning permission**

In many nations, local authorities have considerable scope to negotiate with developers before an application for planning permission or rezoning is submitted. Negotiations must seek to further the community’s main objectives as expressed in the local authority plan.<sup>27</sup> It is important to note that pre-application negotiations will not guarantee the approval of a consent authority, but will help to secure staff members favourable recommendations to the Council. In the UK, local authorities are able to exercise considerable flexibility in negotiating “planning obligations”. “Planning obligations” constitute pre-application negotiations that become legally enforceable once agreed to, incorporated into a deed and planning permission has been granted. Although recent government guidance in the UK has redefined the ambit of planning obligations,<sup>28</sup> bi-laterally agreed obligations are still significantly more flexible than “conditions” imposed upon grants of planning permission for development.<sup>29</sup> Central government in the UK has said as follows:

### **Local requirements for sustainable buildings**

*30. Planning authorities, developers and other partners in the provision of new development should engage constructively and imaginatively to encourage the delivery of sustainable buildings. Accordingly, planning policies should support innovation and investment in sustainable buildings and should not, unless there are exceptional reasons, deter novel or cutting-edge developments. Planning authorities should help to achieve the national timetable for reducing carbon emissions from domestic and non-domestic buildings.*

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**26** *Community Action on Energy and Emissions (2007) Energy Efficiency and Buildings: A Resource for BC’s Local Governments, British Columbia, Canada, p.38, available at [http://www.bcclimateexchange.ca/doc/FBC\\_Manual\\_ONLINE.pdf](http://www.bcclimateexchange.ca/doc/FBC_Manual_ONLINE.pdf) (last accessed 31 January 2008).*

**27** *See for example Municipality of Bowen Island Policy on “Green Building Standards for Residential Re-zoning March 2007”, available at [www.bimbc.ca/files/policies/Green%20Building%20Standards2.pdf](http://www.bimbc.ca/files/policies/Green%20Building%20Standards2.pdf) (last accessed 31 January 2008).*

**28** *Communities and Local Government (December 2007) Planning Policy Statement: Planning and Climate Change Supplement to Planning Policy Statement 1, The Stationery Office, London, United Kingdom, p.17–18*

**29** *Conditions on planning permissions in the UK are legally constrained and must accord with the tests set down in Newbury DC v Secretary of State for the Environment [1981] A.C. 578. This is similar to the scenario in New Zealand.*

31. *There will be situations where it could be appropriate for planning authorities to anticipate levels of building sustainability in advance of those set out nationally. When proposing any local requirements for sustainable buildings planning authorities must be able to demonstrate clearly the local circumstances that warrant and allow this. These could include for example, where:*

- *there are clear opportunities for significant use of decentralised and renewable or low-carbon energy; or*
- *without the requirement, for example on water efficiency, the envisaged development would be unacceptable for its proposed location.*

32. *When proposing any local requirement for sustainable buildings planning authorities should:*

- *focus on development area or site-specific opportunities;*
- *specify the requirement in terms of achievement of nationally described sustainable buildings standards, for example in the case of housing by expecting identified housing proposals to be delivered at a specific level of the Code for Sustainable Homes;*
- *ensure the requirement is consistent with their policies on decentralised energy; and*
- *not require local approaches for a building's environmental performance on matters relating to construction techniques, building fabrics, products, fittings or finishes, or for measuring a building's performance unless for reasons of landscape or townscape.*

*Communities and Local Government (December 2007) Planning Policy Statement: Planning and Climate Change Supplement to Planning Policy Statement 1*

Thus there is considerable scope for pre-application negotiations in the UK to focus upon achieving sustainable buildings.

In Canada, “local government administrative staff can, on a re-zoning application, suggest that a section 219 Land Title Act covenant be registered, requiring the incorporation of certain green building or development features, as a condition of staff giving their recommendation to the re-zoning and development proposal. Staff cannot promise the re-zoning will be granted, as staff cannot bind council to a decision and council cannot close its mind before a re-zoning hearing, but staff can promise their support of the proposal – a significant hurdle for any developer”.<sup>30</sup> Once again, to all intents and purposes the “consideration” for the agreement is the staff members support for the application.

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*30 This approach has been endorsed by the Court in **Burnaby (City) v Marando, 2003 BCCA 400 (CanLii)** as cited in **Rutherford, S. (2006) The Green Buildings Guide: Tools for Local Governments to Promote Site Sustainability, West Coast Environmental Law, British Columbia, Canada, p.28, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).***

## Planning Gains

To provide an added incentive for green development, local authorities may offer specific planning gains to the developer, for example unit “density bonuses” or a relaxation of the maximum site coverage rules. Researchers in Canada have noted that a good planning gains regime

“1) establishes a maximum “uplift” in the OCP (Official Community Plan), following a community dialogue on the subject; (2) uses the OCP to identify areas where density bonuses would be desirable and to prioritise desired community amenities; and (3) establishes a transparent and public accounting mechanism to calculate the value of the bonus and what the bonus will buy in terms of community amenities [which include green buildings].”<sup>31</sup>

In terms of unit “density bonuses”, developers are granted permission to build more units than the zoning would permit on the condition that they build sustainably. Particular regard is paid to the provision of sustainable solutions to minimise an increased load on infrastructure.<sup>32</sup> The City of Burnaby in British Columbia has a “green building bonus” that affords percentage increases in density proportionate to the increase in building performance.<sup>33</sup> A rating tool is used for this purpose. Density bonuses are also commonly used in the UK to address the wider ramifications of sustainable development; often local authorities ensure that a set percentage of the development constitutes “affordable housing”.

In other examples of green building bonuses, developers are permitted to increase the site coverage of a building over and above the maximum site density rules on the basis that the building meets certain sustainability indicators.<sup>34</sup> This bonus is widely used in Germany,

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*31 Rutherford, S. (2006) The Green Buildings Guide: Tools for Local Governments to Promote Site Sustainability, West Coast Environmental Law, British Columbia, Canada, p.27, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).*

*32 In particular, sustainable drainage systems to deal with water run-off; extremely efficient water fittings; micro-generation or CHP plants to reduce the pressure for increased off-site power generation; green roofs or the provision of covenanted areas of indigenous vegetation (if possible) to facilitate wildlife corridors etc.*

*33 Community Action on Energy and Emissions (2007) Energy Efficiency and Buildings: A Resource for BC’s Local Governments, British Columbia, Canada, p 43, available at [http://www.bcclimateexchange.ca/doc/FBC\\_Manual\\_ONLINE.pdf](http://www.bcclimateexchange.ca/doc/FBC_Manual_ONLINE.pdf) (last accessed 31 January 2008)*

*34 See, for example, SFU UniverCity “Green Building Bonus” in Community Action on Energy and Emissions (2007) Energy Efficiency and Buildings: A Resource for BC’s Local Governments, British Columbia, Canada, p 53–54, available at [http://www.bcclimateexchange.ca/doc/FBC\\_Manual\\_ONLINE.pdf](http://www.bcclimateexchange.ca/doc/FBC_Manual_ONLINE.pdf) (last accessed 31 January 2008).*

particularly with regards to green roofs. The majority of German cities have promulgated mandatory regulations or provide incentives for green roofs<sup>35</sup> and one incentive is to permit developers to use green roofs as mitigation for loss of open space on the site. Maximum site coverage can be renegotiated where provision is made for green roofs. Green roofs can be secured by a covenant.<sup>36</sup>

### **Covenants**

If local authorities sell or lease land for development, the authority may seek covenants on the land (that run with the land) mandating green building. Given covenants are achieved by agreement between the buyer / developer and seller they constitute an extremely flexible tool and offer considerable scope for promoting sustainable building. Depending upon the respective regulatory framework, it may also be possible to secure covenants against private land in return for tax or rate reductions.<sup>37</sup>

### **Review Bylaws**

Local authorities should undertake an audit of bylaws or planning controls that might impose unintended hurdles to sustainable building. A common difficulty concerns the use of grey water systems but research in Canada has noted other specific technical requirements of zoning bylaws that create disincentives to green buildings such as,

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*35 Sangster, W. (2006) Benchmark Study on Green Buildings: Current Policies and Practices in Leading Green Building Nations, Industry Canada, Energy and Environmental Industries Branch (copy on file with the author). Green roofs help replace the vegetative footprint destroyed by the building, manage water run off, minimise the necessity for and maintenance of stormwater infrastructure, absorb carbon, help preserve energy, reduce the urban heat island effect, increase longevity of roofing systems, provide sound proofing, habitat for birds and business opportunities for local businesses.*

*36 On the issue of green roofs, the City of Port Coquitlam has a green roof bylaw amendment that rather than focusing on roofing materials “prescribes the roofs performance vis-à-vis run-off and landscaping criteria”. Green roofs are required for larger buildings and the bylaw has also secured the maintenance of the roofs. See Rutherford, S. (2007) The Green Infrastructure Guide: Issues, Implementation Strategies and Success Stories, West Coast Environmental Law, British Columbia, Canada, p.29, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).*

*37 In Canada, other means of achieving security is to take a bond from the developer (that may be returned on an incremental basis to ease the financial burden on the developer) or to impose a temporary “no build” covenant that is released upon fulfilment or performance of all required green infrastructure installations. See Rutherford, S. (2007) The Green Infrastructure Guide: Issues, Implementation Strategies and Success Stories, West Coast Environmental Law, British Columbia, Canada, p 63, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).*

*“Floor space ratio:* most governments limit density by having a maximum floor space ratio that calculates space to include space taken up by heaters, thus encouraging least efficient space saving technologies like baseboard heaters. Floor space ratio is also calculated from the outer wall, discouraging thick energy efficient wall assemblies. Local government can adopt policies / bylaws that: exclude spaces occupied by highly energy efficient heating and cooling apparatus from the floor space ratio.

*Building setbacks:* Building setback requirements may act as a disincentive to the construction of thicker energy efficient walls or for energy efficient retrofits, such as new exterior cladding that pushes the exterior wall beyond the setback area, requiring exceptional approvals.

*Unnecessary restrictions:* Zoning bylaws sometimes unduly restrict passive solar heating or natural ventilation features, creating an impediment to the implementation of “easy” energy efficiency features. Bylaws might be amended to allow access to the sun and daylight (thereby enabling passive solar), and to encourage natural ventilation (e.g. building height restrictions might be relaxed).”<sup>38</sup>

### **Option to lease roof space to utility companies**

Many German local authorities enable property owners to lease their roof space to utility companies for the installation of micro-generation (windmills or photovoltaic systems). This is facilitated by policy promulgation and by ensuring that planning controls do not hinder this development. The micro-generation units are connected to the main electricity grid and limit the necessity for the development of large off site power plants.<sup>39</sup>

### **Green infrastructure**

Local authorities have considerable scope to promote green infrastructure. For example, in terms of water issues local authorities in Canada have employed a number of policies to address the conservation of water and storm water run-off. The City of Vancouver limits impermeable surface coverage in its residential zone and the Town of Oliver, British Columbia, has incorporated the following restriction in its building regulations:

“No property may be developed in a manner which allows drainage water collected on the property to flow onto any adjacent private or public lands including public roads. On-site drainage shall be controlled by retention of open ground for infiltration, on-site retention

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*38 Rutherford, S. (2006) The Green Buildings Guide: Tools for Local Governments to Promote Site Sustainability, West Coast Environmental Law, British Columbia, Canada, p.38–9, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).*

*39 Sangster, W. (2006) Benchmark Study on Green Buildings: Current Policies and Practices in Leading Green Building Nations, Industry Canada, Energy and Environmental Industries Branch, (copy on file with the author).*



basins, rock pits or dry wells to the satisfaction of the Building Inspector, who may require the owner to have the on-site storm drainage facilities designed by a qualified professional engineer at the owner's cost."<sup>40</sup>

Local authorities can also introduce design standards for parking traditionally by reducing the number of car park spaces and requiring bicycle storage facilities but may also mandate permeable surface materials. In addition, topsoil bylaws can be introduced to require developers to deposit six inches of topsoil before laying sod. Topsoil is critical to soil retaining rainwater thus avoiding the need for irrigation and minimising run-off.<sup>41</sup>

### **Service Area bylaws**

In British Columbia, the *Community Charter* permits municipalities to “provide any service that the council considers necessary or desirable, and [they] may do this directly or through another public authority or another person or organization ... a bylaw can be used to establish service areas for particular types of energy services (e.g. a hydronic district heating system) and *to require buildings within the service area to connect to the energy service*” (italics added).<sup>42</sup> To similar effect, in the UK, local authorities are permitted to “set a target percentage of the energy to be used in new development to come from decentralised and renewable or low-carbon energy sources where it is viable” and to specify such in the plan.<sup>43</sup>

### **“Smart Growth” and the focus on mixed-use developments**

This is a classic planning approach to promoting sustainable development in its widest form. Examples abound and good descriptions of successful smart growth strategies are to be found in

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**40 Rutherford, S. (2006) *The Green Buildings Guide: Tools for Local Governments to Promote Site Sustainability, West Coast Environmental Law, British Columbia, Canada, p.42, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).***

**41 Rutherford, S. (2006) *The Green Buildings Guide: Tools for Local Governments to Promote Site Sustainability, West Coast Environmental Law, British Columbia, Canada, p.49, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).***

**42 Community Action on Energy and Emissions (2007) *Energy Efficiency and Buildings: A Resource for BC's Local Governments, British Columbia, Canada, p 34, available at [http://www.bcclimateexchange.ca/doc/FBC\\_Manual\\_ONLINE.pdf](http://www.bcclimateexchange.ca/doc/FBC_Manual_ONLINE.pdf) (last accessed 31 January 2008).***

**43 *Communities and Local Government (December 2007) Planning Policy Statement: Planning and Climate Change Supplement to Planning Policy Statement 1, The Stationery Office, London, United Kingdom, p.16.***

the English Partnership *Millenium Communities* developments,<sup>44</sup>Vauban in Germany,<sup>45</sup>Squamish Council in Canada<sup>46</sup> and so on.

Other ways for local authorities to provide for sustainable buildings and developments include:

**Water metering**

**Reviewing bylaws and infrastructure to encourage recycling of building materials**

**Reviewing and updating tree protection controls**

**Utilising heritage protection to encourage the effective retrofit of old buildings rather than demolition if possible**

**Monitoring compliance with the Building Code**

**Providing subsidised or free heat loss assessments and advising on measures that could be taken to improve the water use and energy efficiency of a home**

**Fiscal Measures**

**Relief of taxes and rates**

A perverse disincentive to building sustainably is that the resulting structure might be of a higher value than a traditional building and (despite the fact that the building may impose less of a burden on infrastructure) may accordingly attract higher taxes or rates. In order to “acknowledge the additional private expense incurred for the public good”, British Columbia permits local authorities to introduce tax exemption bylaws for buildings that reach specified performance standards or incorporate certain features (such as photovoltaic systems).<sup>47</sup> Exemptions are for set periods only (a maximum exemption of 10 years is permissible), which reduces the need for continual local authority monitoring of the situation, and authorities are free to establish the amount and the extent of the tax relief available. This practice is also

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*44 English Partnership Millenium Communities available at <http://www.englishpartnerships.co.uk/millcomms.htm> (last accessed 31 January 2008).*

*45 Vauban District, Frieberg English Introduction, available at <http://www.vauban.de/info/abstract.html> (last accessed 31 January 2008).*

*46 West Coast Environmental Law “The District of Squamish Council Approves Use of the Smart Growth Evaluation Framework in the Development Applications Process” January 8, 2008 available at [http://www.wcel.org/whatsnew/#Squamish\\_SGOG](http://www.wcel.org/whatsnew/#Squamish_SGOG) (last accessed 31 January 2008).*

*47 British Columbia Ministry of Community Services (2007) “Revitalisation Tax Exemptions: A Primer on the Provisions in the Community Charter” p.2, available at [http://www.cserv.gov.bc.ca/lgd/gov\\_structure/library/community\\_charter\\_revital\\_tax\\_exemptions.pdf](http://www.cserv.gov.bc.ca/lgd/gov_structure/library/community_charter_revital_tax_exemptions.pdf) (last accessed 31 January 2008).*

apparent in the USA and in many German cities where, for example, a 100 percent local utility charge is levied for impervious roofs and a reduced rate for green roofs.<sup>48</sup>

### **Relief of Development charges**

More discreetly targeted financial incentives can be achieved by reductions in development charges. Development charges are generally levied to help fund the additional burdens on infrastructure created by development. Research undertaken in Canada suggests that significant infrastructure cost savings are associated with green development and that accordingly green developments are providing an important public service.<sup>49</sup> The City of Toronto is in the process of undertaking a quantification of the public benefits flowing from green developments in order to achieve a fiscally neutral policy for development charge reductions.<sup>50</sup> Researchers in Toronto discovered that a reduction in development charges was the second most preferred incentive for developers (after fast tracking applications).<sup>51</sup>

### **Relief of building permit fees**

Given the high degree of autonomy that many authorities have to set administrative fees for processing permits, reductions or exemptions to such fees are often used as a tool to incentivise green building. Again, this can either be based upon receipt of a satisfactory sustainability checklist (and potentially secured by a covenant), refund post-inspection, rating tool certification or installations of specific features. There are many examples: the County of San Diego in California does not charge a fee for a building permit and plan check for the installation of photovoltaic systems.<sup>52</sup> The District of Saanich, British Columbia, “gives priority processing and offers a grant based on building permit fees of up to thirty percent to residential applications achieving energy efficiency and green building standards ... Saanich also pays for a contractor to serve as an energy adviser, directing builders to available technologies and incentives and assisting them with applications.”<sup>53</sup>

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*48 Sangster, W. (2006) Benchmark Study on Green Buildings: Current Policies and Practices in Leading Green Building Nations, Industry Canada, Energy and Environmental Industries Branch, (copy on file with the author).*

*49 Rutherford, S. (2007) The Green Infrastructure Guide: Issues, Implementation Strategies and Success Stories, West Coast Environmental Law, British Columbia, Canada, available at <http://www.wcel.org/resources/publications/default.cfm> (last accessed 31 January 2008).*

*50 City of Toronto (June 2006) Making a Sustainable City Happen: The Toronto Green Development Standard Discussion Paper, City of Toronto, Canada, p 58, available at <http://www.toronto.ca/environment/greendevlopment.htm#why> (last accessed 31 January 2008).*

*51 Supra, “Appendices” p.77.*

*52 County of San Diego, California, US available at <http://www.sdcounty.ca.gov/dplu/greenbuildings.html> (last accessed 31 January 2008).*

*53 Community Action on Energy and Emissions (2007) Energy Efficiency and Buildings: A Resource for BC’s Local Governments, British Columbia, Canada, p 40, available at [http://www.bcclimateexchange.ca/doc/FBC\\_Manual\\_ONLINE.pdf](http://www.bcclimateexchange.ca/doc/FBC_Manual_ONLINE.pdf) (last accessed 31 January 2008).*



## Financial grants

Direct financial grants to promote green building are particularly prevalent in the USA. These grants may be awarded on a competitive basis to promote innovation<sup>54</sup> or simply to projects that achieve certain ratings on performance tools. For larger projects over \$5,000,000, Seattle City Council offers technical assistance and direct monetary grants if the building achieves a minimum of a LEED certified rating via the *LEED Incentive Program*. The grant may be increased in proportion to the LEED rating achieved. Seattle has brought together a number of interested organizations, including utility companies, in order to offer this incentive package.<sup>55</sup> The City of Toronto in Canada has specific regulations for green roofs requiring them on certain developments<sup>56</sup> but also provides direct monetary subsidies that compensate for the increased installation costs of a green roof. This subsidy is provided by the municipal water department and based on an assessment of the infrastructure costs that have been avoided.

## LEADERSHIP, PARTNERSHIP AND EDUCATIONAL ROLE

### Public Buildings

Local authorities can lead by example by adopting a green buildings policy for civic buildings. Policies may, for example, mandate that all civic buildings achieve a certain level on a recognised rating tool or commit to achieving a set-percentage higher performance standard than that required by the Building Code. Vancouver is a good example of civic policy: all new civic buildings must achieve LEED gold certification.<sup>57</sup>

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2008). See also *District of Saanich, Green Building Rebate Programme* available at <http://www.gov.saanich.bc.ca/business/development/greenbuilding/GreenBuilding.html> (last accessed 31 January 2008).

54 See for example, *Portland, Oregon, "Green Investment Fund"* available at <http://www.portlandonline.com/osd/index.cfm?c=ecbde> (last accessed 31 January 2008).

55 *Seattle City Council, US, "LEED Incentive Program"* available at [http://www.cityofseattle.net/light/conservesustainability/leed/cv5\\_lds1.htm](http://www.cityofseattle.net/light/conservesustainability/leed/cv5_lds1.htm) (last accessed 31 January 2008).

56 *City of Toronto Act 2006, s 108*. See also *City of Toronto, Living in Toronto, Environment, "Green Roofs"* available at <http://www.toronto.ca/greenroofs/index.htm> (last accessed 31 January 2008).

57 For a list of local authorities in the United States and Canada that have adopted the requirement for LEED certification for civic buildings see *Buildings.Com "America's Cities LEED the Way" May 2005* available at <http://www.buildings.com/articles/detail.aspx?contentID=2475> (last accessed 31 January 2008).

## **Train City Staff**

The importance of training city staff became an imperative for Portland, Oregon. The Portland Office of Sustainable Developments offers the *Green Building Program*, a one-stop shop for green building needs manned by knowledgeable staff.<sup>58</sup> The *Green Building Program* offers free technical assistance for development projects in Portland, educational tours and classes, project guidebooks, grants that support innovative green building practices and information about policies and regulations. There is also a regional green building hotline to answer callers' questions about green building products, strategies and resources. Given the large number of policies and incentives for green building in Portland, a dedicated team was formed to address the issue.

## **Web page**

Information about the Portland *Green Building Program* can be found on their informative website. Many authorities have resourced web pages that aim to educate the public as to green building. The Santa Monica *Green Building Program* website links community goals and environmental drivers to the City's green design standards.<sup>59</sup> The County of San Mateo in California has mandatory regulations with regards to new buildings and the requirement to achieve LEED certification and has a website that sets out the local authority's policies. The website also includes information on where to get locally produced building materials and the number of the free telephone hotline manned by specially trained staff.<sup>60</sup> Marin County's website includes information about and links to the *BEST Program* sustainability checklists, expedited processing, waiver of fees, technical assistance, training seminars and programs, rebate programmes and the free assessment of a buildings suitability for solar power installation.<sup>61</sup> There are numerous examples.

## **Competition**

In order to publicise the issue of green building, local authorities might wish to formulate or sponsor competitions. One of the most effective and innovative competitions in terms of raising

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■ **58** *Portland, Oregon, Green Building Program available at*  
*<http://www.portlandonline.com/OSD/index.cfm?c=ebeib> (last accessed 31 January 2008)*

**59** *City of Santa Monica, California, Green Building Program available at*  
*<http://www.greenbuildings.santa-monica.org/> (last accessed 31 January 2008).*

**60** *County of San Mateo, California, Green Building, available at*  
*<http://www.recycleworks.org/greenbuilding/index.html> (last accessed 31 January 2008).*

**61** *Marin County, California, Green Building Program available at*  
*[http://www.co.marin.ca.us/depts/CD/main/comdev/advance/Sustainability/greenbuilding/gbuild\\_index.cfm](http://www.co.marin.ca.us/depts/CD/main/comdev/advance/Sustainability/greenbuilding/gbuild_index.cfm) (last accessed 31 January 2008).*

public awareness is the County of San Mateo *Green Dollhouse Competition*<sup>62</sup>(which is precisely as described).

### **Demonstration site**

On a larger scale, numerous local authorities around the world have helped to fund, build and/or publicise demonstration-model green buildings. These range from individual houses to civic buildings with dedicated displays and tour guides to explain the green features. Chicago has a permanent *Centre for Green Technology* housed in a sustainable building.<sup>63</sup>

### **Negotiate with industry**

Local authorities may be in an advantageous position to negotiate with industry to support local green building initiatives. Examples of such partnership can be seen in cities as diverse as Tokyo and Toronto, whereby authorities have entered into partnerships with banks in order to offer green developments better financing rates.<sup>64</sup> In Northern Ireland, local authorities promoted the use of smart meters in homes by arranging tariff reductions for the use of energy during off peak times with power companies<sup>65</sup>(and this ultimately reduces the need for supplies of back up energy generation).

### **Work with tertiary providers**

Local authorities may provide a valuable source of knowledge to providers of training and tertiary education bodies to identify any skills shortfall in the locality that would hinder the adoption of sustainable construction and buildings.

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62 *County of San Mateo, California, Green Dollhouse Competition available at <http://www.greendollhouse.org/> see also <http://www.recycleworks.org/index.html> (last accessed 31 January 2008).*

63 *City of Chicago, USA, Centre for Green Technology, available at <http://egov.cityofchicago.org/city/webportal/portalEntityHomeAction.do?entityName=Chicago+Center+for+Green+Technology&entityNameEnumValue=161> (last accessed 31 January 2008).*

64 *City of Toronto (June 2006) Making a Sustainable City Happen: The Toronto Green Development Standard Discussion Paper, City of Toronto, Canada, Chapter 5 “Where do we go from here”, pp.59 and 67, available at <http://www.toronto.ca/environment/greendevlopment.htm#why>*

65 *Sangster, W. (2006) Benchmark Study on Green Buildings: Current Policies and Practices in Leading Green Building Nations, Industry Canada, Energy and Environmental Industries Branch, (copy on file with the author).*