

## Submission by Beacon Pathway Ltd (Beacon)

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# Submission on LTCCP for Greater Wellington Regional Council

<b>Date</b>	April 2009
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<b>Position</b>	Beacon Knowledge and Science Manager

<b>Request to appear</b>	Beacon would appreciate the opportunity to appear before the council in support of this submission. Mr Nick Collins, General Manager, Beacon Pathway Ltd 109 Great South Rd, Greenlane, Auckland. Phone 09 522 5170 or 021 464 252
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## About Beacon

- Beacon Pathway (Beacon) is a research consortium that seeks to radically change the design, construction and renovation of New Zealand's homes and neighbourhoods. Beacon aims to bring about a significant improvement in the sustainability of the residential built environment in New Zealand through science-based New Zealand research.
- Beacon's shareholding partners are organisations with a considerable stake in the quality of the residential sector: BRANZ, Fletcher Building, New Zealand Steel, Scion and Waitakere City Council. Contributions from the shareholders are matched, dollar for dollar, by funding from the Foundation for Research, Science and Technology (FRST).
- Beacon believes it is only through collaboration and the sharing of knowledge that there can be a significant improvement in New Zealand's homes.
- Beacon's goal is to significantly improve housing sustainability through:
  - influencing policy and regulation;
  - understanding consumer and industry needs;
  - defining an appropriate high standard of sustainability; and
  - developing the tools to achieve, measure and monitor progress to achieving that standard at the house and neighbourhood scales.

A summary of Beacon's research is annexed to this submission: notably the reports referred to in the submission.

## Reason for Submission

Beacon recognises the need for maximising the sustainability potential of the residential built environment during the development process at all scales- including individual homes, new developments and neighbourhoods. It also recognises the important role that local councils play in both supporting and encouraging the development and management of homes with a greater emphasis on sustainability.

## Submission

### 1. *Water supply*

Beacon welcomes the development of a Regional Water Strategy for the Wellington area. We submit that the strategy should place an emphasis on promoting water conservation, the use of water saving devices and water efficient appliances. Beacon has developed *Slowing the Flow*, a resource document on water demand management, and this should be a useful resource to assist the councils. Beacon would welcome the opportunity to work with the councils in the development of the strategy.

Beacon submits that metering of water supply across the region should be central to the Water Strategy. This is a critical method to develop the incentive for water efficiency, as few householders undertake conservation measures unless they are aware of the amount of water they use, and the costs associated with this. Water metering would also have the benefit of reducing wastewater discharges. Research undertaken by other councils indicates that a 15-20% water saving (and reduction in wastewater discharges) can result from water metering.

Beacon submits that the Regional Water Strategy should explicitly promote (through regulatory and non-regulatory pathways) sustainable stormwater management. Should the Water Strategy adopt water conservations measures including the promotion of rainwater tanks, then this would also result in a decrease in demand being placed on the stormwater management system.

Beacon welcomes the draft LTCCP's recognition of the role improved demand management can play: it is an effective mechanism to delay or avoid costly infrastructure investment. We strongly advocate such measures should have higher priority than more 'traditional' engineering approaches to issues of supply. We also welcome the acknowledgement of the significant contribution water makes to the region's greenhouse gas emission profile. We look forward to sharing a Beacon research report on this topic in the near future.

### 2. *Climate Change*

Beacon supports Greater Wellington's plans for improving the resilience of the region in face of climate change. In addition to improving capacity in renewable energy, Beacon submits the council could actively encourage more energy efficiency measures. The development of a regional energy strategy would contribute to improving resilience, as will the planned Regional Water Strategy.

As part of an Energy Strategy, Beacon would support the development and promotion of Energy Efficiency and Retrofitting Programmes (e.g. such as Clean Heat, Snug Homes and Warm Homes Programmes). Beacon has developed a National Value Case which outlines the importance and benefits of improving the performance and sustainability of the housing stock. Beacon's current research programme should provide some useful findings in this area which Greater Wellington could consider in relation to such initiatives.

### **3. Policy Support for Sustainable Building**

Beacon has undertaken research into the range of ways in which local government can promote sustainable building and looks forward to sharing this information in the future with Greater Wellington Regional Council.

Beacon submits that staff time should be allocated by the Council to liaise with Beacon over the results of this research and look at ways that Greater Wellington can better promote sustainable building within its community. These measures could include amendments to Wellington Regional Policy Statement and other regulatory documents to incorporate the following considerations:

- Orientation and design of all buildings to suit both passive and active solar (e.g. solar hot water heating);
- Design to suit natural ventilation;
- Design of all buildings for energy efficiency using existing means, such as optimal insulation and thermal mass properties of materials;
- Provision for wind turbines and other means of renewable energy generation in Plan rules and in the design of all buildings and infrastructure;
- Use of innovative stormwater treatment systems;
- Requirement for stormwater reduction mechanisms such as through landscaping design, pervious surface requirements, green roofs, rainwater tanks;
- Provisions in relation to trees in car parks, in order to provide shade, reduce the effect of large heat islands, and absorb runoff from impermeable surfaces;
- Provision for avenues trees to occupy a small portion of the space devoted to kerbside parking lanes;
- Provision or requirement for greywater recycling systems;
- Requirement for interconnected street patterns; and,
- Requirement for safe, convenient, and high-quality facilities for pedestrians, cyclists and users of public transport.

### **4. Environmental education**

Beacon supports the council taking an active role in environmental education: the Regional Water Strategy provides a good opportunity to expand the current education programmes to support its launch.

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## Beacon's research

Reports and further insight can be found at Beacon's website: [www.beaconpathway.co.nz](http://www.beaconpathway.co.nz)

### ***Water research***

Beacon has undertaken a significant amount of research over the past two years related to water. Our premise is that increasing cost and decreasing availability of water supply will require a more efficient and conservation-orientated approach if New Zealand is to achieve widespread household sustainability. During 2008 Beacon ran workshops with six councils across the country in order to influence and help councils to intensify their water demand management approaches. Key water reports are:

- 2008 [Slowing the Flow: A Comprehensive Demand Management Framework for Reticulated Water Supply](#) (PDF 1.4MB)
- 2008 [Best Practice Water Efficiency Policy and Regulation](#) (PDF 1.4MB)
- 2007 [Demand Management Through Water Retrofit Projects \(Public report\)](#) (PDF 737KB)
- 2007 [Making Policy and Regulations Rain Tank Friendly](#) (PDF 234KB)
- 2006 [Water Efficiencies: Report on Existing Technologies/Expertise in New Zealand](#) (PDF 116KB)

### ***National Value Case***

Beacon believes there is a significant role for Government to drive the necessary upgrade of the existing housing stock to a higher standard of sustainability as well as substantially raise minimum standards in the Building Code for new houses. Furthermore, our research indicates a strong value case at a national level to transform a significant proportion of the New Zealand housing stock to Beacon's HSS High Standard of Sustainability® with beneficial social, health, environmental and economic outcomes.

- [National Value Case for Sustainable Housing Innovations](#) (PDF 2MB)

### ***Large-scale renovation is big on job creation***

Prudent investment by the Government in New Zealand's residential infrastructure, in partnership with local government and industry, will maintain employment and critical mass in the building, building product manufacturing and building retail industries. Beacon's submission to the Government's Job Summit showed that, for every 1,000 houses retrofitted, a total of 151 full-time equivalent jobs would be required for delivery solely of on-site retrofitting services; a total of 392 full-time equivalent jobs would be required to provide the products and services involved in the renovation activity.

### ***HomeSmart Renovations***

The HomeSmart Renovation project involves the assessment and evaluation of renovations undertaken by approximately 600 homeowners across New Zealand to improve their building performance. Each home will receive an individually tailored renovation plan (based on our research so far) which shows participants how to get the best return on their investment, by

drawing up a detailed pathway to improve the sustainability of their home. Through the project, we're developing tools which will assist homeowners in making good choices when they make changes to their homes, and collecting information to assess the benefits of renovating homes and the best ways to do this. The research outputs from the project will be available late 2010.

### ***Barriers to sustainable building***

Beacon has conducted detailed work looking at the barriers to sustainable building within local government and that this has resulted in the development of a Local Government Resource Manual which provides the detailed rationale, suggested solutions and case studies for best practice policy measures to support sustainable building. In 2009, this Resource Manual is being launched through a series of workshops in Christchurch, Wellington, Rotorua and Auckland. This resource will be available through our website to all councils.

- [Best Practice Policy Approaches to Encourage Sustainable Residential Building and Retrofitting: Evaluation and shortlist of initiatives](#) (PDF 118 KB)
- [Best Practice Policy Approaches to Encourage Sustainable Residential Building and Renovation: Survey and Literature Review Results](#) (PDF 820 KB)

### ***Energy research***

Our Energy Retrofit research will provide robust information to inform decision makers and actors in the value chain on how to cost effectively renovate New Zealand homes to a high standard of energy sustainability. We're tackling this in three ways.

- 1) We're looking at how hard or easy it is to renovate the energy performance of **different types** of existing homes. Our houses were built significantly differently over the last century and each type poses different problems for energy retrofits.
- 2) We want to understand how **different consumers** see the energy performance of their home and respond to retrofit opportunities. Specifically we've focused on landlords, high energy users and recent home buyers.
- 3) We're using what we learned along with our experience in the HomeSmart Renovations project to build a series of **energy retrofit packages** that will provide effective improvements for each type of home and different consumer groups.

- 2008 [New Zealand House Typologies to Inform Energy Retrofits](#) (PDF 651KB)
- 2008 [Housing Typologies: Current Stock Prevalence](#) (PDF 392KB)

### ***Neighbourhood research***

Beacon's neighbourhood research team have developed a framework which could be used to measure the sustainability of New Zealand's neighbourhoods. Our aim is to create a tool for developers, planners and local government which both measures neighbourhood sustainability and suggests improvements. The goal is how to design, construct, and manage neighbourhoods which: are adaptive; are resilient; allow people to construct rich satisfying lives; and, respect the limits of the environment.