



The Case for Sustainable Building: A bloke's guide to sustainability



Beacon Pathway



Vision *creating homes and neighbourhoods that work well into the future and don't cost the Earth*

Goals

1. To bring the vast majority (90%) of New Zealand homes to a high standard of sustainability by 2012
2. Every new subdivision and any redeveloped subdivision or neighbourhood from 2008 onwards be developed with reference to a nationally recognised sustainability framework.

SCION 



FletcherBuilding



BUILDING RESEARCH

INVESTING FOR NEW ZEALAND'S CONSTRUCTION FUTURE



Overview



- Sustainable Building – *what smart blokes know*
- The Challenges - *why a smart bloke should care*
- What we at Beacon have learnt
- *What smart blokes in government need to do*
- *What smart blokes in industry need to do*
- Conclusion – *we can all be smart blokes*



Sustainable Building



Is not about doing without,
it's about being smarter
doing more with less
and its more than energy



Smart blokes know Sustainability is not a new concept



Working within the natural environment

Location

Orientation

Resource efficiency

Use of local materials

Natural ventilation

Affordability



Why should blokes worry about neighbourhoods?



Neighbourhoods are where most of us live

They connect our homes with the city system and infrastructure

They are where we relax and hang out with friends and family

They are where we do all the everyday ordinary things we do



Welcome

You've just taken the first step towards a home that's warmer, drier, healthier, more comfortable, more affordable and kinder to the environment. [Find out more.](#)

Did You Know?

Fitting a low-flow shower head can save on both energy and water charges. According to the estimate, a four-person household in an area with water meters could save up to \$360 a year.

Homesmarts

Homesmarts calculator - find out how your home measures up, and learn about the simple steps you can take to make your home smarter. [Go to Homesmarts calculator](#)

Case Studies
Find out how other New Zealanders are benefiting from energy efficient design for new homes and renovations. [View](#)

Checklists & Tools
See our [top 100](#) for cutting your energy bill, living properly and much more.

Latest News:
[LIFE and HIFOS to be unveiled by October](#)

Design

[Insulation: Essential heating](#)
[Shower](#) More >

Energy

[Appliances: Lighting](#) [Solar water heating](#) More >

Water

[Eco-wash: Soak](#) [Using Onwater](#) More >

Siting & Landscaping

[Climate: Neighbourhood](#) [Trees](#) More >

LIVE SMARTER SAVE MONEY BE HEALTHY

Make sure your home:

- Uses less power
- Is cheaper to run
- Stays warm and healthy
- Is kind to the environment

CLICK HERE TO FIND OUT MORE IN 'YOUR GUIDE TO A SMARTER HOME'

For homeowners and renters:
A smart home is warmer, drier, and more comfortable. It has more natural light. It's healthier for you and your family. And it's affordable too. [Test it out.](#)

For building & construction professionals

New Zealand's national database of building products

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Structure
Envelope
Interior
Finish
Services
Climate

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- Resource Consent
- Green Rating Systems
- Industry Standards
- Health & Safety
- Publications, Technical Literature
- Industry Organisations
- HAZ Technical Information Search

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The GreenBuild Project

Thank you for visiting GreenBuild.co.nz.

Since going live we've had tremendous response from the industry.

Thank you to everyone who has given us feedback. This is invaluable to the GreenBuild project because GreenBuild involves an ongoing process of refining information to ensure it is of maximum value.

Fundamental to the site are environmental assessments. These are underway and will be uniquely valuable to specifiers in making informed choices.

Based on input from the industry, our review of the data and CDR classifications allocated, our product pages are currently online so we can continue the product listings to ensure their accuracy. This involves personally contacting many manufacturers and suppliers.

When this has been completed we will be live again and continuing the journey.

Thank you again for your support and patience.

GreenBuild™ is proudly supported by the following organisations:

Welcome to Level.
THE AUTHORITY ON SUSTAINABLE BUILDINGS.

Home

- Site Analysis
- Site Use
- Passive Design
- Water
- Material Use
- Energy
- Health and Safety
- Tools

Level will help you design and build homes which have less impact on the environment and are healthier, more comfortable, and have lower running costs.

Big changes are coming in the levels of energy efficiency required in new houses and major extensions to existing homes. The changes will be introduced gradually, starting with the South Island and the Central Plateau of the North Island from 31 October this year. Level has background explanations on insulation and glazing to complement the new legal requirements.

SEARCH

SEARCH

ENERGY

Designing homes to conserve energy and use it efficiently, from sources which cause least environmental harm.

MATERIAL USE

Specifying efficient use of materials and considering their impact from manufacture to disposal.

PASSIVE DESIGN

Designing the building and the spaces within it to benefit from natural light, ventilation and air temperatures.

CONTACT

HEALTH AND SAFETY

WATER

TOOLS

The challenges – *Why should a smart bloke care?*

- Climate change
- Resources are finite
- Changing demographics
- Our unsustainable housing stock



Have we reached a tipping point in New Zealand, with respect to our understanding of Climate Change?



- Al Gore and *An Inconvenient Truth*
- Stern Report
- Inter-governmental Panel on Climate Change (Feb 2007)
- PM's Speech from the Throne
 - o Emissions Strategy
 - o National Energy Strategy. National Energy Efficiency and Conservation Strategies
 - o Govt3 purchasing initiatives



Climate Change – today

Smart blokes think differently



TRAIL OF DESTRUCTION



PM: Towns may have to move

Repeated flooding means it's time to consider drastic measures, says Clark

When Clark said "You do feel by a little uncertainty like Kaero where some people have only just got their properties repaired by very recent times... although it was necessary to give assistance of the road."

"A number of the roads are blocked, it's hard to see what the d

Resources are finite

- New Zealand economy dependent upon cheap oil and cheap gas
- Increased competition for water and declining water quality.
- New Zealand electricity supply is largely centralised, generated / reticulated from a national perspective, with majority of generation far away from main urban areas / use.
- Need a shift from supply side management to demand side management



Changing demographics

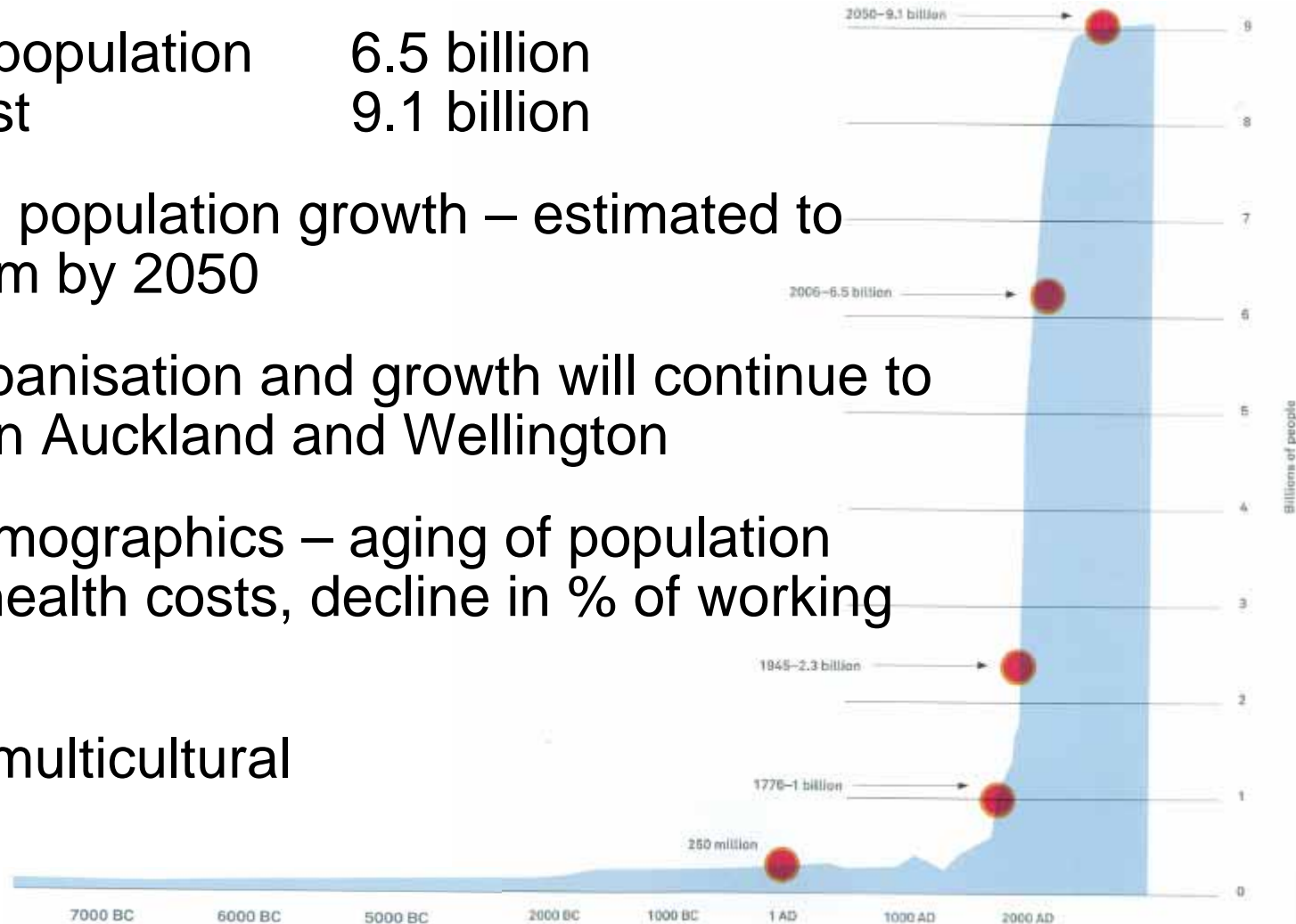
2005 Global population 6.5 billion
2050 Forecast 9.1 billion

New Zealand population growth – estimated to increase to 5m by 2050

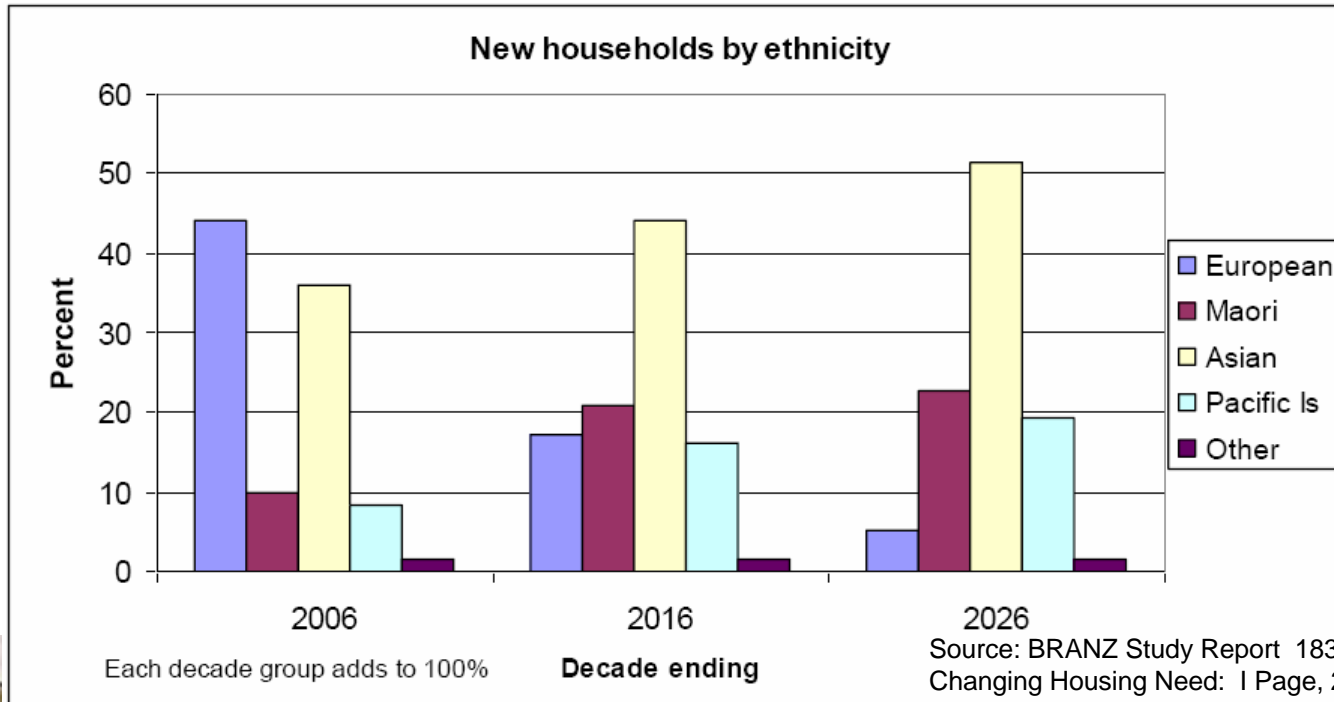
Increased urbanisation and growth will continue to be focused on Auckland and Wellington

Changing demographics – aging of population (associated health costs, decline in % of working age people)

Increasingly multicultural



Changes in the make - up of our society



What might it mean for our homes?



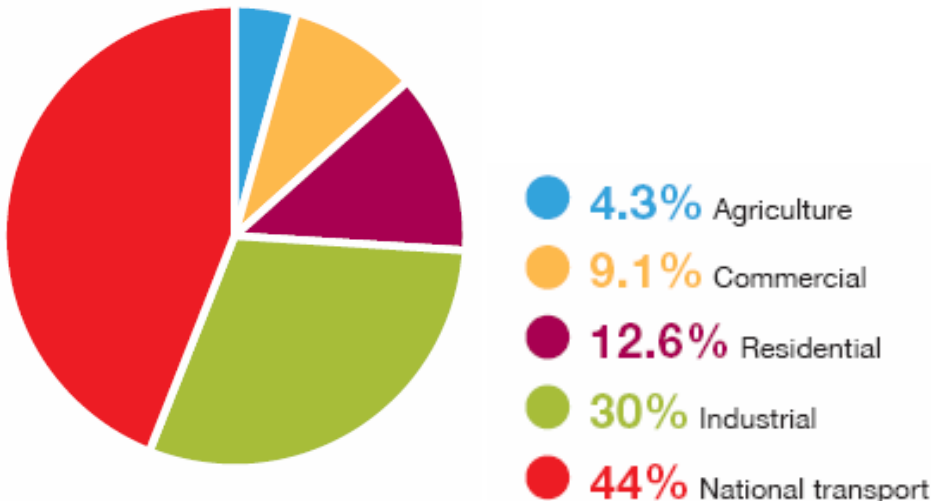
Our Homes are significant for a Sustainable New Zealand



ENERGY

- Excellent data
- Residential Energy use, accounts for 12.6% of New Zealand's energy use

Total consumer energy by sector in 2006



Source: Ministry of Economic Development

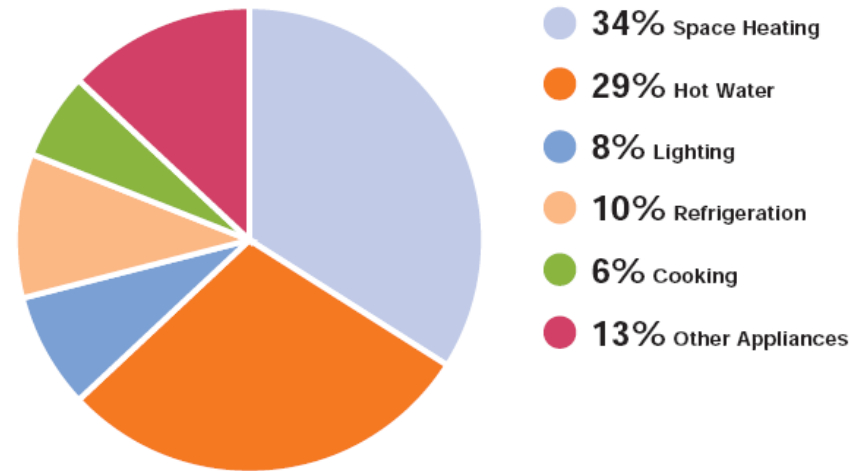
WATER – not valued

- Poor data
- 1/3 of New Zealand's homes are in the Auckland region, where rainfall is 7 - 10 times greater than water use.

Our Homes aren't performing well for us

BRANZ  Reports tell us

- Two thirds of energy used to heat space and water
- 21% of homes use 36% of energy
- New Zealand homes are cold – frequently on average 6°C below WHO recommended minimums in winter

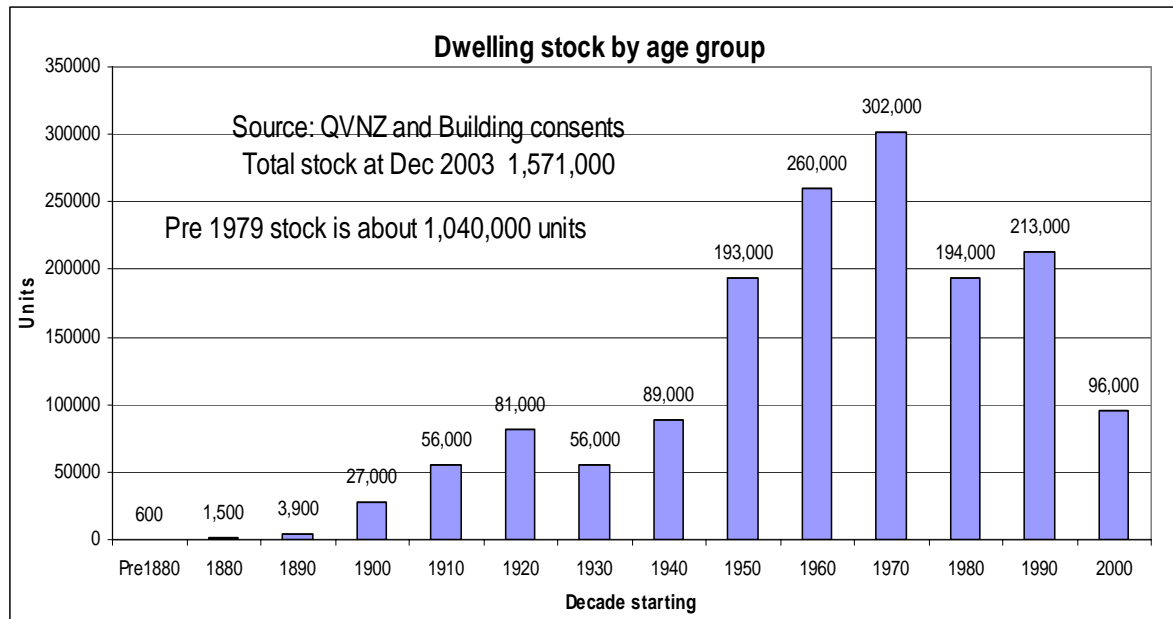


Source: BRANZ Study Report SR 155, 2006

More poorly performing homes



- Majority of New Zealand homes are poorly insulated. BRANZ Home Condition Survey (2005) identified that only 21% of New Zealand homes had ceiling insulation >75mm



- 45% of New Zealand homes are mouldy

Our homes affect our personal performance



- Cold damp homes pose a health risk, particularly for the most vulnerable groups in the community who spend the most time at home (the young, elderly, infirmed, and unemployed).
- New Zealand has the second highest rate of asthma in the world;
- New Zealand has an excess winter mortality rate of 1600 that is not seen in other OECD countries, and is attributable to our unhealthy homes;
- 300,000 New Zealand homes have an unflued gas heater



What we have learnt at Beacon



By making our homes more sustainable, we will:



- improve New Zealanders' quality of life
- reduce the demand from homes on reticulated energy, and reduce total energy requirements;
- reduce carbon dioxide emissions and assist New Zealand in meeting our Kyoto commitments;
- reduce demand for reticulated water (and the associated energy required), with longer life for infrastructure and environmental benefits;



By making our homes and neighbourhoods more sustainable, we will:



- improve management of storm water and grey water to decrease negative impacts on the residential and natural environment, thereby making a more resilient water system;
- increased productivity and more efficient use of New Zealand's resources; and
- improve New Zealand housing stock in terms of resilience to global challenges such as climate change, resource availability, and population change.



Big national benefits accrue from sustainable homes



- savings in household energy consumption of almost 22 PJ per year
- a direct private gain to households equal to one percent of GDP by 2017 or \$2 billion.
- a reduction in CO2 emissions of 3600kt per year, the equivalent of \$54million in tradable emissions (at \$15/tonne).
- water savings of 81 litres per person per day, or 130 million m³ per year, additional non-monetary benefits of healthier and more comfortable homes, and environmental benefits.

What smart blokes in Government need to do

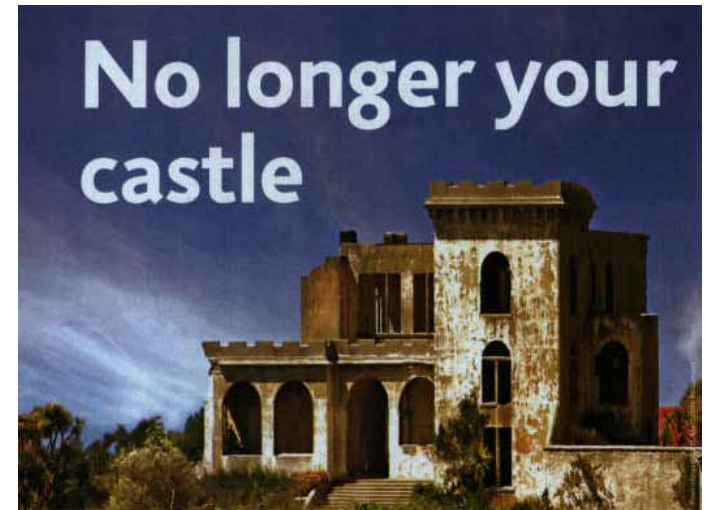
- Upgrade the current insulation retrofits
- Ban unflued gas heaters.
- Government to take a lead - HNZC and other government housing upgraded to a High Standard of Sustainability over the next 5 years.



What smart blokes in Government need to do (2)

Build on the voluntary Home Energy Rating Scheme (HERS) to:

- a mandatory HERS at point of sale from December 2007;
- a mandatory HERS at point of rental from December 2009; and
- a mandatory Sustainability Rating at point of sale and rental from December 2010.



If you own a house, government energy bureaucrats have got something planned for you. We say ... STOP THEM ... making it compulsory

What smart blokes in Government need to do (3)



Further amendments to the Building Code - Include provisions for minimum requirements when retrofitting existing houses in the Building Code. Inclusion of a rating tool within the Building Code.

Additional regulatory review.

- Minimum standards in the Residential Tenancy Act for residential dwellings at point of rental.
- Urban water efficiency be integrated into the Ministry for the Environment's Water Programme of Action and any National Policy Statement developed under this.

What smart blokes in industry need to do



Need smart blokes across all sectors of industry... and it is happening

- Professions – Architects, Engineers
- Trades – Builders, Plumber & Electricians
- Manufacturers and Retail
- Energy / Water Utilities, Finance, Insurance and Real Estate

Central
Government

Local
Government

Professionals

Manufacturers
Retailers
Utilities

Trades

Finance

Home Occupiers

Conclusion



As a consumer, go home, assess your house and work out how to make it use less resources so it will cost you less and be comfy and healthy

As an industry bloke, look to how your business can provide solutions which will be part of the new way forward for New Zealand's homes, neighbourhoods and commercial buildings...there's a big opportunity out here

As a government bloke, make some fine policy decisions that support people acting in a way that improves the sustainability of our residential built environment.

Central
Government

Local
Government

Professionals

Manufacturers
Retailers
Utilities

Trades

Finance

Home Occupiers



 **SBo7 NZ**
CONFERENCE

TRANSFORMING OUR
BUILT ENVIRONMENT
14 - 16 NOVEMBER 2007
AUCKLAND, NEW ZEALAND



The banner features four logos at the bottom: the Sustainable Building Council of New Zealand logo (a green tree-like structure), the IISBE logo (a blue globe with a white grid), a green globe logo, and the IISBE logo (a green house icon with a grid pattern).