The secret is out, green buildings work.

Green is GOOD
The recent green construction movement had its origins in the 1990s, initially as a fringe activity but increasingly, over the past two decades, it has gained mainstream status. The UK and US were the first to lead the charge with momentum growing more rapidly amongst other OECD countries in the 2000s and beyond. In NZ the movement really kicked up a gear in 2005 with the formation of the NZ Green Building Council (NZGBC) and in 2006 NZGBC became the 6th member of the World Green Building Council (currently 100 members). NZGBC began offering 4 to 6 Green Star ratings in 2007 for “design”, 2008 for “built” and 2009 for “interior” projects. From 2018 the NZGBC plans to streamline the process further and phase out “design” certifications, focusing instead on “built” and “interior” certifications.

As a third party quality-assurance to owners and added value to buildings, the adoption of green building standards in NZ has been market led rather than regulation driven as in some European countries and other parts of the world.
A growing number of global cities are embracing the move to green rated buildings. This growth has been particularly strong over the past 10 years with momentum continuing to build as more cities commit to the certification process. Auckland is definitely tracking in the right direction but still has some way to go when compared to other leading Pacific Rim cities. This is probably a reflection of differences in the timing and scale of development cycles and the size of each cities population and total office stock. In terms of stand-out’s San Francisco appears to be the flag bearer for green office buildings with 145 “built” rated.

In Auckland almost half the green Star rated office buildings are located in the CBD and the other half spread across the broader metro area. The nine CBD “built” rated buildings total 132,000m² and represent around 10% of total CBD Stock (and 22% of prime grade stock). The Auckland CBD is currently in the midst of a new development cycle with five office projects totalling around 80,000m² currently under construction. To date four out of five projects have been registered for either Green “design” and/or “built” rating status. Unlike the previous construction cycle where a construction cost premium was attached to green features, this has all but disappeared as environmental features increasingly become standard.

HOW GREEN IS AUCKLAND VS OTHER PACIFIC-RIM CITIES?

Auckland Sydney Melbourne Vancouver San Francisco Seattle

GREEN STAR RATED (OR EQUIVALENT) “BUILT” OFFICE BUILDINGS BY NUMBER

<table>
<thead>
<tr>
<th>City</th>
<th>2005</th>
<th>2010</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auckland</td>
<td>50</td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td>Sydney</td>
<td>20</td>
<td>40</td>
<td>70</td>
</tr>
<tr>
<td>Melbourne</td>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Vancouver</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>San Francisco</td>
<td>20</td>
<td>40</td>
<td>60</td>
</tr>
</tbody>
</table>

Source: NZGBC, GBC Australia, Canadian GBC, US GBC

SURVEY RESULTS

Bayleys Research in conjunction with NZGBC conducted two surveys in order to gauge the views of owners, occupiers and other key stakeholders on the short and long term benefits of green building features and design. Encouragingly both surveys strongly support the continued push towards making the built environment greener. Rating tools, such as Green Star and NABERSNZ, were seen as important drivers in this process, providing checks on building quality and ensuring sustainability criteria are met in the future.

RATING TOOLS HAVE HAD A POSITIVE IMPACT ON THE QUALITY OF BUILDING IN NZ IN THE LAST 10 YEARS

RATING TOOLS ARE FUNDAMENTAL TO IMPROVING THE SUSTAINABILITY OF BUILDINGS IN THE FUTURE

NZGBC SURVEY

Summary: Respondents felt the most important shift in NZ’s built environment over the next decade will be an increased focus on building performance and whole of life costs. The key barrier to improving building quality was seen as a focus on costs rather than benefits.

QUESTIONS

Choose the most important shift to NZ’s built environment in the next 10 years?

- 32% - increased focus on building performance and whole of life costs
- 26% - better standard for NZ homes
- 14% - increased focus on upgrading existing building stock

What do you think will most impact NZ building designs of the future?

- 30% - innovation in building design and systems
- 18% - availability of land for development
- 12% - changes in demographics
- 12% - changes to how people work eg. co-working

What do you see as the most important aspects of a sustainable building?

- 34% - whole of life costs
- 14% - lower energy consumptions

Which option do you feel is the main barrier to improving the quality of buildings in NZ?

- 48% - focus on costs rather than benefits
- 18% - minimum building code requirements
BEING GREEN IMPROVES PERFORMANCE

A growing body of research globally is pointing to the financial benefits for owners and occupiers of Green certified buildings. In the US a report released by Morgan Stanley last year suggested that “a typical office building that integrates sustainable practices could help reduce building expenses by 5% to 30%, creating US$5.7 billion to US$1.9 billion of asset value in the top 10 US markets in the process”.

Closer to home, the latest Australian MSCI analysis (Dec 2016) comparing, Australian 4 to 6 Green Star office buildings with the broader Australian “All Office” market shows Green buildings outperforming on a number of key financial and market metrics. In particular, the numbers point to lower capex, longer lease terms and better rental and value premiums.

AUS: GREEN STAR VS ALL OFFICE RESULTS FOR QUARTER ENDING DEC 2016

-33%  0%  10%  20%  30%  40%  50%  60%  70%
Capital value in $/sqm
Net Income in $/sqm
Opex in $/sqm
Capex in $/sqm
Vacancy Rate
WALE in years
-2%  20%  8%
0.05%  20%  8%

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FUTURE GREEN TRENDS

NET ZERO ENERGY BUILDINGS

The drive towards net zero energy buildings (i.e. buildings which produce enough renewable energy to completely off-set the energy they use) took a major step forward following the Paris Climate Change Conference in 2015 where world leaders agreed to limit global warming to 2 degrees by the second half of the century. In order to meet that timeframe the building sector globally needs to achieve almost zero fossil fuel CO2 emissions by about 2050 which implies a rapid shift in building design, construction and operations. The World Green Building Council and its associates globally are spearheading a push towards Net Zero (carbon) Emissions for all buildings by 2050. It’s a hugely ambitious task which will involve significant commitment from the private sector as well as governments to safely arrest global warming.

RETRO-FITTING EXISTING BUILDINGS

Existing buildings make up the largest segment of the built environment so retro-fitting to improve energy management, water usage and waste will go a long way in reducing a building’s overall environmental footprint (as well as providing some attractive operating cost savings along the way). The success of NABERS in Australia and its growth in NZ under NABERSNZ could well be the catalyst to drive further sustainable gains. NZBC is due to launch a new Green Star tool called Green Star Performance in September 2017. This includes all the same categories as a new build Green Star rating but focusing on operational performance rather than as built performance.

WHAT MAKES FOR HEALTHIER AND GREENER OFFICES

1. Indoor air quality and ventilation
   - Healthy offices have low concentrations of CO2, VOCs and other pollutants, as well as high ventilation rates
   WHY: Increase in cognitive scores for workers in a green, well ventilated office

2. Thermal comfort
   - Healthy offices have a comfortable temperature range which staff can control
   WHY: Fall in staff performance when offices are too hot and 4% if too cold

3. Daylight and Lighting
   - Healthy offices have generous access to daylight and self-controlled electrical lighting
   WHY: Improved night-time sleep for workers in offices near windows

4. Noise and Acoustics
   - Healthy offices use materials that reduce noise and provide quiet spaces to work
   WHY: Reduced staff performance as a result of distracting noise

5. Interior Layout and Active Design
   - Healthy offices have a diverse array of workspaces, with ample meeting rooms, quiet zones, and stand-sit desks, promoting active movement within offices
   WHY: Flexible workspaces help staff feel more in control of their workload and engenders loyalty

6. Look and Feel
   - Healthy offices have colours, textures and materials that are welcoming, calming and evoke nature
   WHY: Visual appeal is a major factor in workplace satisfaction

7. Location and Access to Amenities
   - Healthy offices have access to public transport, safe bike routes, parking and showers, and a range of health food choices
   WHY: Savings through cutting absenteeism

References

2. “Responsible investing” is also known as ethical investing, sustainable investing and socially responsible investing.
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4. Responsible Investment Benchmark Report 2016 Australia
6. Responsible Investment Benchmark Report 2016 New Zealand
7. NZ Treasury – Review of the Kiwisaver Fund Manager Market Dynamics and allocation of assets 2015 (base case projections)

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