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INTRODUCTION

With the continuing trend of rising energy prices, increasingly strict governmental regulations and strong public attention to more environment-friendly approaches to design and construction, green building has become a more essential matter for the Australian building and construction industry than it has ever been before. Additionally, a recent report by American industry leader Jerry Yudelson reveals that the scope of green building in Australia is expanding from just new construction to include retrofitting of existing buildings, thus further corroborating the growing importance of the issue.

Since BCI has recently expanded into the New Zealand market, this year’s report also covers the state of green building in that country. The fact that New Zealand has passed the threshold of 100 commercial buildings being awarded the “Green Star” by the New Zealand Green Building Council (NZGBC) makes an inquiry into its domestic market especially worthwhile.

BCI Australia has been conducting surveys into the field of green building since the year 2006. Each time, industry stakeholders were asked to share their insights and opinions on the status quo of green building and how it affected their own businesses. Those stakeholders included owners and developers, architects and engineers, main contractors and subcontractors. The 2014 survey is the first to include New Zealand but marks the fourth edition of BCI’s efforts to shed light on the levels of development and commitment concerning green building measures and ventures in Australia. The previous surveys were as follows:
The inaugural survey (April 2006) was conducted in the wake of the release of Al Gore’s environmental documentary-blockbuster “An Inconvenient Truth” which caused a jolt of awareness of the ecological threats and the need for a concerted response. The second survey (January 2008) took place not long before the biggest economic crisis since the Great Depression hit countries and businesses across the globe. Green building was on the verge of sustainably establishing itself in Australia when the near-fatal financial breakdown precipitated the construction industry to focus on more short-term issues. Our most recent survey so far (September 2010) was carried out in the aftermath of the Australian construction market avoiding a recession (due to strong governmental support). Yet, the lack of sufficient financing continued to hamper construction projects in general and thus green building in particular. This year, 133 respondents in Australia and 110 respondents in New Zealand participated in the survey. The results confirm that the concept of green building has put down substantially deep roots in both the Australian and the New Zealand construction industries. However, there do remain several barriers in both markets for green building to grow in significance including the perception of high upfront costs and the insufficient attention to the potential to increase the value of projects as a result of building “green”.

So now, without further ado, BCI Australia and BCI New Zealand proudly present the 2014 Green Building Report. This report underscores BCI’s advocacy role for the environment and forms an important element of BCI’s vast portfolio of products and services designed to providestakeholders with a greater understanding of the Australian and New Zealand construction market.

Dr. Matthias Krups
Chairman & CEO
BCI Media Group PTY Ltd.
EXECUTIVE SUMMARY

From March to May 2014, 133 developers, architects, builders and subcontractors in Australia and 110 in New Zealand shared their views on and experiences with green building with the BCI Economics research team. The main findings were as follows:

Virtually 90% of respondents in Australia and just over 80% in New Zealand have been involved in a project that entailed “green” building elements during the period of 2008-2014.

However, only a third of participants in Australia and a quarter in New Zealand pursued certification by an accredited agency.

In Australia, 62% of those projects received the GBCA Green Star and in New Zealand, 47% received the NZ GBC Green Star.

Yet, almost half of the Australian respondent professionals indicated that they were “very likely” or “somewhat likely” to seek an official green building certification. Their New Zealand counterparts were not quite as motivated with roughly 37% “very likely” or “somewhat likely” to seek an official green building certification. In both countries the Green Building Council “Green Star” was the standout choice.
The three most prevalent motives in both countries for companies to pursue ‘green building’ principles when designing or implementing projects were found to be:

- To achieve lower lifecycle costs,
- To contribute to the protection of the environment and attenuate the impact of global warming and
to achieve increased building value or marketability.

Conversely, the primary reasons for which respondents from both markets said they opted not to adopt ‘green building’ principles in their projects were:

- Higher cost of building materials,
- Additional time and cost of documentation and
- Additional time and cost to research materials.

About 54% of Australian respondents stated that they were able to report some sales growth which they could attribute to green building. This is about the same number that was given by Australian participants in 2010 when asked about their expectations regarding the effect of green building on sales (53%).

In comparison, around 53% of industry professionals in New Zealand said they witnessed growth in sales because of their green building activity.

Although over 30% of respondents in 2010 believed upfront costs due to green building were over 20%, this figure has dramatically reduced to only 4% and the typical rating falls in the range between +5% and +15%.

The profile of responses from New Zealand displays fairly similar “clustering” in the +5% to +15% range.
In spite of a high degree of uncertainty among respondents, cost savings through green building initiatives have been reported in both Australia and New Zealand, although, on balance somewhat lower than the expectations from the previous Australian surveys.

Although a large number of respondents in Australia and New Zealand had difficulty in estimating the extent by which the value of the buildings in their projects benefited from the green building classification, more than half of the estimates received from both countries were in excess of +5%.

Calculating the improvement in Return on Investment (ROI) for their green building projects proved the most difficult challenge for our respondents with 50% of Australian answers and 64% of New Zealand being “don’t know”. However, of those responses which were forthcoming from both markets, it is instructive that the median improvement was slightly above 5%.

Concerning the technologies that Australian firms actually use in the context of green building, we ascertained that water efficient fixtures and fittings, rainwater and stormwater management/retention systems and insulation products were the major elements incorporated by industry professionals.

Enterprises in New Zealand named insulation products, energy efficient/intelligent lighting and rainwater and stormwater management/retention systems as the top three technologies applied.

Design software in Australia was considered most crucial for the fields of heating, lighting and alternative building materials.

In New Zealand, design software was deemed to be primarily important for natural ventilation, heating and energy modelling/baseline analysis.
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In Australia, the green building movement only gained momentum after the Sydney Olympics in 2000 received worldwide recognition as the first ‘Green Games’. With venues and facilities that established new benchmarks in design excellence and best practice sustainability, Australia’s property and construction industry demonstrated that green buildings were achievable.

But at the time, the industry had few metrics or agreed methodologies to measure green building, and few assessment tools or benchmarks of best practice. There was no organised approach to knowledge-sharing or collaboration. Nor was there any way for the industry to promote or profit from green building leadership.

In 2002, a group of green building pioneers recognised the need for an independent organisation to develop a sustainable property industry in Australia and drive the adoption of green building practices. The Green Building Council of Australia (GBCA) had arrived, following in the footsteps of other green building councils in the UK and US.
The following year, in 2003, the GBCA launched Australia’s first holistic environmental rating system for buildings, Green Star.

Today, Green Star is certainly ascendant, with more than 750 building projects certified and a further 435 registered to achieve Green Star ratings. Of the almost 25 million square metres of office space across the whole of Australia, 22 per cent is Green Star-rated.

As ISPT’s Chief Executive Officer, Daryl Browning, says: “Those investing in or occupying properties need benchmarks they can rely on. Green Star certification is one of the quality assurance measures everyone can rely on with confidence.”

Of course, Green Star is not restricted to offices. We now have more than 120 education facilities either certified or registered to achieve Green Star certification. Green Star is influencing the design and construction of everything from hotels to hospitals, schools to shopping centres, fire stations and train stations, libraries and leisure centres, restaurants and retirement villages.

The Green Star – Performance rating tool was released to address the sustainability of the 340 million square metres of non-residential building space that is ripe for retrofit. According to the Property Council of Australia, the cost of running these buildings is, conservatively, $27 billion dollars each year.

Meanwhile, the Green Star – Communities rating tool is addressing sustainability at the precinct scale, and we will soon see hundreds of thousands of people living in precincts, neighbourhoods and communities with Green Star ratings.

A range of international reports have confirmed that green buildings positively impact everything from operational costs to return on investment, and from reputational equity to productivity. The Building Better Returns report (2011) found that Green Star-rated buildings deliver a 12 per cent ‘green premium’ in value and a 5 per cent premium in rent, when compared to non-rated buildings. The Property Council/IPD Australian Green Property Index (June 2014), found that Green Star-rated CBD office assets outperformed the broader CBD office market by 100 basis points.

Green Star buildings are recording productivity increases of up to 15 per cent, which is perhaps why Colliers International’s Office Tenant Survey (2012) has found that 96 per cent of tenants want to be in a green building. ‘Green space’ is now one of the top four attributes tenants look for – along with bike racks, childcare facilities and a gym.
Each year, the Dow Jones Sustainability Index is led by Australian companies, such as Stockland, GPT Group, Investa and Lend Lease. Similarly, the Global Real Estate Sustainability Benchmark (GRESB), which now reports on 49,000 assets in 46 countries worth AUD$1.73 trillion dollars in value, identifies Australia as the global leader.

So, what does the future hold? Certainly, the number of Green Star-rated buildings will continue to escalate, as developers, investors and building users all recognise that ‘green’ makes good business sense, as it reduces costs, enhances transparency, accountability and risk management, and improves productivity, health and wellbeing.

Many projects now aim for 6 Star Green Star ‘World Leadership’ ratings, as project teams understand how to design for higher Green Star benchmarks on conventional budgets. Even projects that don’t attempt to achieve a Green Star rating are designed by some of the same architects and designers working on Green Star projects, and we are seeing current Green Star principles embedded into many projects around the country.

But the Green Star story is about more than just buildings. If we were to plot the evolution of the Green Building Council of Australia over last 12 years, we’d see an early emphasis on the environmental benefits of green building such as kilos of carbon, litres of water and tonnes of waste evolve to consider economic benefits such as payback periods, cost savings, asset values and vacancy rates. As we’ve matured, we’ve expanded our thinking to recognise and reward social return on investment such as shared value, improved productivity, health and wellbeing, and skills development.

Today, we are increasingly talking the language of social sustainability – about how our buildings benefit people. Our next great challenge is to put a value on the social capital to be gained from green building.

The World Green Building Council is currently working on two projects that exemplify this shift. A new socio-economic category for rating tools will guide the design and delivery of buildings that empower local communities, create jobs and upskill disadvantaged groups. At the same time, a study into the health and wellbeing benefits of green buildings will provide best practice guidance on the type of green building features that enhance productivity and performance.

As world becomes increasingly interconnected, we have a shared fate and a shared responsibility to our communities, to our society and to our environment. As the world adapts, and the market adapts, Green Star will continue to adapt. Why? Because everyone should have the opportunity to learn in a sustainable school, work in an efficient office, or live in a healthy home – and because Green Star is the mechanism to help us create sustainable places for everyone.
GREEN BUILDING COUNCIL OF AUSTRALIA
FAST FACTS

More than 750 member organisations

435 Green Star registered projects

More than 750 Green Star certified projects

750 Staff

45 Green Star projects

60,000 people trained in Green Star
Innovative Green Facades

Green facades may look simple in appearance. However, multiple factors go into planning and detailing a successful green facade. Like our clients, each facade that Tensile creates is unique, and innovative solutions are Tensile’s forte. We at Tensile pride ourselves on our ability to create unique designs and are genuinely excited by opportunities to develop new ways of doing things. A ‘one-size-fits-all’ mentality is certainly not what Tensile is about. We take the time to understand our clients’ needs and create a bespoke solution to meet their requirements.

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Green Star-rated buildings emit around a third of the greenhouse gas emissions and use a third of the electricity when compared with the average Australian building.

The Value of Green Star: A decade of environmental benefits (2013), analysed the data from 428 Green Star-certified projects occupying 5,746,000 million square metres across Australia and compares it to the ‘average’ Australian building and minimum practice benchmarks.

Findings include:

- **Energy:** Green Star-rated buildings have reduced electricity consumption by a total of 580,000 megawatts per year – equivalent to 76,000 average households’ annual electricity use.

- **Emissions:** On average, Green Star-certified buildings produce 62 per cent fewer greenhouse gas emissions. The cumulative greenhouse gas savings from the Green Star-rated buildings surveyed, when compared to the average, totals 625,000 tonnes of carbon dioxide a year - the equivalent of removing 172,000 cars from our roads.
• Water: Green Star buildings use 51 per cent less potable water than average buildings. That saving – 3,300,000 kilolitres of potable water a year – is enough to service 18,000 households or fill 1,320 Olympic swimming pools.

• Waste: Green Star - As Built certified buildings are recycling 96 per cent of their construction demolition waste. In total, 37,600 truckloads of construction and demolition waste have been diverted from landfill due to good waste management practices.

For many building owners and managers operating in an increasingly competitive market, the environmental, financial and social benefits of Green Star buildings are now too good to ignore.

Download The Value of Green Star: A decade of environmental benefits from the GBCA website:
While Green Star buildings are better for the environment and cheaper to operate, energy efficiency is just part of the story.

A smart business decision
Abode Woden, an adaptive reuse project developed by GEOCON, is on track to become the first Green Star-rated hotel in Australia. “We understand that truly sustainable practices can deliver dividends – from reduced operating costs and higher profit margins, to improved staff productivity and brand equity. Achieving a Green Star rating just makes good business sense,” says GEOCON’s Managing Director, Nick Georgalis.

Healthier places to heal
Australia’s first Green Star-rated healthcare facility, the Flinders Medical Centre New South Wing in Adelaide, houses women’s health services and has been designed to deliver high-quality patient care with a minimal environmental footprint. The new unit increased deliveries of babies by 10 percent in its first year of operation - positive proof of the community’s support for hospitals that provide high-quality care for patients and the environment, with improved healing and recovery rates increasing bed turnover.
Improved productivity and learning
Staff and students love RMIT’s Swanston Academic Building (SAB). The sustainability features, which earned a 5 Star Green Star rating, have delivered higher quality learning outcomes, as well as greater student engagement and space use. A survey of staff and student surveys found an 85 percent satisfaction rating with the building. What’s more, 77 per cent of staff felt the design, technology and environment within SAB had improved their delivery of learning material and engagement with students.

Delivering higher returns
Grocon’s investment in the 6 Star Green Star-certified PIxEL building in Melbourne was vindicated after the developer achieved a positive commercial return. The $6 million transaction, though modest, netted $1 million more than would a similar-sized, similar quality office without a Green Star rating. “This transaction proves that purchasers are increasingly attracted to unique, innovative and sustainable buildings,” said Grocon’s Chairman Daniel Grollo.

A future proofed investment
Australand achieved Green Star certification for its Key Spec 1 industrial development because “Green Star certification gives us assurance that we’re ‘future-proofing’ our investment,” says Australand’s Sustainability Manager, Paolo Bevilacqua. “When combined with the fact that it will reduce occupancy costs for our customers, we believe the Green Star rating gives both Australand and our customers a competitive edge in the market as utility costs continue to rise.”

A competitive edge in a crowded market
The University of Technology Sydney has three Green Star-rated buildings in the pipeline, including the Frank Gehry-designed Dr Chau Chak Wing Building. Having Green Star-rated buildings gives UTS “an edge in competing for students,” says UTS sustainability manager Danielle McCartney. “There is benchmarking around sustainability and Green Star which could make a difference.”
An employee retention tool
GPT Group’s new headquarters house some of the happiest workers in Sydney. Prior to moving, just 54 per cent of GPT workers were satisfied with their level of comfort in their working environment; the new space has achieved a 97 per cent satisfaction rating. “I’m proud to say I work in a green environment,” says one GPT employee.

Sustainability in action
The Sir Samuel Griffith Centre is a $40 million world-class building and Australia’s first off-grid, self-powering teaching and research facility. The building “gives an absolute physical expression to this university’s ongoing commitment to sustainability. It is a showcase of genuine sustainable energy alternatives for Australia and the international community,” says Griffith University’s Vice Chancellor, Professor Ian O’Connor.
The 2014 Green Building Report encompassed 133 respondents in total across Australia. More than three quarters of those were providers of professional services such as architects, engineers and consultants.

Participants came from companies of all sizes, ranging from such with 1-10 employees to those employing more than 100 people, with the small companies forming the largest group.
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GREEN BUILDING IN AUSTRALIA

GREEN BUILDING ACTIVITY

Nearly nine out of ten industry players in Australia stated that they had been involved in green building in one way or another in the six years since 2008. This surpasses the results of our previous studies and marks a significant increase from the 2010 survey (90 % from 83 %). We can therefore conclude that – at least as far as the sheer affiliation with green building is concerned – the Australian construction market has reached a decisive penetration rate. Green building appears to have “gone mainstream” in the Australian building industry.

AUSTRALIA

- 2006: 84%
- 2008: 85%
- 2010: 83%
- 2014: 90%
When we analysed the degree of involvement in green building state by state, the trends for most states or territories are quite similar to the overall Australian outcome. The exception was the result for SA declining to 75%, however, this may be a sampling anomaly.
GREEN BUILDING IN AUSTRALIA

ACT

2006 82% 2008 85% 2010 75% 2014 100%

VIC

2006 94% 2008 88% 2010 85% 2014 91%

NT

2006 100% 2008 100% 2010 86% 2014 100%

SA

2006 85% 2008 89% 2010 86% 2014 75%
Furthermore, we also looked at the degree of green building affiliation according to the respondents’ roles in the industry. Owners and developers were found to be the primary champions of green building in Australia, achieving 100% involvement. This may reflect an appreciation of the value of a Green Star rating in attracting and retaining tenants.

* In 2006, the results for owners and developers were combined.
GREEN BUILDING IN AUSTRALIA

CONTRACTOR/SUBCONTRACTOR

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Of those respondents that did pursue and achieve certification, 60% stated that they sought a Green Star rating as accredited by the Green Building Council of Australia. The remaining responses were spread across a wide range of local and overseas accreditation and rating systems.

Although the share of Australian firms involved in green building is the highest we have recorded to date, merely a third of survey participants indicated that their projects had been accredited by an official agency.

GREEN BUILDING CERTIFICATION

- Yes: 34%
- No: 66%

Others: LEED, BREEAM, GREEN MARK etc. 30%

LEED (US) 10%

GBCA Green Star 60%
GROWTH EXPECTATIONS FOR GREEN BUILDING - BY BUILDING CATEGORY -

Although publicly funded projects such as community buildings do not rate highly, the influence of the government sector is acknowledged as significant because of the minimum standards, for example, designated for their office accommodation. These are setting benchmarks for development in the private sector.

In the 2014 survey, our questionnaire sought the respondent’s opinion of the growth prospects from their company’s perspective. During the survey period we did note that business confidence was generally positive although business conditions remained subdued.

Bearing this in mind, although the actual rating values have been pulled back, the profile of responses is still similar to previous surveys with the commercial/office and education categories seen to afford the most potential. However, and this may be indicative of the current high levels of activity, residential, especially multi dwelling residential has edged in front of healthcare.

* In the 2010 survey Government funded projects formed a separate category.
  In 2014 this was replaced by the category Publicly funded, community & legal.
  **In 2010 the categories of multi residential & single residential were combined
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As in previous surveys, the two leading reasons for being involved are to achieve lower operating costs and concerns for the building’s impact on the environment – although this year they have switched places in the ranking. That the financial incentive appears to be emerging ahead of the idealistic motive is supported by the higher rating for the expected improvement in Return on Investment.

This year, the third place slot went to another financial incentive option which had not been considered in previous surveys – the enhanced value and improved marketability of buildings with Green credentials. As was mentioned in the introduction, Australia is now seeing green building principles applied to building refurbishments and upgrades. Having a good Green Star rating is being seen as important for retaining tenants as well as attracting them.

The relatively minor relevance of Green Building in government tendering probably is a measure of how well the principles are now being taken for granted. However, this still remains an issue for contractors who need to know how to deliver a green product at a competitive price!
REASONS AGAINST INVOLVEMENT IN GREEN BUILDING

We also survey the negative attitudes in the building and construction industry dissuading participants from getting involved in green building. As in our previous surveys (cited by over 90% of respondents) the perceived “higher cost of building materials” was confirmed as the most potent objection.

This year, spots 2 and 3 were occupied by the reasons “additional time and cost of documentation” and “additional time and cost to research materials”, respectively. This reinforces the view that it is the cost aspect that poses the major impediment to the adoption of green building elements by professionals although there is a sub-text that the extra effort to pursue complying design principles is a bit too hard.

However, given the positive growth trend of green building, and the observation that only 66% made mention of the upfront costs (compared with over 90% previously), we surmise that higher volumes may be helping to bring down the manufacturing costs of products meeting green building standards.
The floor is usually one of the largest surfaces in a room, however, when it comes to enhancing natural light in a building, it is generally one of the most overlooked elements of fit-out.

One Canberra, an iconic commercial project by Willemsen Design, shifted this approach and put a focus on the flooring and its interaction with the glass façade in order to maximise lighting efficiency and improve the indoor environment.

Maximising natural light throughout the floor plate was a key design criteria for One Canberra. The team knew that abundance of natural light would serve to improve occupant health (both physically and psychologically), and also reduce the need for artificial lighting, thus increasing energy efficiency.

To do this, the team installed new low “E” triple silver coated insulating floor-to-ceiling glass with a class leading 63% of visible light transmission and insulating ISO G value of 0.26.

In order to make the most of this light, the Willemsen team then looked to the flooring and sought a carpet with a high light reflective value (LRV) that would maximise this light throughout the floor plate, without compromising on the texture and colour.

According to Anthony Willemsen, CEO of Willemsen Group, “The Desso product was unique providing us an office area carpet which exceeded our requirements for light reflective value (LRV) whilst having a serviceable and aesthetically pleasing colour and texture.”

“We used the latest passive and active energy efficiency systems to achieve the lowest energy consumption possible whilst still providing optimum occupant comfort”.

“On sunny days the building is able to capture and transmit sufficient natural light across the floor plate to eliminate the need for artificial ceiling lighting, with only detailed work requiring task lighting support.”

Added to this, Desso carpets are designed and manufactured using circular economy and Cradle to Cradle® principles.

Inspired by the company vision to create environmentally responsible products that contribute to health and wellbeing, Desso has developed a unique range of carpets including Light Reflection Master, SoundMaster and its top selling AirMaster.

Desso AirMaster with Ecobase backing was recognised recently at the Australian BPN Awards receiving the judges commendation in the Innovation of the Year category.

For more information, please contact Colin Bray, Desso cbray@desso.com or visit desso-businesscarpets.com
The level of familiarity with the Green Star system as administered by the Green Building Council of Australia is encouraging. Although we are unable to make a direct comparison with our previous survey, there is reason to believe that it continues to improve, as in 2008, 37% of respondents claimed to have ‘good’ knowledge whereas, in 2014, 45% had either ‘detailed’ or ‘expert’ knowledge.

However, there was only limited awareness of other certification systems. Only 7% of respondents claimed detailed knowledge about the US LEED system and 5% about the British BREEAM scheme. Moreover, there was little evidence of working knowledge of the local regional systems such as Green Mark (Singapore), BEAM Plus (Hong Kong), GBI (Malaysia), TREES (Thailand) and Greenship (Indonesia).

Although not intended for inclusion in the study, it was clear from the responses that there is generally a good working knowledge of the rating tool NABERS (and NatHERS for residential use) for buildings’ actual performance which is to be expected following the introduction of the Building Energy Efficiency Disclosure Act of 2010.
THE INTENTION OF SEEKING GREEN BUILDING CERTIFICATION

We noted earlier that only a third of respondents had pursued certification for their projects previously. However, looking ahead, 47% of our participants stated that they were ‘very likely’ or ‘somewhat likely’ to seek an official green building certification. This hopefully is a sign that the “badge” is growing in status and as a result, in demand.

We will later explore the sentiments for and against pursuing certification but it is worth pausing to consider that more than half of the eligible projects are still unlikely to proceed with Green Star accreditation – including 16% of the participants who stated they will not seek certification but will still stick to green building standards.

PREFERRED GREEN BUILDING CERTIFICATION

As was to be expected given the familiarity with the various schemes demonstrated earlier, the Green Star system is the dominant option with the UK BREEAM and US LEED systems having minority shares.

However, among the other responses we recorded, there was a strong hint that some respondents would opt to pursue the NABERS rating tool on building completion and forego certification from design stage.
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PERCEIVED USEFULNESS OF CERTIFICATION BY BUILDING CATEGORY

We wished to determine whether the industry professionals regarded certification as being more useful for certain building categories than others. In light of their importance as an asset class, it was not surprising that commercial office buildings headed the list.

In general terms there appear to be two ‘classes’ of building type. With offices, education, public buildings, healthcare and multi-residential would appear to be the building types which would most benefit from certification.

In contrast, certification is considered less beneficial for hospitality, industrial, single residential and retail buildings.

THE MAIN REASONS FOR NOT SEEKING CERTIFICATION

The sheer upfront cost is clearly the favourite reason for not seeking certification. This should be taken into consideration with the result for the option “lacking credit being given to certification by our clients” – our interpretation is that the cost is likely to remain a potential barrier even if the client is educated regarding the benefits of certification. Moreover there is some scepticism regarding the eventual outcome with 39% believing that the performance reality may not measure up to what is promised at design stage.

Certification is also regarded as a difficult process (and requiring significant staff time) and that information on requirements is not readily available.

Nevertheless, relatively few participants are critical of the level of requirements – the bar has not been set too high.
In previous surveys, BCI elicited the expectations for commercial benefits of getting involved in green building. In 2014 we took the opportunity for a reality check and we asked about the outcomes of those initiatives.

In 2008, respondents were particularly optimistic about the sales opportunities afforded by green building and 16% anticipated ‘significant’ growth with a further 44% who expected ‘some’ growth.

These views were tempered in 2010 and 11% believed the sales growth would be ‘significant’ and 42% thought there would be ‘some’ growth.

In 2014, our survey revealed that ‘significant’ growth had been experienced by 6% of the respondents and only 14% confirmed that they had noticed ‘some’ growth. In our working figures, there were another 34% who reported growth as “little” but that should perhaps be ignored.

We would make one observation. As green building has become more accepted and expected, one might argue that firms would have run the risk of losing business if they did not have the skills and experience to deliver a green product.
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+ REDUCED ENVIRONMENTAL IMPACT
It has always been taken for granted that green building would involve additional building costs. It has also been frequently cited that the extra expense was a major factor inhibiting the uptake of green building design principles.

In 2010 we took the opportunity to check whether the actual experience had been as scary as we thought it might be. The alarming result in that year was that 30% of our sample believed green building incurred an additional cost of over 20%, well above the 9% of respondents in the survey of 2008.

The good news in 2014 is that the 2010 experience has not carried over with only 4% of our respondents assessing the additional cost factor as in excess of 20% and the major share falling into the +5% to +15% range.

The estimates vary by respondent type with owners/developers looking to be the most pessimistic and contractors being more frugal with the design and engineering professionals close to the middle. However, we must express our concern that 28% of respondents were unable to provide estimates of the additional costs for their projects.
SAVINGS IN OPERATING COSTS ATTRIBUTABLE TO GREEN BUILDING

As mentioned above, a major commercial motive for embracing green building principles has been the belief that these would lead to significant savings in operating costs, in particular, the lower consumption of energy and water. The most significant observation from this year’s survey has been the lack of attention to this key issue with 44% of our respondents unable to provide estimates. Earlier surveys have also been subject to a high degree of uncertainty although the “Don’t Know” responses in 2010 only amounted to 29%.

Comparing the distribution of responses over the past three surveys shows the initial optimism to have been somewhat overstated. Nevertheless, in 2014 48% of those respondents who were prepared to estimate the cost savings claimed those savings to be at least 10%. Also, when comparing the weighted averages of the estimated savings in operating costs over time the current experience of 6% is not that far off the expectation in 2008 of 7%. However, it is disappointing compared with the overall 2010 result of 9%.

A slightly different picture emerges from the analysis of the estimates of cost savings according to respondent type. Here we see that owners and developers rate the level of operating cost savings somewhat higher than the other respondents. As this sector has the most to benefit from these cost savings we can therefore have some confidence that green building is delivering on its earlier promise.
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This is another subject impacted by a high degree of uncertainty. Although the percentage of “Don’t Know” responses was high at 44%, this was substantially lower than the level of 58% recorded in 2008.

It was disappointing to see that 13% of the responses were that green building had “No Impact” on the value of the building. Nevertheless, the distribution of the other responses were comparable with those for previous surveys.

Looking at the results according to respondent type, we again see that owners and developers had a higher estimation of the benefit to building value of green building than the other respondents – as well as the lowest “don’t know” percentage.
INCREASE IN RETURN ON INVESTMENT (ROI) ATTRIBUTABLE TO GREEN BUILDING

With respondents struggling to estimate operating cost savings and improvement in building value it is not surprising that 50% of the responses to this question were “Don’t Know” just marginally better than the result for 2008.

We can however conclude that the improvement in ROI is reasonably comparable with what was expected previously with the distribution of responses fairly similar across the 3 surveys.

Consistent with the two previous questions, the owners and developers are clearly more confident of the degree of improvement than the professional services and contracting sectors.
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THE IMPORTANCE OF DESIGN SOFTWARE TO OPTIMIZE ENVIRONMENTAL PERFORMANCE

The preferred application of design software appears to be in the prediction and evaluation of solar heating and lighting. However, there is an interesting “spread” of responses with a substantial number of participants registering a degree of scepticism concerning the usefulness of design software available.
TECHNOLOGIES EMPLOYED IN GREEN BUILDING PROJECTS

In Australia, the three clear leaders were water efficient fixtures and fittings, rainwater and stormwater management/retention and insulation products for roofs, ceilings, walls and pipes. These were fairly closely followed by energy efficient/intelligent lighting, renewable energy systems and energy efficient appliances.

It will be interesting to see how this develops over the following years. Some technologies, such as co-generation and tri-generation energy systems will probably continue to suit only a limited range of projects, however, it would be rewarding if the use of recycled and renewable materials, waste water treatment and building control systems were to climb into the 60% and 70% ranges.
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GREEN BUILDING PRODUCTS AND TECHNOLOGIES - BRAND RECOGNITION

We asked our respondents to nominate 2 to 3 brands for each of the technologies that we had previously identified. We then collated the responses and have listed the brands according to the frequency of mention.
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In New Zealand, the respondent size comprised 110 professionals from the domestic building and construction industry. 60% of all New Zealand survey participants were employed in professional services as architects, engineers or consultants.

A range of company sizes were represented with small enterprises making up the largest share.
GREEN BUILDING ACTIVITY

81% of survey participants in New Zealand said they had been involved in green building in the period between 2008-2014. Hence, we conclude there is a substantial degree of green building in New Zealand as well, even if the number still lags somewhat behind Australia.

In contrast with Australia, where 100% of owners and developers declared involvement, it was the Professional Services group among our New Zealand respondents that showed the highest share of green building affiliation.
Of all the New Zealand survey participants, just 24% reported that they were involved in projects that had been certified by an accredited agency. This might imply that the importance of green building recognition in the New Zealand construction market is still in its early stages and/or that the obstacles to obtaining certification as described below still outweigh the perceived benefits.

Comparably with the Australian experience, for those firms that had had projects certified, the “Green Star” administered by the Green Building Council of New Zealand was the most favoured choice, with about 47% of the formally registered projects.
According to the New Zealand-based respondents, the categories of “education”, “publicly funded/community/legal” and “single residential” offer the most opportunities for the growth of Green Building.

Comparing the chart with that for Australia, it is clear that the future development of the New Zealand green building sector is still highly dependent on governmentally supported areas. Conversely, “commercial/office” was ranked only fifth, which highlights the disparity between Australia and New Zealand in terms of the adopting of green building principles within the private sector.
It is probably no great surprise that the ranking of the reasons for New Zealand respondents to adopt green building principles in their projects closely matches those of their Australian counterparts.

Lifecycle cost reduction has the clear lead as the most important objective, with concern for the environment a reasonably close second choice. Not far behind is the intention to gain enhanced value and marketability through green building credentials. Interestingly, there are some strong differences as well as similarities between the attitudes of the various respondent types. On the whole, the contractors and subcontractors are more inclined to find benefit in getting involved, including, like their Australian counterparts, to be eligible to win Government tenders!

One could summarise by saying there is a healthy balance between what is good for the business and what is good for the environment!
REASONS AGAINST INVOLVEMENT IN GREEN BUILDING

As was recorded for the Australian market, cost related issues, in particular, the costs of materials, were considered the major obstacles for the industry to pursue green building initiatives.

A slightly different picture emerged regarding the respondent roles, with New Zealand builders and subcontractors being noticeably more negative than the other respondents as well as their counterparts in Australia.
FAMILIARITY WITH CERTIFICATION SYSTEMS

Knowledge of the Green Star systems does not appear to be as deep in New Zealand as in Australia although the result may be “diluted” between the responses for the New Zealand and Australian versions. Making allowances for that, it would seem that around 30% of respondents are claiming detailed or expert knowledge compared with 45% in Australia.

Regarding the awareness of International systems, there was quite a drop from the local to the UK BREEAM and US LEED systems with a similar gap between these and the local regional schemes. However, one respondent did claim detailed knowledge of the Vietnamese Lotus system.
THE INTENTION OF SEEKING GREEN BUILDING CERTIFICATION

Although, at 37%, the percentage of respondents who indicated they are ‘very likely or ‘somewhat likely’ to seek official green building certification was behind that of Australia, this does represent a substantial improvement over the 24% that had sought accreditation for previous projects.

We will later explore the sentiments for and against pursuing certification and addressing those issues may help to convert the 21% of respondents who are committed to stick to green building principles while still not seeking certification.

PREFERRED GREEN BUILDING CERTIFICATION

As was to be expected given the familiarity with the various schemes demonstrated earlier, the Green Building Councils are the dominant options with the UK BREEAM and US LEED systems having minority shares.
PERCEIVED USEFULNESS OF CERTIFICATION BY BUILDING CATEGORY

The industry professionals in New Zealand rate the utility of certification for the various building categories similarly to their Australian counterparts although there is not a divide between two classes – more a steady gradation.

Commercial offices and education head the list, closely followed by healthcare and public buildings.

However, New Zealand shows a bit more optimism for hospitality and single residential than Australia while slightly more pessimistic for the retail and industrial sectors.

THE MAIN REASONS FOR NOT SEEKING CERTIFICATION

The cost of the certification process is head and shoulders above all the other reasons deterring the New Zealand professionals from seeking certification. Extra requirements for staff time is ranked the second reason and also reinforces the cost issue. Further, clients are perceived not to appreciate the value of certification, but as with the Australian experience, there may be limits to how education of clients may mitigate the perceived cost barrier.

We found it interesting that the New Zealand respondents found the factors of difficulty of certification and the level of requirements were less onerous than the Australians but won’t buy into any inter-country rivalry about professional qualification standards.

We were however a little concerned at a number of the informal comments which the participants posted which suggested that some aspects of the certification process were not always appropriate to the circumstances of the development.

<table>
<thead>
<tr>
<th>Building Category</th>
<th>Perceived Usefulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial/Office</td>
<td>3.2</td>
</tr>
<tr>
<td>Education</td>
<td>3.2</td>
</tr>
<tr>
<td>Healthcare</td>
<td>3.2</td>
</tr>
<tr>
<td>Public funded/Community/Legal</td>
<td>3.1</td>
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<tr>
<td>Multi Residential</td>
<td>3.0</td>
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<tr>
<td>Hospitality</td>
<td>2.8</td>
</tr>
<tr>
<td>Single Residential</td>
<td>2.8</td>
</tr>
<tr>
<td>Retail</td>
<td>2.6</td>
</tr>
<tr>
<td>Industrial</td>
<td>2.6</td>
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</table>

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of certification process</td>
<td>62%</td>
</tr>
<tr>
<td>Staff time required</td>
<td>38%</td>
</tr>
<tr>
<td>Lacking credit being given to certification by our clients</td>
<td>37%</td>
</tr>
<tr>
<td>Difficulty of certification process</td>
<td>33%</td>
</tr>
<tr>
<td>Gap between ‘design promises’ and the performance reality</td>
<td>33%</td>
</tr>
<tr>
<td>Lacking information on certification requirements</td>
<td>33%</td>
</tr>
<tr>
<td>Time of certification process</td>
<td>32%</td>
</tr>
<tr>
<td>Requirements too high</td>
<td>23%</td>
</tr>
</tbody>
</table>
SALES GROWTH ATTRIBUTABLE TO GREEN BUILDING

The pattern of sales growth in New Zealand fairly closely matches that observed in Australia. 7% of firms in our survey attributed ‘significant’ sales growth to green building activity with a further 11% reporting ‘some’ growth. In our working figures, “Little” growth was also reported by a further 35% of respondents.

Looking at the results according to respondent type, we noted that the design and engineering professionals witnessed the largest sales increase, followed by owners and developers.
ADDITIONAL UPFRONT BUILDING COSTS ATTRIBUTABLE TO GREEN BUILDING

The profiles for the estimate of actual additional costs was fairly comparable with that for Australia “clustering” in the +5% to +15% range. As is the case in Australia owners/developers are at the upper limit of the estimates with contractors at the lower limit.

We would like to be more enthusiastic about this outcome but we have to express our concern for the high value of 35% of respondents who cannot provide an estimate for the additional upfront costs for their projects.
SAVINGS IN OPERATING COSTS ATTRIBUTABLE TO GREEN BUILDING

Lack of information regarding the degree of savings in operating costs is even more prevalent in New Zealand with a surprisingly high 47% of respondents taking the “Don’t Know” option in our questionnaire.

As this is the first survey we have undertaken, we cannot make comparisons with earlier expectations but the results appear to have a similar profile to those for Australia and a significant proportion have indicated savings of at least 5%.

In contrast with the Australian results, the owners and developers in New Zealand appear less confident in the level of savings and look to rank just below the professional services sector with their estimates.
INCREASE IN BUILDING VALUE ATTRIBUTABLE TO GREEN BUILDING

Unfortunately the degree of uncertainty regarding this issue has gone beyond the 50% mark. However, we can draw the conclusion from the responses of those participants who have provided estimates that there are improvements in building value attributable to green building but of a modest nature. 17% have indicated improvements of at least 10%.

At slight variance with the results for the savings in operating costs shown above, construction contractors and subcontractors appear the most confident of the increase in building value for green projects.
INCREASE IN RETURN ON INVESTMENT (ROI) ATTRIBUTABLE TO GREEN BUILDING

We have to approach this subject as it relates to the New Zealand experience with some caution. Respondents found it difficult to estimate operating cost savings and improvements in building value and therefore we should not be surprised that some 64% of the participants registered a “Don’t Know” answer for their estimated increase in ROI.

It is difficult to be definitive but we think it worth pointing out that of the participants who did venture an estimate, the median point of their responses was just over the 5% level.

Again at odds with their Australian counterparts, the owners and developers would seem to have the lowest rating for improvement in ROI behind the contractors and subcontractors and the professional services sector.
THE IMPORTANCE OF DESIGN SOFTWARE TO OPTMISE ENVIRONMENTAL PERFORMANCE

It would be fair to say “the jury is out” in New Zealand concerning this subject. The ratings average out at quite a low value with a considerable share of the respondents judging the use of design software as “Not Important” in this area.
TECHNOLOGIES EMPLOYED IN GREEN BUILDING PROJECTS

The stand out product in green building projects in New Zealand was insulation with a 90% response rate – perhaps the climate conditions may account for this to be a basic assumption in most construction projects.

This was followed at some distance by energy efficient/intelligent lighting at 73%. The other leading items comprise the others from the top 4 technologies as cited in the Australian survey, namely rainwater and stormwater management/retention and water efficient fixtures and fittings.

Apart from the result for insulation, generally the New Zealand market appears to be trailing Australia in the adoption of these green technologies and it will be interesting to see how quickly this gap will close.
We asked our respondents to nominate 2 to 3 brands for each of the technologies that we had previously identified. We then collated the responses and have listed the brands according to the frequency of mention.
GREEN BUILDING MARKET REPORT FOR SOUTH EAST ASIA 2014

At the same time BCI Economics was surveying the Australian and New Zealand green building market, we were also analysing responses from 523 developers, architects, main- and sub-contractors across Southeast Asia to a questionnaire about their views on and experiences with green building.

In this survey, we found that around 7 in 10 respondents across the region stated that they had been involved in some form of green building during the period of 2008-2014. Hong Kong led the way with 83% involvement with Singapore and Malaysia close behind at 82%, comparing favourably with the results for Australia (90%) and New Zealand (81%).

Overall, the South East Asian respondents were more prepared to proceed with green building certification than their counterparts in Australia (34%) and New Zealand (24%). The average response of 46% however, masks a wide range of commitment with Hong Kong taking 90% of their green building projects through to certification (and Singapore was close behind at 82%). On the other hand, Thailand at 21% and Indonesia at 24% appear to be much less enthusiastic.

Attitudes for and against the adoption of green building principles in general and towards pursuing certification as expressed by the South East Asian respondents were fairly comparable with those in ANZ with the additional costs incurred in green building being balanced against the perceived commercial benefits. Interestingly, although the upfront costs were perceived higher in South East Asia (a premium of 11%) than in ANZ (6% to 7%), the financial benefits were also estimated to be higher. The average savings in operating costs in South East Asia were estimated at 9% and the increase in the building’s end value attributable to green building also averaged out at 9% compared with the ANZ estimates of 6% and 4% respectively.

Across the countries, water efficient fixtures and fittings stood out as being frequently incorporated into green building projects together with energy efficient/intelligent lighting and insulation products although the individual rankings did vary. And, as was done for Australia and New Zealand, we have reported the popular brands identified by the participants in the South East Asian survey.

If we have sparked your interest you can easily access the results of the survey by downloading from:


Publication date: 24th November 2014

And we are happy to advise that the report may be downloaded free of charge!
METHODOLOGY

Research for this report was conducted under the supervision of Dr Matthias Krups PhD, Chairman of BCI Media Group and spearheaded by Petra Berning, General Manager of BCI Economics.

The survey was taken online and analysed by BCI Economics’ in-house analysts. Between March and May of 2014, invitations to participate in our online survey were sent out to a random sample of contacts drawn from BCI’s highly sophisticated industry database. Given that the decision to participate in the survey was out of interest in the topic of green building, it is fair to assume that our sample would be likely skewed in favour of sustainability principles.

In order to compare the 2014 results with the results ascertained in the prior surveys in 2006, 2008 and 2010, we utilised a questionnaire that was similar to the previous surveys. A few changes were made to take account of the new conditions in the market.

For those issues where value judgements were canvassed, a 4 or 5 point Likert scale was adopted with ‘1’ representing a very negative rating and ‘4’ or ‘5’ a very positive rating.
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