

The Value Case for Green Building in New Zealand

September 2010

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Introduction

The environmental benefits from building green are beyond dispute. Internationally it has been proven that green buildings deliver a suite of compelling economic and social benefits that conventional buildings do not. New Zealand is now moving in this direction with an expanding stock of green buildings.

Studies have identified that industry take up of certified green building ratings can be hampered by a lack of clear information on the business case for green buildings.

Internationally a number of studies into the costs and benefits of commercial green buildings have been completed, particularly in the United States of America (US), Canada and the United Kingdom (UK). Little comparable research into certified green buildings has been undertaken in New Zealand and only a small amount of anecdotal evidence is currently available.

This document goes part way to closing this gap by clearly detailing the compelling value proposition for certified green buildings in New Zealand through the consolidation of international findings, reinforcing these findings with local examples and identifying where further research is needed.

The value proposition for green buildings can be addressed from a benefits perspective to:

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Property investors are key players in the development of buildings, but they also play a critical role in changing market behavior.¹ Demand is created by investors, through increased accountability required of corporates, certification to internationally recognised standards and an increase in competition through sustainability indices.

Risk Mitigation

NZ institutional investors, including the New Zealand SuperAnnuation Fund have advised the New Zealand Green Building Council (NZGBC) that certified green buildings provide new opportunities for property investors where these buildings meet risk/return hurdles. These investors are expecting property managers to give consideration to certified green buildings and the management of long term risks from climate change, including understanding trends in energy and resource costs, consumer demand and the regulatory environment.

Increased Return on Investment (ROI)

The ROI for green buildings has jumped 50% in three years as building values rise and operating costs tumble, according to a new survey of the commercial building sector in the US. This report,² produced in conjunction with the US Green Building Council, states that green buildings now experience a 9.9% ROI, up from 6.6% in 2005.

Enhanced Marketability

The public perceives certified green buildings as an environmentally responsible approach to construction and development. Corporations that are associated with green buildings (whether through direct ownership or via fund investment) can benefit from this perception and use it to enhance their brand position as well as promote alignment with their corporate social responsibility (CSR) programs.

In particular, investment funds can use this association to market and attract their own investors. Investment funds that brand themselves as socially responsible or ethical often enjoy strong consumer interest.

According to figures released by Ethical Investment Research Service (EIRS) the amount of money invested in Britain's green and ethical retail funds has reached an all-time high of £9.5 billion in 2010.

This is up from only £2.4 billion that was invested in 1999 and clearly shows the increase of interest in socially responsible or ethical investing.

Reduced Carbon Risk

Worldwide governments are starting to implement requirements and legislation around carbon emissions. The Intergovernmental Panel on Climate Change states that buildings account for 8.6 gigatonnes of carbon dioxide emissions, or almost one quarter of total world emissions.³

An article in The Australian⁴ points out that "investors need to understand how our decisions on where to invest our money expose us to carbon risk". Investing in certified green buildings helps to mitigate this risk.

A 2009 NZGBC discussion paper found that 17% of New Zealand carbon emissions are from the construction and operation of buildings, which is a substantial emissions total, with significant cost-effective reductions possible. This is particularly significant given that almost half (48%) of New Zealand's emissions are from agriculture and 20% from transport, both of which are difficult and costly to reduce, thereby increasing the focus and requirement for carbon reduction from the building sector.

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Developers

One of the major obstacles to developers building green has been the tendency to hold a short term view, i.e. build it, sell it and move onto the next development. However, developers have much to gain from going green and the following benefits have been identified for developers.

2% TO 5% SAVING
IN CAPITAL COST⁵

16% INCREASE
IN SALES PRICE⁶

ROI OF 9.9%²

Capital Cost Savings

Optimising building systems can lead to substantial savings in capital costs. Davis Langdon found in Australia that a 4 Green Star certified building could expect to experience a 2% – 5% saving on the up front capital cost. For example downsizing HVAC systems through energy efficient design not only produces savings in ductwork, but by reducing the requirement for bulky mechanical equipment, more floor space can be made available for leasing.

Increased Sale Price

It has often been claimed that certified green buildings have higher property valuations over non-green buildings, however until recently this claim has not been able to be robustly substantiated.

A recent RICS report,⁶ looking into sales prices of green buildings in the US market, found that a 16% premium was being experienced over business as usual buildings

Improved Marketability

Green buildings are identified by the public as being contemporary, leading edge and high quality.

These buildings have a higher profile than other buildings and their owners enjoy the well-deserved public perception of goodwill toward employees and the community. These qualities provide an excellent basis for marketing the building to potential tenants.

Access to Capital

Debt funding may soon become easier and less expensive for certified green buildings in New Zealand. There is often less perceived credit risk in the development of certified green buildings, due to their ability to command higher rents and better tenants.

Asset Protection

Government and large corporate organisations are increasingly incorporating green principles into their property requirements. Developing a certified green building anticipates potential future changes in market demand and legislation thereby protecting expensive developments.

Compressed Schedule

An integrated team approach to design (as required when using Green Star) results in fewer design conflicts and subsequent change orders.

American studies have shown that green building projects are routinely coming in on time and ahead of schedule. In New Zealand local authorities are discussing accelerating building approvals for projects going through the Green Star process.

“Upgrading the average non-‘green’ building to a ‘green’ one would increase its capital value by some \$5.5 million.”⁶

Astute building owners are increasingly recognising that green buildings have significant benefits. Green buildings may be self managed or managed through an independent facility manager, however in many cases the drivers for owning them are similar.

Lower Operating Costs

Worldwide it has been proven that green buildings have a lower operating cost.⁷ These reduced costs can be realised directly by the building owner, but can also flow through to the owner by way of increased rent when compared with non-green, and less efficient, but otherwise comparable buildings.

Tenant Attraction and Retention

Green buildings have significant benefits for their occupants. As such there is increased demand for space in green buildings and this is reflected in the increased pre-commitment or winning of tenants in comparison with non-certified competitors.

The added attraction of certified green buildings over 'business as usual' buildings also leads to an increased retention of existing tenants.

According to Paul Day from Savills Queensland, "all tenants want to be a part of the green solution, even small tenants, which has led to an unprecedented number of new buildings registering and achieving a Green Star rating in Queensland". Mr Day believes, however, that it's not the new stock under threat, it's the old stock that will have to be taken off the market and retrofitted to Green Star.¹⁰

Reduced Liability and Risk

In the USA the insurance industry is becoming increasingly aware of lawsuits associated with building sickness and other indoor air quality issues, resulting in rising insurance costs. Some industry experts are predicting that insurance companies will start linking lower insurance premiums to green buildings.¹¹

In New Zealand the insurance industry is realising the benefits of green buildings and in 2008 NZI launched a new suite of sustainability insurance products for use in commercial buildings.¹²

Higher Lease Rates

Tenants want environmentally sustainable and productive workspaces that demonstrate their commitment to corporate social responsibility and will pay increased lease rates to obtain space in these buildings. International studies have shown that certified green buildings can experience a 5% to 10% increase in lease value over business as usual buildings.⁷

Increased Property Values

In the US it is now the norm for certified green buildings to command a 30% price premium over similar non-certified buildings due to the economic benefits they offer.¹³ US experts believe that it is only a matter of time before Grade A office buildings without certification see their property value decline as LEED certification becomes the defacto benchmark in measuring quality in construction.

**5% TO 10% INCREASE
IN LEASE VALUE⁷**

**60% OF ASIA PACIFIC
COMPANIES WILLING
TO PAY A PREMIUM
RENT TO OCCUPY
SUSTAINABLE SPACE⁸**

**OPERATING COSTS
DECREASED BY 8% TO 9%⁹**

"When we started our search for new premises a number of requirements were listed, one of which was a building with a Green Star rating. Sustainability is important to our people and we recognised this as we considered our building options."

SOPHIA GUNN

Chief Operating Officer / Independence Director of Deloitte
(tenant in the 5 Green Star - Office Design and Office Built rated 80 Queen St)

CASE STUDY

**CHRISTCHURCH CIVIC BUILDING**

Christchurch's new Civic Building is the greenest building in New Zealand, achieving a 6 Green Star – Office Design certified rating in early 2010, with the highest number of points achieved, from the New Zealand Green Building Council.

"With 6 Green Stars and 83 points we have designed the greenest building in New Zealand," says Christchurch Mayor Bob Parker. "This represents significant annual energy and cost savings for our ratepayers and reflects the Council's commitment to creating a sustainable future for our community and the region."¹⁴

The building is designed to save \$1.3 million in energy annually through its innovative Tri-Generation system, and 85 per cent of its hot water will be heated by solar power.

CASE STUDY

**THE DELOITTE CENTRE, 80 QUEEN ST**

The Deloitte Centre is one of Auckland's most well-known environmentally sustainable commercial buildings. It was one of the first high rise tower in New Zealand to achieve a 5 Green Star – Office Design rating.

The premium-grade office tower was developed, built, owned and managed by Brookfield Multiplex and is tenanted by BNZ and Deloitte.

Brookfield Multiplex recently sold 80 Queen St for just under \$180 million, at a yield of about 7.6%.¹⁵

CASE STUDY

**MERIDIAN BUILDING**

The Meridian Building was New Zealand's first completed 5 Green Star building rated under the New Zealand Green Building Council's (NZGBC) Green Star - Office Design certification scheme and is Meridian Energy Ltd's head office.

The building was the first to be constructed on Wellington's waterfront in a decade.

A post occupancy study of the Meridian Building showed that staff productivity has improved by about 9%. Employees are exceptionally comfortable in this building and are therefore productive. Comparatively speaking the new building outperforms the former Meridian office building in all areas, particularly in productivity.

Tenants are beginning to realise that, other factors being constant, green buildings demonstrate large financial, social and environmental benefits when compared with non-green buildings.

UP TO 25% INCREASE
IN PRODUCTIVITY⁷

15% REDUCTION IN
ABSENTEEISM¹⁶

UP TO 60% REDUCTION
IN WATER AND ENERGY
USE⁷

Increased Productivity

In commercial buildings, payroll costs greatly overshadow all other costs for a business. A Californian report¹⁷ found that four attributes associated with green buildings (increased ventilation control, temperature control, lighting control and daylighting) positively and significantly correlate with increased productivity.

The Szencorp building at 40 Albert Street in South Melbourne was the first existing office refurbishment in Australia to be awarded a 6 Star Green Star – Office Design rating. A 2009 workplace satisfaction study¹⁸ found an 11.5% increase in staff productivity and that 54% of staff perceived that it was “more healthy” working in the refurbished building. New Zealand buildings are achieving similar levels of productivity improvement – see Meridian Building.

Reduced Operating Costs

Certified green buildings are designed and built for energy and water efficiency, making them cheaper to operate. The Szencorp building has reported energy savings of over 70% after two years of operation.

Reduced Absenteeism

It is generally accepted that buildings with toxic substances, poor ventilation and insufficient natural light can increase staff sick days. The ING headquarters in Amsterdam claims a 15% reduction in employee absenteeism due to improved indoor environment quality.¹⁹

Increased Staff Attraction and Retention

In aggressive recruitment markets tenants are realising the benefits of a building's environment in gaining a competitive edge in attracting talent. A common view is that if you fail to understand what drives Generation Y you will fail to attract or retain the very people who hold the key to an organisation's survival.

A recent study has shown that 98% of Generation Y aspires to working in a green building.²⁰

Corporate Social Responsibility (CSR)

Taking space in a certified green building is a clear demonstration of a company's commitment to CSR. Official certification schemes, such as Green Star, verify and substantiate green claims allowing tenants to publicly report their achievements.

When IAG decided to build a new Green Star rated head office they saw it as an opportunity to demonstrate that CSR starts at home.

Reduced Cost of Churn

Churn is defined as the frequency with which building occupants are moved (either externally or internally). Research in Australia has found that the cost of staff churn can be A\$2482 per person.¹⁶ Green buildings often incorporate systems (such as raised floors) that allow workstations to be rearranged without costly rewiring and HVAC modifications, thereby reducing the cost of churn.”

Future Proofing

Certified green buildings use less water and energy than conventional buildings, thereby providing a buffer against future increases in water and energy services costs and protecting against services shortages. In New Zealand the insurance industry is realising the benefits of green buildings and in 2008 NZI launched a new suite of sustainability insurance products for use in commercial buildings.²²

98% OF GEN Y
WORKERS
ASPIRE TO WORK
IN GREEN
BUILDINGS²⁰

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Capital Cost Impact

Several international studies have focused on the capital costs of green buildings and these studies have played an important role in driving the shift to building green.

To date New Zealand has not had the penetration of certified green buildings to conduct a similar analysis and therefore little research has been conducted on the cost impact in the New Zealand market.

Overall the international consensus is that green buildings cost around 2% more to design and construct. In particular, since 2003, the US Green Building Council (USGBC) has studied more than 200 commercial office buildings across the US and determined the cost premium to build green to be, on average, 1.84% across the various certification levels.

However, significantly, the USGBC found there was absolutely no correlation between the amount of money that had to be spent and the shade of green. There is even some evidence to suggest that the integrated thinking, and solution driven design processes, associated with green building means that you reduce the amount of risk, construction time, and variations and the capital costs are actually less.

In Australia Davis Langdon has undertaken some research analysis on the construction cost impact of incorporating Green Star into a project.

This research shows that a 4 Green Star building can actually be built cheaper than a Business As Usual (BAU) building. It also shows that a 5 Green Star building need not cost any more than a BAU building.

A study was completed in New Zealand in 2006 that found that the difference in the initial capital cost of the green case study buildings, compared to conventional good quality buildings, varied quite widely (from 15% less to 11.5% more), with sustainable features initially costing an average of 2-6% more.²¹

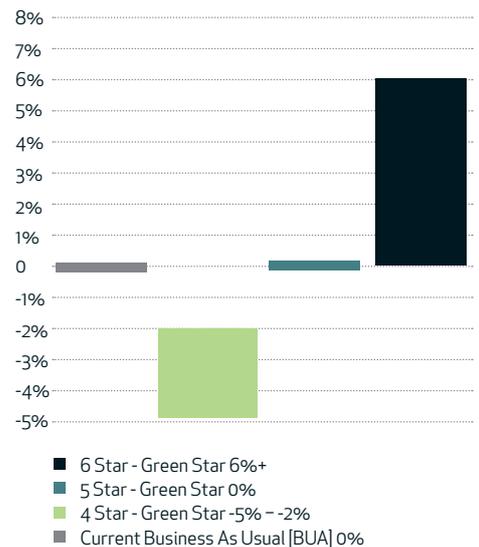
With the numbers of Green Star NZ certified buildings increasing further research will soon be possible into the costs of developing certified green buildings in the New Zealand market.

“Green is only more expensive when the procurement process is fragmented”

Peter Gomm
CEO Mainzeal Property and Construction

“A major barrier to the greening of the industry is the misconception that the capital costs of green buildings are significantly higher than those of conventional buildings.”²¹

Office – Design & As Built Capital Cost Impact [%]⁵



Endnotes

1. Ethical Investor, July 2008 Issue 78
2. McGraw Hill Smart Market Report
3. Working group III: Mitigation of climate change, IPCC fourth assessment report, 2007
4. How green is your portfolio, The Australian, 30 July 2008
5. The Road to Green Property, Davis Langdon, Version 2.0 June 2010, Page 09
6. Doing well by doing good? An analysis of the financial performance of green office buildings in the USA, RICS research report, March 2009
7. The Dollars and Sense of Green Buildings, GBCA, 2006
8. 60 Percent of Asia Pacific Companies Willing to Pay a Premium Rent to Occupy Sustainable Space, Despite Tighter Economic Environment, Jones Lang Lasalle, MACAU, March 26, 2009
9. The dollars and sense of green buildings, GBCA, 2008, Page 46
10. The dollars and sense of green buildings, GBCA, 2008, Page 39
11. The dollars and sense of green buildings, GBCA, 2006, Page 51
12. <http://www.nzci.co.nz/AboutNZCI/News-and-Media-/NZCI-launches-commercial-sustainability-suite.aspx>
13. www.reuters.com/article/idUS54332971520100709
14. <http://www.ngaitahu.iwi.nz/News/Media/Media-Releases/2010/New-Zealands-greenest-building.php>
15. http://www.bdccentral.co.nz/afa.asp?idWebPage=8338&idBobDeyProperty_Articles=14145&SID=217718484
16. The dollars and sense of green buildings, GBCA, 2006, Page 56
17. The Costs and Financial Benefits of Green Buildings, A report to California's Sustainable Building Task Force, Greg Kats, October 2003
18. Encompass Sustainability and Building Use Study
19. Rocky Mountain Institute Case Studies, www.rmi.org/nz
20. Gen Y and the workplace annual report, 2010
21. Value case for sustainable building in New Zealand, Ministry for the Environment, 2006

