

ABOUT US 2

Green Building: Your Time to Link

BUILDING HAS A complex delivery chain. Investors and developers, architects and engineers, quantity surveyors and interior designers, construction companies and legal teams make up just some of the links in the building value chain that is responsible for the delivery of the end product: a building.

The recent introduction of Green Star NZ, New Zealand's green building rating tool, has given a name and process to a new product: a green building. This edition of Futures helps you understand what this means to you and the ramifications for you as industry leaders strive for best practice in delivering green buildings.

We have asked stakeholders to shed light on their experience of green building within their particular link of the value chain, so this edition features contributions from industry representatives in various sectors; architecture, engineering, construction, product manufacturing, tenancy, and law.

Whatever your position in the building value chain, the key questions you should be asking yourself are:

- 1. What products or services can I offer to this growing market?
- 2. How do I communicate this in relation to Green Star NZ, and what information do people need (e.g., ISOI400I, various reports and

documentation demonstrating compliance)?

- 3. How do I integrate this thinking throughout the entire company by walking the talk and realising the benefits of sustainability myself?
- 4. What opportunities exist in the market that are not currently being met and how can I fill those gaps?

As our commercial building sector embraces green building seemingly overnight, the learning curve for many has been steep. To ensure members of the New Zealand Green Building Council (NZGBC) are well positioned to meet this growing demand in New Zealand, we are working hard to expand the Green Star NZ suite of rating tools to cover other building types beyond our inaugural tool – Office Design.

We have begun work on the tools for schools and industrial buildings, as well as on those which complete the Office suite. In addition, the GreenBuild product database will fill an important gap that currently exists; access to independent product information to specify your building to Green Star NZ requirements. You can find more information about this exciting development in this edition's case study.

Jane Henley

CEO - New Zealand Green Building Council

The Building Value Chain Edition

FOCUS

Government Mandates Green Star NZ

PRIME MINISTER HELEN Clark has mandated the green building rating system Green Star NZ by committing new government office space to its endorsement.

"From I July, all new A-grade office buildings being constructed to house government staff in central business districts must have a minimum five-star Green Star NZ rating, which represents New Zealand excellence. A Green Star NZ four-star rating is required for B grade office buildings signifying best practice standard," the Prime Minister said at the Property Council of New Zealand Awards on 29 June.

The stance is the strongest support yet the Government has shown for the initiative the industry has already taken with the formation of the New Zealand Green Building Council and its introduction of Green Star NZ.

Jane Henley, chief executive officer of the New Zealand Green Building Council, welcomes the move.

"The government endorsement of Green Star NZ sends a strong message to the industry that third party voluntary industry standards have their place and complement compliance requirements," she says. "Green Star NZ was designed by industry to meet the needs of both government and industry and it is through this type of partnership that green building will become standard practice over time."

Henley says, "The industry has really taken a lead in New Zealand, in line with strong international trends towards green building, especially as the business case for green building is becoming more attractive by making sound economic, social, as well as environmental, sense."

With a growing international commitment to the reduction in greenhouse gas emissions, government-led improvement in the efficiency of building design and operation is viewed as a necessity.

In January, the White House issued an executive order known as the 'High Performance and Sustainable Buildings Memorandum'. As a result, many state governments across the United States are committing to the targets set by LEED (Leadership in Energy Efficient Design), the environmental rating system which is the US equivalent to Green Star NZ.



Above: Jane Henley and Prime Minister Helen Clark.

The Green Star NZ rating system has been adapted from the successful Australian Green Star system. It sets a standard for industry best practice by evaluating building projects against eight environmental impact categories such as energy, water, indoor environment quality, and materials.

Within each category, points are awarded for energy efficient initiatives before an environmental weighting factor is applied and an overall score is calculated, determining the project's Green Star NZ rating. Every project submitted to the NZ Green Building Council for certification is also assessed by independent assessors for third party verification.

The Prime Minister's address also acknowledged the important role the building and construction industry has to play in New Zealand becoming a truly sustainable nation.

FUTURES is produced by the New Zealand Green Building Council. www.nzgbc.org.nz

BUILDING VALUE CHAIN

Perspectives this issue from:

ARCHITECTURE

Architects and Design

ENGINEERING

Engineers

PRODUCT

Building Product Manufacturers and Distributors

CONSTRUCTION

Property Construction Professionals

LEGAL

Related Interests

TENANT

Owner Occupier

Further perspectives next issue from:

DEVELOPERS

Commercial Property Developers

INVESTORS

Investor Owners and Managers

RESIDENTIAL

Portfolio Owners and Developers

EDUCATION/NGO

Higher Education, Research and NGO's

PROFESSIONALS

Property Professionals

CONTRACTORS

Building Contractors

As GREEN BUILDING mushrooms both internationally and within New Zealand, we asked people working at the coalface for their perspective.

In this month's case study, stakeholder representatives share their views on just what effects the green building movement and the recent release of Green Star NZ are having upon their sector of the building industry.

Invited contributors are industry representatives from various links in the building value chain – from architecture, engineering, construction, product manufacturing, tenancy, and law. They have been chosen because their companies and organisations are regarded as innovative market leaders due to their early adoption of green building considerations.



CASE STUDY

BUILDING VALUE CHAINPerspective: **ARCHITECTURE**

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John Rogers
DIRECTOR

Craig Craig Moller Wellington

Craig Craig Moller Wellington is a design-led medium sized architectural firm. CCM focuses on large complex projects, health sector work, airports and domestic projects. Commercial offices in Wellington for the government sector is currently a major part of its portfolio.

IN THE LAST two years our firm has noticed a huge up-swell of interest in sustainable architecture, led in particular by large institutional clients and Government.

We have been involved in two major building projects since the introduction of Green Star NZ this year, both of which are adopting this rating system from start to finish. This focus typically involves us in a separate tier of meetings during the design and development stage of the project.

As the subject matter is complex and the cost issues are significant, we experience intense interest from the client/developer which is just as strong from the prospective tenant. We find our design process is becoming, of necessity, focused on achieving optimal solutions that meet the Green Star NZ rating set by the client.

As the demand for a high Green Star NZ rating is now coming from tenants, with some tenancy agreements being linked to achievement of Green Star NZ points, it becomes critical that all nuances of the guide are understood and embraced. We find there is much room for 'interpretation' in the defini-

tions that will need clarification in due course.

Green building is evolving rapidly so we seek the advice of Environmentally Sustainable Design (ESD) specialists at the outset of a project (who stay with us throughout), and endeavour to absorb their early suggestions into our design process. We find this brings significant improvement in our approach to building design and delivery.

We spend considerable time researching fresh opportunities in green building as a high degree of competence will be expected of all leading design professionals in the near future. We now have a much better understanding of the crucial issues that face engineers in the reduction of heating and lighting loads, and this is a critical skill to have in the new ESD marketplace. Significant opportunity arises for the base building architect from having an integrated fit-out.

There are also opportunities in really addressing and justifying the recycling of existing buildings, and from introducing genuine 'innovation' into any project.

BUILDING VALUE CHAINPerspective: **ENGINEERING**

Quentin Jackson DIRECTOR

e Cubed Building Workshop (e3BW)

e Cubed Building Workshop (e3BW) synthesises traditional mechanical and electrical services engineering design with new trends in sustainable design. The company has offices in Auckland and Wellington and offers a range of services in the field of sustainable building design, evaluation and research.

WE WORK ALONGSIDE architects and traditional engineering consultants to develop a sustainable design framework and concepts which are refined and tested by the use of advanced modelling tools. Before the release of the Green Star NZ Office Design tool we were working with clients using the Australian Green Star system as a guide, and we are pleased to see that the New Zealand system is very closely related to it.

Having New Zealand Green Building Council (NZGBC) as an independent body that will impartially assess projects for their sustainability means that clients can easily understand how their projects fit into the current market. The rating tool has not really changed the way we do business, but just gives us more credibility with our clients.

We are getting asked more and more to sit on the tenant side of the design team and help the tenant understand how the building being designed for them is meeting their needs. This has added a service to our company of being ESD advisors. Many clients also want pre-assessment checks before going through the 'official' NZGBC process to know how on target they are.

Another change in the market is the introduction of green or performance based leases. These types of leases are being mentioned more and more these days, and as a direct result we have developed a green lease that can be used for most commercial projects.

Up until recently the development of green buildings in New Zealand, particularly for commercial offices, has been ad-hoc. Briefs were very vague, designs were unchallenged and a building's performance was not guaranteed in any shape or form. A green lease builds upon conventional lease features and includes commitments from both the building owner and the tenant. The main benefit from using a green lease is that the tenant and the building owner can gain benefits from green buildings as both have a vested interest in it.



CASE STUDY

BUILDING VALUE CHAINPerspective: **PRODUCT**

John Coop DIRECTOR

GreenBuild

GreenBuild is an industry-led response to the threat of environmental degradation by meeting the demand for independent information on the environmental impact of building products. It will launch on 1 October and is a national on-line database that will compare the environmental and technical characteristics of building materials. GreenBuild is backed by the New Zealand Institute of Architects, Registered Master Builders Federation and Building Research among others.

EVEN THREE YEARS ago, whoever would have heard a specifier asking for a product's Life Cycle Analysis data?

Now such a question is commonplace as green building drives a mini-revolution in the manufacture of building products.

Specifiers are asking new and searching questions about products' environmental performance such as does your product comply with Green Star NZ requirements and can you supply laboratory test results that demonstrate VOC levels?

Some product manufacturers are already well positioned to meet this change, offering products that have undergone robust third party verification through the government endorsed Environmental Choice eco-labelling scheme. But what about the other products required in building?

To address this gap, a national green building product database will be launched later this year. Called GreenBuild, it will be a national online resource for comparing the environmental and technical characteristics of building materials, and a portal for anyone assessing the environmental sustainability of building products.

To be listed on the web-based database at greenbuild.co.nz, manufacturers will be required to submit product information under five main categories: Energy Use, Human Health, Pollution, Resource Efficiency and Natural Habitats. This information will be assessed by an expert panel that will rank products on a scale from 'Basic' through to 'Best Practice' across categories ranging from toxicity to the degree of recycled material content to the use of fossil fuel in production.

GreenBuild is set to have a significant effect on the building product manufacturing industry in this country. Just as Green Star NZ will be pivotal to raising the level of sustainable business practice, GreenBuild will spur manufacturers' interest in listing their products because design teams and specifiers will be able to easily sift through the thousands of building products available in New Zealand for options with the necessary environmental sustainability to meet Green Star NZ specifications.

For product manufacturers and suppliers, GreenBuild offers targets for achieving and demonstrating environmental performance, as well as a roadmap with which to accomplish them.

BUILDING VALUE CHAINPerspective: **CONSTRUCTION**

Gary Caulfield BUSINESS DEVELOPMENT & BID MANAGER

Hawkins Construction

Hawkins Construction is a New Zealand construction company established in 1946. It operates in all market sectors by utilising a variety of procurement techniques. Among other projects, it has worked on the Auckland Museum, Kelly Tarlton's Underwater World, Middlemore Hospital and the Waitomo Caves.

WE HAVE SEEN a significant increase in the number of developments which contain reference to Green Star NZ and sustainable principles in recent times.

Initially we are focusing on the areas of Green Star NZ we can directly impact with minimal change to our working practices, such as management (Commissioning/EMP/Waste Management) and materials. Through our existing on-site management practices, strict adherence to the REBRI guidelines (which we follow as policy), and specification knowledge within our procurement team we can add value to our clients in achieving the points within these areas. This makes for little or no impact to our business and subsequently minimal cost to our clients.

Design and build projects are a bigger part of our business and their integration with Green Star NZ is of more concern. Contract conditions currently being presented at tender stage do not define where design responsibility will ultimately lie. This is of concern as we are responsible for co-ordinating the design and, either directly or through the Novation process, contracting with the designers. As yet we have not ascertained what impact Green Star NZ

and its implementation will have upon our Professional Indemnity Insurance or that of our designers.

Due to the number of opportunities currently within the marketplace that contain some form of green content, the learning curve for our staff is dramatic. We must be able to discuss and provide professional, well-informed advice to our clients on the implications of 'going green' so we are embracing training opportunities.

Due to the increase of design and build opportunities and our ability to contribute in the management and materials sections of Green Star NZ, we strongly feel that contractors have a vital part to play within the process. Furthermore, we foresee that as Green Star NZ gains momentum within the industry, clients will require all members of their project teams to have a working knowledge of Green Star NZ – and potentially all members to have Green Star NZ Accredited Professionals within their organisations. Green Star NZ will become a prime, non-commercial attribute upon which contractors are selected.

CASE STUDY

BUILDING VALUE CHAIN

Perspective: **LEGAL**

Tom Cantwell and Justin March PARTNERS

DLA Phillips Fox

DLA Phillips Fox is an Australasian commercial law firm which advises various stakeholders – ranging from owners and occupiers to developers, contractors, consultants, local authorities and others – on the impact of the trend to green buildings.

IT BECAME CLEAR to us a few years ago that the international trend towards sustainable development and green buildings was inevitable. To be able to meet our clients' demands in this area, we decided to invest our resources across all our offices in Australia and New Zealand in understanding green buildings.

As expected, green issues are finding their way into contractual arrangements. Green building issues are also increasing the legal focus on risk minimisation. This means recognising the commercial objectives of clients but putting systems in place to help minimise the economic and business impact if they get it wrong.

The concept of a green lease builds upon the idea of a traditional lease, but with extra commitments from tenants and/or landlords which relate to the reduction of the building's environmental impact. There is no standard green lease so their form varies widely.

A green lease may:

- impose binding commitments on one or both parties;
- impose sanctions for failing to meet agreed standards;
- encourage one or both parties to improve their environmental performance through non-binding obligations;
- be aspirational by listing goals rather than obligations;
- use a combination of these techniques.

Issues considered in a green lease include some or all of the following: obtaining ratings (such as Green Star NZ), reducing energy and water use, waste recycling policies, cleaning with green products, fit-out requirements, building management and environmental management system compliance. They may also include restrictions on the manner in which a tenant operates their business.

Existing leases for green buildings range from standard leases with no reference to the 'greenness' of the building to ones which dramatically impact on operations; for example permitting very hot summer and cold winter temperatures. Useful examples of issues to consider in a green lease are included in the Green Lease Guide.

There are challenges ahead, including potential issues around the voluntary nature of Green Star NZ tools. With the increasing demand for green buildings, owners are likely to focus on minimising risks against losses due to the failure to obtain the required rating or performance outcomes. It is likely that shared responsibility contracts will become more prevalent.

We could see stricter contractual obligations imposed and these risks passed down to other project participants such as designers and builders. However, these challenges are surmountable and should not detract from the benefits of green buildings.



BUILDING VALUE CHAINPerspective: **TENANCY**

Department of Conservation (DOC)

The Department of Conservation occupies a refitted former cinema complex in downtown Wellington with the most advanced of sustainable ventilation and energy saving strategies now known as Conservation House, winner of the Sustainable Building Award at the 2006 Govt3 Awards.

IN 2004, THE general management team of DOC developed a strategy to drive significant culture change within the organisation. At that time, the Department was operating from four separate buildings which cultivated a 'silo' approach to communication and cooperation.

Senior management realised that moving together under one roof would go some way towards changing the prevailing culture, but also provided a unique opportunity to express the values and beliefs of the organisation – to 'walk the sustainable talk'.

Staff members were surveyed to ensure their needs were also included in the building design brief or request for proposals (RFP). Staff wanted fresh air, windows that opened and a clean working environment.

Recognising that change can be threatening, care was taken to address any concerns of staff members and constant communication between management and staff was a feature of the entire process. Staff members were also involved in the selection of furniture to ensure it was fit for purpose and in line with sustainability criteria.

The design brieffor the new accommodation was based on the principles of a sustainable building. The Department went to the market with its RFP only to find there was little appetite

for sustainable building specifications. It received just two responses that met its needs from developers – both of which happened to be the most cost effective.

The proposal was for the redevelopment of the existing podium and basement levels of the Mid City building in Manners Street, adhering to the principles of a 'high performance green building' with objectives being to prevent environmental degradation and avoid resource depletion of energy, water and raw materials.

The strong partnership between tenant and owner began. This was new for both parties, but proved beneficial to the point that DOC contracted the same companies to complete the fit-out that the owner had used for the base building. The Green Star was just coming into the market in Australia and was used as a design guide on the project.

The new building's successful three floor open plan design has contributed to an open environment both spatially and socially – a shift that has been easier for younger generations, leaving the others to slowly embrace the more interactive environment. However, the divisive silo culture that once existed has changed significantly within the organisation as a result of occupying this new green building.



AUSTRALIA 7

Melbourne Tenants' Demand for Green Premises

THE INDUSTRY-LED Green Building Council of Australia has had a significant impact on the way buildings are being constructed today, and the effect is being felt far beyond the traditional confines of the CBD and city fringe according to a recent report in Melbourne newspaper The Age.

Commercial tenants in suburban Melbourne are showing a clear preference for green buildings, driving developers and owners towards environmentally sustainable designs (ESD). Offices aiming at 4.5 to five star Green Star ratings are being built as far out of the CBD as Essendon and Bundoora.

The message is clear that green building is the way of the future and it is becoming an increasingly necessary component to obtain attractive tenants. Stuart Fowler, managing director of engineering consultancy Norman Disney Young, recently told *The Age* that tenants had shown their willingness to be in green buildings and become responsible corporate citizens.

"Because it has been tenant-led, developers have come up with compliant and sexy ESD buildings in the suburbs."

The sea-change in the market has also been noticed by David Craven, executive director of the Green Building Council of Australia.

"We've noticed lots of small to medium building tenants make conscious efforts to neutralise their carbon footprint over the past 12 months."

USA

Developers, Managers and Investors see Green Building Perks

THE UNITED STATES real estate industry – most notably its commercial division – is embracing sustainable business practices and green technologies, according to an analysis of the industry by Progressive Investor, a monthly newsletter focused on sustainable investments.

Developers are using green construction in their projects, real estate consumers and tenants are showing a preference for sustainable buildings, and it is becoming more affordable to make earth-friendly choices, the newsletter says.

The newsletter identifies several factors as driving the trend towards

green building: energy prices are rising; green building construction costs are coming down; tenants are demanding it; green buildings attract positive publicity; and state governments are increasingly mandating energy efficient buildings.

The increase in the number of green buildings also allows for more options for investors who want to put their money into environmentally friendly funds. Some 41 percent of the 300 US real estate investment trusts (REITs) are actively pursuing energy efficiency and green building upgrades, and another 27 percent plan to do so.

GLOBAL News

BRAZIL

Brazil Forms a Green Building Council

BRAZIL WAS LAST month welcomed by the World Green Building Council as its newest Emerging Member Council.

Brazil's council, known as the Green Building Council do Brasil (or GBCBrasil), was formed through the joint efforts of business groups focused on the benefits of environmentally sustainable building practices and on the development of a rating tool and certification programme.

Brazil enjoys a growing middle class and an economy forecasted to grow at an annual rate of 3.6 percent, has a stable inflation rate and a healthy current account surplus.

The country has been marked by global investment banking and securities group Goldman Sachs as one of the four giant economies making up the BRIC (Brazil, Russia, India and China). These economic powerhouses are predicted to grow at a rate which will outstrip the G7 over the next 30 years, and their environmental impact will be significant.

The Council, with an online presence at www.gbcbrasil.org.br, is already enjoying broad support from all sectors of industry, government and academia.

CHINA

Green Global Village Nears Completion

THE CLEANEST, MOST energy efficient suburban structures in China and possibly the world are due to be completed in Beijing this year.

In China's landmark 'Future House Community' project that began in 2003, 10 homes are being equipped with wind turbines, solar panels and innovative water saving techniques.

The Future House project was established by the People's Republic of China as part of its effort to address its environmental problems and skyrocketing energy demand and has the support of foreign governments, companies, universities and environmental groups from eight nations.

Spain's Polytechnic University in Madrid donated a building powered entirely by solar panels, while a Chinese government specialist designed a home to tap into geothermal vents using pipes sunk some 230 feet into the ground.

America demonstrated its innovative and effective approach to green building by contributing a house designed to improve energy efficiency by 80 to 90 percent, and improve water efficiency by 60 percent compared to a typical American home.

Beijing has doubled its population to 16 million since 1978 and the effects of this growth are clear. The city's underground aquifers have fallen 41 feet since 1980, and last year a spike in greenhouse gas emissions occurred due to a surge in China's energy demand – causing it to overtake the US as the largest emitter of greenhouse gases in the world.

MEMBERSHIP 8

A Warm Welcome to our New Members

Adobe South AE Smith (NZ) Ltd Architecture +

Architecture Brewer Davidson Ltd

Atlas Concrete Ltd Audeo Group Ltd

Babbage Consultants Ltd

Buddle Findlay

Caldwell & Levesque Electrical Ltd

Caroma Industries NZ Ltd Clipsal New Zealand Ltd Coltrane Trust Ltd Conrad Properties Ltd Construction Projects Ltd Cornerstone Group Ltd

Craig Craig Moller Wellington Ltd

Dominion Income Property Fund Ltd

Eclipse Architecture Ltd ECO Management Group

Energy Light Ltd Europlan Industries Eurotec Instruments Ltd Exception Interiors Ltd Faulkner Construction Ltd

Furnware Ltd Greenstone Group Hewitson Roofing Initial Tropical Plants Ltd Kave Konsult Pty Ltd MacLeod & Associates

Maxair Ltd

MCS Investments Ltd Medland Metropolis MGA Innovation Ltd

Ministry of Social Development

Navlor Love Ltd

Opus International Consultants Pacific Environments NZ Ltd Pynenburg and Collins Architects Ltd

Rapaki Property Group

RCP Ltd

Redwood Group Ltd Spotless Services (NZ) Ltd USG Interiors Pacific Ltd

The Members Forum is now active! You can use your member login to post questions and review answers on Green Star NZ and other green building topics. Log in at:

www.nzgbc.org.nz/smf/index.php

O JOIN NOW or register your interest! Go to www.nzgbc.org.nz/membership

UPCOMING EVENTS

Conferences and events

Green Star NZ Training

Green Star NZ half day training courses have been running every six weeks in main centres around the country since April. Courses have been filling fast as industry members look to up-skill in green building and ESD.

Green Star - Level 1

Designed as an introductory course for ALL levels and interests. This course covers what a green building is, how the Green Star NZ rating tool system works, how the point and weightings work within the tool, and an overview of the certification process.

Green Star - Level 2

A more in-depth look at in-use examples of green buildings, this course also covers the role of an Accredited Professional (AP) in submitting a Green Star NZ project for certification. After completing L1 and L2 you will be eligible to sit the Green Star AP exam.

Future Course Dates:

Wellington 24 July, 13 September, 6 November

Auckland 26 July (fully booked), 11 September, 30 October

Christchurch 20 September

Course Costs

Member: \$195 + GST per course / Non-Member: \$295 + GST per course. Accreditation: Both courses must be completed and an exam passed to gain accreditation. More information at www.nzgbc.org.nz Book your place at www.nzgbc.org/GreenStarNZ

Breakfast Speaker Series

The Breakfast Speaker Series will be held in Auckland, Wellington and Christchurch, involving an early morning breakfast and presentation prior to several Green Star NZ – Level 1 courses during 2007. The events offer the opportunity to hear cases studies and international experts in different aspects of green building. Attendance is limited so watch this space and the Training section of the NZGBC website for dates and more information.

Dr Raymond J Cole

We are pleased to announce that Dr Ray Cole will be presenting in Wellington on 24 July. Dr Ray Cole has been lecturing and researching in building design for some thirty years and is a well known international expert in the field. Dr Cole is a founding member of the Canadian Green Building Council and visits New Zealand to work with John Storey at Victoria University of Wellington's School of Architecture.

Book at the Events page of the NZGBC website for confirmed event information.

SB07 Conference (14–16 November)

The Sustainable Building Conference 2007 (SBo7) expands the adoption of sustainable practice in the design, construction and use of our built environment. This is New Zealand's only conference and trade exhibition in this field and will bring together a wide range of industry experts, leaders and stakeholders for a stimulating three days focussed on 'Transforming Our Built Environment'. More information at www. sb07.org.nz or by viewing the PDF brochure on our Events page.

Special thanks to Matisse, PAWA (Plants At Work Association) & Canon for their assistance equipping the New Zealand Green Building Council office.

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