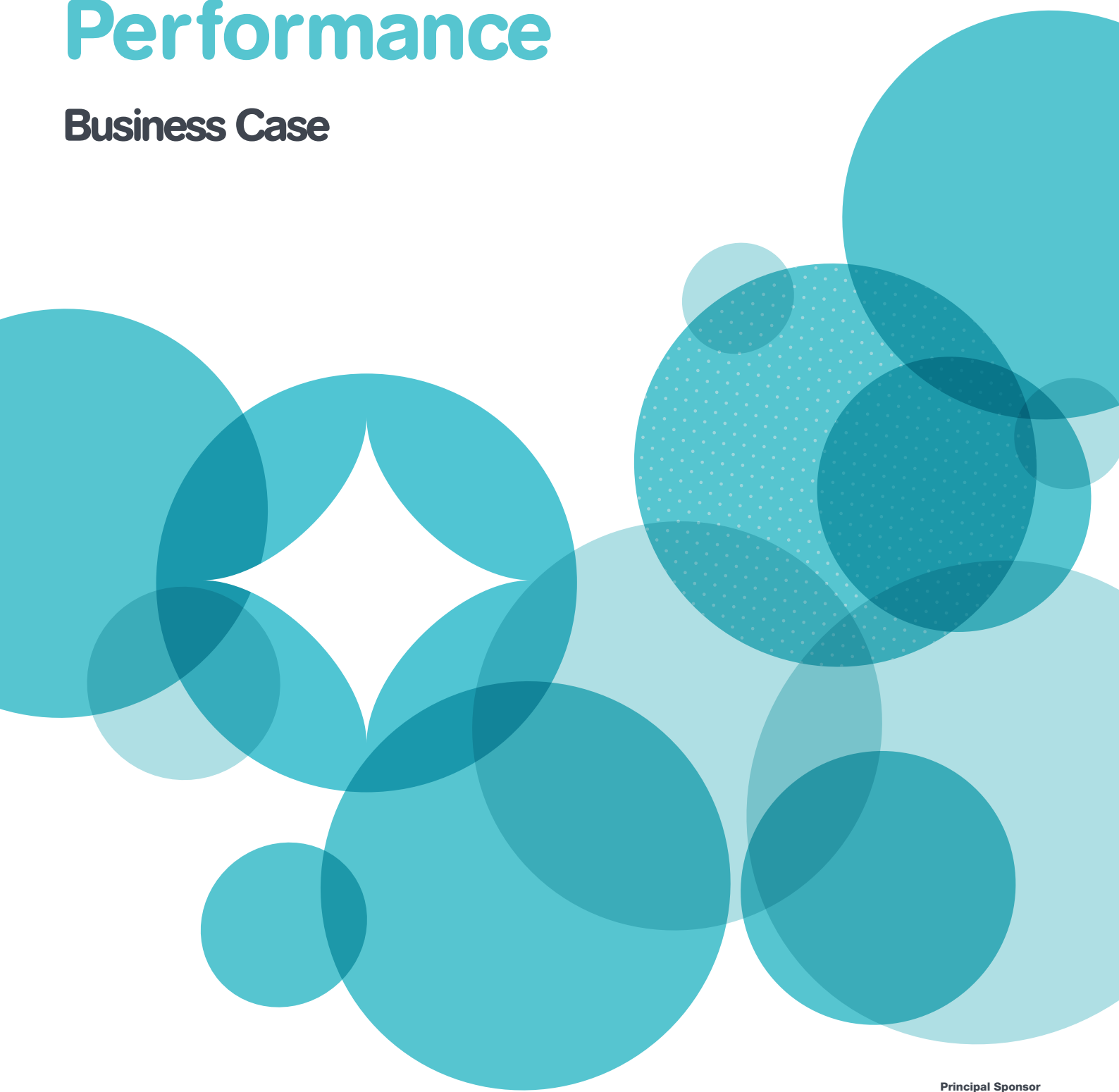




Green Star Performance

Business Case



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The Green Building Council of Australia (GBCA) is proudly leading the green building industry's most ambitious undertaking: Green Star – Performance.

Green Star – Performance will revolutionise green building operations in Australia.

Since the GBCA launched the first Green Star rating tool for offices in 2003, we have focused on the design and construction of new and refurbished buildings – just a fraction of the market.

Now we're tackling the far greater challenge of 'greening' our existing building stock. Green Star – Performance will establish best practice benchmarks for the operations of a range of building types, and for buildings with or without Green Star Design & As Built ratings.

This document outlines the proven benefits and business case for using Green Star – Performance and green building in general, and offers insights into how the Green Star categories will be addressed in this ground-breaking new rating tool.



So, what will Green Star – Performance mean for you?

Green Star – Performance is holistic

Green Star – Performance will be Australia's only rating tool to provide a comprehensive, holistic rating of building operations across nine impact categories: management, indoor environment quality, energy, transport, water, materials, land use and ecology, emissions and innovation.

Green Star – Performance is comprehensive

The rating tool won't just be limited to offices. Green Star – Performance will also be applicable to schools, universities, shopping centres and industrial facilities, and will be used to identify areas for incremental improvement. In the future, Green Star – Performance will be able to assess many other building uses.

Green Star – Performance is inclusive

Green Star – Performance ratings will be available for buildings with and without Green Star Design & As Built ratings. Green Star – Performance will 'close the loop' on the design, construction and management of Green Star-rated buildings, and provide third-party certification of the environmental achievements of buildings in operation.

Green Star – Performance is easy to use

In a first for Green Star, this rating tool will be accessed via a simple and easy to use online format. Assessments will be quick and easy, so gaining a Green Star – Performance rating will be a cost-effective and efficient process.



Romilly Madew
Chief Executive - Green Building Council of Australia

Green Star – Performance is robust

Our development approach to Green Star – Performance has involved more collaboration with industry than ever before, which we're confident will lead to a market-leading, robust tool.

Green Star – Performance is revolutionary

The US Green Building Council's rating tool for Existing Buildings' Operations and Maintenance, LEED-EBOM, drove more certifications in one year than all the other LEED tools have done in their history. We expect Green Star – Performance to have the same impact in Australia, and encourage Australia's property and construction industry to get behind this exciting and innovative project.

Green Star - Performance is affordable

A Green Star – Performance rating will be valid for three years and costs as little as \$2,250 per annum*, making it the most affordable rating tool yet. Annual performance checks will keep ratings current and measure improvement.

* Fee dependant on building size, see page 29 for our fee structure.

The business case for green building operations



Introduction

Buildings are the single largest contributor to the world's greenhouse gas emissions, using 40 per cent of global energy and generating around 30 per cent of all carbon emissions.¹ In Australia, commercial and residential buildings alone contribute 23 per cent of Australia's total greenhouse gas emissions.²

It's no stretch to see that our buildings need to be part of the solution to climate change. Of course, a building's impact is not limited to its energy consumption. Commuting patterns of occupants, the use and consumption of goods and materials, waste production and water use are all ways in which buildings can adversely affect our planet and its resources.

While the last few years has seen a 'green gold rush' of new buildings designed and constructed to the highest environmental standards, new construction accounts for only two per cent of our building stock.

Consider this: of Australia's 21 million square metres of existing office stock, 81 per cent is over ten years of age, equalling more than 17.5 million square metres.³

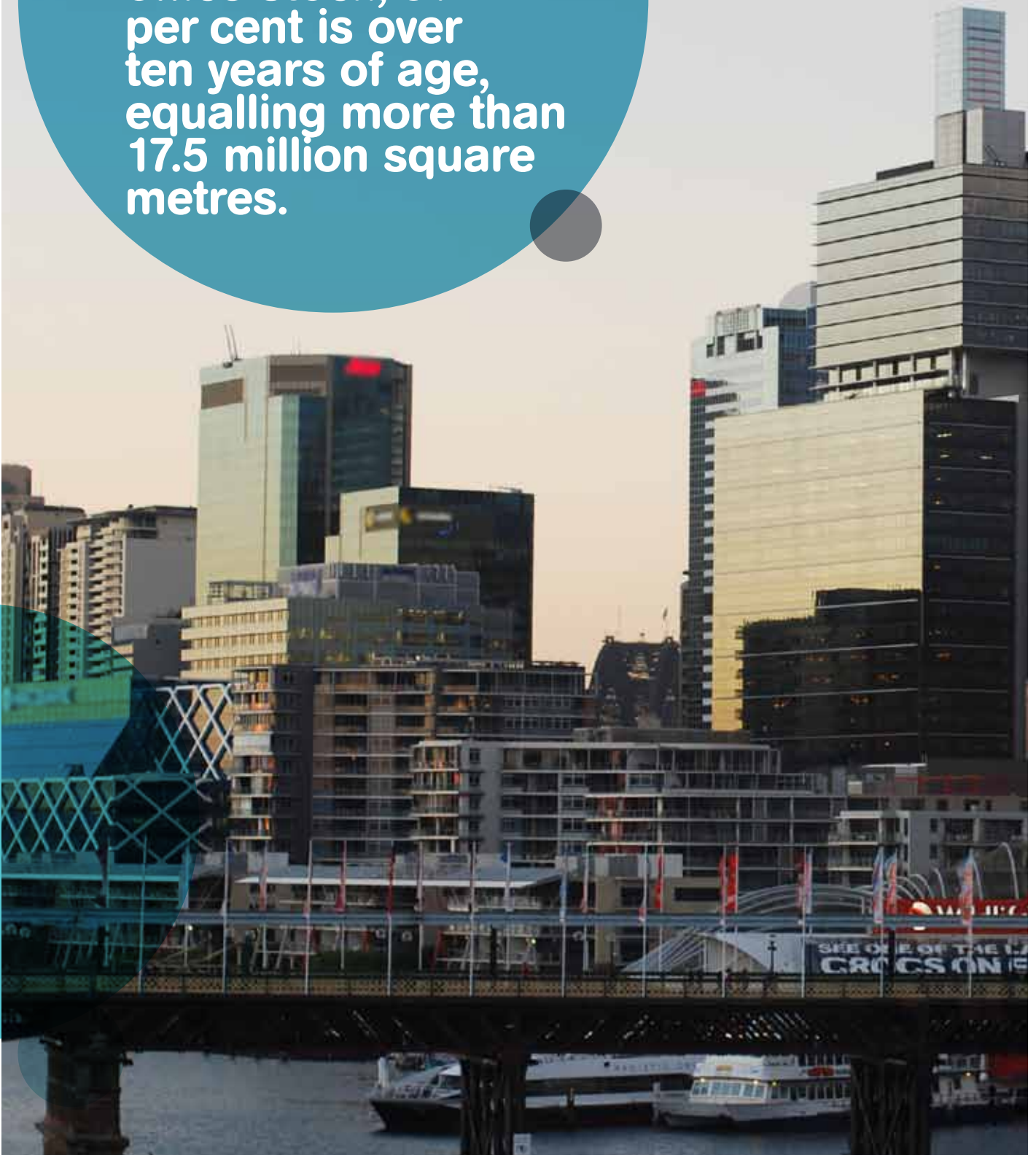
Most of these buildings are 'brown' buildings – not the green buildings we need. Many were constructed between 1960 and 1980 for as little money as possible, and with little thought given to issues such as energy efficiency.

And that's just offices. Australia also has around 9,500 schools and universities, 1,300 hospitals, 1,300 shopping centres, as well as countless square metres of other buildings such as libraries, law courts, town halls and industrial facilities. The vast majority of these buildings perform well below our current best practice environmental benchmarks.

Measurement is the first step towards better environmental management of our buildings. The Green Building Council of Australia (GBCA) is currently developing the Green Star – Performance rating tool to assess the ongoing operational performance of buildings across many building types.

So, why should building owners, operators and tenants seek a Green Star – Performance rating?

Of Australia's 21 million square metres of existing office stock, 81 per cent is over ten years of age, equalling more than 17.5 million square metres.



“Green Star – Performance could be a major catalyst for change in the property and facilities management industry. The focus on ongoing performance will drive decisions based on value and not just cost.”

Jon McCormick, Managing Director, Brookfield Multiplex Services

Benefits for building owners and operators

A better performing building delivers a number of direct economic benefits to building owners. Increased economic benefits are the prime drivers of change for most building upgrades, which include reduced operating costs, higher rents, greater occupancy, and higher resale value.

Green Star – Performance will enable building owners to compare their buildings’ holistic performance with other buildings of similar use, and set targets to increase energy and water efficiency, reduce waste and improve factors that influence productivity, health and learning, such as indoor environment quality.

The 5 Star Green Star – Retail Centre Design v1 refurbishment of Westfield Sydney made it the largest fully-rated Green Star retail centre in Australia. The centre was designed to reduce potable water consumption by 80 per cent and greenhouse gas emissions by 35 per cent when compared to an average retail centre of equivalent size. With a Green Star – Performance rating, the facilities management team at Westfield Sydney will be able to verify that the centre is operating to its design potential.



Higher returns

Green Star-rated buildings deliver consistently higher returns on investment than their non-green counterparts.

The *Building Better Returns* report, published by the Australian Property Institute and Property Funds Association, found that Green Star-rated buildings are delivering a 12 per cent 'green premium' in value and a five per cent premium in rent, when compared to non-rated buildings.⁴

Similarly, the IPD *Green Investment Index*, developed in conjunction with the Property Council of Australia, indicates that in the two years to March 2011, Green Star-rated office buildings outperformed non-rated buildings.⁵ 4 Star Green Star-rated buildings (signifying 'Best Practice') delivered a 10.8 per cent return over the two years to March, compared with a 4 per cent return for non-rated buildings. Capitalisation rates were on average around 30 basis points lower than non-rated buildings. According to IPD's Research Manager, Peter McGuinness: "Lower cap rates are consistent with capital value stability and indicate that Green Star-rated assets have less investment risk."

Reduced operating costs

With energy costs rising steadily, energy-efficient buildings make good business sense. Without significant capital costs, green buildings can save on energy operating costs for years to come.

An US report, *Assessing Green Building Performance*, found that green buildings consume 26 per cent less energy than average buildings and generate 33 per cent less greenhouse gas emissions.⁶

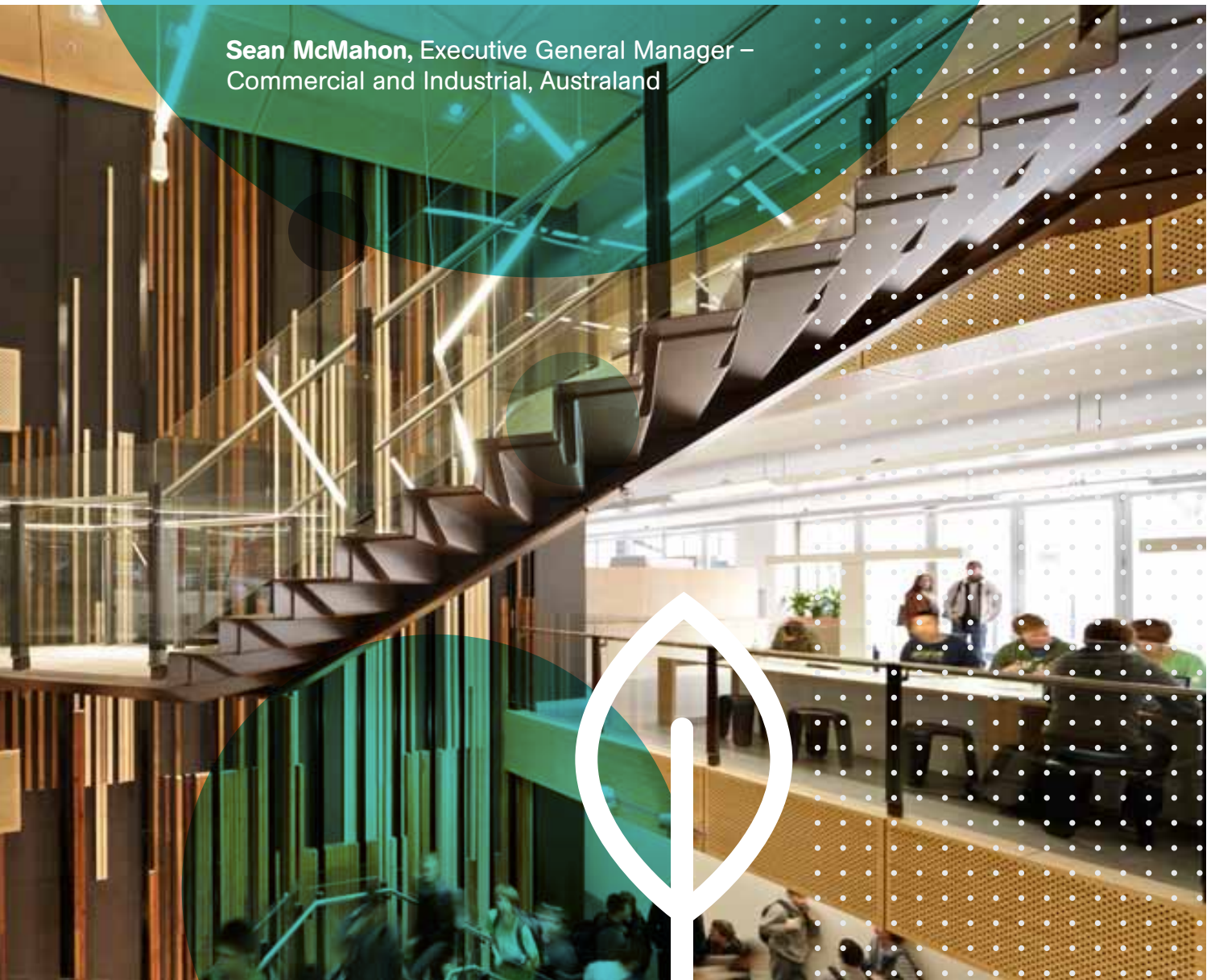
Innova21, the University of Adelaide's Faculty of Engineering, Computer and Mathematical Sciences building, was the first project in Australia to achieve a 6 Star Green Star – Education Design v1 rating. The use of geothermal energy storage is expected reduce the building's cooling-related CO₂ emissions by 58 per cent, while the natural gas-fired tri-generation plant - which supplies all of Innova21's electricity, heating and cooling requirements - is predicted to deliver a 60.3 per cent reduction in peak electrical demand. With a Green Star – Performance rating, the University of Adelaide will be able to confirm that their 6 Star Green Star certified design translates into 6 Star Green Star certified performance.

Energy costs can represent up to 35 per cent of a typical building's operating costs and are subject to rate fluctuation beyond the control of most buildings' management.⁷ Retrocommissioning is a structured way to examine potential energy savings and to efficiently upgrade a building's environmental performance rating. A survey from the US in 2008 found that retrocommissioning typically yields up to 10 per cent annual energy savings.⁸ Buildings that have undergone retrocommissioning tend to be much easier to operate and maintain. Benefits include extended equipment life, greater thermal comfort, and improved indoor air quality.



“Closing the gap between Green Star Design and As Built is essential for the industry to ensure that green designs are translating into better performing buildings for owners, users and the community. Green Star – Performance will do just that.”

Sean McMahon, Executive General Manager – Commercial and Industrial, Australand



Attractive to tenants and buyers

Greener buildings attract prospective tenants and buyers, and help retain existing tenants – reducing risk and increasing building value into the bargain.

The GBCA's *Valuing Green* report found that green buildings attract better quality tenants, such as government and 'top tier' corporates with stable businesses and strong commitments to corporate social responsibility.⁹

Colliers International's 2012 *Tenant Sentiment Survey* found that 95 per cent of tenants want to be in a green building, up from 75 per cent two years earlier. This evidence is backed up by Jones Lang LaSalle's *Global Corporate Occupier Sustainability Report*, which found that, of the 143 top-level corporate real estate leaders surveyed internationally, 92 per cent consider sustainability criteria when making their location decisions. And interestingly, just under half of the respondents said they would pay up to a 10 per cent premium for sustainable office space.¹⁰

Tax benefits and incentives

The federal government, as well as some state and local governments, are offering a range of incentives for green building, including investment assistance, rate reductions for certified green buildings, and sustainable development grants.

Non-financial incentives include green planning reconsiderations and green education programs. The GBCA website includes a full database of government incentives, programs and schemes currently in use.



Westfield Sydney Retail Podium - 5 Star Green Star - Retail Design v1

Regulation and mandatory disclosure

Financial and non-financial incentives complement other government regulations such as the Commercial Building Disclosure scheme, which aims to improve the energy efficiency of Australia's large office buildings by ensuring tenants and buyers have credible information on energy performance.

Building owners and lessors are required to disclose an up-to-date Building Energy Efficiency Certificate (BEEC) when they sell, lease or sub-lease office space of more than 2,000 square metres. Disclosing this certificate provides everyone with access to the same consistent and meaningful information about a building's performance, making it easier for companies to buy or rent more efficient office space. Also, these measures create strong market-based incentives for owners to improve their properties with cost-effective energy-efficient upgrades, increasing return on investment.

Governments and large corporate organisations are increasingly incorporating green principles into their property requirements, and a number of state governments have already mandated minimum Green Star benchmarks for all government office buildings – with other building types expected to follow suit. By incorporating sustainable features now, building owners are 'future-proofing' for changes in the regulatory environment, and ensuring they will not be at a disadvantage in the future. What's more, by integrating Green Star principles into their buildings, they are leaving the community with a lasting legacy.



Risk mitigation

Green buildings with lower operating costs and better indoor environmental quality are inherently more attractive to a growing group of corporations and consumers. Green features will increasingly enter into companies' decisions about leasing space and consumers' decisions about purchasing properties. There is also growing evidence of greater returns on investment for Green Star-rated buildings.

Daniel Grollo, Chief Executive of Australia's largest privately-owned development, funds management and construction company, Grocon, has said that it is now a "liability to have too few Green Stars."¹¹ Similarly, the Property Council of Australia's Chief Executive, Peter Verwer, said in 2011 that "the industry already knows it: sustainable design and management of office buildings has become part of core business."¹²

Certifying a property using Green Star – Performance can make an older building more competitive with the many new Green Star-certified buildings being designed and built, helping to mitigate the risk of obsolescence in older properties.

The City of Gosnells has achieved a 5 Star Green Star – Office Design v2 rating for the retrofit of its offices near Perth. The sustainable transformation means the building is now 'future-proofed' to withstand tighter environmental legislation and the introduction of carbon reporting requirements. The Council expects a five year payback period on the extra outlay of \$750,000 demonstrating that building green is a smart financial decision. As Paul McAllister, Project Manager, City of Gosnells, explains: "We have a commitment of fiscal responsibility to our ratepayers. That's why we decided to build green."





City of Goshells Civic Centre Redevelopment Project - 5 Star Green Star - Office Design v2

Stakeholder relations

Most people appreciate a demonstrated concern for their welfare, as well as for the planet. Progressive building owners realise how to market these benefits to a discerning client base – whether that person is an office employee, a public housing tenant, a nurse, a teacher or a student.

The Lilyfield Housing Redevelopment in Sydney achieved a 5 Star Green Star – Multi Unit Residential PILOT rating in 2009. Housing NSW invested in environmentally sustainable initiatives such as gas-boosted solar hot water systems, 267 square metres of solar panels and a 4 kilowatt photovoltaic system to power common area lighting. The gas-boosted hot water system caters for 60 per cent of hot water consumption and delivers annual savings of \$19,000 - or \$213 per unit. Housing NSW's commitment to sustainability is supporting low-income households to reduce their annual electricity bills in the building by 25 per cent. Green Star – Performance will help governments to assess the environmental sustainability of their entire housing portfolios before they embark on renovation programs.

Green building operations can also offer a solution to the misalignment of cost and benefit between owners and those leasing or renting a building, since there are benefits to both parties, as well as the environment. Reductions in operating costs and increases in tenant satisfaction can lead to increased rates of lease renewal and eventually higher returns.

Brand equity

A strong commitment to sustainability and a growing portfolio of green projects may help to enhance developers' and owners' credibility in the marketplace.

Green Star – Performance presents a golden opportunity to reposition older properties as more upscale or 'trend setting'. Establishing and improving the environmental performance of older properties could be an essential element in rebranding and repositioning them to be more attractive to people looking for green office space, retail tenancies or other public buildings.



“Existing buildings represent the single biggest opportunity to reduce the environmental impact from the built environment. The link between commissioning, tuning, operations and management has been somewhat missing from the discussion. This performance tool is a real opportunity to bring those influences together.”



Lilyfield Housing Redevelopment- 5 Star Green Star - Multi Unit Residential PILOT

Benefits for people

While green buildings are a smart investment, they also deliver a wide range of benefits for people, from improved health and education outcomes through to increased workplace productivity.



Productivity gains

In an office environment, natural light, fresh air and access to views of the outdoors, as well as control over individual workspace temperature and lighting, can affect productivity directly. Staff costs are by far the greatest business expense in most organisations and a slight increase in productivity will quickly pay for the small premium on a green space. Buildings using Green Star – Performance to assess, and then improve, indoor environment quality (IEQ) may provide important benefits for a building occupant or prospective tenant.

The Victorian Building and Plumbing Industry Commission's 2011 productivity study, conducted by Allens Consulting Group, modelled the impact of different increases in productivity levels arising from improved IEQ on the businesses occupying the 1,800 commercial offices within the City of Melbourne. For an initial outlay of \$1.9 billion to retrofit all the offices, the results would be:

Productivity gain	Annual productivity payback	Payback period
2%	\$223 million per year	8.8 years
5%	\$557 million per year	3.5 years
10%	\$1.1 billion per year	1.8 years

Carnegie Mellon University reported median productivity gains from high-performance lighting retrofits of 3.2 per cent, or about US\$1-2 per square foot per year, an amount equal to about half the cost of energy.¹³ These savings are in addition to a reported average saving of 18 per cent on total energy bills from more efficient and effective lighting.

Trevor Pearcey House in Canberra was awarded a 6 Star Green Star – Office Design v2 rating in 2007 for what was then a ground-breaking retrofit, undertaken by Australian Ethical Investments (AEI). Since then, AEI has conducted an internal survey of staff perceptions, which reported a 6.2 per cent increase in productivity. AEI's Director, Howard Pender, estimates this small productivity improvement adds up to a big benefit: around \$1.5 million of extra value over the past five years.

Researchers in 2009 surveyed 534 tenants in 154 LEED or Energy Star buildings and found increased productivity and reduced absenteeism.¹⁴ Average productivity increased by nearly five per cent, and absenteeism decreased by nearly three days per year. Total value of the increased productivity and decreased absenteeism was estimated at US\$25.73 per square foot.¹⁵

And productivity benefits are not limited to offices. Green schools and universities have been found to deliver a 41.5 per cent improvement in the health of students and teachers, as well as a 15 per cent improvement in student learning and a 25 per cent improvement on test scores due to good lighting and ventilation.¹⁶





500 Collins Street - 5 Star Green Star - Office Design v1

Health improvements

A major element of productivity is healthy workers – whether that’s a teacher in the classroom, a nurse in the emergency room or a factory worker in an industrial facility. Where building owners have taken measures to improve indoor environment quality, such as increased ventilation, daylighting, views to the outdoors, and low-toxicity finishes and furniture, workers show an average reduction in illness symptoms of 41.5 per cent on an annual basis, according to 17 academic studies reviewed by researchers at Carnegie Mellon University.¹⁷

The green refurbishment of 500 Collins Street turned an aging landmark into a modern icon, and at the same time increased productivity and decreased the sick leave taken by building occupants. 500 Collins Street was 30 years old when it began a progressive Green Star renovation in 2006 by the Kador Group. The 28-level multi-tenanted building in Melbourne’s CBD achieved a 5 Star Green Star – Office Design v2 rating for the design of its staged refurbishment. Pre- and post-occupancy surveys revealed that the refurbished office delivered a:

- 39% reduction in average sick leave days per employee per month
- 44% reduction in the monthly average cost of sick leave
- 9% increase in the typing speed of secretaries
- 7% increase in lawyers’ billing ratio, despite a 12% decline in the average monthly hours worked.

A range of international reports has also found green schools and hospitals deliver better health and learning outcomes for students and teachers, as well as faster recovery rates and lower staff turnover in healthcare settings. Thinking green in industrial facilities can also lead to a reduced rate of accidents and lost time due to injury.

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. According to the Redevelopment Project Manager, Frank Zotti: “we’ve delivered 271 more babies in the new unit in 2011, a ten per cent increase on previous years.” The numbers are positive proof of the community’s support for hospitals that provide high-quality care for patients and the environment.

Employee recruitment and retention

Attracting and retaining talented employees is vital to any business' success – and a Green Star-rated building is a valuable employee benefit.

Findings from a 2008 Deloitte survey of organisations that had undergone at least one green building retrofit in the US found that 93 per cent of respondents found it easier to attract talent after their renovation, with 81 per cent reporting greater employee retention. Every company surveyed reported an increase in goodwill and brand equity.

Colliers International *Office Tenant Survey 2010* found that excellent indoor air quality and thermal comfort was second only to proximity to public transport (and above cutting edge IT and communications) in the top three office attributes for staff attraction and retention.²⁰

The report, *Sustainable Healthcare Architecture*, argues that there is a “consistent, positive correlation between green building, staff recruitment, retention and performance” in healthcare settings.

Green schools also experience reductions in teacher turnover. *Greening America's Schools: Costs and Benefits* estimated that teacher retention in green schools translates into financial savings of about US \$4 per square foot over a 20 year period.

It costs an estimated 150 per cent of annual salary to lose a good employee, and most organisations experience 10 to 20 per cent turnover per year, often including people they didn't want to lose.²¹ In a workforce of 200 people, turnover at that level would mean a loss of 20 to 40 people per year. What if a green building could reduce turnover by five per cent? The value of that alone could be as much as \$300,000 – more than enough to justify the out-of-pocket costs of certifying a building.

Operating from a high-performance green building may help attract and keep good people – whether that's nurses and doctors, teachers, librarians, industrial workers or office employees. The issue of recruitment and retention is now emerging as a rationale for many large companies to consider greening all of their existing buildings. This rationale may be even stronger for recruiting and retaining the younger generation of employees, who tend to be passionate about environmental issues.²²

The staff at Queensland Government's Environment Protection Agency in Toowoomba are enjoying working in a 4 Star Green Star – Office Interiors v1.1 rated office. “We are noticing increased interest from people seeking to work for an environmentally-aware employer. It's generally a tight labour market out there, so if being proactive... can help us be seen as an employer of choice, it will enhance our prospects of attracting and retaining suitably qualified employees that share our values,” says Executive Director of Corporate Sustainability, Terry Harper.



Wangaratta High School - 4 Star Green Star - Education PILOT

Public relations and marketing

Many organisations, governments, universities and non-profit organisations now seek to maximise their 'brand equity' and increasingly rely on marketing and public relations activities to accomplish this goal. Operating from certified Green Star buildings can contribute to meeting these objectives.

The Melbourne Convention and Exhibition Centre was awarded a 6 Star Green Star rating for its innovative environmental design in 2008, under the Green Star - Convention Centre PILOT rating tool. Setting a new global standard for convention centre design, the MCEC project team's innovation and ingenuity has been acknowledged with dozens of awards, including the 2010 Victorian Architecture Medal, the prestigious Banksia Foundation Built Environment Award 2009, as well as recognition by the Design Institute of Australia for its contribution to Victoria's next generation of public buildings.

The Bond University Mirvac School of Sustainable Development in Queensland, which operates from the first 6 Star Green Star – Education facility in Australia, has identified a number of significant benefits of its green credentials, including attracting international students and developing research partnerships with other prestigious universities around the world. These benefits, alongside the environmental ones, have resulted in a sustainable financial return on their investment.





“By providing a greater measure of building performance across a wider range of elements, we’ll have a tool for existing buildings that goes beyond energy and water use and which will challenge the scope of retrofits and management practices, producing greater outcomes for the industry.”

**Michael Lane, Head of Corporate Responsibility and Sustainability
DEXUS Property Group**

Consumer demand

Today's consumers want to know that the corporations they do business with operate in an environmentally friendly manner - and they are rewarding sustainability with their wallets.

One US survey for Retail Customer Experience found that 46 per cent of consumers would shop at a retailer more if it was environmentally friendly, while 47 per cent say they would pay more for environmentally friendly services, products or brands.

HomeHQ North Shore is Australia's first 4 Star Green Star-rated bulky goods centre, achieving a 4 Star Green Star – Retail Design v1 rating in 2009. A high standard of energy efficiency for the building is achieved through green features including an energy-efficient plant and machinery and the use of building materials that reduce the need for artificial heating and cooling by up to 60 per cent. HomeHQ says that's good news not only for the environment, but for retailers and customers too, with the cost savings to retailers able to be passed on to consumers.

Corporate social responsibility

It is no longer enough to be a good employer; companies need to be good neighbours in the larger community as well. Developers, large corporations, local government and building owners have long recognised the marketing and public relations benefits of a demonstrated concern for the environment. Green Star buildings fit perfectly with this message.

Increasingly, people around the world perceive green buildings as modern, ethical and proactive – and companies, governments and community organisations associated with green buildings benefit from these perceptions through community pride, satisfaction and well-being.



Home HQ North Shore - 4 Star Green Star - Retail Centre Design v1



Summary

The motivation for green buildings does not end with purely financial benefits. It extends to many other tangible and intangible benefits, including productivity and health gains, public relations, employee retention and building a reputation as a sustainable organisation. Legislation such as commercial building disclosure, coupled with the introduction of carbon reporting requirements will also drive the business case for energy efficiency upgrades by owners and operators of large buildings. Assessing your building with the Green Star – Performance rating tool will help you capitalise on these benefits and ‘future proof’ your investment.



Green Star – Performance rating tool overview



Introduction

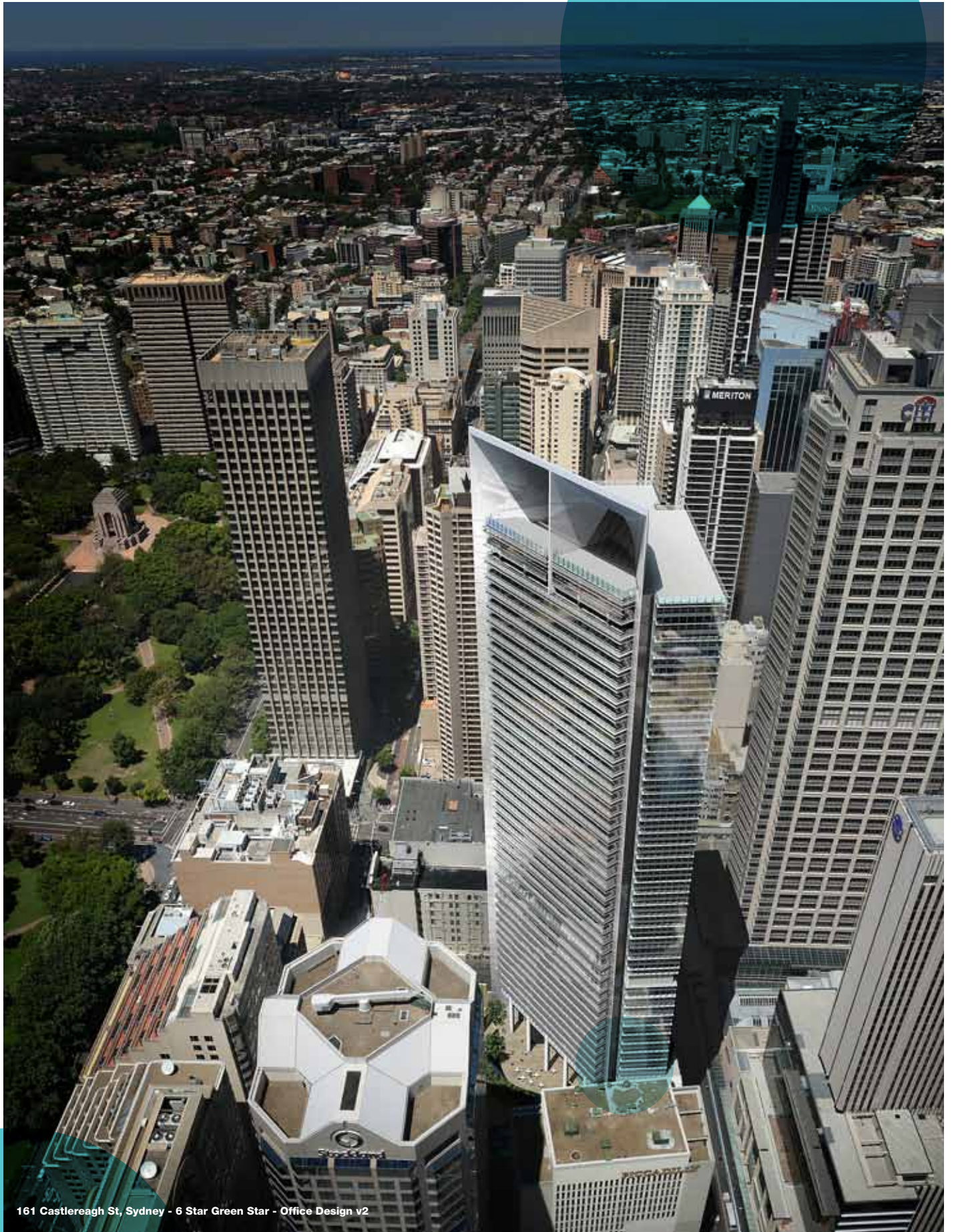
This overview has been designed to help property owners and managers understand the major elements of the Green Star – Performance rating tool. In this section, you'll gain some insight into how Green Star – Performance tackles individual issues within its environmental categories, and how holistic performance may be addressed once the rating tool is complete.

While Green Star – Performance will be consistent with all other Green Star rating tools, as it will provide an holistic assessment of buildings against the nine environmental impact categories, Green Star – Performance will focus on building operations and ongoing performance, not only on specific design features and attributes. This makes Green Star – Performance ideal for owners and management teams who can use the rating tool to measure their buildings' operational performance and implement incremental improvements over time.


Green Star – Performance ratings will be available for certification from 1 to 6 stars. Ratings will be valid for three years, with interim reporting requirements at the end of the first and second years to allow the rating to remain current. Re-certification may be sought at the end of the third year.

Green Star – Performance's categories and credits address the following issues:

- **Management:** ongoing tuning, monitoring and metering strategies, commissioning and recommissioning, up-to-date building information (such as building user guides, operations and maintenance manuals and occupant/tenant guides), commitment to environmental performance, healthy building cleaning.
- **Indoor Environment Quality:** fresh indoor air, cleaning and maintenance of air conditioning systems, indoor temperature, relative air humidity, natural and artificial lighting levels, noise comfort levels, occupant feedback.
- **Energy:** greenhouse gas emissions from energy use, peak electricity demand reduction.
- **Transport:** alternative transportation initiatives, commuting patterns.
- **Water:** potable water consumption, fire safety system testing.
- **Materials:** sustainable procurement and purchasing, operational waste, construction waste from minor repairs and interior fitout churn.
- **Land Use & Ecology:** ecological value, hard surfaces, landscaped areas.
- **Emissions:** Legionella control, refrigerant management, external lighting, runoff from stormwater.
- **Innovation:** pioneering operational excellence, improving on Green Star benchmarks and initiatives that eliminate negative environmental impacts.

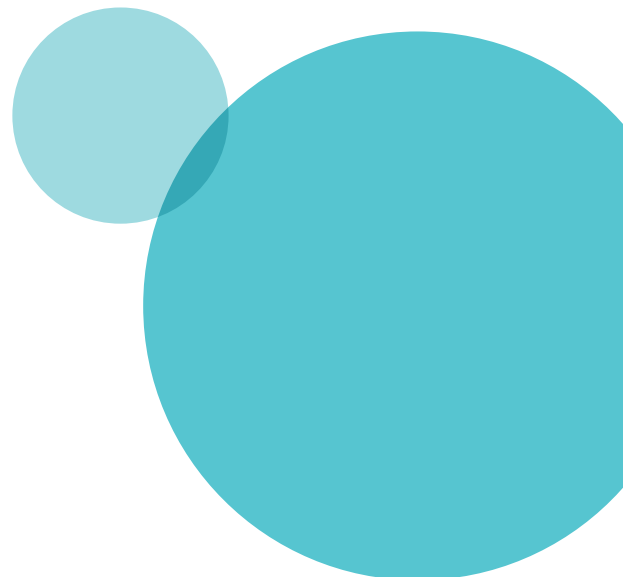


161 Castlereagh St, Sydney - 6 Star Green Star - Office Design v2



“Not everyone has the money to take a building straight to 6 Star Green Star, but Green Star – Performance will help us to make decisions that support both long-term investment in green building and incremental improvements.”

Chris Luscombe, General Manager, Mirvac



Green Star – Performance is the most affordable rating tool yet, costing as little as \$2,250 per annum.

When you apply for a Green Star – Performance rating the certification fee will be based on your building’s size (Gross Floor Area) and only one upfront fee is required to certify your project for 3 years. Members of the GBCA are also entitled to a discount.

To maintain your rating over the 3 year period, Green Star – Performance checks are completed at the end of the first and second years, which is included in the cost of registration. At the end of the third year you can choose to re-certify. This will allow you to maintain or improve your Green Star – Performance rating.

A Green Star – Performance certification fee includes:

- Unlimited access to the Green Star – Performance PILOT online rating tool and technical guidance
- Project registration and assessment (including annual performance audits)
- Unlimited technical clarifications until the release of Green Star – Performance v1
- Unlimited credit interpretation requests until the release of Green Star – Performance v1



Example



Management

Management and operation are instrumental to building performance. Establishing appropriate policies, procedures and targets support high levels of operational performance, and allow operations teams to understand their buildings and plan for future upgrades.

Green Star – Performance recognises the importance of these factors in its ‘Management’ category, which will address a number of initiatives, including:

- ongoing tuning of building systems and processes
- monitoring and metering strategies for energy and water
- commissioning and recommissioning (depending on the age of the building)
- accurate, current building information, including building user guides, operations and maintenance manuals and occupant/tenant guides
- policies and procedures relating to waste minimisation from interior refurbishments
- procurement of materials
- building cleaning and maintenance.

Owners and managers of multi-tenanted buildings may find it difficult to aim for a ‘World Leadership’ rating, the highest possible level in Green Star – Performance, without gaining buy-in from building occupants. Green Star – Performance recognises this. Incentives such as green lease arrangements or joint environmental targets between building owners and tenants can encourage engagement, and will be rewarded within the Management category.





Residual Chlorine A
ph Analysis

Turbidity Analy

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“The Green Star rating tools have had a profound impact in setting benchmarks for the sustainability of new buildings. The new Green Star – Performance tool will complement the current suite of Green Star tools and allow building owners to monitor and improve the ongoing performance of their existing premises.”

Stefan Preuss, Manager Buildings, Sustainability Victoria

Indoor Environment Quality (IEQ)

The quality of the indoor environment within our buildings is an integral part of holistic building performance. A truly high-performing property must have management and monitoring procedures in place that address all aspects of indoor environment quality, as well as all other factors related to green building operations. However, it is generally true that the indoor environment factors are not valued to the same extent as energy and water efficiency.

Green Star – Performance aims to address these issues in its 'IEQ' category by taking a 'modular approach' to the ongoing management of indoor environment performance in buildings.

For example, in mechanically ventilated buildings, one basic way of providing improved indoor air quality can be to keep air ducts and filters clean and free of pollutants, as part of a best practice maintenance regimen. This will ensure greater amount of fresh air is delivered into the building on an ongoing basis. More advanced measures may be taken such as periodic air sampling to gauge carbon dioxide levels in occupied spaces.

An incremental approach to indoor environment factors allows building owners and operators to tackle issues that are most suited to their own objectives and operational budgets for each of the many aspects of IEQ.

Indoor air quality is obviously only one of many aspects of IEQ addressed by Green Star – Performance. Other factors include:

- indoor temperature and relative air humidity
- natural and artificial lighting levels
- noise comfort levels.

Green Star – Performance also encourages building owners and operators to establish occupant feedback collection systems, to gather indoor comfort information and identify appropriate corrective actions.



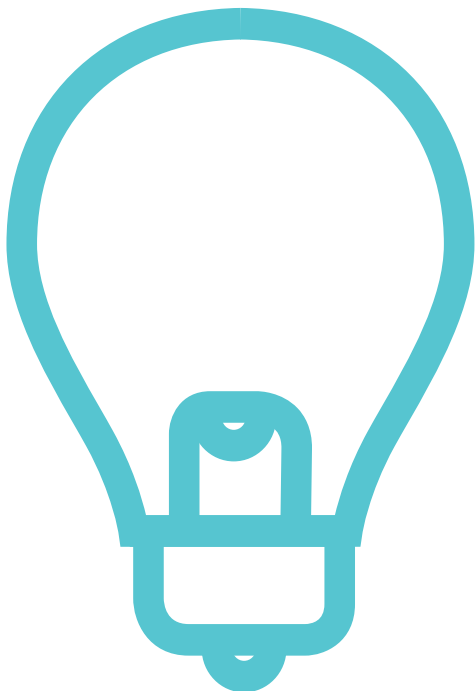


Energy

When greening building operations, energy efficiency is often the first area addressed. Green Star – Performance focuses on two main issues in the ‘Energy’ category: peak electricity demand and the greenhouse gas emissions associated with energy consumption.

Within Green Star – Performance, a baseline for peak electricity demand reduction is set based on historical data from the building’s annual peak loads, as well as information about the peak electricity demand for the electricity network. Reductions to load on the network are encouraged and rewarded.

A building’s greenhouse gas emissions performance is also assessed against a baseline, from which building owners and operators can set targets for improvement over time.





Working together, improving together

We've worked closely with industry to identify 'best practice' benchmarks for each Green Star – Performance credit, and map out a range of ways for building owners and managers to demonstrate how their building is performing in relation to these standards.

Some types of buildings are subject to mandatory measurement and assessment requirements for aspects of their operation, like the amount of energy or water they regularly use. For example, organisations that sell or lease commercial office spaces of 2000 square metres or more are required by law to have a current Building Energy Efficiency Certificate (BEEC).

Where such measurement and assessment schemes are recognised and accepted by industry as representing 'best practice', teams will be able to use the certificates or documentation that they already have to demonstrate that their building operates in accordance with Green Star – Performance credit benchmarks. Technical guidance will be provided within the rating tool to help ensure building owners and managers are demonstrating compliance in the simplest, easiest way, without unnecessary duplication of their efforts or documentation.

Where best practice certification or assessment schemes for individual aspects of building management do not exist, or are not yet considered to be 'best industry practice' – such as in the case of waste management - teams will be given guidance on how to establish 'best practice' benchmarks for comparison.

Green Star is a learning process and we're always open to new ways of thinking, so where teams think of alternative ways of demonstrating that their building meets the aim of a credit, they can also submit a Credit Interpretation Request (CIR) to have their method recognised in Green Star – Performance.

Transport

Single-occupant vehicle use for commuting represents a large environmental impact associated with transport and the built environment. Although buildings themselves are not directly responsible for traffic, they influence commuting habits based on their location and on the transport-related services offered.

Green Star – Performance recognises these issues and encourages the provision, maintenance and communication of alternative transportation initiatives in its ‘Transport’ category. Building owners and operators may address this category in a number of ways, including:

- providing and maintaining cycling facilities
- facilitating the purchase of public transport tickets
- providing shuttle buses to transport hubs.

Ongoing performance of these initiatives may be measured by surveying building occupants about their commuting patterns using a questionnaire and then comparing these results to Australian Bureau of Statistics (ABS) figures for transport mode use for the Local Government Area (LGA) in which the building is located.

This approach takes into account the fact that in regional locations, for example, the vast majority of people arrive and depart by single-occupant cars and may not have access to public transport. Therefore if the ABS figures indicate that 100 per cent of people arrive at a particular LGA by car, any improvement on this average will be rewarded by Green Star – Performance. Improvement could be achieved by building owner initiatives, such as incentives for car pooling and the provision of shuttle buses.







Water

Relatively low water utility rates and the perceived abundance of water in urban areas have traditionally made water conservation and efficiency seem less important than energy issues. Although water restrictions have been imposed in some areas of Australia in times of drought, by and large, water saving practices are less commonly employed. For this reason, programs that combine the use of water-efficient technologies with effective system operations and educational resources will provide the greatest benefits.

The primary focus of the 'Water' category in Green Star – Performance is the reduction of potable water use in building operations. In addition to addressing potable water that is typically metered by the local utility company, Green Star – Performance also addresses water use associated with the testing of fire safety systems.

As with the Energy category, a building's potable water use is assessed against a baseline from which building owners and operators can set targets for improvements over time.







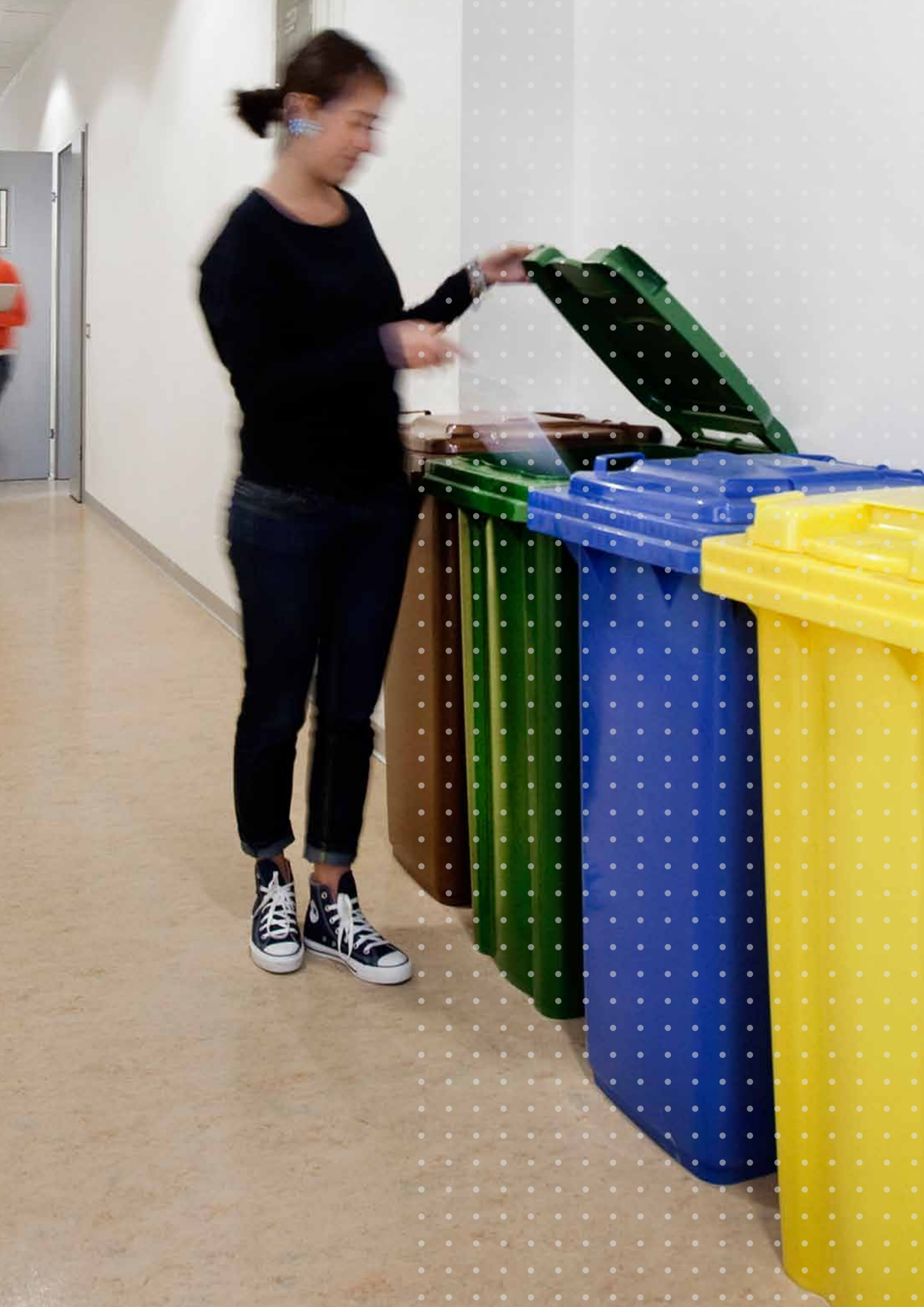
Materials

The 'Materials' category in Green Star – Performance focuses on materials that go into - or come out of - a building during the operational phase of its lifecycle. These are the materials that are required for building operations, not the materials from which the building is constructed. Areas such as sustainable procurement and purchasing (materials in) and waste (materials out) will be addressed by the Materials category.

Materials generated by building occupants during operations, such as recyclable and non-recyclable plastic, glass, paper, cardboard and food waste are covered by Green Star – Performance in waste from building operations.

Construction waste from building maintenance, minor repairs and interior fitout churn may also be addressed by a building owner using Green Star – Performance, where waste from building alterations is concerned.





Land Use and Ecology

Green Star – Performance aims to address the ongoing impact of buildings on their immediate ecosystem with its ‘Land Use and Ecology’ category, by discouraging degradation and encouraging the restoration of natural environments whenever possible.

This particular category focuses on issues relating to the ecological value of a site, its management and potential improvements. The relationship between permeable landscaped areas and impermeable surfaces, and how this affects the ecological value of a site, are also explored in this category.



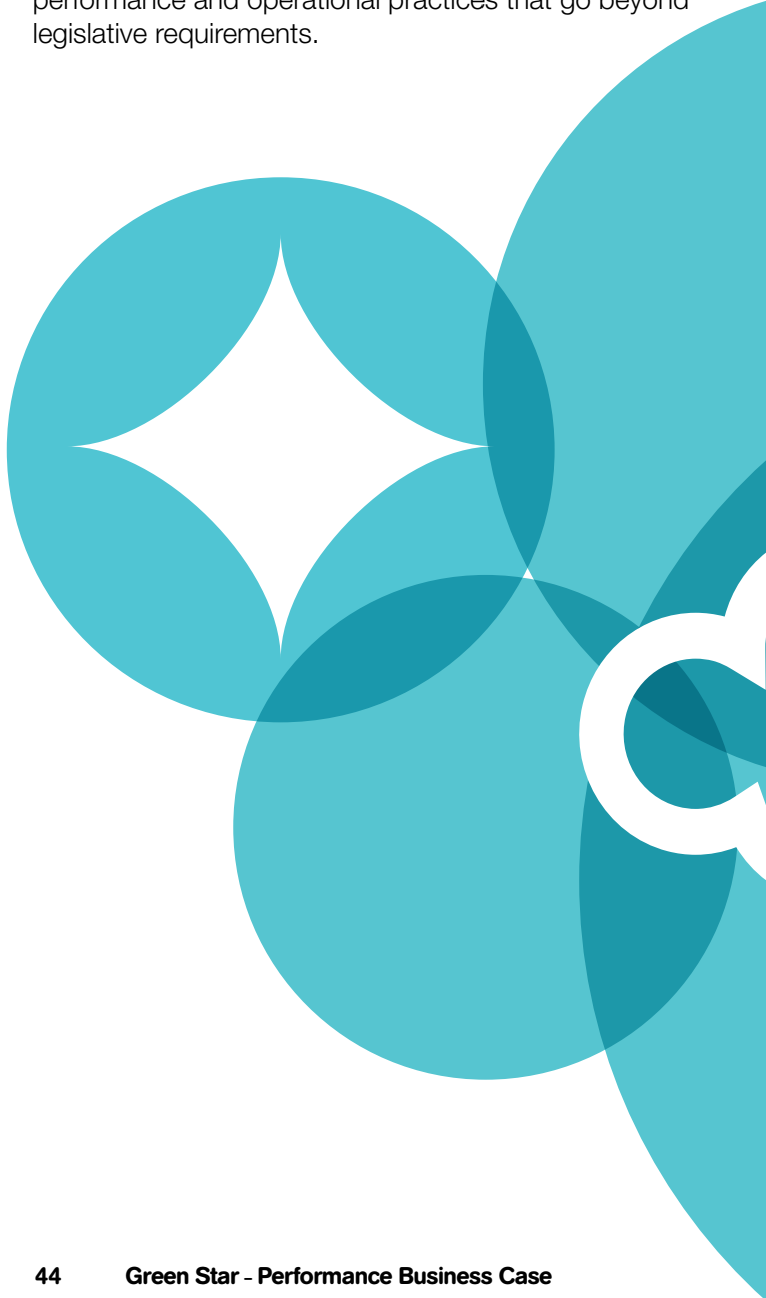


Emissions

The 'Emissions' category focuses on 'point source pollution' from buildings and building services to the atmosphere, watercourses and local ecosystems. 'Point source pollution' is contamination that affects the natural environment through any discernible, confined and discrete conveyance, such as a pipe, a duct or a floodlight.

Green Star – Performance recognises these environmental impacts by addressing operational issues related to heating, ventilation and air conditioning such as Legionella control and refrigerant management. Other sources of pollution from buildings include, for instance, external lighting that may seep into the night sky, and untreated runoff from stormwater, which may pollute adjacent waterways.

As with all other Green Star categories, the 'Emissions' category in Green Star – Performance aims to reward performance and operational practices that go beyond legislative requirements.





Innovation

It has been said that innovation is what drives progress through the creation of better and more effective products, processes, services, technologies and ideas. It is through creative ideas, and the pioneering application of these ideas, that the built environment will progress to more sustainable and greener outcomes.

This category relates to innovative technologies or processes in building operations, improvements on Green Star benchmarks, exceeding the scope of Green Star, or taking on what will be known as 'Green Star Challenges'. These challenges will be designed to encourage building owners and operators to go beyond best practice and develop more stringent environmental requirements for the continuous improvement of Green Star – Performance.



Conclusion

Collaboration with industry has been vital in the development of Green Star – Performance. The Technical Working Group (TWG), which includes more than 30 people from GBCA member companies, has worked with us to develop credit criteria and requirements for the rating tool.

‘Beta testing’ of Green Star – Performance draft credits has been undertaken to enable industry to provide further feedback on the content of the rating tool, while ensuring we understand the amount of information required to validate the credit claims made by applicants throughout the rating tool’s pilot phase and beyond.

In a first for the Green Star rating system, Green Star – Performance will be delivered via an online platform, which will help to ensure that the rating tool is efficient and cost-effective to use.

The GBCA would like to thank all of the sponsors, contributors and supporters of Green Star – Performance, and encourage all of Australia’s green building leaders to get behind our nation’s first ever comprehensive and holistic rating tool for sustainable building operations.



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“In any realm - be it sport, business or environment - we can only enhance what we measure. It is only through benchmarking and measuring that we’ll be able to enhance the performance of our built environment.”

Peter Marix-Evans, General Manager ISIS Group Australia Pty Limited



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