



GREEN STAR PUBLIC BUILDING PILOT ♦

FACT SHEET

green building council australia

greenstar

Public Buildings PILOT

BEFORE THE GREEN BUILDING COUNCIL OF AUSTRALIA (GBCA) LAUNCHED GREEN STAR IN 2003, MOST OF AUSTRALIA'S BUILDINGS WERE DESIGNED TO SIMPLY MEET MINIMUM BUILDING CODE REQUIREMENTS.

While Australia's property and construction industry was keen to go green, developers had no green building assessment tools to apply to their projects, and no benchmarks of best practice to help them assess their results.

Enter Green Star, which challenged designers to go beyond the building codes to improve environmental performance, and minimise lifecycle environmental impact and cost. Green Star engendered a paradigm shift which encouraged the industry to take an integrated, holistic approach to building design.

Since 2003, more than 20 new versions of Green Star tools have been released in pilot or updated versions. Today, the GBCA certifies a wide range of projects, including office buildings and fit outs, retail centres, industrial, educational and healthcare facilities and multi unit residential buildings.

However, up until now, public buildings fell outside the scope of Green Star. This meant that while hospitals, schools, shopping centres and industrial sheds could achieve Green Star ratings, law courts, museums, art galleries and places of worship could not.

This is about to change, with the release of the Green Star – Public Building PILOT rating tool. The new tool will soon be tested on a handful of specially-selected pilot projects and the GBCA is currently seeking expressions of interest from building projects to participate in the pilot process.

TOP:

Melbourne Convention and Exhibition Centre

6 star Green Star - Convention Centre PILOT

WHY BUILD GREEN? ♦

LOWER OPERATING COSTS

Green buildings are built for high energy and water efficiency, so they are cheaper to operate. Assessing Green Building Performance (2008), found that green buildings:

- consume 26% less energy than the average building
- generate 33% less greenhouse gas emissions

In fact, a minimal 2% upfront cost to support green design can result, on average, in life cycle savings of 20% of total construction costs - more than 10 times the initial investment. Everything from art galleries to apartments and from libraries to law courts can benefit from green building principles. \$4,000 a month saving on energy bills.

Global infrastructure services consultancy, Cardno, operates from the 6 Star Green Star-rated Green Square Tower North in Brisbane. Support Services Manager at Cardno, Rebecca Ernst, was impressed by the financial reward of a green office fit-out. "Since moving from our old 4,500sqm office space to our new 7,800sqm space in Green Square North Tower, our monthly energy bills have dropped from an average of \$12,000 to approximately \$8,000 per month. For us, this is positive proof that moving to a green building was a smart financial decision," she said.



Electricity bills down by 25%

The Lilyfield Housing Redevelopment in Sydney achieved a 5 Star Green Star 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% of hot water consumption and delivers annual savings of \$19,000 - or \$213 per unit - meaning the annual energy bill for households will decrease by 25%.

'FUTURE PROOFED' ASSETS

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 standards 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 principles into their buildings, they are leaving the community with a lasting legacy.

GREEN FOR FUTURE GENERATIONS

Wangaratta High School in north-eastern Victoria was awarded a 4 Star Green Star - Education PILOT rating in August 2009 for Stage One of its three part redevelopment plan, becoming the first Green Star-certified school in Australia. Principal Heather Sarau has said that "the building and surrounds are spotless and there's no graffiti anywhere. The students tell me that they feel obliged to work harder in such an adult environment. I think that this is the future of secondary education."

ATTRACTING AWARDS, GRANTS AND SUBSIDIES

The Royal Institution of Chartered Surveyors' report, Green Value: Growing Buildings, Growing Assets (2006) found that green building practices are more likely to attract grants, subsidies and other inducements that demonstrate environmental stewardship, increase energy efficiency and reduce greenhouse gas emissions.

IMAGE:
Green Square
Tower North
6 star Green Star

AWARDED FOR INNOVATION AND INGENUITY

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 demonstrates that environmentally sustainable design is not limited to commercial and residential development. The MCEC's innovation and ingenuity has been rewarded 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 amenity.

GREEN ENHANCES PRESTIGE

Operating from green facilities can attract new customers, clients and broaden community appeal. The Bond University Mirvac School of Sustainable Development in Queensland, which operates from the first 6 Star Green Star-rated educational 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.

PRODUCTIVITY BENEFITS

Green buildings consistently outperform non-green buildings in terms of comfort and productivity. Natural light, fresh air and access to views of the outdoors, as well as control over individual workspace temperature and lighting, can directly affect productivity. Staff costs are by far the greatest business expense in most businesses and only an incremental increase in productivity will pay for the small premium on a green space – whether that's an office, library or law court.

GREEN FEATURES PAY FOR THEMSELVES

Umow Lai's head office in South Yarra Victoria highlights the very real benefits of green buildings as staff productivity levels increase. An independently conducted occupant productivity study of the building found the new 6 Star Green Star office fit-out has triggered a 13% increase in staff productivity. Higher rates have been recorded for administration staff who spend the most time in the office.

For Managing Director of Umow Lai, Dominic Lai, the result is fantastic. "The productivity benefits we have achieved have effectively paid for the cost of our new fit-out," he said.

COUNCIL SAVES \$2 MILLION A YEAR

When faced with an office accommodation shortage in 2004, the City of Melbourne embarked on an ambitious plan to construct a new office building, to meet its spatial requirements and lead the way in the development of sustainable design.

IMAGE:

Bond University Mirvac School of Sustainable Development
6 star Green Star - Education PILOT



The result is Council House 2 (CH2), Australia's first 6 Star Green Star – Office Design rated building.

This multi-award winning building has demonstrated that productivity of office building occupants can potentially be enhanced through good, green building design and a high quality, healthy, comfortable and functional interior environment. A post-occupancy survey has found that productivity has risen by an impressive 10.9% since staff moved into their green office, with an estimated annual cost savings of \$2 million.

REDUCED LIABILITY AND RISK

According to the OECD's Environmentally Sustainable Buildings report (2003), illness from indoor air pollution has become one of our most acute building challenges – with building materials, ranging from paints to carpets, leading to occupational health issues.

A study by the Lawrence Berkeley National Laboratory found that buildings with good IEQ can reduce the rate of respiratory disease, allergy, asthma, sick building symptoms, and enhance worker performance. The potential financial benefits of improving IEQ are 8 to 14 times the cost investment.

SICK LEAVE FALLS BY 39%

According to CCH Australia, a leading publisher of human resources and industrial relations publications, unscheduled worker absences cost Australian businesses \$7 billion a year. After moving into their green office, the legal firm at the 5 Star Green Star rated 500 Collins Street in Melbourne reduced staff sick leave by 39% - well below the national average. What's more, sick leave costs fell by 44%.



LEADERSHIP IN THE COMMUNITY

Building green is a clear expression of commitment to the environment. Increasingly, people around the world perceive green buildings as modern, ethical and proactive – and companies, councils, governments and community organisations associated with green buildings benefit from these perceptions through community pride, satisfaction and well-being.

GOOD FOR THE ENVIRONMENT, GOOD FOR BUSINESS

When the management team at the Bendigo Bank decided to build new 5 Star Green Star certified headquarters, they saw it as an opportunity to demonstrate that corporate social responsibility starts at home. The Bendigo Bank's Managing Director, Rob Hunt, said that green initiatives "are good for customers, good for the environment and good business for our bank."

IMAGE:

Bendigo Bank
5 star Green Star - Office Design v1

KEY ATTRIBUTES ✦

GREEN STAR EVALUATES THE GREEN ATTRIBUTES OF BUILDING PROJECTS BASED ON NINE CATEGORIES, INCLUDING ENERGY AND WATER EFFICIENCY, INDOOR ENVIRONMENT QUALITY AND MATERIALS.

Green Star is a holistic tool, evaluating not only environmental attributes, but also features that affect occupant health and wellbeing, such as indoor environment quality and access to transport. Green Star tools can be used to rate the environmental merits of a building at the design phase as well as post-construction phase (known as 'As-Built').

The Green Star – Public Building PILOT rating tool assesses the environmental attributes of new and refurbished public buildings including their fitouts. .

Buildings are eligible for Green Star – Public Building PILOT assessment provided that they meet all the eligibility criteria for Green Star, including the following criteria for space use:

- A minimum of 50% of the building's GFA must be BCA Class 9b "assembly building" excluding laboratories and trade workshops; and
- A minimum of 80% of the GFA must be a combination of BCA Class 9b "assembly building" and BCA Class 5 Office, excluding laboratories and trade workshops.

Stadia, aquatic centres, prisons and buildings eligible for ratings under other Green Star tools are not eligible for the Green Star – Public Building PILOT. Eligibility of buildings with swimming pools will be assessed on a case-by-case basis. The full Green Star eligibility criteria can be downloaded from the GBCA website: www.gbca.org.au/green-star/certification/green-star-eligibility-criteria/2982.htm

Green Star – Public Building PILOT is based on the existing Green Star tools, with some customisation and new content, including:

- **Revised water category:** includes a new water calculator that quantifies the water use for toilets, urinals, taps, showers, cooling towers and landscape irrigation. The reductions in potable water demand due to water reuse are also estimated. Points are awarded for percentage reductions in annual demand for potable water compared to a standard practice benchmark.
- **Revised materials calculator:** assesses the environmental impact of the furniture, assemblies and flooring in the building. The revised calculators are easier to use and require less documentation than the previous material calculators in other Green Star tools.
- **Methodology for assessing greenhouse gas emissions:** is based on the methodology previously used in the Green Star tools for healthcare and industrial facilities. This methodology is based on the requirements in the BCA's JV3 validation protocol. Green Star points are awarded based on reductions in greenhouse gas emissions compared to a standard practice benchmark.
- **Management category:** this content has been updated to represent best practice; for example the requirements for commissioning and building tuning are extended and the requirements for metering are refined.

CERTIFICATION ♦

Green Star ratings will be awarded as outlined below:

The rating tools have been developed to be equitable across building sectors. This means a 5 Star Green Star – Public Buildings PILOT project will demonstrate a similar level of industry leadership as 5 Star Green Star – Office v3 project.



4 Star Green Star Certified Rating

Weighted score of 45-59

Signifies 'Best Practice'

Projects cannot achieve ratings of 1, 2 or 3 Stars at certification, as these ratings represent minimum, average and good practice, whereas Green Star aims to recognise and reward best practice and above.

**THESE RATING TOOLS
HAVE BEEN DEVELOPED
TO BE EQUITABLE
ACROSS BUILDING
SECTORS.**



5 Star Green Star Certified Rating

Weighted score of 60-74

Signifies 'Australian Excellence'



6 Star Green Star Certified Rating

Weighted score of 75-100

Signifies 'World Leadership'

CATEGORIES AND CREDITS IN GREEN STAR ♦

PUBLIC BUILDING PILOT



MANAGEMENT

- Green Star Accredited Professional
- Commissioning
- Building Tuning
- Independent Commissioning Agent
- Building Users' Guides
- Environmental Management
- Waste Management
- Building Management and Control System
- Learning Resources
- Maintainability
- Metering



INDOOR ENVIRONMENT QUALITY

- Ventilation Rates
- Air Change Effectiveness
- Indoor Pollutant Monitoring and Control
- Daylight
- Thermal Comfort
- Hazardous Materials
- Internal Noise Levels
- Volatile Organic Compounds
- Formaldehyde Minimisation
- Daylight Glare Control
- Electric Lighting Levels
- External Views
- Exhaust Risers
- Air Distribution System
- Small Occupied Spaces



ENERGY

- Energy - Conditional Requirement
- Greenhouse Gas Emissions
- Peak Energy Demand Reduction



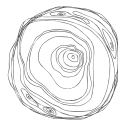
TRANSPORT

- Provision of Car Parking
- Fuel Efficient Transport
- Cyclist Facilities
- Commuting Mass Transport
- Transport Design and Planning



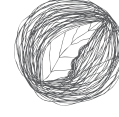
WATER

- Potable Water
- Fire System Water



MATERIALS

- Recycling Waste Storage
- Building Re-use
- Recycled Content and Reused Products & Materials
- Concrete
- Steel
- PVC
- Timber
- Design for Disassembly
- Dematerialisation
- Flooring
- Assemblies
- Furniture



LAND USE & ECOLOGY

- Ecology – Conditional Requirement
- Topsoil
- Re-use of Land
- Reclaimed Contaminated Land
- Change of Ecological Value



EMISSIONS

- Refrigerant ODP
- Refrigerant GWP
- Refrigerant Leaks
- Insulant ODP
- Stormwater
- Discharge to Sewer
- Light Pollution
- Legionella



INNOVATION

- Innovative Strategies and Technologies
- Exceeding Green Star Benchmarks
- Environmental Design Initiatives

CATEGORY WEIGHTINGS ♦

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Management	14%	14%	14%	14%	14%	14%	14%	14%
IEQ	18%	18%	18%	18%	18%	18%	18%	18%
Energy	22%	22%	22%	22%	22%	17%	22%	22%
Transport	10%	10%	10%	10%	10%	10%	10%	10%
Water	12%	12%	10%	10%	15%	15%	15%	12%
Materials	13%	13%	13%	13%	13%	13%	13%	13%
Land Use & Ecology	6%	6%	8%	8%	3%	8%	3%	6%
Emissions	5%	5%	5%	5%	5%	5%	5%	5%

The Innovation Category is not subject to an environmental weighting factor as the innovation could fall under any number of Green Star categories. More information and additional guidance on the weightings for the Green Star – Public Building PILOT rating tool can be found on the GBCA website.

NEXT STEPS ♦

Take part in the PILOT program. A limited number of places are available for project teams to register to achieve the first certifications under Green Star - Public Building PILOT rating tool (either Design or As Built ratings are available). Standard certification fees apply. Project teams gain a number of advantages from joining the PILOT program, including:

- Unlimited Credit Interpretation Requests (CIRs) and Technical Clarifications (TCs) at no charge
- Two free individual workshops with the GBCA for each project team
- The chance to influence the development of version 1 of the tool.
- To find out more about the PILOT program for the Green Star - Public Building PILOT rating tool, and how to register, please visit www.gbca.org.au/greenstar/ratingtools/, or email the Green Star Tool Development Team at [tool.development@gbca.org.au](mailto:development@gbca.org.au).
- Join the GBCA. Demonstrate your company's commitment to sustainability, actively influence the future direction green building and gain access to green building education, training and resources. Find out more at: www.gbca.org.au/membership/
- Purchase a technical manual from our online store: www.gbca.org.au/shop/
- Train your entire project team on how to use Green Star. The GBCA can organise in-house training so that all your project team and sub-contractors are aware of the implications of developing a Green Star project. To obtain an in-house quote please email education@gbca.org.au

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