GREEN STAR HEALTHCARE V1

FACT SHEET

green building council australia

greenstar

Healthcare v1

IMAGE:
Weipa Integrated Health Services
4 star Green Star - Healthcare PILOT

THE GREEN BUILDING COUNCIL OF AUSTRALIA (GBCA) RELEASED THE GREEN STAR – HEALTHCARE V1 RATING TOOL IN JUNE 2009 TO SUPPORT SUSTAINABLE PLANNING, DESIGN AND CONSTRUCTION FOR HIGH-PERFORMANCE HEALTHCARE FACILITIES.

The Green Star – Healthcare v1 rating tool can help owners and operators of healthcare facilities around Australia to:

- minimise the environmental impact of their buildings
- improve patient health outcomes and staff productivity
- receive recognition for green leadership
- achieve real cost savings.

The GBCA launched the Green Star environmental rating system for buildings in 2003. Green Star evaluates the green attributes of building projects based on nine categories, which address key issues including energy and water efficiency, indoor environment quality and resource conservation.

Green Star is an 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'). building projects to participate in the pilot process.

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%.

GREEN BUILDINGS IMPROVE PATIENT OUTCOMES

A number of international studies have confirmed that green healthcare facilities enable better patient care and reduce the length of stay required in hospital. Studies include:

The Mackenzie Health Sciences Centre in Canada found that depressed patients in sunny rooms recovered 15 per cent faster than those in darker rooms

The Bronson Methodist Hospital in Michigan found that applying green design principles such as improved ventilation, private rooms, music, light and nature in its redevelopment project led to an 11 per cent reduction in secondary infections and a decrease in nursing turnover rates to below 7 per cent

The Inha University Hospital in Korea found a 41 per cent reduction in average length of stay for gynaecology patients in sunlit rooms over patients in dull rooms. The study found a 26 per cent reduction similarly for surgery ward patients.

GREEN BUILDINGS REDUCE STAFF TURNOVER

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

A study from the Hackensack University Medical Center in New Jersey revealed that “the cleaning products we were using before caused the employees to call in sick a lot.” After implementing their *Greening the Cleaning* program, “it all went away, and our workers’ compensation claims went down.”

IMAGE:
Weipa Integrated Health Services
4 star Green Star - Healthcare PILOT

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. 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.

A report by Robin Guenther, Principal at Perkins + Will in New York and author of *Sustainable Healthcare Architecture*, found a "consistent, positive correlation between green building, staff recruitment, retention and performance."

GREEN BUILDINGS PROVIDE HEALTHIER INDOOR ENVIRONMENT QUALITY

Thousands of chemicals and biological pollutants are found indoors. The known health effects of some of these pollutants include asthma, cancer, developmental defects and delays, plus effects on vision, hearing, growth, intelligence, learning and the cardiovascular system. Green construction can greatly reduce the effects of sick-building syndrome.

What's more, green buildings can benefit from better ventilation and indoor environment quality, which affects both patient and staff health. For example:

A study of 17 hospitals in Canada examined tuberculin conversion (a positive tuberculin test result) among employees working in patient rooms. The researchers concluded that "tuberculin conversion among health-care workers was strongly associated with inadequate ventilation in general patient rooms." They found a 71 per cent reduction in risk for workers in rooms with ventilation rates greater that two air changes per hour.

IMAGE:
Flinders Medical Centre - New South Wing
5 star Green Star - Healthcare Design v1

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.

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%.

IMAGE:
Weipa Integrated Health Services
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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."

KEY ATTRIBUTES ✦

THE GREEN STAR – HEALTHCARE V1 RATING TOOL EVALUATES THE ENVIRONMENTAL POTENTIAL OF HEALTH AND AGED CARE FACILITIES. IT ALSO ASSESSES MAJOR REFURBISHMENTS OF EXISTING FACILITIES. THE TOOL CAN BE USED TO RATE THE ENVIRONMENTAL MERITS OF A HEALTHCARE FACILITY AT THE DESIGN PHASE AS WELL AS POST-CONSTRUCTION PHASE (KNOWN AS 'AS-BUILT').

Projects are awarded a Green Star rating based on accumulating credit points in nine categories. A number of credits specific to healthcare facilities are included in the Green Star - Healthcare v1 rating tool:

- Building Management Systems
- Maintainability
- Construction Indoor Air Quality Plan
- Sustainable Procurement Guide
- Air Distribution System
- Outdoor Pollutant Source Control
- Places of Respite
- Car Park Ventilation
- Efficient External Lighting
- Transport Design and Planning
- Potable Water Use for Equipment
- Ceilings, Walls and Partitions
- Trade Waste Pollution

The Green Star – Healthcare v1 rating tool also includes a customised greenhouse gas emissions calculator. While the Green Star – Office suite of rating tools incorporates energy modelling consistent with the NABERS energy tool, an equivalent modelling protocol did not exist for the healthcare sector. The customised greenhouse gas emissions calculator was developed in consultation with tool sponsors, the Technical Working Group and other industry stakeholders, and assesses all healthcare facilities equitably - independent of size or location - on their predicted greenhouse gas emissions during operation.

The tool has undergone a rigorous assessment period after a pilot phase, and refinements to the calculators and credits have already received positive feedback from industry.

The result is a single third party certification that the market can understand and trust, and that property developers can use to demonstrate their developments' green credentials.

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 – Healthcare v1 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

5 Star Green Star Certified Rating
Weighted score of 60-74

6 Star Green Star Certified Rating
Weighted score of 75-100

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.

CATEGORIES AND CREDITS IN GREEN STAR ✦

HEALTHCARE V1

MANAGEMENT

- Green Star Accredited Professional
- Commissioning Clauses
- Building Tuning
- Independent Commissioning Agent
- Building Guides
- Environmental Management
- Waste Management
- Building Management System
- Maintainability
- Construction Indoor Air Quality Plan
- Sustainable Procurement Guide

INDOOR ENVIRONMENT QUALITY

- Ventilation Rates
- Air Change Effectiveness
- CO_2 Monitoring and Control and VOC Monitoring
- Daylight
- Thermal Comfort
- Hazardous Materials
- Internal Noise Levels
- Volatile Organic Compounds
- Formaldehyde Minimisation
- Mould Prevention
- Daylight Glare Control
- High Frequency Ballasts
- Electric Lighting Levels
- External Views
- Individual Thermal Comfort Control
- Exhaust Risers
- Air Distribution System
- Outdoor Pollutant Source Control
- Places of Respite

ENERGY

- Conditional Requirement
- Greenhouse Gas Emissions
- Energy Sub-metering
- Peak Energy Demand Reduction
- Lighting Zoning
- Car Park Ventilation
- Efficient External Lighting

TRANSPORT

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

WATER

- Occupant Amenity Water
- Water Meters
- Landscape Irrigation
- Heat Rejection Water
- Fire System Water
- Potable Water Use for Equipment

MATERIALS

- Recycling Waste Storage
- Building Re-use
- Recycled Content and Reused Products & Materials
- Concrete
- Steel
- PVC Minimisation
- Sustainable Timber
- Design for Disassembly
- Dematerialisation
- Flooring
- Joinery
- Loose Furniture
- Ceilings, Walls and Partitions

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
- Trade Waste Pollution

INNOVATION

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

CATEGORY WEIGHTINGS

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Management	9%	9%	9%	9%	9%	9%	9%	9%
IEQ	20%	20%	20%	20%	20%	20%	20%	20%
Energy	24%	24%	24%	24%	24%	19%	24%	24%
Transport	7%	7%	7%	7%	7%	7%	7%	7%
Water	12%	12%	10%	10%	15%	15%	15%	12%
Materials	17%	17%	17%	17%	17%	17%	17%	17%
Land Use & Ecology	8%	8%	10%	10%	5%	10%	5%	8%
Emissions	3%	3%	3%	3%	3%	3%	3%	3%

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 – Healthcare v1 rating tool can be found on the GBCA website.

SPONSORS

Platinum Plus
Department for Administrative and Information Services, Government of South Australia

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