

GREENING THE HEALTHCARE ENVIRONMENT

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The Green Building Council of Australia:

- History and Mission
- Membership
- Education
- Advocacy
- Certification



GREEN STAR ENVIRONMENTAL IMPACT CATEGORIES



Innovation



Management



Indoor Environment Quality



Energy



Transport



Water



Materials



Land use and ecology



Emissions

CATEGORY SCORES

APPLY ENVIRONMENTAL WEIGHTINGS

SINGLE SCORE

4 STAR RATING

5 STAR RATING

6 STAR RATING

Microsoft Excel

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Green Star – Industrial v1

Building Input

New or Refurbished Building:	New Building
Name of Building:	Easts Leagues Club
Address of Building:	93-97 Spring Street Bondi Junction
Postcode:	2022
State:	NSW
Applicant:	Waverley Council
Contact Person:	Emily Scott
Green Star Accredited Professional:	Emily Scott
Project Manager:	
Architect:	
Structural/Civil Engineer:	
Building Services Engineer:	
Quantity Surveyor:	
Acoustic Consultant:	
Landscaping Consultant:	
Building Surveyor:	
Main Contractor:	

Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells Editing

Security Warning: Macros have been disabled. Options...

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Green Star – Industrial v1

Credit Summary for: Easts Leagues Club


Water

Ref No.	Title	Aim of Credit	Credit Criteria Summary	No. of Points Available	Weighted Points	Comments
Wat-1	Occupant Amenity Water	To encourage and recognise designs that reduce potable water consumption by building occupants.	Up to five points are awarded where the predicted occupant amenity potable water consumption within the building has been reduced against a 'best practice' benchmark. Points are determined by the Potable Water Calculator. Go to Potable Water Calculator	5	0	
Wat-2	Not applicable to this tool					
Wat-3	Landscape Irrigation	To encourage and recognise the design of systems that aim to reduce the consumption of potable water for landscape irrigation.	One point is awarded where: <ul style="list-style-type: none"> Potable water consumption for landscape irrigation has been reduced by 90%; OR A xeriscape garden has been installed. If there is no landscaping (including roof, vertical and planter gardens), or landscaping represents less than 1% of the site area, this point is 'Not Applicable' and is excluded from the points available used to calculate the Water Category Score. Please enter 'NA' in the number of points achieved column in this credit.	1	0	
Wat-4	Heat Rejection Water	To encourage and recognise designs that reduce potable water consumption from heat rejection systems.	Up to two points are awarded as follows: <ul style="list-style-type: none"> One point is awarded where: - Potable water consumption of water-based heat rejection systems is reduced by 50%. Two points are awarded where: - Potable water consumption of water-based heat rejection systems is reduced by 90%; OR - No water-based heat rejection systems are present. 	2	0	

The growth of Green Star

- 250+ Green Star certified projects
- 500+ Green Star registered projects
- 3.5+ million m2 Green Star certified space
- 90+ registered education/school projects
- 15 healthcare projects (either registered or processing).





**“If you’re not
building Green Star,
you’re building in
obsolescence.”**

**Daniel Grollo,
Chief Executive,
Grocon**



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 greenstar

Hospitals and sustainability



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The research

- A report by Davis Langdon found hospitals:
 - are among Australia's **most complex and most energy-intensive** facilities
 - use at least **2x as much energy** per m² as commercial office buildings
 - use **6x as much water**.



The research

- In the US, healthcare facilities:
 - use around **4% of all energy** consumed
 - one average sized US hospital emits approximately **18,000 tons of CO2 each year**
 - CO2 emissions equal to **30,000 vehicles.**



The costs

- Cost is still perceived to be the biggest barrier to building green but sustainable construction is now near cost-neutral
- Four Star Green Star – cost neutral +/- two per cent
- Five Star Green Star – cost neutral +/- five per cent
- Six Star Green Star – World Leadership
- The balance between treasury and long-term benefits
- The 'learning curve' within the industry





Friendship is giving and receiving,
understanding and believing, needing and trusting, never denying, the truth.
By Amanda

Health without harm

Benefits of green building

- Benefits for patients
- Benefits for visitors
- Benefits for staff
- Benefits for facility managers
- Benefits for owners and boards.



Benefits for patients and visitors

- Reduced patient and visitor stress
- Healthier internal environment
- Fewer pollutants
- Improved patient recovery rates
- Less pain medication used
- Better patient and visitor satisfaction rates
- Reduced secondary infections.



Benefits to staff

- Healthier working environment
- Reduced staff stress
- Improved work performance and satisfaction
- More productive staff
- Better medical care capability
- Increased staff retention
- Less absenteeism.



Benefits to owners

- Reduced resource consumption – water, gas, energy, materials
- Ability to reduce running costs to stay within budgets
- Better waste management capability
- Greater durability, flexibility and adaptability
- Competitive edge to attract clients
- Lower maintenance during its lifetime
- Better perception within the marketplace
- Better risk management and future-proofing capabilities.



The evidence



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Reduced operating costs

- The Ochsner Health System in New Orleans saved:
 - \$350,000 annually by replacing pump and suction motors with variable speed motors
 - \$3 million in electricity by using water directly from the Mississippi River
 - \$1.2 million in electricity and reduced energy consumption by 20% by replacing 60,000 fluorescent lighting fixtures.



Improved patient outcomes

- The Mackenzie Health Sciences Centre in Canada:
 - 15% faster recovery rate of depressed patients in sunny rooms
- The Bronson Methodist Hospital in Michigan:
 - 11% reduction in secondary infections
 - Decrease in nursing turnover rates to below 7%
- The Inha University Hospital in Korea:
 - 41% reduction in average length of stay for patients in sunlit rooms
 - 26% reduction in stay for surgery ward patients.



Reduced staff turnover

- Hackensack University Medical Center in New Jersey:
 - Implemented a *Greening the Cleaning* program, and “our workers’ compensation claims went down”
- There is a “consistent, positive correlation between green building, staff recruitment, retention and performance.” - Robin Guenther, Sustainable Healthcare



Healthier IEQ

- Reduced risk of sick building syndrome
- Better ventilation and IEQ
- Canadian study of 17 hospitals found 71% reduction in risk of tuberculosis
- Better acoustics lead to better sleep and less stress.



Green design principles

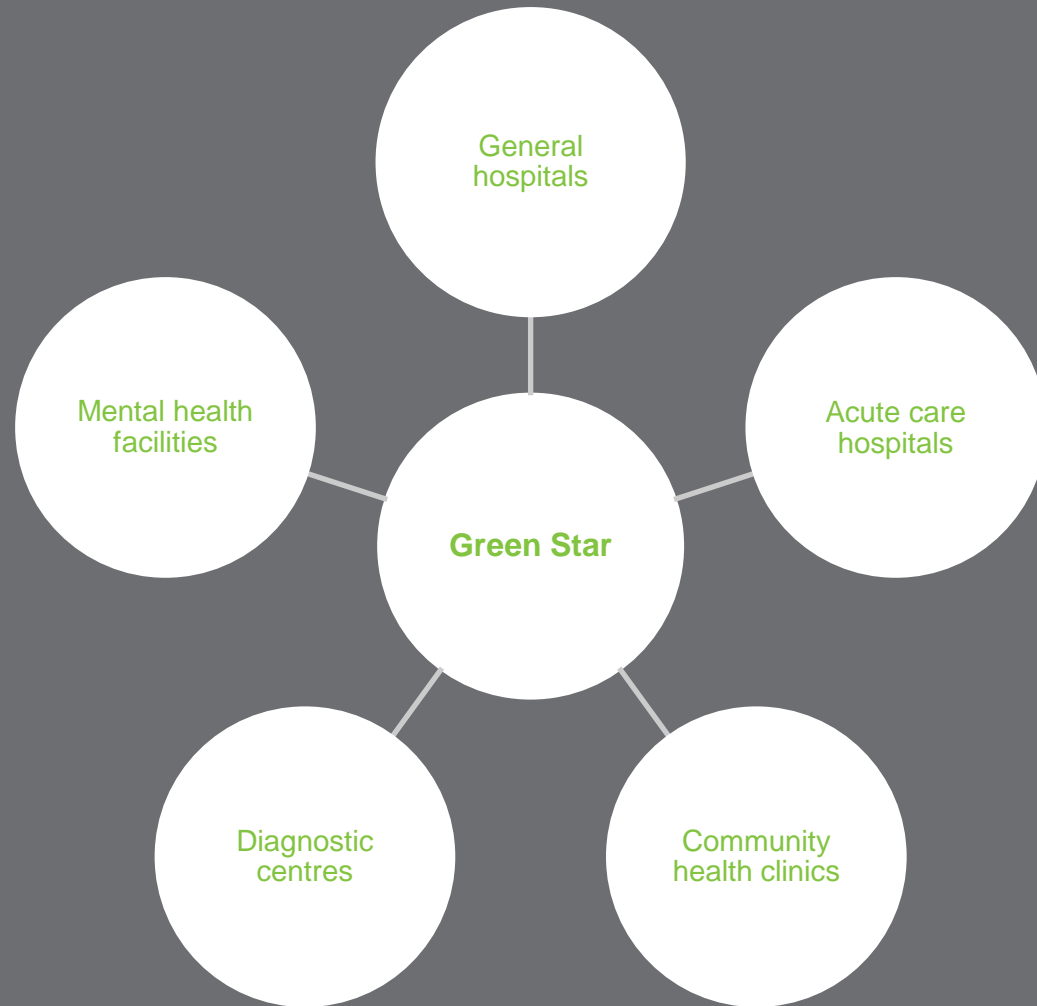


What are green design principles?

- Increased daylight
- Rooms with external views
- More fresh air
- Better quality ventilation systems
- Connection with nature
- Places of respite
- Increased use of natural materials with fewer pollutants.

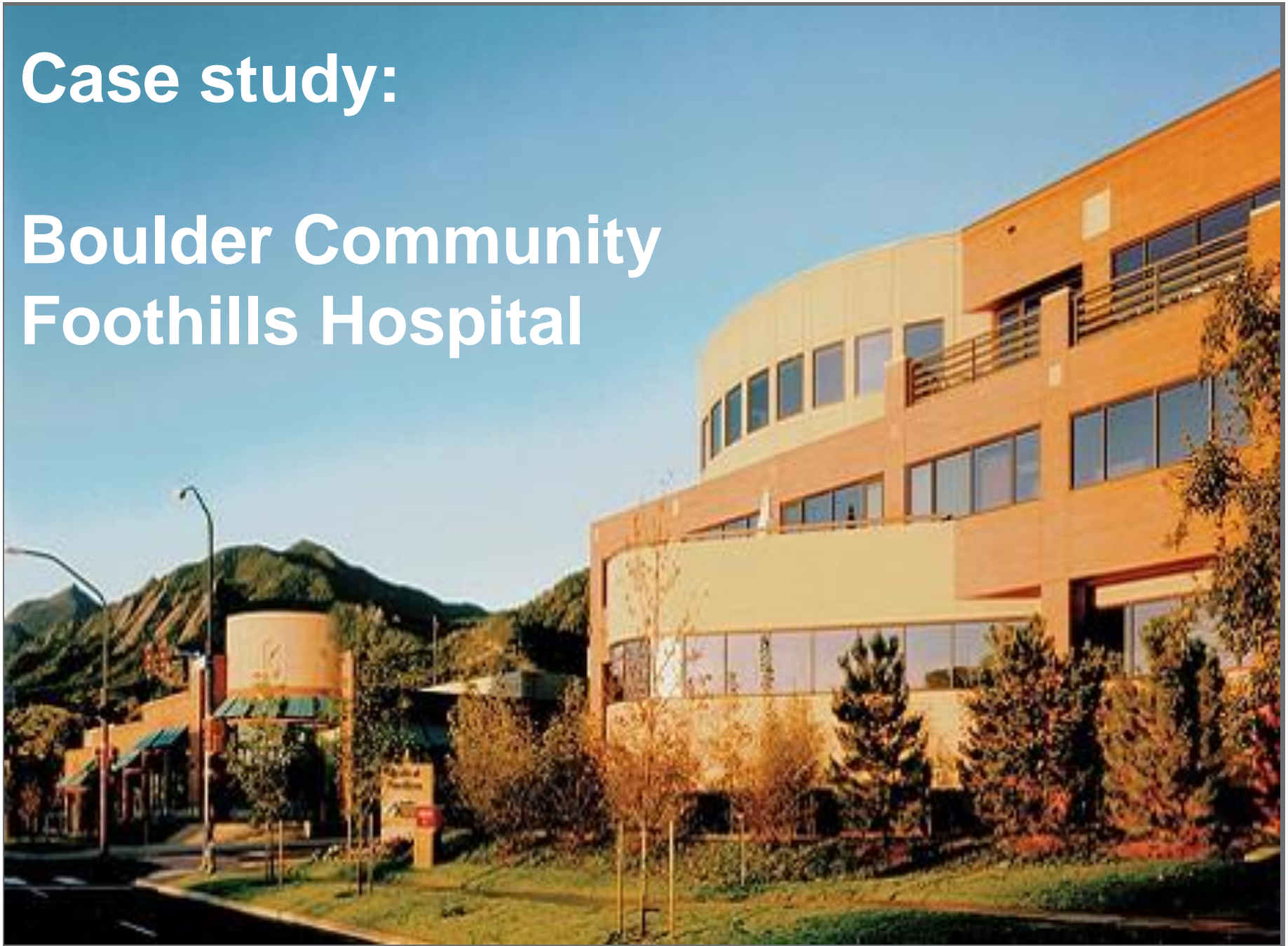


Green Star – Healthcare v1



Case study:

Boulder Community Foothills Hospital



Boulder Community Foothills Hospital

- First hospital to achieve LEED certification
- Opened September 2003
- Project cost US\$45.6 million (excluding land)
- US\$452 per square metre (around AUD\$500)
- 20,624-m², comprehensive 60-bed hospital
- 24-hour emergency care services, ICU
- Surgery, radiology and laboratory services
- Maternity care and paediatrics
- 2 medical office buildings.



Boulder Community Foothills Hospital

- 30% reduction in energy consumption
- Saving of US\$95,000 per year
- 62% construction waste recycled
- Low VOC and formaldehyde materials
- Cost 2% more
- 12 year payback.



Future Green . . .

- Buildings as producers, not just consumers
- Buildings with a positive effect on their surroundings
- Buildings connected to their occupants, through users who understand what was constructed and why
- Holistic view, including GHGs, not just energy efficiency
- A view towards green communities, not just buildings
- A strong business case to help climate change abatement
- Key impacts through future-proofing, risk management and retained asset and rental use and value



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