



# Wathaurong Hub

## Green Star Feasibility Study

Wathaurong Aboriginal Co-operative

September 11, 2024

→ **The Power of Commitment**

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# Executive Summary

The Wathaurong Aboriginal Co-operative has commissioned the Wathaurong Hub Redevelopment, Geelong, inclusive of office spaces, health care and community gathering spaces. As part of the Wathaurong Aboriginal Co-operative's commitment to sustainable development, the project is investigating the opportunities of undertaking Green Star Buildings certification for the new Wathaurong Hub.

This report has been prepared for the Wathaurong Aboriginal Co-operative to assist in the decision of undertaking either 4 or 5 Star Green Star Certification of the new Wathaurong Hub and includes an overview of the certification process, and preliminary points pathways for a 4 star and 5 Star certification.

The 4 Star points pathway currently targets 19 points (15 points minimum plus a 4-point buffer) and the 5 Star points pathway targets a further 20 points (35 points minimum plus 4 points buffer).

It is proposed that the Green Star credit pathways presented would form the basis of a cost and effort determination exercise to be undertaken by the project Quantity Surveyor with support and guidance from GHD. Green Star credit summaries have been provided in section 3.4.1 and include specific guidance to assist in the cost and effort determination for each relevant credit.

Once the cost and effort for each 4 and 5 Star pathway has been evaluated, the Wathaurong Aboriginal Co-operative client team should have the necessary information available to decide whether to pursue a Green Star rating and the respective approach to be adopted by the project.

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# 1. Introduction

## 1.1 Purpose of this report

This report has been prepared for the Wathaurong Aboriginal Co-operative (WAC) to assist in the decision of undertaking either 4 or 5 Star Green Star Certification of the new Wathaurong Hub. The following report sections outline the Green Star certification process and potential 4 and 5 Star Green Star points pathways for the Wathaurong Aboriginal Co-Operative's consideration.

## 1.2 Scope and limitations

*This report: has been prepared by GHD for Wathaurong Aboriginal Co-operative and may only be used and relied on by Wathaurong Aboriginal Co-operative for the purpose agreed between GHD and Wathaurong Aboriginal Co-operative as set out in section 1.1 of this report.*

*GHD otherwise disclaims responsibility to any person other than Wathaurong Aboriginal Co-operative arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report). GHD disclaims liability arising from any of the assumptions being incorrect.*

### **Accessibility of documents**

*If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.*

## 2. Current Performance Targets

### 2.1 Sustainability Management Plan (SMP)

The new Wathaurong hub will be required to meet the City of Greater Geelong sustainability planning requirements as described in the Wathaurong Hub Redevelopment Sustainability Management Plan (SMP). Table 1 below summarises the SMP performance requirements.

Table 1 SMP performance targets

	SMP Requirements
<b>Management</b>	<ul style="list-style-type: none"> <li>All major common area services throughout the development will be separately sub-metered. This allows for monitoring of consumption of electricity and water and identification of opportunities to further reduce consumption.</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>Rainwater storage and rainwater toilet-flushing systems.</li> <li>Efficient water fixtures, fittings and connections</li> <li>Water efficient landscape</li> </ul>
<b>Energy</b>	<ul style="list-style-type: none"> <li>Onsite Solar Photovoltaic (PV) system – target PV system to supply minimum 5% of the building annual demand</li> <li>Energy efficient internal lighting</li> <li>Heating, cooling, and hot water requirements within the building will be minimised through architectural design, selection of appropriate building fabric, and use of efficient mechanical systems</li> </ul>
<b>Stormwater</b>	<ul style="list-style-type: none"> <li>Model for Urban Stormwater Improvement Conceptualisation (MUSIC) modelling demonstrating best practice standards for managing stormwater</li> </ul>
<b>Indoor Environment Quality</b>	<ul style="list-style-type: none"> <li>High levels of daylight access (minimum 33%) to regular use floor areas.</li> <li>High levels of internal air quality (though natural ventilation and carbon dioxide concentration monitoring)</li> <li>Minimum 50% of north, east, and west facing glazing are effectively shaded to manage solar heat gain.</li> <li>All paints, sealants, adhesives, carpets, and engineered wood products selected will not exceed maximum total indoor pollutant emissions</li> </ul>
<b>Transport</b>	<ul style="list-style-type: none"> <li>Bicycle parking will be provided that exceeds planning scheme requirements by a minimum of 50%</li> <li>Electrical infrastructure will be provided allowing for the charging of electric vehicles (at a minimum 1 space is to be provided with EV charging infrastructure)</li> </ul>
<b>Waste</b>	<ul style="list-style-type: none"> <li>Recycling facilities and general waste facilities are equally convenient</li> </ul>
<b>Urban Ecology</b>	<ul style="list-style-type: none"> <li>At least 20% of the total site area is to be covered with vegetation to improve local ecology and biodiversity</li> </ul>

## 2.2 NCC 2022 Section J

In addition to the SMP targets, the building must comply with NCC 2022 Section J requirements. The required calculation to comply with NCC 2022 Section J part J1P1 to J1P4 will be undertaken in the design stage of the project.

Table 2 outlines the minimum requirements for the new Wathaurong Hub located in Climate zone 6.

Table 2 NCC 2022 Section J Provisions

Building Elements	Minimum NCC Requirements
Roof	<ul style="list-style-type: none"> <li>– Total R-Value greater than or equal to R3.2 in climate zone 6</li> <li>– The solar absorptance must be no more than 0.45</li> </ul>
Wall and glazing	<ul style="list-style-type: none"> <li>– The total system U-value of wall-glazing construction must not be greater than U2.0</li> <li>– The solar admittance of wall-glazing construction must not be greater than 0.13</li> <li>– Individual walls forming the building thermal envelope which are lesser than 80% of the area of wall-glazing construction must achieve a minimum total system R-value of R1.0</li> </ul>
Floor	<ul style="list-style-type: none"> <li>– Minimum R2.0 without an in-slab heating or cooling system.</li> </ul>

## 3. Green Star Buildings v1

### 3.1 Overview

Founded by Green Building Council of Australia in 2003, Green Star is an internationally recognised rating system setting the standard for healthy, resilient, positive buildings and places. The Green Star rating system provides a framework to assess how a building reduces its impact on the environment while meeting the economic and social needs for its occupants and surrounding communities. Green Star's goal is to "lead the sustainable transformation of the built environment", by encouraging practices that:

- Reduce the impact of climate change.
- Enhance the health and quality of life of inhabitants and the sustainability of the built environment.
- Restore and protect the planet's biodiversity and ecosystems.
- Ensure the ongoing optimum operational performance of buildings.
- Contribute to market transformation and a sustainable economy.

Green Star Buildings contains 8 categories as can be seen in Figure 1 below. Each category has a set of credits that each address a particular environmental impact. Various credits have set minimum expectations to ensure a project meets a basic definition of a green building established by the Green Building Council of Australia (GBCA). These minimum expectations must be met for the target of any rating level. Points are then awarded for achieving requirements of credits above any minimum expectations at two levels described as credit achievement and exceptional performance. The total number of points awarded determines the level of certification (star rating)

### Responsible

Recognises activities that ensure the building is designed, procured, built, and handed over in a responsible manner.



### Healthy

Promotes actions and solutions that improve the physical and mental health of occupants.



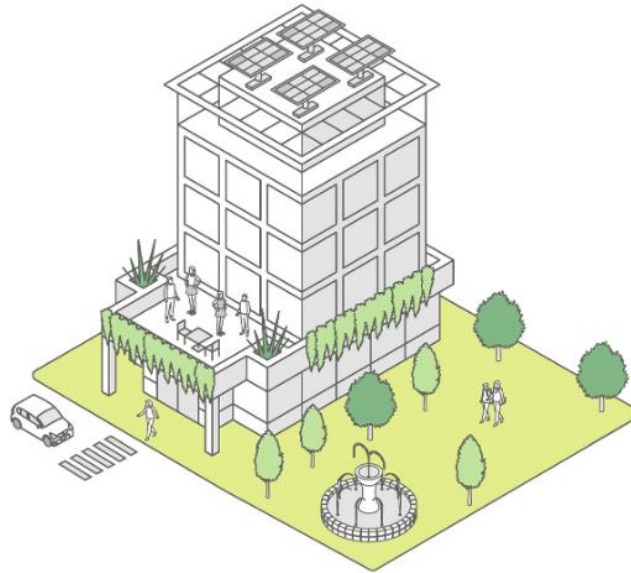
### Resilient

Encourages solutions that address the capacity of the building to bounce back from short-term shocks and long-term stresses.



### Positive

Encourages a positive contribution to key environmental issues of carbon, water, and the impact of materials.



### Places

Supports the creation of safe, enjoyable, integrated and comfortable places.



### People

Encourages solutions that address the social health of the community.



### Nature

Encourages active connections between people and nature and rewards creating biodiverse green spaces in cities.



### Leadership

Recognises projects that set a strategic direction, build a vision for industry, or enhance the industry's capacity to innovate.



Figure 1 Green Star Buildings Credit Categories

Green Star Buildings ratings can achieve 4, 5 or 6 star which requires 15, 35 and 70 points respectively in addition to the Green Star 'minimum requirement' credits.



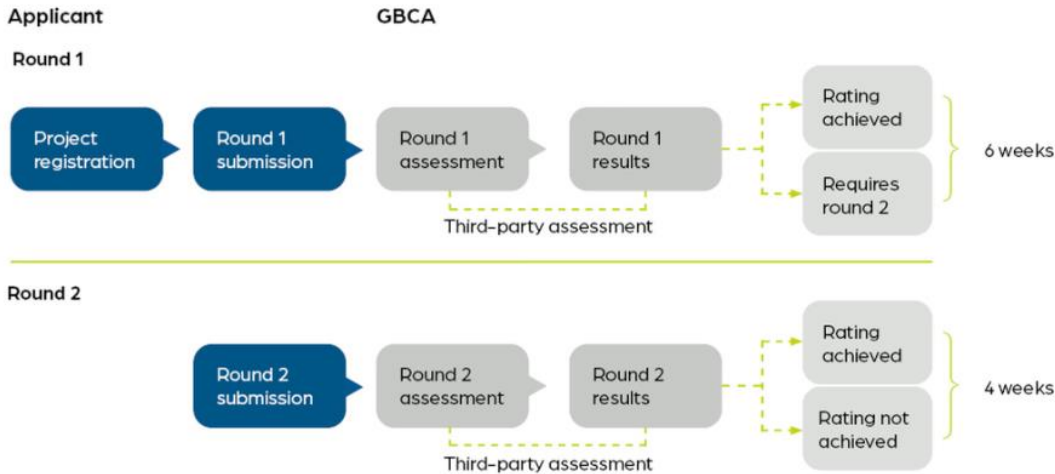
## 3.2 Certification Process

Green Star certification is a formal process managed by Green Building Council of Australia (GBCA), during which a building is awarded a rating by an independent, third-party assessor. It is a document-based assessment, undertaken online.

Within the standard certification process, there are two rounds of assessment. At the first round of assessment, points can be awarded, and the project can be certified, or points may not be awarded and the project is provided with comments and the opportunity to address these items at the second round of assessment. During the Round 2 assessment, additional documentation addressing the Round 1 comments is assessed.

Green Star Certification is awarded at the end of construction. In addition to this, where the project seeks further clarity, there is an option to complete a 'Designed' assessment as an interim step towards the full certification (but is not a certification in itself).

## The certification process



The standard turn around time for assessment results is six weeks for Round 1 and four weeks for Round 2. If there are delays in releasing assessment results, the GBCA will be in contact with the submitter.

A substantial amount of documentation and modelling is required to provide evidence to support the award of specific credits within the Green Star rating. The majority of the modelling requirements and specialist reports required are generally provided by the design team during the documentation stages. These modelling and specialist reports are then updated to reflect the as-built condition of the project at certification. There is also a substantial amount of As-Built documentation required as evidence of the project at construction completion and these documents are generally a contractual requirement for the Contractor.

## 3.3 Green Star Rating Target Strategy

GHD understands that the Wathaurong Aboriginal Co-operative seeks to understand the requirements for the new Wathaurong Hub to formally certify as either 4 or 5 Star Green Star Buildings V1. As such, GHD has prepared a 4 and 5 star preliminary pathway. Please refer to section 3.3.2 and 3.3.3 for the respective target strategies.

### 3.3.1 Climate Positive Pathway

Green Star projects seeking a 5 Star green Star rating after 2023 but before 2026 must comply with the 'Climate Positive pathway' whereas all Green Star projects registering after 2026 must achieve the 'Climate Positive pathway'.

The preliminary Green Star pathway has been prepared with the assumption that the project will register with the GBCA prior to 2026 therefore only the 5 Star points pathway targets credits required as part of the Climate Positive Pathway.

The Climate Positive Pathway requirements are contained within four Green Star Buildings credits and is worth a total 15 points.

- **Credit 21: Upfront Carbon Emissions**
  - 20% reduction in upfront carbon emissions (3 points: credit achievement)
- **Credit 22: Energy Use**
  - 20% reduction in energy use (3 points: credit achievement)
- **Credit 23: Energy Source**
  - 100% all electric and sourced by 100% renewable energy (6 points: credit achievement and exceptional performance)
- **Credit 24: Other Carbon Emissions**

- Scope 1 emissions are off set (3 points: credit achievement)

These credits are targeted as part of each of the 5 star pathway. The Head Contractor is responsible for ensuring the project meets the Climate Positive Pathway requirements.

### 3.3.2 4 Star Target Strategy

GHD has prepared a preliminary 4 Star points pathway to support the process of cost and effort estimation. Refer to Section 3.4.1.

Where targeting a 4 Star rating, the project requires a minimum 15 points to be awarded.

19 points are targeted, providing a 4-point buffer to allow for flexibility to modify the pathway during remaining design and construction stages. A number of other credits have been highlighted (in the 'TBC/Alternative points' column) that could potentially be targeted as alternative credits.

### 3.3.3 5 Star Target Strategy

GHD has prepared a preliminary 5 Star points pathway to support the process of cost and effort estimation. Refer to Section 3.4.1.

Where targeting a 5 Star rating, the project requires a minimum 35 points to be awarded.

39 points are targeted, providing a 4-point buffer to allow for flexibility to modify the pathway during remaining design and construction stages. A number of other credits have been highlighted (in the 'TBC/Alternative points' column) that could potentially be targeted as alternative credits or as additional buffer.

## 3.4 Summary

This report provides a summary of options available to the project to achieve a 4 or 5 star Green Star certification. This forms the basis of understanding the potential impact of pursuing a Green Star certified rating on the overall project design.

Further to this report, the key additional element required to obtain a more complete picture of the impact of Green Star is the cost and design rework impact of individual credits to be targeted and the certification process overall. On this basis, we recommend undertaking the following additional steps:

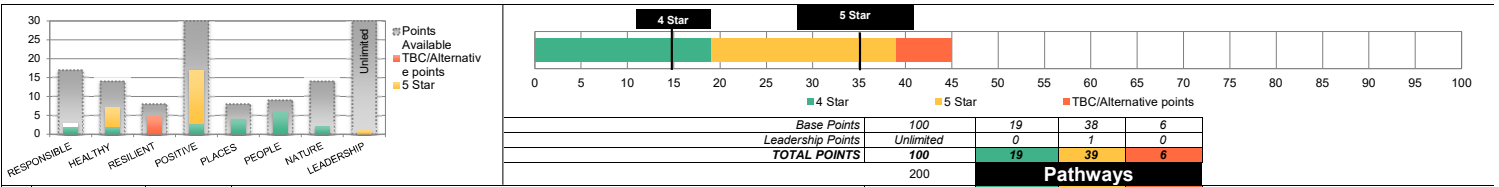
1. WAC review the Green Star feasibility study to gain an understanding of the overall scope and extent of Green Star certification options that could be undertaken.
2. WAC and Quantity Surveyor to establish anticipated costs associated with undertaking each pathway
3. WAC to seek proposals from the design teams to cover additional consultant works related to the Green Star certification
4. Follow up Green Star review session with WAC and relevant members of the consultant team to answer any queries and clarify the way forward.
5. WAC makes a decision on the pathway forward for any formal Green Star certification.

### 3.4.1 4 & 5 Star Green Star Preliminary Points Pathway



Green Star Buildings v1

Client: Wathaurong Aboriginal Co-operative  
Project: Green Star Feasibility



Ref.	Credit Title	Achievement Level	Credit Requirements Summary <i>Summary of criteria shown only. For full criteria refer to Green Star Buildings v1(a) Submission Guidelines</i>	Points Available	4 Star	5 Star	TBC/Alternative points	General Comments
<b>RESPONSIBLE</b>								
1	INDUSTRY DEVELOPMENT	Credit Achievement	The building owner or developer appoints a Green Star Accredited Professional, discloses the cost of sustainable building practices to the GBCA, and markets the building's sustainability achievements.	1	1	1		1. GSAP to be engaged for duration of project. GHD is accredited to undertake this role 2. Costs of applying Green Star to be disclosed to GBCA 3. Buildings sustainability achievements to be marketed in line with GBCA requirements
2	RESPONSIBLE CONSTRUCTION	Minimum Expectation	<ul style="list-style-type: none"> <li>The builder or head contractor has an environmental management system in place to manage its environmental impacts on site;</li> <li>The builder diverts at least 80% of construction and demolition waste from landfill; and</li> <li>The head contractor provides training on the sustainability targets of the building.</li> </ul>	Nil	to be met	to be met		Must be met to achieve a rating. Must be included as contractual requirement for appointed construction contractor.
		Credit Achievement	90% of construction and demolition waste is diverted from landfill, and waste contractors and facilities comply with the Green Star Construction and Demolition Waste Reporting Criteria.	1	1	1		To be included as contractual requirement for appointed construction contractor.
3	VERIFICATION AND HANDOVER	Minimum Expectation	<ul style="list-style-type: none"> <li>Set environmental performance targets through DIR/OPR</li> <li>Complete a services and maintainability review</li> <li>The building has been commissioned according to AIRAH or CIBSE for all services. ASHRAE can be used for mechanical services only.</li> <li><b>Building to be tested for air tightness and aim to achieve permeability of 3.0 m<sup>3</sup>/(hr-m<sup>2</sup>) (facade area).</b></li> <li>Building to be tuned over first 12 months</li> <li>The building is set up for optimum ongoing management due to its appropriate metering and monitoring systems. Meters to be validated.</li> <li>The project team create and deliver operations and maintenance information including building log book to the facilities management team at the time of handover.</li> <li>Information is available to building users on how to best use the building.</li> </ul>	Nil	to be met	to be met		Must be met to achieve a rating. Note building will need to be designed with particular attention to air barrier and tested during commissioning to confirm permeability requirements are met.
		Credit Achievement	<ul style="list-style-type: none"> <li>An independent level of verification is provided to the commissioning and tuning activities through the involvement of an independent commissioning agent;</li> <li>or through a soft landings approach that involves the future facilities management team.</li> <li>For large projects, both must occur.</li> </ul>	1				Not Targeted
4	OPERATIONAL WASTE	Minimum Expectation	<ul style="list-style-type: none"> <li>The project team must demonstrate the building is designed to allow effective management of operational waste by:</li> <li>Separating waste streams (general, paper, glass, plastics and 1 other (e.g. organics, e-waste))</li> <li>Providing a dedicated and adequately sized waste storage area as per third party best practice guidelines; and</li> <li>Ensuring easy and safe access to waste storage areas for both occupants and waste collection contractors.</li> <li>Requirements to be signed off by waste specialist</li> </ul>	Nil	to be met	to be met		Must be met to achieve a rating. This credit is generally consistent with the operational waste initiative in the Sustainability Management Plan (SMP). Further calculation is required to verify waste storage areas are adequately sized and is safe and easy to access.
5	RESPONSIBLE PROCUREMENT	Credit Achievement	<ul style="list-style-type: none"> <li>The building's design and construction procurement process follows ISO 20400 Sustainable Procurement - Guidance and develop a procurement plan; and</li> <li>a supply risk and opportunity assessment is undertaken considering: <ul style="list-style-type: none"> <li>-Human rights;</li> <li>-Labour practices;</li> <li>-The environment;</li> <li>-Fair operating practices;</li> <li>-Consumer issues; and</li> <li>-Community involvement and development.</li> </ul> </li> <li>Provide a narrative on how it has actively addressed one risk and one opportunity.</li> </ul>	1				Not Targeted
6	RESPONSIBLE STRUCTURE	Credit Achievement	<ul style="list-style-type: none"> <li>60% of all structural components (by cost) meet a Responsible Products Value score of at least 10. Eligible products must be compliant with one or more of the following: <ul style="list-style-type: none"> <li>Industry specific environmental product declarations (EPD);</li> <li>Product specific environmental product declarations (EPD);</li> <li>ISO14001 certification;</li> <li>Climate Active Carbon Neutral Certification;</li> <li>Chain of custody certification; and</li> <li>Third-party product certification schemes.</li> </ul> </li> </ul>	3				Not Targeted
		Exceptional Performance	<ul style="list-style-type: none"> <li>In addition to the Credit Achievement, one of the following is met: <ul style="list-style-type: none"> <li>10% of all products in the structure (by cost) meet a Responsible Products Value score of at least 15;</li> <li>OR</li> <li>80% of all products in the structure (by cost) have an average Responsible Products Value score of at least 12.</li> </ul> </li> </ul>	2				Not Targeted
7	RESPONSIBLE ENVELOPE	Credit Achievement	<ul style="list-style-type: none"> <li>60% of all building envelope components (by cost) meet a Responsible Products Value score of at least 10. Eligible products must be compliant with one or more of the following: <ul style="list-style-type: none"> <li>Industry specific environmental product declarations (EPD);</li> <li>Product specific environmental product declarations (EPD);</li> <li>ISO14001 certification;</li> <li>Climate Active Carbon Neutral Certification;</li> <li>Chain of custody certification; and</li> <li>Third-party product certification schemes.</li> </ul> </li> </ul>	2				Not Targeted
		Exceptional Performance	<ul style="list-style-type: none"> <li>In addition to the Credit Achievement, one of the following is met: <ul style="list-style-type: none"> <li>10% of all products in building envelope (by cost) meet a Responsible Products Value score of at least 15.</li> <li>OR</li> <li>25% of all products in the building envelope (by cost) have an average Responsible Products Value score of at least 12.</li> </ul> </li> </ul>	2				Not Targeted
8	RESPONSIBLE SYSTEMS	Credit Achievement	<ul style="list-style-type: none"> <li>20% of all active building systems (by cost) meet a Responsible Products Value score of at least 6. Eligible products must be compliant with one or more of the following: <ul style="list-style-type: none"> <li>Industry specific environmental product declarations (EPD);</li> <li>Product specific environmental product declarations (EPD);</li> <li>ISO14001 certification;</li> <li>Climate Active Carbon Neutral Certification;</li> <li>Chain of custody certification; and</li> <li>Third-party product certification schemes.</li> </ul> </li> </ul>	1				Not Targeted
		Exceptional Performance	<ul style="list-style-type: none"> <li>In addition to the Credit Achievement, one of the following is met: <ul style="list-style-type: none"> <li>5% of all active building systems (by cost) meet a Responsible Products Value score of at least 11.</li> <li>OR</li> <li>15% of all active building systems (by cost) have an average Responsible Products Value score of at least 8.</li> </ul> </li> </ul>	1				Not Targeted



Green Star Buildings v1

Client: Wathaurong Aboriginal Co-operative
Project: Green Star Feasibility

Table with columns: Ref., Credit Title, Achievement Level, Credit Requirements Summary, Points Available, 4 Star, 5 Star, TBC/Alternative points, General Comments. Rows include RESPONSIBLE FINISHES, CLEAN AIR, LIGHT QUALITY, and ACOUSTIC COMFORT.



Table with columns: Ref., Credit Title, Achievement Level, Credit Requirements Summary, Points Available, 4 Star, 5 Star, TBC/Alternative points, General Comments. Rows include categories like EXPOSURE TO TOXINS, AMENITY AND COMFORT, CONNECTION TO NATURE, CLIMATE CHANGE RESILIENCE, OPERATIONS RESILIENCE, COMMUNITY RESILIENCE, and HEAT RESILIENCE. Includes a 'RESILIENT' category total row.



Green Star Buildings v1

Client: Wathaurong Aboriginal Co-operative
Project: Green Star Feasibility

Table with 8 columns: Ref., Credit Title, Achievement Level, Credit Requirements Summary, Points Available, 4 Star, 5 Star, TBC/Alternative points, General Comments. Row 20: GRID RESILIENCE, Credit Achievement, 3 points, 4 Star, 5 Star, 3 TBC points.

Category Total row: 8 points, 0 4 Star, 0 5 Star, 5 TBC points.

POSITIVE

Main table with 8 columns: Ref., Credit Title, Achievement Level, Credit Requirements Summary, Points Available, 4 Star, 5 Star, TBC/Alternative points, General Comments. Rows 21-23: UPFRONT CARBON EMISSIONS, ENERGY USE, ENERGY SOURCE.



Green Star Buildings v1

Table with columns: Ref., Credit Title, Achievement Level, Credit Requirements Summary, Points Available, 4 Star, 5 Star, TBC/Alternative points, General Comments. Rows include categories like OTHER CARBON EMISSIONS, WATER USE, LIFE CYCLE IMPACTS, MOVEMENT AND PLACE, ENJOYABLE PLACES, and CONTRIBUTION TO PLACE.



Ref.	Credit Title	Achievement Level	Credit Requirements Summary <i>Summary of criteria shown only. For full criteria refer to Green Star Buildings v1(s) Submission Guidelines</i>	Points Available	4 Star	5 Star	TBC/Alternative points	General Comments
30	CULTURE, HERITAGE AND IDENTITY	Credit Achievement	<p>Project to comply with <b>one</b> of the following:</p> <p><b>Community Led Design Response</b> Undertake local analysis to identify culture, heritage, and identity unique to the project site and area informed by community engagement as part of this local analysis. Outcomes of community engagement must be used to reflect local identity, culture, and heritage in the design of the building in a publicly demonstrable way (e.g. through community art or placemaking projects, selection of suppliers/designers of artwork or cultural elements, building elements that tell stories of the past and heritage, spaces and uses that reflect the local identities. Engagement activities are to be done in accordance with International Association for Public Participation Australasia (IAP2) core values for public participation and that the project achieved the 'Collaborate' status. A report detailing the community engagement activities undertaken and resultant design responses is to be produced.</p> <p><b>Independent Design Review</b> Design reviews are held at key points in the development of the design by an independent design review panel. At a minimum, these must occur during concept/schematic design stage (to ensure that proponents can take advantage of the advice offered at a time where the design is flexible enough to accommodate change without impacting on time and cost constraints), during design development and at building permit stage (after development approval) a further check must take place by the Design Review Panel Chair or delegate, to ensure that the final design reflects approved development application and any relevant conditions related to design quality.</p>	1				Not Targeted.
<b>Category Total</b>				<b>8</b>	<b>4</b>	<b>4</b>	<b>0</b>	
<b>PEOPLE</b>								
31	INCLUSIVE CONSTRUCTION PRACTICES	Minimum Expectation	<p>The head contractor must ensure the following:</p> <ul style="list-style-type: none"> <li>Separate gender inclusive bathroom facilities and changing amenities with a high degree of privacy provided on-site</li> <li>Diverse gender-specific fit-for-purpose personal protective equipment (PPE) for diverse body sizes and types is provided on-site:</li> <li>Implement policies to address issues of discrimination, racism, and bullying on-site</li> <li>Introduce on-site redress procedures for any relevant breaches and corrective measures to be put in place should any incident be identified</li> <li>Empower a diverse lead team to manage these policies on-site</li> <li>Have policies in place and provide training to 95% of all contractors and subcontractors on drug and alcohol awareness, mental health discrimination, racism, bullying on site, and safe ways to report poor behaviour</li> </ul>	Nil	to be met	to be met		Must be met to achieve a rating. Contractor requirement to be met.
31	INCLUSIVE CONSTRUCTION PRACTICES	Credit Achievement	<p>The project must implement <b>all</b> of the following:</p> <p><b>Needs Analysis</b> The contractor should carry out a needs analysis of potential site workers and sub-contractors at tender (or similar early stage) to determine focus areas and inform the development of policies and programs relevant to all construction workers on site for the full duration of construction.</p> <p><b>Physical and Mental Health Programs</b> The head contractor must show that they have introduced programs and solutions to address at least five of the following:</p> <ul style="list-style-type: none"> <li>Suicide prevention</li> <li>Healthy eating and active living</li> <li>Reduce harmful alcohol and tobacco consumption and avoid drug use</li> <li>Increased social cohesion, community, and cultural participation</li> <li>Understanding depression</li> <li>Preventing violence and injury</li> <li>Decreased psychological stress</li> <li>Finding fulfillment at work or mindful meditation</li> <li>Other issues identified in the Needs Analysis</li> </ul> <p>A mix of programs is acceptable and must cover at least 80% of the workforce that have attended the site for more than three days from commencement on site to practical completion. The programs can be implemented directly by the head contractor or through partnerships with mental and physical health organisations.</p> <p><b>Evaluating the Program's Effectiveness</b> The project must provide an evaluation report to the client and sub-contractors with the information on the programs or initiatives that were delivered, including information on dates, attendance, and available languages and a review on whether the programs delivered the intended outcomes including recommendations for improving future delivery of these programs.</p>	1				Not Targeted
32	INDIGENOUS INCLUSION	Credit Achievement	<p>Project to meet <b>one</b> of the following:</p> <p><b>Reconciliation Action Plan</b> The project team plays an active role in the organisational Reconciliation Action Plan (or adapting an existing plan already in place) by:</p> <ul style="list-style-type: none"> <li>A key member of the Project Team is part of the organisational RAP Working Group</li> <li>At least 90% of the RAP targets have been met on the project</li> <li>All implemented actions related to the RAP are publicly reported on the project's website</li> <li>Outcomes document and reported detailing specific engagement, implementation and actions that have positively influenced the outcomes of the project.</li> </ul> <p><b>Inclusion of indigenous design</b> The building's design and construction incorporates design elements using the Indigenous design and planning strategies and principles. Projects must demonstrate that the Australian Indigenous Design Charter (AIDC) guiding principles are incorporated in the design of the building including:</p> <ul style="list-style-type: none"> <li>How local Aboriginal and Torres Strait Islander communities have been engaged throughout the design development</li> <li>How the project has been designed to acknowledge and recognise the Indigenous culture of the site</li> <li>How information on the reconciliation and cultural values of the project will be made available to the public, visitors, and building tenants in the operational phase of the project's life.</li> </ul> <p>At a minimum, the following four principles from the AIDC are to be addressed, Indigenous Led, Community Specific, Impact of Design, Shared Knowledge. The project team must demonstrate engagement has happened from concept design and continues through to operational handover.</p>	2	2	2		With emphasis of indigenous design being critical for project this credit is targeted.  The extent of indigenous design inclusion within the existing design will likely achieve the credit requirements.
33	PROCUREMENT AND WORKFORCE INCLUSION	Credit Achievement	<p>Project to meet <b>both</b> of the following:</p> <p><b>Social Procurement Strategy</b> Develop and implement a social procurement strategy or plan that directs at least 2% of the building's total contract value to generate employment opportunities for disadvantaged and under-represented groups. Targets and annual reporting requirements shall be included and address all of the following:</p> <ul style="list-style-type: none"> <li>A description of the project's social procurement and workforce objectives, needs, and targets</li> <li>A demographic study of the local region to inform identification of target workforce groups and their skills</li> <li>Descriptions of the roles and responsibilities in the implementation and monitoring of social procurement and workforce targets and contracts</li> <li>Data collection and reporting templates / tools, including how data from head contractors will be collected</li> <li>Monitoring and reporting requirements</li> <li>Reporting requirements for the project director</li> </ul> <p>Projects must report the following at the time of practical completion:</p> <ul style="list-style-type: none"> <li>Dollar spent and as a proportion of building contract value</li> <li>Supplier(s) engaged</li> <li>Where workforce targets are in place, the number of jobs created per target group expressed as Full Time Equivalent</li> <li>Jobs supported</li> </ul> <p><b>Employment Opportunities</b> Generate of employment opportunities for disadvantaged and under-represented groups resulting in a total dollar spend of 2% of the total contract value through either (or combination) of:</p> <ul style="list-style-type: none"> <li>Directly, through workforce targets</li> <li>Indirectly, through social</li> </ul> <p>The building's design and construction can contribute to generating employment opportunities for disadvantaged and under-represented groups through the procurement of procurement goods, services, and construction by any of the following means:</p> <ul style="list-style-type: none"> <li>Aboriginal and/or Torres Strait Islander businesses</li> <li>Third party certified Social enterprises or disability enterprises (such as Supply Nation, Social Traders, BuyAbility and government chamber of commerce)</li> </ul>	2	2	2		With emphasis of indigenous design being critical for project this credit is targeted.  The extent of indigenous design inclusion within the existing design will likely achieve the credit requirements.
33	PROCUREMENT AND WORKFORCE INCLUSION	Exceptional Performance	<p>Achieve <b>both</b> of the following:</p> <p><b>Social Procurement Strategy</b> Develop and implement a social procurement strategy or plan (this can be part of an overall project procurement plan/strategy) that directs at least 4% of the building's total contract value to generate employment opportunities for disadvantaged and under-represented groups. See <i>Credit Achievement requirements for further information.</i></p> <p><b>Employment Opportunities</b> Generation of employment opportunities for disadvantaged and under-represented groups can through either or combination of workforce targets or through social procurement. A combination of these strategies can be used as long as the total dollar spend on the above activities is equal to or greater than the required 4% value of the building's total contract value. See <i>Credit Achievement requirements for further information.</i></p>	1				Not currently targeted



Ref.	Credit Title	Achievement Level	Credit Requirements Summary <i>Summary of criteria shown only. For full criteria refer to Green Star Buildings v1(s) Submission Guidelines</i>	Points Available	4 Star	5 Star	TBC/Alternative points	General Comments
34	DESIGN FOR INCLUSION	Credit Achievement	The building is designed and constructed to be inclusive to a diverse range of people with different needs, ages, gender, mental and physical abilities through: <ul style="list-style-type: none"> <li><b>Equal access to the building:</b> Provide equitable, appealing, safe, and secure access in a manner that does not segregate or stigmatise users through all principal entrance points and main thoroughfares inside and outside the building.</li> <li><b>Diverse wayfinding:</b> Introduce visual, physical, olfactory, and auditory solutions to help individuals navigate the site in a safe and enjoyable manner.</li> <li><b>Inclusive spaces:</b> Introduce internal and external spaces for a diverse range of users, including parents, family rooms, emergency rooms, quiet rooms, and social interaction rooms. These rooms must be accessible to all users.</li> </ul>	2	2	2		
		Exceptional Performance	In addition to the credit achievement requirements the project must conduct a Needs Analysis meeting the following requirements: <ul style="list-style-type: none"> <li>Consult with distinct community types early in the design process to develop a needs analysis that will influence the project during the design phase</li> <li>Consultation must include a balanced cross-section of representation of the target group and be considerate and relevant to the project</li> <li>The consultation process must generate a report that is then used to influence the design of the project show how the building aligns with best practice guidelines, such as the Design for Dignity Guidelines: Principles for Beyond Compliance Accessibility in Urban Regeneration.</li> </ul>	1				not currently targeted
<b>Category Total</b>				<b>9</b>	<b>6</b>	<b>6</b>	<b>0</b>	
<b>NATURE</b>								
35	IMPACTS TO NATURE	Minimum Expectation	The project must comply with all <b>three</b> of the following criteria: <b>Site ecological value</b> - At the date of site purchase or option contract land clearing does not occur as result of the project on old growth forest, prime agricultural land, or a wetland of 'High National Importance', or has no impacts on 'Matters of National Significance' as per the EPBC Act 1999. - If the project site is adjacent, within 100 meters (or contains the above and these are being protected) the construction and future operations of the site takes measures to reduce their impact by achieving the Waterway Protection Credit Achievement and the Credit Achievement for this credit (Impacts to Nature), light pollution impacts are managed and where the site is next to a wetland by also putting in place Wetland Protection Measures. <b>Light Pollution Impacts</b> <b>To neighbouring bodies:</b> All outdoor lighting must comply with AS4282:1997 Control of the obtrusive effects of outdoor lighting at all boundaries apart from those with roads. <b>Light Pollution to Night Sky:</b> No external luminaire has an Upward Light Output Ratio (ULOR) that exceeds 5%; OR External luminaires produces a maximum initial point illuminance value of no greater than 0.5 Lux to the site boundary and 0.1 Lux to 4.5m beyond the site into the night sky. <b>Wetland Management Plan</b> Where required, The site-specific Wetland Management Plan must be prepared by a qualified Ecologist or other qualified professional and include requirements for ongoing quarterly monitoring, annual reporting, and management of the wetland ecosystem for a minimum of five years. The plan must be exhibited to the public on the applicant's website or the local council's offices or library for a minimum of 24 months.	Nil	to be met	to be met		1. Confirm site contained no old growth forest that was cleared or was prime agricultural land 2. Land is does not include 'Matters of National Environmental Significance' subject to Environmental Protection and Biodiversity Conservation Act (1999) 3. If the previous conditions cannot be determined - ecologist to be engaged to assess site and determine ecological value 4. Light pollution credit requirement to be checked and included in the design by the electrical engineer
		Credit Achievement	Comply with <b>both</b> of the following criteria: <b>Protecting Ecological Values</b> <ul style="list-style-type: none"> <li>Context Report: Demonstrate understanding of the historical and current ecological context by documenting the site's current ecological values by type and biomass (including terrestrial and aquatic ecological values, geologic features, and soils and interaction with living things) and use this as a foundation to appropriately identify if there is potential for any future ecological value to be incorporated on site.</li> <li>Protecting ecology: based on understanding demonstrate how ecological values will be protected by retention of vegetated areas, identifying threats and mitigation, engage with the community and local stakeholders and outline risks and opportunities to enhance the site.</li> </ul> <b>Retaining High Biodiversity Values</b> Where the area is deemed an area of high biodiversity value (by an ecologist) at least 50% of this area is to be retained contiguously and a narrative provided demonstrating how impacts to nature and the community from light and noise pollution, habitat disturbance / connectivity, on-site and downstream water quality, migratory paths of animal species, two local issues appropriate to the project site (e.g. pest management and groundwater) have been mitigated. Impacts are to be considered for demolition, siteworks, construction, or future occupation. Where no existing biodiversity is identified through there is no requirement to provide a narrative, but instead how the project will add biodiversity value to the site.	2				Not targeted
36	BIODIVERSITY ENHANCEMENT	Credit Achievement	Project to address all three of following criteria: <b>Landscape Area</b> At a minimum, external landscape whether horizontal or vertical must be provided at a ratio of either 15% of the site area or at a ratio of 1:500 of the GFA, whichever is larger. <b>Diversity of Species</b> Landscape must be diverse and include multiple species/genus/etc. Greater than 60% of plants must be indigenous and the site must include at least one significant (nesting) tree or equivalent habitat provision per 500m <sup>2</sup> of landscaped area. No invasive species are allowed (per Australian Weeds Strategy 2017 to 2027). There are two pathways to demonstrate credit compliance: - Prescriptive pathway - landscaping must not exceed the following percentages per type: <ul style="list-style-type: none"> <li>10% of plants from one species</li> <li>20% of plants from one genus</li> <li>30% of plants from one family</li> </ul> - Performance pathway: An ecologist must assess and verify that the choice of landscaping and biodiversity is diverse and resilient to climate change impacts, thereby increasing the longevity of the landscape. An Ecologist must provide this narrative. <b>Biodiversity Management Plan</b> An ecologist or landscape architect, must prepare a BMP outlining key actions to be undertaken to maintain the ecological integrity of biodiversity on the site, whether this is existing or that created as part of the development. The BMP must contain: <ul style="list-style-type: none"> <li>The vision and objectives for the site's biodiversity values</li> <li>Roles and responsibilities in the implementation of the Plan</li> <li>Description of the biodiversity baseline on and surrounding the site</li> <li>Description of the proposed biodiversity enhancements, how they connect to the existing baseline on and surrounding the site</li> <li>How success and implementation will be measured</li> <li>How impacts or threats to biodiversity on site post practical completion will be mitigated</li> <li>Provision for update of the Biodiversity Management Plan where necessary</li> </ul>	2				Not targeted
		Exceptional performance	Project to address all <b>three</b> of following criteria: <b>Landscape Area</b> At a minimum, external landscape whether horizontal or vertical must be provided at a ratio of either 30% of the site area or at a ratio of 1:500 of the GFA, whichever is larger. <b>Diversity of Species</b> Landscape must be shown to be diverse and include multiple species/genus/etc. An ecologist must review, assess, and verify how the choice of landscaping and biodiversity is diverse and resilient to climate change impacts, thereby increasing the longevity of the landscape. Greater than 80% of plants must be indigenous and the site must include at least one significant (nesting) tree or equivalent habitat provision per 250m <sup>2</sup> of landscaped area. No invasive species are allowed, as per the Australian Weeds Strategy 2017 to 2027. The site must preserve, restore and/or support vulnerable ecosystem through planting critically endangered and/or endangered plant species which are native to the bioregion.	2				Not targeted
37	NATURE CONNECTIVITY	Credit Achievement	The site must be built to encourage species connectivity through the site, and to adjacent sites. If the project sits within a blue or green grid strategy it must contribute to the goals of the strategy. This can be achieved through: <ul style="list-style-type: none"> <li><b>Landscaping:</b> Where connectivity is being achieved through landscaping, this must be contiguous with existing, restored, and new habitats. As a minimum requirement for habitat connectedness, the conservation area must make up at least 25% of the total external area within the building's site boundary. To be eligible, this must be at least 182m<sup>2</sup></li> <li><b>Infrastructure:</b> Design features such as a canopy bridges, wildlife tunnels, green roofs, amphibian tunnels and green infrastructure are used to connect nature on site to adjacent natural areas, which are either existing, restored, or new.</li> </ul>	2				Not targeted



Ref.	Credit Title	Achievement Level	Credit Requirements Summary <i>Summary of criteria shown only. For full criteria refer to Green Star Buildings v1(a) Submission Guidelines</i>	Points Available	4 Star	5 Star	TBC/Alternative points	General Comments
38	NATURE STEWARDSHIP	Credit Achievement	To be eligible for the Nature Stewardship credit projects must meet the Credit Achievement in the Impacts to Nature credit and then comply with <b>all four</b> of the following criteria: <b>Area of Restoration or Protection</b> The area of restoration must be equivalent to the total GFA of the development or site area, whichever is greater. <b>Location of Restoration or Protection Activities</b> Land for restoration must be in Australia and restored to equivalent ecological value of the site before any development occurred. The location of the land designated for the offsite restoration must not be in the development boundary (precinct sites such as university campuses may be considered upon discussion with GBCA). A qualified Ecologist must confirm that the ecological value is equivalent. Land used for restoration cannot be double counted. <b>Activities to Protect or Restore</b> Achieving the credit can be done by either project owner protecting or restoring an area offsite themselves or project owner supports an organisation that restores an area on their behalf. In all cases, for the activities above, the project team must show how the action is additional. That is, the action goes beyond any legislated requirements and how it is resulting in an outcome that wouldn't have happened otherwise. <b>Legislated Requirements</b> Where the project is required to purchase biodiversity offsets, invest in land restoration, restore land, or similar, as part of an EPBC action, development approval, or other legislated requirements, these actions cannot be used to demonstrate compliance with this credit.	2				Not targeted
39	WATERWAY PROTECTION	Credit Achievement	Projects need to meet <b>both</b> of the following requirements. <b>Stormwater Volume</b> Demonstrate a reduction in annual stormwater discharge (ML/yr) comparing pre-development to post-development discharge by <b>40%</b> across the whole site <b>Pollution Reduction</b> Stormwater discharged from the site must meet the following Pollution Reduction Targets: - Total Suspended Solids (TSS) - 85% - Gross Pollutants - 90% - Total Nitrogen (TN) - 45% - Total Phosphorus (TP) - 65% Minimise risk of chemicals or other toxicants entering stormwater including: • Chemical storage, loading, refuelling or work areas must install bunding, with any spills draining to trade waste or appropriate treatment devices and covered with an awning or roofing to separately divert rainfall into the stormwater system. • For sites with >200m <sup>2</sup> of uncovered areas where vehicles are likely to transit and/or park, then hydrocarbon treatment devices must be installed, specified to remove at least 98% of hydrocarbons and, sized to treat a 1-in-3 month ARI (4EY) flow. Electric vehicle parking areas are excluded.	2	2	2		1. OSD required to ensure post development does not exceed pre dev - civil engineer to advise on storage capacity and whether 40% target can be met. 2. Civil engineer to review stormwater quality and advise if GS criteria can be met. Note current stormwater quality targets are lower than Green Star therefore revised MUSIC modelling and enhanced stringency in stormwater quantity measures required. 3. If both 1 and 2 above are satisfied then this credit could be targeted.
		Exceptional Performance	Projects need to meet <b>both</b> of the following requirements. <b>Stormwater Volume</b> Demonstrate a reduction in annual stormwater discharge (ML/yr) comparing pre-development to post-development discharge by <b>80%</b> across the whole site <b>Pollution Reduction</b> Stormwater discharged from the site must meet the following Pollution Reduction Targets: - Total Suspended Solids (TSS) - 90% - Gross Pollutants - 95% - Total Nitrogen (TN) - 60% - Total Phosphorus (TP) - 70% Minimise risk of chemicals or other toxicants entering stormwater as per same requirements as credit achievement.	2				Not targeted
<b>Category Total</b>				<b>14</b>	<b>2</b>	<b>2</b>	<b>0</b>	
<b>BASE TOTAL POINTS</b>				<b>100</b>	<b>19</b>	<b>38</b>	<b>6</b>	

**LEADERSHIP**

40	MARKET TRANSFORMATION	Credit Achievement	Projects can make up to five claims for this credit. Each claim is only worth one (1) point. To claim points, the project team must show that an initiative is innovative by demonstrating that the technology or process is not commonly used within Australia's building industry globally, depending on the context of the innovation claimed. Projects must demonstrate these initiatives align with the GBCA's scoring metrics: • Control of outcome: the initiative delivers a guaranteed outcome • Length of impact: the initiative delivers long-lasting impacts • Scale of impact: the scale of impact is significant. For example, the outcome may satisfy multiple UN Sustainable Development Goals • Transformation potential: the initiative has the potential to transform an industry or sector • Value generation: the initiative can deliver benefits to both stakeholders (e.g. building owner or occupants) as well as the general public	5				Not currently targeted
41	LEADERSHIP CHALLENGES	Credit Achievement	The project meets the requirements of a Leadership Challenge developed by the GBCA. Leadership Challenges will be uploaded to the GBCA website as they are developed. All criteria as listed on the Leadership Challenge must be met to claim reward. There is no limit to how many Leadership Challenges project teams can target.	Unlimited				Not currently targeted
41A	CLIMATE POSITIVE PATHWAY	Credit Achievement	Where all elements of the Climate Positive Pathway are met then a Leadership Challenge Point is awarded	1		1		Climate Positive Pathway Achievement required.
<b>Category Total</b>				<b>Unlimited</b>	<b>0</b>	<b>1</b>	<b>0</b>	
<b>TOTAL POINTS</b>				<b>100</b>	<b>19</b>	<b>39</b>	<b>6</b>	

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Environmental Category	Points Available	4 Star	5 Star	TBC/Alternative points
RESPONSIBLE	17	2	2	1
HEALTHY	14	2	7	0
RESILIENT	8	0	0	5
POSITIVE	30	3	17	0
PLACES	8	4	4	0
PEOPLE	9	6	6	0
NATURE	14	2	2	0
<b>BASE SUB-TOTAL POINTS</b>	<b>100</b>	<b>19</b>	<b>38</b>	<b>6</b>
LEADERSHIP	Unlimited	0	1	0
<b>TOTAL POINTS</b>	<b>Unlimited</b>	<b>19</b>	<b>39</b>	<b>6</b>
<b>COMBINED TOTAL POINTS</b>				
4 Star - 15 to 34 points   5 Star - 35 to 69 points   6 Star - 70+ points				



[Website]

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