

Green Star Buildings

Submission Guidelines

Version 1.1
21 October 2025



Version control

Version	Date	Description
1	29/10/2020	Initial release
1: Revision A	06/07/2021	Maintenance and correction revision
1: Revision B	10/12/2021	Maintenance and correction revision
1: Revision C	18/10/2023	Minor clarification and correction revision
1.1	21/10/2025	Minor revision

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Table of contents

Introduction	7
About the Green Building Council of Australia	7
About Green Star Buildings	8
Rating tool resources	10
Developing Green Star Buildings	12
How Green Star Buildings works	13
Certifying your project	26
Achievement scale	31
Promoting your Green Star project registration and certification	33
Rating tool updates	34
Common definitions	36
Additional information	37
Responsible	39
Industry Development	40
Responsible Construction	44
Verification and Handover	50
Responsible Resource Management	62
Responsible Procurement	67
Responsible Structure	71
Responsible Envelope	75
Responsible Systems	79
Responsible Finishes	82
Impacts Disclosure	85
Healthy	90
Clean Air	91
Light Quality	100
Acoustic Comfort	107
Exposure to Toxins	115
Amenity and Comfort	124
Connection to Nature	128
Resilient	133
Climate Resilience	134
Operations Resilience	140
Community Resilience	145
Heat Resilience	149
Grid Resilience	153
Positive	158

Energy Source	159
Energy Source – Pathway A: Owner Operated pathway	162
Energy Source – Pathway B: Tenant Operated pathway	168
Energy Use	172
Energy Use – Pathway A: Reference building pathway	176
Energy Use – Pathway B: NABERS Commitment Agreement pathway	179
Energy Use – Pathway C: Residential pathway	184
Energy Use – Pathway D: Small non-residential pathway	191
Upfront Carbon Reduction	196
Upfront Carbon Reduction – Pathway A: Benchmark pathway	199
Upfront Carbon Reduction – Pathway B: Reference building pathway	203
Upfront Carbon Compensation	207
Future-ready Refrigeration Equipment	211
Low-Emissions Transport	218
Design for Circularity	222
Water Use	228
Places	234
Movement and Place	235
Enjoyable Places	241
Contribution to Place	245
Culture, Heritage and Identity	251
People	255
Inclusive Construction Practices	256
First Nations Inclusion	261
Procurement and Workforce Inclusion	266
Design for Equity	272
Nature	277
Impacts to Nature	278
Biodiversity Enhancement	287
Nature Connectivity	293
Nature Stewardship	297
Waterway Protection	302
Leadership	308
Market Transformation	309
Leadership Challenges	312
Appendix	314
Appendix A. Acknowledgements	314

Introduction

About the Green Building Council of Australia

The Green Building Council of Australia (GBCA) is Australia's leading authority on sustainable buildings and communities. The GBCA was established in 2002 to develop a sustainable property industry in Australia and drive the adoption of sustainable practices. Today, the GBCA operates Australia's only national voluntary, comprehensive sustainability rating system for the built environment – Green Star.

What is Green Star?

Green Star is Australia's trusted mark of quality for the design, construction and operations of healthy, resilient and positive buildings, fitouts, communities and homes.

Green Star's mission is to "*lead the sustainable transformation of the built environment*". Green Star aims to achieve this by encouraging practices that:

- Reduce the impact of climate change
- Enhance health & quality of life
- Restore and protect our planet's biodiversity and ecosystems
- Drive resilient outcomes for buildings, fitouts, communities and homes
- Contribute to market transformation and a sustainable economy

The rating tool, certification and evolution of the tool is informed by the following ten principles:

- | | |
|--|-------------------------------------|
| • Green Star is holistic | • Green Star is robust |
| • Green Star is targeted | • Green Star is transparent |
| • Green Star is outcomes focused | • Green Star is verifiable |
| • Green Star is industry developed and adopted | • Green Star promotes innovation |
| • Green Star reflects best practice | • Green Star celebrates achievement |

Through Green Star, assets can achieve certification for their level of performance against one of the many Green Star rating tools. Green Star certification describes to the industry the attributes of the asset in terms that are widely understood and accepted.

The Green Star rating system is composed of five rating tools:

- Green Star Buildings: a rating tool for the design and construction of new buildings and major refurbishments
- Green Star Fitouts: a rating tool for the design and construction of new interior fitouts
- Green Star Performance: a rating tool for sustainable building operations
- Green Star Communities: a rating tool for communities and precincts
- Green Star Homes: a rating tool for the design and construction of new freestanding, detached houses homes and townhouses

About Green Star Buildings

Green Star Buildings aims to meet current and future demands on the built environment with aspirational benchmarks for design, construction, and operational performance. It also provides a pathway for building owners to address carbon emissions over time.

Green Star Buildings is a rating tool developed to rate the design and construction of any building. Green Star Buildings aims to:

- Assist clients and project teams to achieve and rate their sustainability goals for their project.
- Encourage a new approach by rewarding healthy, resilient, and positive best practice outcomes and excellence.
- Provide consistent and clear advice in an easy-to-use manner.

Green Star Buildings features eight categories representing the issues that will define the next decade of the built environment.



Responsible

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



Places

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



Healthy

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



People

Encourages solutions that address the social health of the community.



Resilient

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



Nature

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



Positive

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



Leadership

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

Each category groups a number of issues related to a certain impact. These are known as credits. A credit addresses an initiative that improves or has the potential to improve a project's performance.

Credits are weighted in relation with each other by varying the number of points available. Each credit defines a clear outcome that a project must meet. Where the outcome is verified to have been met, a project will be awarded the relevant available points.

Once all credits are assessed, the total number of points achieved is compared against the available points in the rating tool, and a certified rating is awarded.

A building seeking certification can achieve a Green Star 'Certified' rating. This rating is awarded at the end of construction and does not expire. There is an option to complete a 'Designed' assessment, an interim step towards the full certification.

Green Star Buildings certification identifies projects that have demonstrated the achievement of a specific level of sustainability. The rating describes to the industry the sustainability attributes of the project in terms that are widely understood and accepted.

Key features

Green Star Buildings v1.1 has five key features:

- Delivers a holistic definition of a sustainable building
- Drives deep decarbonisation
- Responds to sustainability megatrends of nature and circularity
- Creates clear expectations for new buildings
- Drives opportunities for supply chain transformation

Delivers a holistic definition of a sustainable building

Green Star Buildings is underpinned by a holistic framework that addresses social and environmental issues. This rating tool responds to global movements and initiatives such as the Paris Agreement and the United Nation's Sustainable Development Goals. These are increasingly on the radar of investors, governments, and communities. Green Star Buildings certification will give owners, occupiers, and investors' confidence that theirs is a high-quality and future-proofed asset.

In particular, the rating tool:

- Addresses holistically the key megatrends of climate action, resource and circularity, and health, equity and wellbeing.
- Helps buildings meet 12 out of 17 UN Sustainable Development Goals.
- Responds to the Intergovernmental Panel on Climate Change (IPCC) recommendations on the built environment, which resulted in a clear set of benchmarks and practices to drive the built environment to be on track for a 1.5°C trajectory.

Drives deep decarbonisation

Green Star Buildings aims to drive all buildings to eliminate their direct operating emissions from fuels and refrigerants, be ready for a renewable energy grid during operations, and drastically reduce their embodied carbon during construction. It aims to do this by setting clear targets that become more stringent over time. This approach to deep decarbonisation in Green Star Buildings is known as the Climate Positive Pathway.

This path aims to provide a pathway for Australia to deliver buildings that are fossil fuel free, powered by renewables, highly efficient, built with lower carbon materials and offset with nature. It aims to create supply chains and expertise in the sector to enable policy change in the built environment for new buildings by 2030.

Further information is available in the section Climate Positive Pathway.

Responds to sustainability megatrends of nature and circularity

Over the past five years, there has been increased focus on nature and circularity and the impacts of these trends on the sector. In particular, the rise of the Taskforce for Nature Related Financial Disclosures (TNFD) and the Kunming-Montreal Global Biodiversity Framework means that nature and circularity are becoming key to governments, tenants, investors, developers and building owners.

In response, and to ensure industry is prepared to respond, Green Star Buildings v1.1 has two new features:

- A new *Nature Positive Pathway* for projects registering from 2028 onwards that requires biodiversity net gains and the reporting on nature related impacts. The category has also been reweighted to drive further on-site nature related solutions.
- Two new credits *Design for Circular Economy* and *Impacts Disclosure* designed to direct more attention to end-of-life impacts and the practice of circularity measurement and improvements in Australia. These credits build on the *Circular Economy Leadership Challenge* of the previous version.

Creates clear expectations for new buildings

There is a set of *Minimum Expectations* that must be achieved by all projects to achieve a Green Star rating. The *Minimum Expectations* aim to ensure all Green Star rated buildings meet a basic definition of a green building (energy efficient, water efficient,

good healthy spaces, built responsibly, and on sites that are not critical natural areas). These expectations will assist anyone in understanding the characteristics of a Green Star rated building.

In version 1.1, the *Minimum Expectations* have been expanded as the definition of a green building evolves. All buildings will also be fossil fuel free, have considered the impacts of refrigerant selection and discloses nature-related metrics. Additional expectations apply to 5 and 6 Star rated buildings as part of the Climate Positive Pathway and Nature Positive Pathway and will gradually be applicable to all ratings over time.

Drives opportunities for supply chain transformation

Green Star Buildings aims to create market demand for innovative, responsible, and low carbon products. It does this by:

- Introducing a new framework for assessing products and materials that rewards products that have lower environmental impact, are transparent, respect human rights, and are lower in carbon content.
- Creating a driver for low carbon products by introducing a requirement that must be met by all buildings to reduce their embodied carbon to achieve a rating.

Rating tool resources

Green Star Buildings is composed of the following:

- **Submission Guidelines:** which contains the requirements and benchmarks (credits) that a building must comply with to achieve a rating.
- **Green Star Online:** which allows a project team to keep track of their score submit their documentation.
- **Calculators and guides:** which assist project teams to calculate whether specific thresholds have been met.
- **Technical Questions:** which help project teams seek clarity or propose alternatives to the information in the submission guidelines or guides.
- **Frequently Asked Questions:** which provide project teams with answers to questions that are considered relevant to most buildings.
- **Guidance documents:** developed by the GBCA to assist project teams towards achieving a rating.

All Green Star user resources are accessible online through the [Green Star Manager](#).

Green Star quotes several standards, external guides, and legislation within each credit. Where referenced, these refer to the currently enforced version (e.g. by the Australian Building Codes Board, or local council), unless otherwise stated.

Submission Guidelines

The Submission Guidelines (this document) is the collection of all credits applicable to eligible projects. Within this document, all the categories and credits are explained, targets are set, and submission requirements are detailed. The Submission Guidelines contain:

- An overview of the rating tool;
- Information on the certification process;
- The targets and criteria of each credit;
- The requirements for achieving a Green Star Buildings rating; and
- The recommended evidence to include in the Certified submission.

Green Star Online

Green Star Online is a digital system that must be used when seeking a formal rating. It includes the submission forms, the scorecard, and calculators and allows project teams to keep track of a Green Star submission. The system will help project teams follow the information presented in the Submission Guidelines to guide project teams with compiling their submission. It is also used by the GBCA to provide the results of each round of assessment.

The online system can be accessed via the Submission button for the relevant Green Star Buildings project in [My Projects in the Green Star Dashboard](#).

For more information, see the [GBCA's Digital strategy document](#).

Calculators and guides

Some credits require calculators to demonstrate compliance with the credit criteria. The submission content section of each credit specifies if a calculator is needed. Calculation guides are also available to assist project teams in completing the calculators, which can be downloaded from the Green Star resources portal. The following table summarises the credits that have calculators.

Credit	Description
Responsible Products credits	Allows projects to determine whether their building has the requisite amount of responsible products
Energy Use – Reference pathway	Allows project teams to demonstrate that they are reducing their energy consumption against a reference building.
Upfront Carbon Emissions	Enables project teams to demonstrate that they are reducing their upfront carbon against a benchmark or a reference building.
Upfront Carbon Compensation	Allows project teams to demonstrate the project's upfront carbon emissions have been compensated.
Future-ready Refrigeration Equipment (criteria dependent)	Enables projects targeting the <i>Low Initial Charge</i> or <i>Lower Initial Charge</i> criteria to demonstrate that the project overall has selected low GWP refrigerants.
Water Use	Allows project teams to demonstrate that they are reducing their water consumption against a typical building.
Movement and Place	Allows project teams to demonstrate that they are reducing their transport related impacts against a typical building.
Procurement and Workforce Inclusion	Enables projects to demonstrate the proportion of the project spend that has been dedicated to social procurement initiatives.
Biodiversity Enhancement	Enables projects to demonstrate biodiversity net gain.

Technical Questions

Technical Questions are intended to assist project teams in communicating to a Certified Assessor instances where clarification is needed, or alternative compliance pathways are reviewed and approved by the GBCA. Technical Questions must be submitted online at [My requests](#) and included in the project's submission.

Frequently asked questions (FAQs)

A database of Frequently Asked Questions (FAQs) is available to provide additional technical assistance for no additional charge. Using FAQ responses is not mandatory but may save projects time in some instances. Project teams have the option of including FAQs in their submission should the outcome support their project.

Should a project wish to apply a specific FAQ response then it must be stated in the submission and the FAQ must be included as submission supporting documents. Assessors will not refer to the FAQ database as part of the assessment process, other than to verify the validity of an included FAQ. The FAQ database can be found [here](#).

Guidance documents

GBCA also develops guidance documents that assist project teams towards achieving a rating. These are available through the [Green Star resources portal](#).

Developing Green Star Buildings

Green Star Buildings was developed through a comprehensive engagement process with industry. It had three distinct stages:

- A **scoping phase** for the Future Focus program, which outlined the program's objectives. This included releasing a scoping paper and hosting four sessions across Australia. The GBCA received over 100 submissions, with a high degree of support for the program's direction.
- A **consultation phase** for Green Star Buildings, which detailed how the Future Focus program translated to the rating tool for buildings. The GBCA received over 125 submissions with a high degree of support for the revised rating tool, including the revised framework and scope
- A **draft phase**, where the credits were released for public comment. The GBCA also engaged with 11 projects (the 'Early Access Program') to test the rating tool and obtain feedback during its development.

Green Star Buildings reflects three years of engagement with industry. This extensive engagement process lends confidence that the rating tool reflects the issue and opportunities facing the built environment over the coming decade.

More information on the Governance of Green Star can be found [here](#).

Developing version 1.1

Version 1.1 is a minor revision to Green Star Buildings v1. The revision ensures continued alignment with GBCA's strategic areas of climate action, nature and circularity to ensure buildings are designed to meet the challenges of the next decade. Updates have also been made based on a review of industry feedback, frequently asked questions, Technical Questions and Assessment Panel comments that have been collated since version 1 was released in 2020. It aims to provide technical amendments, clarifications and improvements.

The proposed updates were published for public consultation in October 2024 to receive additional feedback to inform the final updates. These were also discussed extensively with GBCA's Expert Reference Panels and endorsed by the Green Star Advisory Committee and Advisory Groups.

Acknowledgements

Green Star Buildings was developed thanks to the support of hundreds of people and dozens of organisations in industry. From our Future Focus partners to our Expert Reference Panels, from our colleagues worldwide in our Green Building Council network, to our partners in the built environment space, and finally to all our member organisations, we acknowledge your support in delivering this next version of Green Star.

We'd like to highlight and thank those who provided significant time during this process. Their names are listed in Appendix A.

How Green Star Buildings works

Green Star Buildings is organised around the following concepts:

- Core credits
- *Minimum Expectations*
- The Climate Positive Pathway
- The Nature Positive Pathway
- Leadership
- Sector Specific Credits and Pathways

Minimum expectations

No points – all mandatory for every project

Core rating tool

Climate Positive path
(15 points)

100 points – score is calculated based on these

Sector specific credits

Sector specific credits are optional and can be used to supplement the score above. There is no penalty for not achieving them.

 **Leadership**

Market Transformation

Leadership challenges

Can be used to supplement score above.

1 point per claim, max 5 claims – Reflects industry claims

Unlimited claims – Developed by GBCA. Defines next step for the rating tool and leadership performance.

There are eight categories in Green Star Buildings.

- Responsible
- Healthy
- Resilient
- Positive
- Places
- People
- Nature
- Leadership

Each category contains multiple credits. A credit addresses an outcome that improves or has the potential to improve a project's sustainability performance.

Credits are weighted in relation with each other by varying the number of points available. Each credit defines a clear outcome that a project must meet. Where the outcome is verified to have been met, a project will be awarded with the relevant available points.

Once all credits are assessed, the total number of points achieved is tallied, and the project is certified as either a 4, 5, or 6 Star rating.

Credit overview

Performance levels

The performance levels include:

- **Minimum Expectation:** mandatory outcomes that all projects must meet as part of achieving a rating; these do not earn points.
- **Credit Achievement:** outcomes that projects must meet to earn at least one point within a credit.
- **Exceptional Performance:** additional outcomes that can earn the maximum points available in a credit.

Performance levels are typically achieved in sequential order where each level builds on the previous one with independent but cumulative criteria. Projects cannot achieve subsequent performance levels if the preceding level has not been achieved unless explicitly noted (i.e. projects must achieve Credit Achievement in order to achieve Exceptional Performance).

The credit specifies the relationship between levels as either “in addition to” where preceding levels must be achieved before subsequent ones or “in conjunction with” where achieving a higher threshold at one level contributes to achieving the preceding level.

Points

Credit Achievement and Exceptional Performance levels award up to three points. Most credits are assessed on a pass/fail basis with no partial points awarded. Some credits have stepped points available where whole points are awarded by achieving intermediary benchmarks within a performance level. This is denoted within the relevant credit criteria. The maximum points a credit can earn is six, determined by the highest performance level it includes.

Credit components

Each credit has the following sections:

Outcome	Outlines the result of achieving all the criteria outlined within it.
Criteria	Outlines the performance levels and the points available.
Additional Information	<p>Provides relevant details including:</p> <ul style="list-style-type: none">• Scope of credit defines the boundaries for applying the credit outcome and criteria. If different scopes apply to different building classes, they will be specified here. If no specific guidance is provided, the scope is assumed to be consistent across all building classes.• Stage implementation indicates the development stage at which the credit typically applies.• Synergies with other credits highlights alignment with other credits in the rating tool.• Sustainable Development Goals (SDGs) lists any SDGs relevant to the credit.• Relevant reporting initiatives identifies applicable reporting initiatives for the credit.
Requirements	<p>Describes the method for demonstrating compliance with the credit criteria.</p> <p>Additional information related to fitout scope and tenanted buildings is highlighted in green:</p> <p>Fitout scope provides clarification on how fitout works are considered in the requirements or the extent of fitout works that is required to demonstrate compliance.</p> <p>Tenanted buildings notes requirements for building owners when the building is tenanted. This is applicable to any tenanted spaces within a project.</p>
Definitions	Specifies the definition of specific terms in the <i>Requirements</i> that must be applied, unless agreed with GBCA via a Technical Question.

Guidance	Contains supporting information for credit requirements and are not mandatory to apply. However, where project teams deviate from guidance, they should articulate in the narrative as to why it is not relevant. An assessor may use their discretion to determine if this results in a non-conformance.
Submission content	Lists examples of documentation that can be used as evidence. It also states when a calculator must be provided too.
Supporting information	Lists any relevant standards referenced in the credit requirements and other resources that may assist project teams in targeting the credit.

Credits in the rating tool

The table below summarises the credits, performance levels and points available across each category. Refer to individual credits for detailed requirements.

Performance levels highlighted in blue have stepped points available. The credits in the Climate Positive Pathway are highlighted in yellow. The credits in the Nature Positive Pathway are highlighted in green.

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points
Responsible					17
1	Industry Development		1		1
2	Responsible Construction	●	1		1
3	Verification and Handover	●	1		1
4	Responsible Resource Management	●			Nil
5	Responsible Procurement		1		1
6	Responsible Structure		2	2	4
7	Responsible Envelope		2	2	4
8	Responsible Systems		1	1	2
9	Responsible Finishes		1	1	2
10	Impacts Disclosure		1		1
Healthy					14
11	Clean Air	●	2		2
12	Light Quality	●	2	2	4

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points
13	Acoustic Comfort	●	2		2
14	Exposure to Toxins	●	2		2
15	Amenity and Comfort		2		2
16	Connection to Nature		1	1	2
Resilient					7
17	Climate Resilience	●	1		1
18	Operations Resilience		2		2
19	Community Resilience		1		1
20	Heat Resilience		1		1
21	Grid Resilience		2		2
Positive					32
22	Energy Source	●	2	2	4
23	Energy Use	●	3	3	6
24	Upfront Carbon Reduction	●	3	3	6
25	Upfront Carbon Compensation		1	2	3
26	Future-ready Refrigeration Equipment	●	1	2	3
27	Low-Emissions Transport		1		1
28	Design for Circularity		2	1	3
29	Water Use	●	3	3	6
Places					7
30	Movement and Place	●	2		2
31	Enjoyable Places		2		2
32	Contribution to Place		2		2
33	Culture, Heritage and Identity		1		1

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance	Total points
People					9
34	Inclusive Construction Practices	•	1		1
35	First Nations Inclusion		2		2
36	Procurement and Workforce Inclusion		2	1	3
37	Design for Equity		2	1	3
Nature					14
38	Impacts to Nature	•	2		2
39	Biodiversity Enhancement		3	3	6
40	Nature Connectivity		2		2
41	Nature Stewardship		2		2
42	Waterway Protection		2		2
Leadership					
43	Market Transformation		Up to 5		5
44	Leadership Challenges		Per Leadership Challenge.		
Sector Specific Credits				Per Sector Specific Credit.	

Core rating tool

The core of the rating tool is made up of 42 credits across seven of the eight categories, known as the core rating tool. These credits account for 100 available points, which is what the rating score is based on.

Minimum Expectations

There is a set of *Minimum Expectations* in the rating tool. All *Minimum Expectations* must be targeted by any project looking to achieve a Green Star rating. *Minimum Expectations* are not awarded points and therefore, to achieve a rating, the project must accumulate points in addition to the *Minimum Expectations*.

The *Minimum Expectations* aim to ensure all Green Star rated buildings meet a basic definition of a green building (energy efficient, water efficient, good healthy spaces, built responsibly and on sites that are not highly sensitive areas). In summary, buildings must be designed and built to:

- Protect environmentally significant areas
- Be built with climate change in mind

- Emit less carbon in construction and during operations
- Be water efficient
- Have improved air, light, acoustics and product finishes
- Promote physical activity
- Manage environmental impacts during construction
- Embrace the diversity of our population
- Enable practices that reduce operational waste
- Be verified to work

There is at least one *Minimum Expectation* per core category in the rating tool.

Minimum Expectation criteria

No.	Credit	Minimum Expectation criteria
Responsible		
2	Responsible Construction	<ul style="list-style-type: none">• Environmental Management System: The head contractor has an environmental management system in place to manage its environmental impacts on site.• Environmental Management Plan: The head contractor has an environmental management plan to cover the scope of construction activities.• Construction and Demolition Waste Diversion: At least 80% of construction and demolition waste is diverted from going to landfill.• Sustainability Training: The head contractor provides training on the sustainability targets of the building.
3	Verification and Handover	<ul style="list-style-type: none">• Metering and Monitoring: The building is set up for optimum ongoing management due to its appropriate metering and monitoring systems.• Commissioning and Tuning: The building has set environmental performance targets, designed and tested for airtightness, been commissioned and will be tuned.• Building Information: The project team creates and delivers operations and maintenance information to the facilities management team at the time of handover. Information is available to building users on how to best use the building.
4	Responsible Resource Management	<ul style="list-style-type: none">• Collection of Waste Streams: The project is designed for the collection of separate waste and resource streams.• Dedicated Waste Storage Area: The building provides a dedicated and adequately sized waste and resource storage area.• Safe and Efficient Access to Waste Storage: The building ensures safe and efficient access to waste and resource storage areas for both occupants and waste and resource collection contractors.
Healthy		
11	Clean Air	<ul style="list-style-type: none">• Ventilation System Attributes: Levels of indoor pollutants are maintained at acceptable levels.• Provision of Outdoor Air: A high level of effective outdoor air is provided.• Exhaust or Elimination of Pollutants: Pollutants entering the building are minimised.

No.	Credit	Minimum Expectation criteria
12	Light Quality	<ul style="list-style-type: none"> Lighting Comfort: Lighting within the building meets minimum comfort requirements. Glare from Light Sources: Good lighting levels suitable for the typical tasks in each space are available. Daylight Strategy: The building aims to maximise access to daylight.
13	Acoustic Comfort	<ul style="list-style-type: none"> Acoustic Comfort Strategy: An Acoustic Comfort Strategy is prepared to describe how the building and acoustic design aims to deliver acoustic comfort to the building occupants.
14	Exposure to Toxins	<ul style="list-style-type: none"> Paints, Adhesives, Sealants, and Carpets: The building's paints, adhesives, sealants and carpets are low in toxins or non-toxic. Engineered Wood Products: The building's engineered wood products are low in toxins or non-toxic. Banned or Highly Toxic Materials: Occupants are not exposed to banned or highly toxic materials in the building

Resilient

17	Climate Resilience	<ul style="list-style-type: none"> Climate Change Pre-screening Checklist: The project team completes the climate change pre-screening checklist and communicates the building's exposure to climate risks to the applicant.
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Positive

22	Energy Source	<ul style="list-style-type: none"> All-electric Building Services: The building is all-electric and has no infrastructure for fossil fuels for hot water, space heating and cooking. Remaining Emissions Roadmap: If there are other uses of fossil fuels, a roadmap is provided to eliminate these.
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Pathway A: Reference building pathway

- Reducing Energy Use:** The building's energy use is at least 10% less than a reference building.

Pathway B: NABERS Commitment Agreement pathway

- NABERS Commitment Agreement:** The building's energy use is modelled to perform at a specified minimum NABERS star rating (by building class).

Pathway C: Residential pathway

- NatHERS Ratings:** The building has a weighted-area average of NatHERS 7.5 stars and at least a NatHERS 6 stars for each sole-occupancy unit.
- Domestic Hot Water Demand:** The building addresses domestic hot water demand.
- Pool Covers:** Where a pool exists, it has a pool cover.
- Energy Efficiency Requirements:** The building complies with NCC Parts J3 to J8.

Pathway D: Small non-residential buildings pathway

- Building Envelope Attributes:** The building has several efficient building fabric attributes.

No.	Credit	Minimum Expectation criteria
		<ul style="list-style-type: none"> Building Systems Attributes: The building has several efficient building systems attributes. Energy Consumption Estimate: The project estimates its energy use.
24	Upfront Carbon Reduction	<p>Pathway A: Benchmark pathway</p> <ul style="list-style-type: none"> Reducing Upfront Carbon Emissions: The building's upfront carbon emissions are at least 10% less than a benchmark. <p>Pathway B: Reference building pathway</p> <ul style="list-style-type: none"> Reducing Upfront Carbon Emissions: The building's upfront carbon emissions are at least 10% less than a reference building.
26	Future-ready Refrigeration Equipment	<ul style="list-style-type: none"> Future-ready Buildings: The building considers future-proofing the building for equipment that uses ultra-low GWP refrigerants
28	Water Use	<p>or</p> <ul style="list-style-type: none"> Sanitary Fixture and Appliance Efficiency: The building has efficient water fixtures. Reducing Water Use: The building is more water efficient than a reference building.

Places

30	Movement and Place	<ul style="list-style-type: none"> Changing Facilities: The building includes showers and changing facilities for building occupants. Safe Ingress: Access to changing facilities is located in a safe and protected space.
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People

34	Inclusive Construction Practices	<ul style="list-style-type: none"> Facilities and Equipment: Gender inclusive facilities and protective equipment are provided on-site. Policies and Training: On-site policies are implemented to increase awareness and reduces instances of discrimination, racism and bullying.
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Nature

38	Impacts to Nature	<ul style="list-style-type: none"> Sensitive Sites and Species Protection: An assessment is conducted to identify if the project's site or adjacent sites, within 100m, contain <i>sensitive sites</i> or <i>sensitive species</i>. Where identified, measures are in place to ensure these are protected from <i>significant impacts</i> from the project's development and operations. Metrics Disclosure: Metrics related to land/freshwater-use change are disclosed. Managing Light Pollution Impacts: The project's light pollution is minimised.
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Managing Minimum Expectations

There may be situations in which a project cannot achieve a *Minimum Expectation* for situations beyond their control, or due to the project's typology. Where an exception or a modification is sought, the project team must:

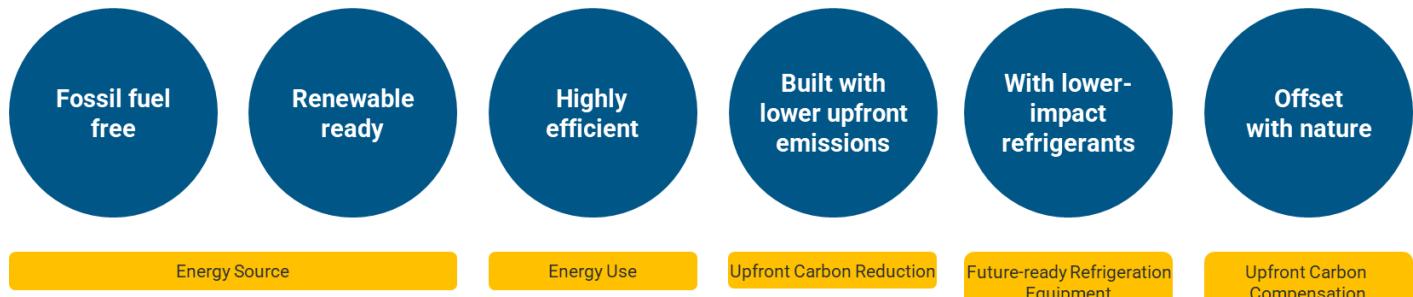
- Submit a Technical Question prior to the submission.
- Justify the reason and **nominate an alternative approach**.
- Comply with any instructions for justifying their waiver that may be outlined in the query response.

Waiving *Minimum Expectations* is done via exceptional circumstances and may require additional consultation with our governance process. For more information, contact the GBCA.

Climate Positive Pathway

The Climate Positive Pathway is a select group of credits in the Positive category designed to drive carbon reduction which must be met to achieve a Green Star rating. It consists of *Minimum Expectations* and credit criteria that progressively increase in stringency based on project's registration date and targeted Green Star rating.

The diagram below illustrates the Climate Positive Pathway for version 1.1 of the rating tool:



The following table outlines the Climate Positive Pathway criteria that must be achieved for each star rating based on the registration date. The year refers to 1 January of that year and indicates when the corresponding set of requirements begin. ME denotes Minimum Expectation, CA denotes Credit Achievement, EP denotes Exceptional Performance and LC denotes Leadership Challenge.

Some credits in the Climate Positive Pathway and Nature Positive Pathway have stepped points. However, to meet the Pathways, all points in the nominated performance level must be achieved (i.e. in *Credit Achievement* for the *Energy Use* credit, there are stepped points available for reductions between 10 to 20% however 5 star projects meeting the 2025 requirements must achieve a 20% reduction to comply with the Climate Positive Pathway).

Credits	Criteria	2025	2028	2030
Energy Source	ME All electric building services	All registrations		
	CA Renewable electricity or renewable ready	6 star	5 star	All registrations
	EP Renewable electricity and renewable ready			
Energy Use	ME 10% reduction	All registrations		
	CA 20% reduction	5 star	All registrations	
	EP 30% reduction			
Upfront Carbon Reduction	ME 10% reduction	All registrations		
	CA 20% reduction	6 star	5 star	All registrations
	EP 40% reduction		6 star	5 star

Credits	Criteria	2025	2028	2030
Future-ready Refrigeration Equipment	ME Future-proofing for ultra-low GWP refrigerants	All registrations		
	CA GWP of refrigerants is limited or refrigerant emissions are compensated	6 star	5 star	
	EP GWP of refrigerants is limited further and refrigerant emissions are compensated		6 star	
LC Ultra-low GWP refrigerants				6 star
Upfront Carbon Compensation	ME 30% of remaining upfront emissions are compensated	6 star	5 star	All registrations
	CA All remaining upfront emissions are compensated	6 star		

Nature Positive Pathway

Green Star Buildings version 1.1 includes additional requirements within the *Impacts to Nature* and *Biodiversity Enhancement* credits for each rating referred to as the Nature Positive Pathway. These change in stringency over time. The pathway translates global biodiversity targets into actionable steps to achieve a nature positive built environment by 2050.

Similar to the above table, the year refers to 1 January of that year and indicates the date of registration.

Credits	Criteria	2028	2030
Impacts to Nature	ME Protecting high value biodiversity & nature-related reporting metrics	All registrations	
	CA No net biodiversity loss	5 star	All registrations
Biodiversity Enhancement	CA Biodiversity net gain of 10%	5 star	All registrations

Leadership

The Leadership category has two credits. Points for these credits are in addition to the 100 points available in the core credits.

The two credits in the Leadership category are:

- **Market Transformation:** Recognises claims for new or innovative technologies or processes, or claims for achievements beyond the core rating tool, not covered by any other credit or leadership challenge. The Submission Guidelines defines the Criteria to make a Market Transformation claim, and up to five different claims can be made in Market Transformation. Each claim is worth one point, meaning a maximum of 5 points can be awarded.
- **Leadership Challenges:** Credits that are introduced by GBCA to test new approaches and potential expansion for the rating tools. Leadership Challenges are created by GBCA based on feedback or proposals for industry. New Leadership Challenges must be approved through our governance process. Some Leadership Challenges may require credits in the core of the rating tool to be targeted and achieved before points can be awarded.

Project teams can target all five Market Transformation points by using five separate claims, and there is no limit to the number of Leadership Challenges a project can target.

Sector specific credits and pathways

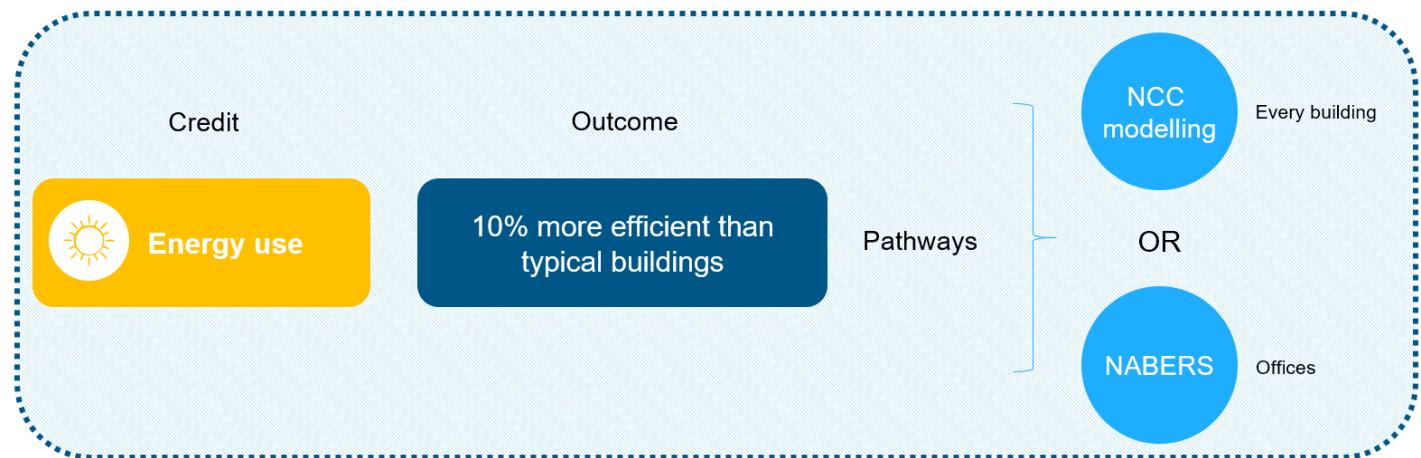
Green Star Buildings is a rating tool designed for use on all habitable building types (except Class 1). However, due to its universal nature, it may need customising or additional guidance from time to time.

Green Star Buildings introduces two methods to account for sector specific issues:

- **Sector specific pathways:** specific solutions within the core rating tools credits.
- **Sector specific credits:** additional credits that are optional and apply to specific sectors.

Sector specific pathways

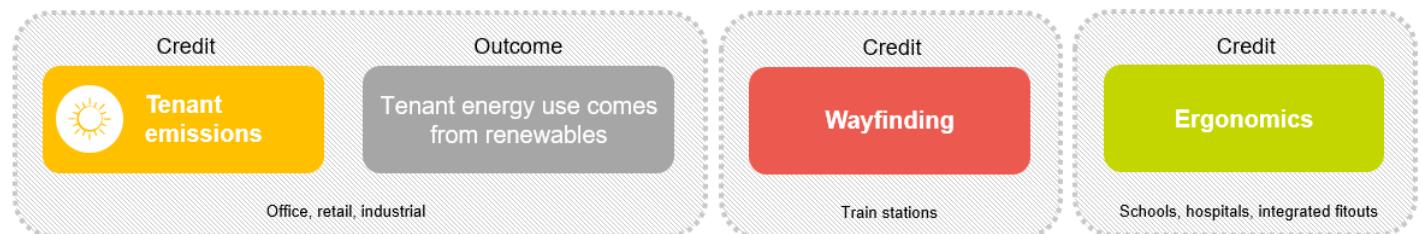
Sector specific pathways respond to the credit outcome for specific sectors. Pathways don't modify the points value of the core credit. They are always additional, and optional, to the core pathway described in the credit. Pathways can be introduced at any time by GBCA. An example of a specific pathway in the *Energy Use* credit is provided below:



Sector specific credits

Sector specific credits exist outside of the core rating tool. Sector specific credits are assigned a category to help identify where the benefits lie. For example, the credit 'Tenant emissions', which applies to the industrial, commercial, retail, and built-to-rent residential sectors, sits in the 'Positive' category.

Sector specific credits can have *Credit Achievements*, and *Exceptional Performance* criteria. A maximum of three points can be assigned for sector specific credit criteria.



Sector specific credits are developed by GBCA in consultation with industry and approved by the Green Star Advisory Committee.

Sector specific issues not covered by the rating tool, and that are not in a sector specific credit, may be submitted as a Market Transformation claim.

If you are interested in developing sector specific credits for a building sector, please contact GBCA for more information.

Project types

Mixed use

All class types within a building must comply with the *Minimum Expectations*. Projects using a combination of pathways must meet compliance for each pathway in order to achieve the relevant points. Refer to the relevant credit for further details.

Fitout scope

Green Star is a holistic rating tool and can be used to rate a base building or a whole building including tenant fitouts. Importantly, because Green Star reflects the building at the time of completion, credits must be awarded based on what has been installed at the time of the submission. Where credits require a project to demonstrate an outcome via a built attribute, they cannot be awarded for a commitment to future installation.

Generally, projects can target credits regardless of the fitout scope of a project. Guidance is provided for credits where fitout scope may affect the outcome. Projects that do not install specific fitout attributes in the majority of the project (such as cold shell projects) are not eligible for some credits where a fitout is required to demonstrate compliance; in this instance an alternative pathway or sector specific credit may be used instead.

In regard to the scope of fitouts, the following applies:

- Purpose built, single use projects (or parts thereof) such as hospitals, schools, residential apartment buildings and hotels are expected to include fitout works when targeting points in the rating tool. Furniture and loose joinery are not included in the scope by default but can be included if the project team wants.
- Tenanted buildings, such as commercial offices or shopping centres, projects may choose to include or exclude tenant fitout works however this must be consistent across all credits. This also means projects can only target points in certain credits with specific attributes if tenant fitout works are included. This may be through built outcomes or leasing clause and guidance mechanisms (refer *Targeting points in Credit Achievement and Exceptional Performance* below). Most credits can be targeted without relying on tenant engagement, and additional sector specific credits for buildings with tenants are available.

Guidance is related to fitout works and tenanted buildings are highlighted in green and are included in the credit requirements.

Meeting Minimum Expectations

Buildings may choose to exclude fitout works from their rating scope for the purposes of meeting the *Minimum Expectations*. For example, buildings with tenants, such as a commercial office tower or shopping centre, or small retail parts of the purpose built, single use buildings mentioned above, may choose to exclude fitout works from the rating scope. In these cases, a tenancy fitout guide (refer *Common definitions*) and model lease clauses are required to meet criteria in the *Minimum Expectation*. This includes the following criteria and credits:

- *Collection of Waste Streams in the Responsible Resource Management* credit
- *Exhaust or Elimination of Pollutants* in the *Clean Air* credit
- *Lighting Comfort and Glare from Light Sources* in the *Light Quality* credit
- Exposure to Toxins
- *Metering and Monitoring* in the *Verification and Handover* credit

Tenancy fitout guides and model lease clauses **cannot** be used unless expressly identified in the credit guidance section.

Targeting points in Credit Achievement and Exceptional Performance

The following credits require fitout works to be included to demonstrate that outcomes are met for the majority of the building so that points can be awarded. This means that the relevant building attributes must be installed for at least 80% of the total gross floor area (GFA – refer *Common definitions*) to demonstrate compliance.

- *Responsible Finishes*
- *Artificial Lighting* in the *Light Quality* credit
- Exposure to Toxins

Example

- The building's total GFA is 1000m² (100%)
- 350m² of the building's GFA is leased to tenants (35%)
- Therefore, to demonstrate compliance in at least 80% of the total GFA, 650m² of the common area and at least 150m² of the tenanted area must meet the requirements.

Space type	GFA (m ²)	Minimum <u>direct</u> GFA (m ²) compliance
Common area/Untenanted area	650	650
Tenanted area	350	150
TOTAL	1000	800

For purpose built projects where less than 20% of the GFA is tenanted, all areas within the building owner's control are to be included in scope of compliance.

Example

- The building's total GFA is 1000m² (100%)
- 100m² of the building's GFA is leased to tenants (10%)
- Therefore to demonstrate compliance, as 10% of the GFA is tenanted, the remaining 90% of the GFA that is common area must meet the requirements.

Space type	GFA (m ²)	Minimum <u>direct</u> GFA (m ²) compliance
Common area/Untenanted area	900	900
Tenanted area	100	0
TOTAL	1000	900

Where the project is tenanted but is not installing fitout works for at least 80% of the total GFA or excluding fitout works from the rating, Sector Specific credits will be available to target. These credits will specifically reward green lease clauses, tenant emissions, and upfront carbon emissions from tenancies.

For more information on Best Practice Lease Clauses refer to [Better Building Partnership Green Leasing](#).

Other credits with requirements related to fitout works

The following credits do not require a percentage of floor space to meet the credit requirements, but have additional information or guidance related to fitout scope or communication with tenants:

- *Dedicated Waste Storage Area* in the *Responsible Resource Management* credit
- Clean Air
- Acoustic Comfort
- Operations Resilience
- Grid Resilience
- Energy Source – Pathway B: Tenant Operated pathway
- Energy Use – Pathway A: Reference building pathway

- *Changing Facilities* in the *Movement and Place* credit
- *Needs Analysis* in the *Design for Equity* credit

Applicability

With the introduction of the core rating tool and sector specific credits, projects teams will no longer be able to claim points as 'Not Applicable'. The total number of points the rating score is calculated from is always 100 points. Project teams are encouraged to submit suggestions for sector specific approaches or a Technical Question where they see opportunities for alternative compliance pathways.

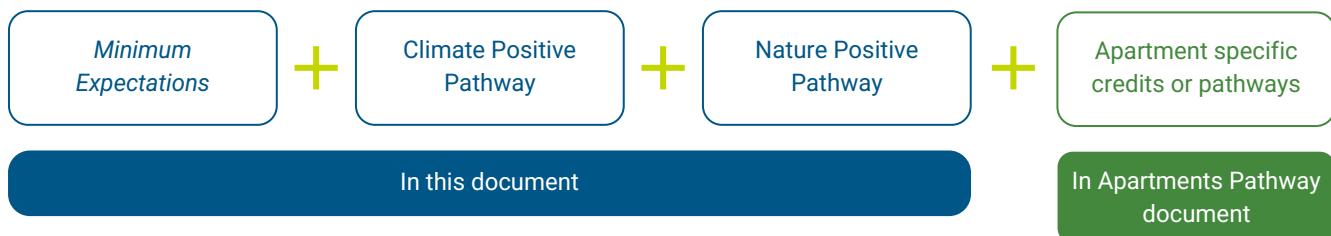
If certain attributes are not being installed in the building, the project is exempt from demonstrating compliance with those specific requirements and must only comply with the other relevant requirements at the specified performance level (e.g., where the project does not have heated pools, it is exempt from the *Pool covers* criteria in the *Energy Use – Pathway C: Residential pathway*).

Green Star Buildings – Apartments Pathway

The Green Star Buildings – Apartments Pathway has been introduced to mark the quality of units in a building, where each unit has been assessed and verified to achieve Green Star outcomes. The pathway is optional for Class 2 multi-unit residential projects including build-to-sell, build-to-rent, affordable housing, community housing and mixed-tenure housing certifying under Green Star Buildings. It does not include student accommodation or hotels.

Projects that target the Green Star Buildings – Apartments Pathway will be registered for a Green Star Buildings rating. They are required to meet the *Minimum Expectations*, the Climate Positive Pathway (depending on the year of registration and target star rating), the Nature Positive Pathway (also depending on the year of registration and target star rating) and the credits or pathways specific to the Green Star Buildings – Apartments Pathway.

The credits and pathways specific to the Green Star Buildings – Apartments Pathway are published in a separate document. A version of the document will be released for projects registered under Green Star Buildings v1.1.



Certifying your project

Green Star certification is a formal process during which a building, fitout, precinct, or home is awarded a rating by an independent, third-party assessment panel. It is a document-based assessment of the project's submission against the requirements of the rating tool.

GBCA operates the assessment and certification process that awards all ratings. This process is managed through a quality management system which complies with the requirements of ISO 9001:2015 for the development, upkeep, and delivery of Green Star certification.

Eligibility and certification criteria

The eligibility criteria for Green Star Buildings are:

- **Building Type:** It is a new building or a major refurbishment, but not a single dwelling home, a parking garage, or an uninhabited structure.

- **Distinct Boundary:** There is a distinct boundary to the building – it has its own address, title, and entrance. It is also the entire building.

In addition to the requirements on scoring to achieve a rating, the following three additional certification criteria apply:

- **Timing of Registration and Certification:** The Certified rating is achieved within two years from practical completion.
- **Minimum Expectations:** The *Minimum Expectations* are met.
- **Star rating requirement:** The building achieves at least a 4 star rating.

The GBCA may choose to update eligibility and certification requirements from what is stated in these Submission Guidelines. Please visit the GBCA website for any further changes to eligibility and certification requirements.

Building Type

Green Star Buildings rates most building types that are new buildings or major refurbishments. In principle:

- Most building types are eligible to be rated, including mixed use developments. All National Construction Code (NCC) space use definitions are eligible for certification apart from single dwellings (class 1) and standalone carparks (NCC Class 7a) and uninhabited structures (Class 10). Class 1 buildings by Volume Home Builders are eligible for Green Star Homes certifications. Standalone residential garages cannot be rated by Green Star.
- New buildings are those where most structural and facade components of a building are new. The building can be on a greenfield or a brownfield site. Projects that are reusing portions of an existing building can be considered new where a significant proportion of the building structure did not previously exist.
- A major refurbishment is where a building, or portion of a building, is vacated and withdrawn from stock for the purpose of replacing plant and services. In these cases, most of the façade or structure is retained, though some works on those are acceptable.
- Existing buildings where refurbishments are made but no services, façade, or structure are modified or introduced may be eligible for certification under the Green Star Performance rating tool.

Project teams are encouraged to contact the Market Engagement team at the GBCA where a project is undergoing refurbishment to determine if the project is an eligible building type or submit an Eligibility Query via the Green Star Manager on the GBCA website.

Distinct boundary

To provide a meaningful result and send a clear message to the market, Green Star Buildings rates the whole building, regardless of the types of uses within it. Only distinct projects are eligible for assessment; project components are not eligible.

Shared building services (such as Heating Ventilation and Air Conditioning plant or water treatment) or amenities (such as waste rooms or bicycle facilities) do not affect the building's eligibility for Green Star assessment.

There are situations where buildings do have a distinct boundary even if they share a space with another building. Buildings that have a combination of separate entrances, distinct titles, and addresses can be rated if they can be easily distinguished from another part of a building. Where towers are joined by an above ground podium, it is all considered as a single structure and can be covered in one certification. Where buildings share a common basement below ground, they are considered two structures and will need their own ratings (unless an approach is agreed upon by the GBCA through an eligibility request before registration – see the Options for certifying projects).

Timing of Registration and Certification

Projects can register for certification at any time prior to practical completion. Projects can register after practical completion, though applicants should note the deadline below.

All projects registered for Green Star Buildings must achieve a Certified rating within two years from practical completion of the project. The Certified rating is awarded after practical completion. Registered projects have the option of undergoing a Designed assessment as an interim step towards certification. The Designed assessment must be done prior to practical completion.

Minimum Expectations

A project seeking certification must meet the *Minimum Expectations* set out in the Green Star Buildings rating tool. The *Minimum Expectations* are an expanded list of credits that must be met for the building to be certified. There are also additional *Minimum Expectations* for 5 and 6 Star rated projects. These are listed under the Minimum Expectations section.

Star rating requirement

The project must achieve at least 15 points for a 4 Star rating. Refer to *The Green Star Buildings rating scale* for more information.

Registering for Green Star Buildings

To obtain a Green Star rating, the project must be registered with the GBCA.

Information regarding the Registration process, including fees, can be found online [here](#). For further information contact [a member of the Market Engagement team](#).

Options for certifying projects

Please note that these Submission Guidelines are the basis for certification of a single building.

From time to time, the following certification options may be used to facilitate certification of eligible projects. An applicant must receive approval through a formal Eligibility Query, prior to registration, to use one of these options:

- **Volume** – this allows eligible applicants with multiple buildings that share a standard design, construction and/or policies to have these common elements assessed once together. Further information can be found [here](#).
- **Site-wide credits** – this allows eligible applicants to streamline some documentation requirements when there are multiple buildings in the same site boundary seeking Green Star certifications. Further information can be found [here](#).
- **Multiple Building, Single Rating (MBSR)** – this allows eligible projects to certify multiple buildings that have the same use, design and delivery contract under one single certification. Further information can be found [here](#).

Further requirements such as additional eligibility criteria and alternative certification fees may be applicable. Refer to the GBCA website or contact the GBCA for more information. GBCA reserves the right to deem a project ineligible for certification if it has not met the requirements of these options.

GBCA support

Once a project is registered for a Green Star rating, a Technical Coordinator will be assigned to your project. Technical Coordinators are there to assist project teams through the submission, assessment and certification stages of your project and will interface with your assessor once you have submitted. They are the first point of contact for any questions you might have regarding your registered project and certification. Technical Coordinators, however, do not provide design advice or guidance to project teams on how individual projects may provide solutions to meeting the requirements in the Submission Guidelines.

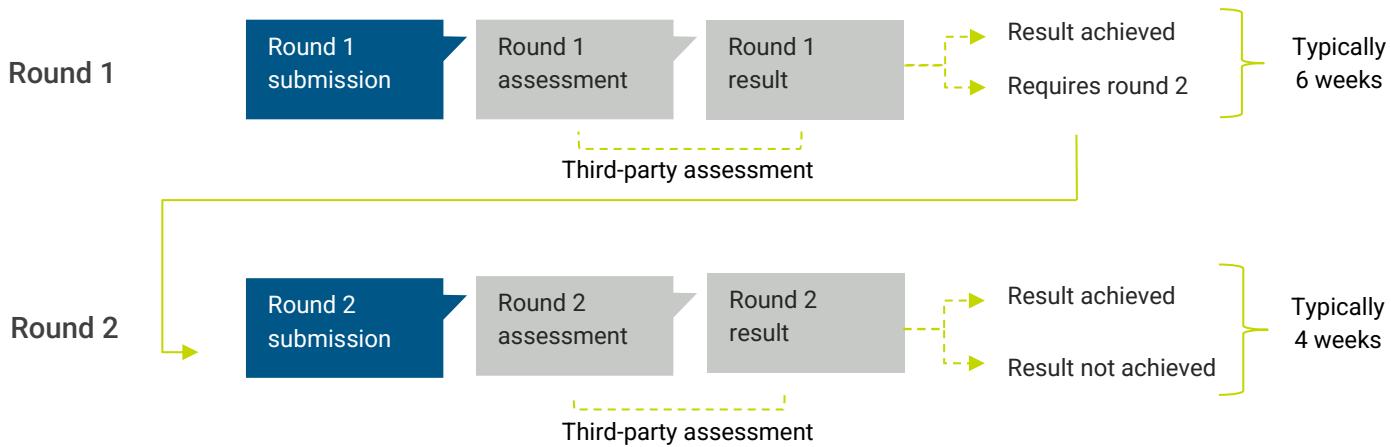
For further information about the roles of the GBCA in relation to Green Star and resources available to project teams can be found [here](#) and on the [GBCA resources portal](#).

Submission and assessment process

Submissions are managed through the Green Star Online submission portal where project teams submit for assessment by a Certified Assessor the information about how they have met the Submission Guideline requirements and supporting evidence to demonstrate their claims.

Once project teams submit, GBCA coordinates a third-party assessment with a Certified Assessor. This process occurs each time a submission takes place for both Designed assessments and Certified rating assessments.

Each project has the option of up to two rounds of assessment. The second round is an opportunity to address any comments provided by the Certified Assessor in the first round, or target additional credits. The diagram below outlines the typical process of assessment.



Refer to the [Assessment and Certification webpage](#) for more information. [Training](#) is also available to support project teams as they prepare their submission documentation for assessment.

Submission types

There are two types of submissions for assessment within Green Star Buildings:

- Designed submission – this is optional for project teams
- Certified submission – this is mandatory to achieve a Green Star rating.

These are assessed independently from each other and require separate submissions.

Designed submission

The *Green Star Designed* assessment is an optional assessment of the design progress to date. The purpose of this assessment is to have an Assessor provide feedback on how the project is tracking to achieving the credit criteria targeted for the future Certified submission and assessment. There is no minimum number of credits for submission.

Project teams may nominate the project stage for which the Designed submission is made however this must be prior to practical completion. Project teams generally find it most beneficial to undertake the Designed assessment at the detailed design or tender stage to ensure the project design is on track to achieve the Certified rating before proceeding to construction. Projects must provide evidence in their submission of their intended approach to achieving the credit.

Refer to the [Guidance for Submitting for Designed Assessments](#) available on the Green Star resources portal for further information.

Certified submission

The submission for the Certified assessment must demonstrate that the requirements have been achieved for the building, as constructed. Supporting documentation is required to back up the claims made in the Submission Forms. Under the Submission Content section in each credit, a list of recommended supporting documentation is provided.

Unless explicitly noted, the evidence submitted should exist in the form of documentation produced as part of the design, procurement, construction, or commissioning process. Project teams are discouraged from producing documentation specifically for Green Star if this can be avoided.

Documenting a building's achievements

The credits contain criteria that must be achieved for a point to be awarded. To be awarded a credit within the Green Star Buildings rating tool, compliance must be demonstrated through documentation. The project team provides this documentation demonstrating

these achievements. The documentation is used by the GBCA's independent Certified Assessors to establish whether the credit criteria have been met. The independent assessment phase is fundamental to the integrity of the Green Star rating system.

Except for the calculators, Green Star Buildings does not prescribe what documentation must be provided. Instead, this is left to the project team to prove evidence of compliance. The credits do, however, provide a suggested list of evidence which project teams may wish to use as a guide.

The documentation requirements for the Green Star Buildings rating tool do not encourage the submission of large volumes of documentation, but rather a selection of relevant information that clearly demonstrates compliance for each claim made in the Submission. Project teams are recommended to provide direct reference to the part of the documentation that demonstrates compliance. For example, the front page and relevant pages of a report are acceptable rather than an entire document. These requirements are detailed in these Submission Guidelines, on a credit-by-credit basis. Refer to the [Guide on how to prepare a Green Star Submission](#) for further guidance.

General submission requirements

To ensure the Certified Assessor can progress the assessment in a timely way, GBCA strongly recommends project teams submit the following documentation as part of their submission to provide general information about the project:

- A **markup of the proposed Green Star project boundary**. This sets the project boundary to be applied for all credits targets unless noted otherwise in the credit (i.e. the credit requirements refer to a boundary that differs from the project boundary) or if approved via a Technical Question.
- **Eligibility Queries** (if submitted and relevant)
- **ESD specification**
- **Architectural and building services drawings or design reports**

List of evidence

Unless explicitly noted, the evidence submitted should exist in the form of documentation produced as part of the design, procurement, construction, or commissioning process. Project teams are advised to use such documents as evidence for justifying claims. Below are some examples of frequently used documentation.

- **Certificate** - An official third-party document that certifies that an individual or organisation possesses the qualifications sought in the relevant credit.
- **Confirmation** - An official letter from the relevant party that has authority to confirm an aspect of compliance. The letter must state, recite, or confirm compliance with the Credit Criteria or part thereof. The letter must be project-specific, signed, dated and on company letterhead, as per ISO 9001. Also referred to as: 'Statement' or 'Letter of Confirmation'.
- **Contract(s)** - Full copies or extract(s) from the contract(s) (as required) that clearly stipulate compliance with the Credit Criteria. Relevant sections must be highlighted to allow for quick identification of the relevant clauses.
 - Terminology that dilutes compliance (e.g., 'or equivalent'), is not acceptable. Clauses must stipulate that any deviation from the criteria be approved by the professional who can enforce adherence to design intent
- **Drawings** - Drawings in Green Star refer to architectural and engineering plans, elevations and sections that are generally used to locate items in a building.
 - All drawings must be on official letterhead, contain the project or the building's name, the version number, and the change log. Where a drawing is typical to a number of buildings or floors, the drawing must clearly state that this is the case, and nominate the typical buildings, or typical building type. The drawings must clearly state what type of drawing they are.
 - When submitting drawings for the 'Certified rating (which rates the finished construction), the drawings should reflect what has been installed in the building and are drawn, or verified by the contractor to be true, after construction has finished. 'For Construction' drawings are accompanied by formal confirmation from the head contractor or other relevant professional(s) that the 'For Construction' drawings depict the site as-built conditions. If the drawings are from an earlier stage, the submitter must state why these drawings are appropriate when using them as justification.
- **Meeting Schedule** – A document that lists the dates, purpose, and attendees of project team meetings.

- **Photographic Evidence** – A photograph or set of photographs that demonstrate that a design feature has been installed. The evidence must clearly show the design feature, the context and location where it is installed, that it is part of the registered project and give a date that the photograph(s) was taken.
- **Report** – An official report from a relevant professional that provides an analysis and draws a conclusion on an aspect of the design. The report must be project-specific, dated, and on company letterhead.
- **Specification(s)** – Written descriptions of the works that are to be performed for the project. Specifications are used to delineate the required works, the requirements for a product's characteristics, and the verification procedures for the installed item, or the works performed. They also list legal requirements and quote or name applicable standards.
 - When used to justify a claim, all specifications must be on official letterhead, contain the project's, or the building's name, and the version number. Where a specification is typical to several buildings, the specification must clearly state that this is the case, and nominate the typical buildings, or typical building type.
- **Tender Documentation** – Where tender documentation is used to justify a submission, the project is required to provide either specifications, or drawings, or a contract, or other supporting evidence that forms part of the tender package. In such a case, the project must ensure that the evidence provided complies with the descriptions as detailed in this section.
- **Third-Party Documentation** – Full copies or extracts, as stipulated, from public, non project-specific documents. When submitted as evidence, the relevant elements of the document must be clearly identified with colour (e.g., circled or highlighted). Examples may include standards or local planning regulations.

Achievement scale

Points in Green Star Buildings

A point in Green Star Buildings is equivalent throughout the rating tool. That is, a point in the *Positive* category is equivalent to a point in the *Nature* category.

The point(s) assigned to individual credits are representative of the credit's worth when assessed against five criteria:

- **Control of outcome**: to place higher reward on credits that deliver guaranteed outcomes. Process-orientated credits would score lower in this metric, while credits that rely on delivering physical attributes would score higher.
- **Scale of impacts**: to place higher reward on credits that have a larger impact in terms of scale. Credits that are narrowly focused score low, whereas credits that have multiple benefits score high.
- **Transformation potential**: to place higher reward on credits that drive market transformation across industry.
- **Length of impact**: to place higher reward on credits that deliver long-lasting impacts. A credit that relies on future operational maintenance will score low, whereas a credit affecting a long-lasting building system would score high.
- **Value generation**: to place higher reward on credits that deliver broad value and benefits beyond the building owner. Credits that are more valued by stakeholders and society will score higher.

The score distribution across the categories is as follows:



The final composition of the categories highlights the priority areas in industry. The primary percentage of points continues to be on direct environmental impacts, with a specific focus on carbon emissions. In general, categories and credits that have direct qualitative outcomes score higher (e.g., credits in the Positive category) compared to credits that are more process based.

The Green Star Buildings rating scale

The Green Star rating is determined by comparing the percentage of available points achieved out of the 100 total available points. The rating scale shown below details the percentage thresholds for the Star ratings awarded.

- **Legal compliance** – The building is compliant with legislation (National Construction Code – 2019 or later)
- **Good Practice** – The building meets the *Minimum Expectations* of good practice – energy and water efficient, good indoor environment quality, and built to operate well.
- **4 Star** – reflects a *Best Practice* environmental performer. It builds on the *Minimum Expectations* to deliver a building that is either climate positive or a higher performer in energy, water, and health related issues (**at least 15 points**)
- **5 Star** – demonstrates *Australian Excellence* by being a high environmental performer that addresses social issues relevant to the building owner (**at least 35 points**)
- **6 Star** – showcases *World Leadership*. It has been built to be a highly efficient building fully powered by renewables that addresses a significant number of environmental and social issues, and contributes to the community (**at least 70 points**)

The diagram below details the ratings awarded by Green Star Buildings.



Calculating your score

The project's score is the total number of points achieved in the Core rating tool, the sector specific credits, and any Leadership claims. Once *Minimum Expectations* are met, and the project meets or exceeds the star rating score benchmark, you can claim the desired rating.

It is possible to add up to more than 100 points, but only 100 points will be assessed and awarded.

The following table gives some examples:

Score	
<i>Minimum Expectation</i>	Met
Core rating tool	60
Sector specific credits	7
Leadership	8
Total score	75

Promoting your Green Star project registration and certification

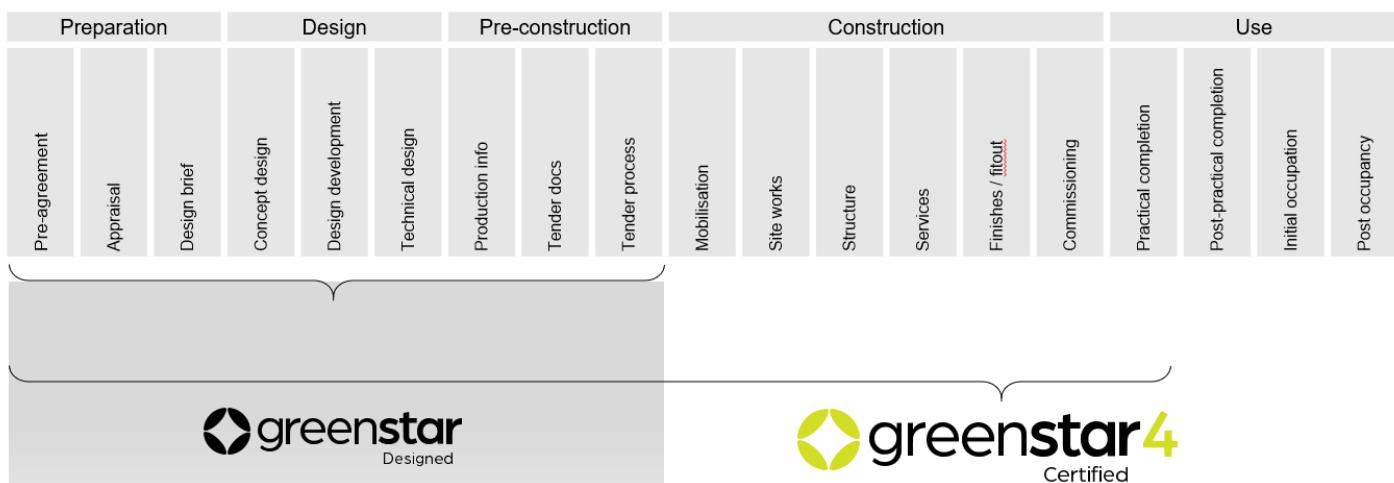
Marketing your registered project

Once registration is confirmed by the GBCA, you are permitted to market your Green Star project as targeting a Green Star rating but cannot use the Green Star Certified logo.

Marketing your Green Star Buildings ‘Certified’ rating and ‘Designed’ assessment

A Green Star Buildings *Certified* rating signifies a high degree of achievement in sustainable practice for the design and construction of a building. Green Star Buildings does not award certification to the design of the building – the rating is awarded for the construction of the building. To receive the rating, a building must submit documentation to the GBCA that demonstrates the benchmarks in the rating tool have been achieved. The assessment of the submission is carried out by third-party Assessment Panel.

An optional *Designed* assessment award, known as the “Record of assessment”, is available for marketing purposes prior to construction. The *Designed* assessment is not a rating, rather an indication that the project is on track for a *Certified* rating.



Green Star Designed

Green Star *Designed* is intended to signify a project’s progress towards a *Certified* rating. It may be awarded following assessment of design stage documentation and entitles an applicant to use the Green Star *Designed* logo for marketing purposes.

Use of the 4, 5 or 6 achievement levels will not be part of the award. However, in communications about the project the owner may say words to the effect: ‘The building’s design has been assessed and the project is on track to achieve a 6 star Green Star *Certified* rating’.

The Green Star *Designed* logo may be used in collateral, marketing materials, but not permanent ones like plaques or decals. The Green Star *Designed* logo does not contain the rating level.

Green Star Certified

The Green Star *Certified* rating represents a certification that the building’s design and construction complies with the requirements of the rating tool.

The award of a *Certified* rating entitles the applicant to use the Green Star *Certified* logo including with the designated star rating – 4, 5 or 6 – for marketing purposes. GBCA’s Marketing Kit and Style Guide apply to all uses of GBCA’s trademarks.

Green Star trademarks

Green Star and the Green Star certified logo are trademarks owned by Green Building Council of Australia (GBCA). They constitute valuable intellectual property and are protected by law. Any unauthorised use of the trademarks constitutes infringement of our rights and may result in legal action.

Marketing rules and style guide

This guide sets out the rules for the use of the trademarks and provides marketing ideas to help promote your Green Star project, at registration, Designed assessment and Certified rating. The Marketing Kit and Style Guide is can be found [here](#).

Rating tool updates

While the rating tool will be updated from time to time, project teams are only subject to the Submission Guidelines for the rating tool that they register for, or if the project team chooses, a later version. Project teams are not subject to clarifications or amendments made as part of a revision, unless explicitly stated by the GBCA. Any release of the Submission Guidelines will always have any relevant supporting material available for it, such as scorecards, calculators, and calculation guides. The rating tool can be updated as follows:

- **Ad hoc:** additions to the rating tool that are additive in nature such as Sector Specific Credits or Pathways and Leadership Challenges. The changes are noted but are not considered a revision.
- **Maintenance:** occur when an obvious error in the rating tool has been identified. These revisions (e.g. Rev. A) are additive.
- **Corrections:** occur when a significant error in the rating tool has been identified. These revisions (e.g. Rev. A) are corrective.
- **Minor revisions:** a new version of the same rating tool, with minor credit introductions and new or amended credit criteria or requirements. These ensure the rating tools are up to date, e.g., Green Star Buildings v1 to Green Star Buildings v1.1.
- **Major revisions:** Significant changes to the rating tool of both a technical and structural nature to align rating tools with new trends or revised GBCA strategy. Results in the release of a new full version e.g., *Green Star – Design & As Built* to Green Star Buildings, or a full version change (v1 to v2).

Ad Hoc

Ad Hoc changes are additive in nature and involve releasing additional criteria, sector specific information, or leadership challenges that do not impact the current information in the rating tool but expand on it. They can be used by project teams but are not required to achieve a certification. Current guidance in the rating tool is not impacted. Ad Hoc releases will include:

- Sector specific credits
- Sector specific pathways
- Leadership / Innovation Challenges

Ad hoc changes are dated, but there is no change of versioning to the rating tool. These additional credits and pathways can be published in separate guides or through our FAQ system and will be available through Green Star Online.

Reviews and updates to Guidance, Definitions and Supporting Information may occur from time to time should it be deemed necessary. These updates will not change the compliance requirements for certification and will not result in an updated version of the rating tool. These updates may include:

- Clarification of existing guidance
- Additional Guidance or Reference materials
- Updated definitions
- Updated standards

If an error is found in a calculator or guide, the GBCA reserves the right to make a correction applicable to all registered projects. These are applicable as they correct critical elements which do not accurately reflect the benchmarks or requirements in published credits.

Green Star quotes several standards, external guides, and legislation within each credit. Where referenced, these refer to the currently enforced version (e.g., by the Australian Buildings Code Board, or local council), unless otherwise stated.

Maintenance

Maintenance revisions occur when an obvious error in the rating tool has been identified. These revisions are additive in nature. The changes do not negatively impact on projects registered prior to the date of the change, though all registered projects are informed of the change. They include:

- Additional guidance and non-mandatory general pathways
- Spellings and grammar corrections
- Changes to introduction, guidance, definitions, standards, references, and documentation
- Errors in calculators
- Amendments to documentation requirements

Maintenance revisions performed within the first 9 months of a major rating tool release can also include changes to credit criteria and compliance requirements, where the changes are in line with previously communicated outcomes and strategy.

Maintenance revisions are noted by a letter suffix, e.g., 1.0 Rev. A. Revisions are noted in the changelog but are not highlighted directly in the text of the rating tool. Superseded versions won't be available for download.

Project teams can contact GBCA if they believe they are negatively impacted, and GBCA will assist them in this scenario.

Corrections

These occur when a significant error in the rating tool has been identified. The revisions are **corrective** in nature. They can change credits, credit criteria, compliance requirements, calculation methodology, and guides. Corrections are retrospective. That is, they apply to all current and future registered projects. Corrections are noted in the submission guidelines and noted by a letter suffix, e.g., 1.0 Rev. A. Corrections can be issued at any time.

Minor version

Minor revisions result in the release of a revised tool such as this revision, version 1.1. The purpose of these updates is to improve the useability of the rating tool and to continue to promote sustainable outcomes. Minor updates may include:

- Readability amendments
- Minor introduction or deletion of criteria and credits
- Updates to compliance requirements and changes in strategy for how credits are approached
- Updates to benchmarks
- Amendments to documentation requirements and additional guidance to account for changes in the certification process

The updates will be based on a continuous review of feedback received throughout the year from project teams, assessment panel and industry. Feedback sources include Technical Questions, Assessment Panel comments, communication from project teams, communication from industry and working group feedback.

Where significant change to the rating tool is necessary within a minor update, the GBCA will engage in public consultation and all significant changes will undergo an endorsement process through the Green Star Advisory Committee and Advisory Groups.

Minor versions only apply to projects that register under that version.

Major version

Major version update may include:

- Major amendments to benchmarks
- Introduction or deletion of criteria, credits, or categories
- Major amendments to credit values or scoring for 4, 5 and 6 Star ratings

The release of a major version will be based on a review of changes in priorities and benchmarks in the built environment.

Major releases will involve significant engagement with industry, as well as a review of the achievements through innovation, and a review of certified projects to date. The revisions will result in the release of a revised tool e.g., v2, or a rebrand. Major versions only apply to projects that register under that version.

Common definitions

Definitions are included in specific credits and must be applied to the credit requirements. Definitions that are commonly applied across the rating tool are included below.

Base building

The portion of the building that is under the developer's scope of works when the building is tenanted. This includes common areas only.

Building owner's control

The scope of the project in which the building owner has decision making influence over.

Cold shell

Where the finishes and services are not installed. A tenancy with an unfinished interior, with no HVAC services beyond the riser (or core or rigid duct), and without lighting, plumbing, ceilings, floor finishes (or with a setdown to allow for future provision of floor finishes), interior partitions or walls.

Gross Floor Area (GFA)

As defined by the Australian Institute of Quantity Surveyors (AIQS) in the Australian Cost Management Manual – Volume 1 to be the sum of the fully enclosed covered areas (FECA) and unenclosed covered areas (UCA) of the building. Definitions for FECA and UCA below are extracted from the AIQS' Australian Cost Management Manual - Volume 1.

Fully Enclosed Covered Area (FECA)

The sum of all such areas at all building floor levels, including basements (except unexcavated portions), floored roof spaces and attics, garages, penthouses, enclosed porches and attached enclosed covered ways alongside buildings, equipment rooms, lift shafts, vertical ducts, staircases and any other fully enclosed spaces and usable areas of the building, computed by measuring from the normal inside face of exterior walls but ignoring any projections such as plinths, columns, piers and the like which project from the normal inside face of exterior walls.

It shall not include open courts, light wells, connecting or isolated covered ways and net open areas of upper portions of rooms, lobbies, halls, interstitial spaces and the like which extend through the storey being computed.

Unenclosed Covered Area (UCA)

The sum of all such areas at all building floor levels, including roofed balconies, open verandahs, porches and porticos, attached open covered ways alongside buildings, undercrofts and usable space under buildings, unenclosed access galleries (including ground floor) and any other trafficable covered areas of the building which are not totally enclosed by full height walls, computed by measuring the areas between the enclosing walls or balustrade (i.e. from the inside face of the UCA excluding the wall or balustrade thickness).

When the covering element (i.e. roof or upper floor) is supported by columns, is cantilevered or is suspended, or any combination of these, the measurements shall be taken to the edge of the paving or to the edge of the cover, whichever is the lesser.

UCA shall not include eaves overhangs, sun shading, awnings and the like where these do not relate to clearly defined trafficable covered areas, nor shall it include connecting or isolated covered ways.

In some credits, the exclusion of car parking (including undercover car parking) areas is specified however if not noted, the above definition applies.

Design occupancy

The intended occupancy rate that the spaces have been designed for. Assumptions for the proposed occupancy rate are included in the project's submission. Where the design occupancy is unknown, the default occupancy may be used. The default occupancy varies between some credit depending on the intent of the credit. Refer to the specific credit for a definition.

Net Lettable Area (NLA)

As defined by the Property Council of Australia (PCA) in the Method of Measurement: Commercial. NLA is defined as the sum of the whole floor lettable areas at each floor level. It is measured from the internal finish surface of permanent internal walls, but it includes structural columns or piers and small protuberances from the wall lines including window mullions and frames. Common areas part of the base build such as lift lobbies, stairs, plant rooms etc. are excluded.

Project boundary

Refers to the Green Star rating boundary identified by the project team.

Regularly occupied area

This is defined as areas of the building that are continuously occupied or occupied for more than two hours (previously known as 'primary' and 'secondary' spaces in *Green Star – Design & As Built*) including living and sleeping areas in Class 2 and Class 3 units. Cold shell retail and office areas are considered to be regularly occupied areas. Areas that are either transient or accessed intermittently such as car parks, corridors, storage, back of house or plant rooms can be excluded.

Site boundary

Refers to the boundary that surrounds the total area owned by the building owner. This includes the building or buildings being developed, landscaping, car parking, ancillary infrastructure, and other existing buildings within a broader precinct owned by the building owner. This may be the same as the project boundary or larger due to the chosen project boundary or where there are existing buildings in a precinct.

Tenancy fitout guide

A guidance document that is provided to tenants and outlines the requirements and procedures tenants must include in their fitout design, construction and operations. It also includes information about the base building systems and performance. The requirement to meet the tenancy fitout guide is included in the lease agreement.

Additional information

Project registration upgrade

In planning for release of new rating tools under the Future Focus program, GBCA provides the market with a transition period during which projects can register under either version of the tool. This gives the market time to familiarise itself with the latest revision of the rating tool.

There will be a 6-month registration transition period for Green Star Buildings v1.1, i.e., from the date that registrations open for version 1.1, registrations under version 1 will continue to be accepted for a further 6 months. Projects that are currently registered to an earlier version of Green Star Buildings and any version of *Green Star – Design & As Built*, or legacy rating tools, are eligible to upgrade to Green Star Buildings v1.1 and it is not mandatory to upgrade to version 1.1. Project teams cannot revert to older versions of the rating tool and can only upgrade to the most current version. Project teams may formally apply to upgrade rating tools by contacting [the Market Engagement team](#).

Credit substitutions

Project teams can substitute certain credits between different rating tools or different versions of the same rating tool. For Green Star Buildings v1, the GBCA will publish a credit substitution guide on the Green Star resources portal, which lists credits and features that may be substituted for use in Green Star Buildings v1. For credits that are not listed in the Matrix or for use in other rating tools, a Technical Question must be submitted to the GBCA for approval.

Courses and training

The GBCA is a leading provider of training on sustainable practices in the built environment. As part of its mission, the GBCA supports the property and construction industry with training on Green Star and has trained more than 15,000 people.

The GBCA's continuing professional development (CPD) program supports this mission and is designed to provide practitioners with vital knowledge on the implementation of Green Star tools, strong networks in the industry, and news of the latest innovations, technologies, and trends.

To encourage sustainability initiatives throughout a project, having a Green Star Accredited Professional on a project is rewarded in the Green Star Accredited Professional credit.

The first step of becoming a Green Star Accredited Professional is to attend a [Green Star Training Course](#). Following the course there is the opportunity to join the CPD program.

The GBCA CPD program has two types of accreditation:

- Green Star Associate for those needing a basic level of Green Star knowledge
- Green Star Accredited Professional with specialisations based on the rating tool. Currently this includes Green Star – Design & As Built, Green Star – Performance, or Green Star – Communities, for those working on Green Star, needing an advanced level of knowledge and experience. The specialisations will be updated based on the Future Focus program. Please check the GBCA website for updates.

For information on GBCA training courses, the [CPD program](#), and how to become a Green Star Accredited Professional, please refer to the [Professional Development](#) section of the GBCA website.

Responsible Products program

Several credits in Green Star Buildings require product-specific third-party initiatives such as ecolabels or chain of custody certificates. These initiatives are accredited through our Responsible Products program. More information on the program can be found [here](#).

Feedback

The GBCA encourages feedback on all Green Star rating tools. Please submit your feedback [here](#) for consideration. All feedback related to rating tools is reviewed as part of any new rating tool development process.

Responsible

The *Responsible* category recognises activities that ensure the building is designed, procured, built and handed over in a responsible manner.

The category aims to help builders, owners and the supply chain on the sustainability journey.

Credits in this category:

- Ensure collaboration is at the heart of the design and construction of the building.
- Divert construction and demolition waste from going to landfill.
- Validate that the building can perform optimally and efficiently over time and in different climates.
- Promote and reward responsible procurement practices, while supporting the supply chain on its sustainability journey.
- Enable the collection of information for transparent disclosure of the building's impacts.

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance
1	Industry Development		1	
2	Responsible Construction	●	1	
3	Verification and Handover	●	1	
4	Responsible Resource Management	●		
5	Responsible Procurement		1	
6	Responsible Structure		2	2
7	Responsible Envelope		2	2
8	Responsible Systems		1	1
9	Responsible Finishes		1	1
10	Impacts Disclosure		1	

Industry Development

Outcome

The development facilitates industry transformation through partnership, collaboration and data sharing.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">Green Star Accredited Professional: A Green Star Accredited Professional is appointed for the project.Financial Transparency: The costs of sustainable building practices are disclosed to the GBCA.Marketing Sustainability Achievements: The project's sustainability achievements are marketed publicly.

Additional information

Scope of credit

All areas of the project from the time of registration or within one month following registration for the duration of the project.

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- All credits (Green Star Accredited Professional involvement)

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)

Requirements

Credit Achievement

The project must comply with **all three** of the following criteria:

- Green Star Accredited Professional
- Financial Transparency
- Marketing Sustainability Achievements

Green Star Accredited Professional

At least one Green Star Accredited Professional (GSAP) is engaged as part of the project team from the time of registration or within one month from registration for the duration of the project. The engagement of a GSAP begins early in the design phase (i.e. concept or schematic design). The role of the GSAP can be fulfilled by one, or multiple individuals.

The GSAP:

- Is accredited for Green Star Buildings.
- Is nominated as the 'Project Contact' for the purposes of communicating with the GBCA.
- Provides advice, guidance and support to the rest of the project team on the project's Green Star strategy, Green Star principles, structure, timing and certification process.

Financial Transparency

The project team discloses the design, construction and documentation cost of sustainable building practices of the project to the GBCA by completing the *Financial Transparency disclosure template*.

The latest version of the *Financial Transparency disclosure template* is submitted in an Excel format, not PDF.

Marketing Sustainability Achievements

The project team communicates and markets the sustainability achievements and benefits of the project by demonstrating at least three of the following:

- Information for a case study are provided to the GBCA by completing the *Case Study template*.
- Digital screens will be installed in the building to promote the GBCA and the achieved Green Star rating with a key benefit statement.
- GBCA and the targeted Green Star rating with a key benefit statement are displayed on the project's construction hoarding.
- GBCA and the targeted Green Star rating with a key benefit statement are central to the marketing and communications strategy and promotional material.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Green Star Accredited Professional (GSAP)

The GSAP is enrolled in the Green Building Council of Australia's Continuous Professional Development (CPD) program and has valid credentials for the duration of their engagement on the project. This accreditation must be for the current Green Star Buildings rating tool.

Timing

The intent is that a GSAP is involved early in the design to support the integration of Green Star principles into the project's design to achieve the intended outcomes. Where the decision to target Green Star occurs later in the project timeline, the requirement can still be targeted provided a GSAP is engaged from the time of registration or within one month from registration and that there are still opportunities for the project's design to be updated to meet the outcomes of the targeted credits.

Multiple GSAPs

In some cases, the role of the GSAP can be fulfilled by different individuals or organisations throughout the project. This is acceptable provided each GSAP individually meets the requirements of this credit (and this role has been fulfilled continually from the time of registration or within one month following registration).

Project support

The GSAP is expected to provide advice, guidance and support to the project team by:

- Ensuring the project team has access to the information covering Green Star principles, structure, timing, and process including:
 - Eligibility
 - Green Star strategy
 - Technical Questions
 - The submission
 - Certification process
 - Green Star branding and marketing rules
- Demonstrating their involvement in collaborating and coordinating the Green Star strategy with the rest of the project team.

Financial Transparency disclosure template

The *Financial Transparency disclosure template* is available on the Green Star resources portal.

Documentation cost

This refers to the cost being charged to the Applicant for documenting the specified performance level for the credit. This only includes work required to meet the specified performance level for the credit, beyond the project's base requirement if it were not seeking a Green Star rating. Where separate costs are not available for additional works, costs may be estimated based on additional time spent.

Implementation cost

This refers to the cost being charged to the Applicant for implementing the specific credit. This only includes the additional cost of materials and installation required to meet the specified performance level for the credit, beyond the project's base requirement if it were not seeking a Green Star rating. This does not include the fees associated with engaging the consultant.

All information will be anonymised by the GBCA and included as an aggregate as part of a regular report to inform industry on the cost of Green Star. No project, owner or consultant will be identifiable.

Promotional material

Examples of promotional material may include the building owner's, head contractor's and the architect's website, building signage, collateral, sales training and tenant welcome packs.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Financial Transparency disclosure template** in an Excel format
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Green Star Accredited Professional

- Letter from building owner confirming the appointment of a GSAP in the project including:
 - The scope of works and confirmation of successful completion.
 - Date of commencement of works and confirmation of project phase.
 - Date of appointment and description of the GSAP's engagement with the project team.
- Extracts from meeting minutes demonstrating continued input from the GSAP over the duration of the project.
- Letter from the building owner confirming that the GSAP satisfactorily fulfilled their engagement responsibilities as per the scope of works and requirements of this credit.

Financial Transparency

- Statement or report from quantity surveyor, head contractor or cost consultant from the project, supporting the costs outlined in the disclosure template.

Marketing Sustainability Achievements

- Case study template.
- Plans or photos showing the location of digital screens.
- Photos of or copies of the material used to promote the GBCA and the Green Star rating.
- Photos or similar of project's construction hoarding that promotes the GBCA and the targeted Green Star rating.
- Extracts of promotional material.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- GBCA – Case study template
- GBCA – Financial Transparency Disclosure Template (available on the Green Star resources portal)
- GBCA – [Green Star Accredited Professional Courses](#)
- GBCA – Green Star Certification Essential Information (available on the Green Star resources portal)
- GBCA – [Marketing Rules & Style Guides](#)

Responsible Construction

Outcome

The builder's construction practices reduce impacts and promote opportunities for improved environmental and social outcomes.

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">• Environmental Management System: The head contractor has an environmental management system in place to manage its environmental impacts on site.• Environmental Management Plan: The head contractor has an environmental management plan to cover the scope of construction activities.• Construction and Demolition Waste Diversion: At least 80% of construction and demolition waste is diverted from going to landfill.• Sustainability Training: The head contractor provides training on the sustainability targets of the building.
Credit Achievement	1 point	In addition to the <i>Minimum Expectation</i> : <ul style="list-style-type: none">• Increased Construction and Demolition Waste Diversion: At least 90% of construction and demolition waste is diverted from going to landfill, and waste contractors and facilities comply with the <i>Green Star Construction and Demolition Waste Reporting Criteria</i>.

Additional information

Scope of credit

All areas of the project and all site works after the purchase of the site until practical completion. This includes any demolition, early works and/or main works.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Inclusive Construction Practices

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)
- Goal 12 (Climate Action)

Requirements

Minimum Expectation

The project must comply with **all four** of the following criteria:

- Environmental Management System
- Environmental Management Plan
- Construction and Demolition Waste
- Sustainability Training

Environmental Management System

The head contractor/s for all site works have an Environmental Management System (EMS) in place that meets one of the following:

- For contracts valued at less than \$10 million, the EMS complies with either the NSW Environmental Management System Guidelines or another recognised framework.
- For contracts valued at over \$10 million, the EMS is audited and certified to AS/NZS ISO 14001, BS 7750 or the European Eco-Management and Audit Scheme (EMAS).

The EMS is stand-alone or part of an integrated management system and is valid for the duration of site activities completed from the date of purchase by the developer. The EMS includes actions related to the implementation of the EMP.

If the project has different head contractors for the demolition, early works and main works, the 'contract value' can be considered separately.

Environmental Management Plan

A project-specific Environmental Management Plan (EMP) is developed and implemented for the full duration of all site works. The purpose of the EMP is to assist the head contractor/s and its service providers to manage environmental performance conditions and impacts arising from demolition, excavation and construction.

If the project has different head contractors for the demolition, early works and main works, each head contractor has an EMP.

Construction and Demolition Waste Diversion

At least 80% of site waste from site works is diverted from landfill.

The waste contractors and processing facilities provide a Disclosure Statement outlining how the company and their reporting aligns with the *Green Star Construction and Demolition Waste Reporting Criteria*.

The mass of waste is reported (in kilograms or tonnes).

Sustainability Training

Training is provided to at least 95% of contractors and subcontractors present on site for at least three days during all site works. The content of the training includes the following:

- Sustainability attributes of the project and their benefits.
- Value of certification.
- Role site worker/s play in delivering a sustainable building.

Credit Achievement

In addition to *Minimum Expectation*, the project complies with the following criterion:

- Construction and Demolition Waste Diversion

Increased Construction and Demolition Waste Diversion

At least 90% of site waste from all site works is diverted from landfill.

The waste contractors and processing facilities comply with the *Green Star Construction and Demolition Waste Reporting Criteria* by providing the Compliance Verification Summary.

The mass of waste is reported (in kilograms or tonnes).

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Early works

Works that are carried out prior to the main works (which would typically consist of the construction of the main building), often under a separate head contract.

Excavation waste

Includes unwanted material resulting from excavation activities such as a reduced level dig and site preparation and levelling, and the excavation of foundations, basements, tunnels and service trenches typically consisting of soil and stones.

Practical completion

Practical completion is achieved when all the necessary construction work is completed.

Site works

For this credit, this refers to any demolition, early works and/or main works that occurs after the purchase of the site until practical completion. Any works that occurred prior to the purchase of the site are excluded.

Special waste

Includes asbestos waste and asbestos containing material, or other hazardous waste and restricted solid waste as defined by the NSW Environment Protection Authority Environmental Guidelines and Policies for Waste.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Environmental management system

A formalised Environmental Management System (EMS) is a process that can be used to identify, manage, audit, and reduce environmental impacts, and generate reports on environmental performance progress. It should provide a systematic and methodical approach to preventing impacts and when they occur to planning, implementing, and reviewing an organisation's response.

The management system may be integrated with other management systems (such as occupational health and safety, risk registers etc.) to give a 'whole of business' approach.

All formalised EMS should follow the basic stages of high-level commitment, identification of impacts, review, target setting, action planning, monitoring, and reporting. The process is to be frequent and ongoing.

Alternate recognised standard

If projects wish to use an alternate standard to AS/NZS ISO 14001, BS 7750 or the European Eco-Management and Audit Scheme (EMAS), a Technical Question must be submitted. A demonstration of how the proposed standard aligns with one of the recognised standards is to be included.

Environmental management plan

The NSW Environmental Management Systems Guidelines contains requirements of EMPs which is considered best practice.

Site waste

Special waste and excavation waste, refer *Definitions*, are excluded from site waste. However, soil generated from site clean-up works which incorporates soil leaving the site mixed with general construction and demolition waste must be included in the waste-to-landfill calculations, as it forms part of the building site's general waste profile.

Calculating waste

To calculate the amount of waste diverted from landfill, the project team is required to report the total amount of waste generated and the total amount of waste diverted from landfill.

Project teams are encouraged to use the *Building Materials Reporting Tool Template* to provide a more granular breakdown of their waste. A Leadership Challenge will be available for the use of this template. Refer to GBCA's *Australia's Waste(d) Opportunity* for further information.

Volume to weight conversion

Waste contractors are often required to determine the weight of waste material streams from visual inspections of a load's volume for the purpose of reporting the estimated weights of material types removed from site (e.g., timber, steel, plasterboard, concrete, carpet).

The conversion factors in the Table below may be used to convert measurement of waste types from volume to weight.

Material	Density (tonne/m ³)	Material	Density (tonne/m ³)
Aluminium cans - whole	0.026	Cobbles / Boulders	1.4
Aluminium cans - flattened	0.087	Commingled containers (plastic, glass, steel, and aluminium cans)	0.063
Aluminium cans - baled	0.154	Concrete	1.5
Asphalt / Bitumen	0.8	Garbage	0.15
Bricks	1.2	Garden / Vegetation	0.15
Car Batteries	0.375	Glass bottles - whole	0.174
Carpets	0.3	Glass bottles - semi-crushed	0.347
Cement Sheet	0.5	Green waste processed	0.3
Ceramics	1	Green waste unprocessed	0.15
Clean Soil	1.6		

Material	Density (tonne/m ³)
Hazardous Wastes	0.2
Insulation	0.05
Litter trap	0.75
Metals	0.9
Oil	0.8
Other Textiles	0.15
Others	0.3
Paint	0.8
Paper / Cardboard	0.1
Plasterboard	0.2

Material	Density (tonne/m ³)
Plastic containers - whole	0.01
Plastic containers - whole, some flattened	0.013
Plastic containers - baled	0.139
Rubber	0.3
Soil / Rubble<150mm	1.4
Steel cans - whole	0.052
Steel cans - flattened	0.13
Steel cans - baled	0.226
Wood / Timber	0.3
Waste oil	0.8

Source: Western Australia Waste Authority

GECA Construction and Demolition Waste Services Standard

Waste contractors and processing facilities that comply with the GECA Construction and Demolition Waste Services Standard (CDWSv1.0-2021) comply with the *Green Star Construction and Demolition Waste Reporting Criteria*.

Sustainability Training

Evidence provided is to demonstrate a clear link between the sustainability training material presented and the records of attendance. Project teams are recommended to consider documentation revision, dates, and detailed attendance records to demonstrate specific training undertaken.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Environmental Management System

- For contracts valued at less than \$10 million, evidence demonstrating EMS complies with either the NSW Environmental Management System Guidelines or another recognised framework.

- For contracts valued at more than \$10 million, evidence that the EMS has been certified to one of the recognised standards listed.
- Evidence that an EMS was in place for the duration of site activities.
- Evidence of site purchase date and any works that have been completed prior (if relevant)

Environmental Management Plan

- Extracts of the EMP/s that were in place for the duration of site activities.
- Evidence that the EMP complies with the EMS
- Copies of reporting required by the EMP – no less than two site audits for every 12 months of construction phase duration and covering every phase of construction (i.e., demolition, early / site preparation works and construction).

Construction and Demolition Waste Diversion

- Demolition or Site Drawings indicating the structures on site at time of purchase, extent of demolition and retained structure and façade.
- Cumulative waste report generated from the monthly waste reports provided by the waste contractor over the entire duration of construction and demolition works.
- Disclosure statement outlining how the contractor or facility aligns with the *Green Star Construction and Demolition Waste Reporting Criteria*.

Sustainability Training

- Evidence of sustainability training materials.
- Evidence of attendance (e.g., site induction register).
- Evidence that demonstrates the proportion of site workers that attended the training.

Increased Construction and Demolition Waste Diversion

- Compliance Verification Summaries from waste contractor(s) and waste processing facilities as detailed in the *Green Star Construction and Demolition Waste Reporting Criteria* document
- Auditor credentials as detailed in the *Green Star Construction and Demolition Waste Reporting Criteria* document

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AS/NZS ISO 14001 Environmental Management
- BS 7750 Specification for environmental management systems
- GBCA – [Green Star Construction and Demolition Waste Reporting Criteria](#)
- GBCA – [Australia's Waste\(d\) Opportunity](#)
- European Commission – [Eco-Management and Audit Scheme \(EMAS\)](#)
- NSW EPA – Environmental Management Systems Guidelines
- Western Australia Waste Authority – ['Converting Volumes to Tonnes'](#)

Verification and Handover

Outcome

The building has been optimised and handed over to deliver a higher level of performance in operation.

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">Metering and Monitoring: The building is set up for optimum ongoing management due to its appropriate metering and monitoring systems.Commissioning and Tuning: The building has set environmental performance targets, designed and tested for airtightness, been commissioned, and will be tuned.Building Information: The project team creates and delivers operations and maintenance information to the facilities management team at the time of handover. Information is available to building users on how to best use the building.
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Credit Achievement	1 point
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In addition to *Minimum Expectation*:

- Independent Commissioning Agent:** An independent level of verification is provided to the design, planning, commissioning and tuning activities through the involvement of an independent commissioning agent.
or
- Soft Landings Approach:** The project uses a soft landings approach that involves the future facilities management team.

For large projects, both must occur.

Additional information

Scope of credit

All building systems and envelope installed under the scope of the rating.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Energy Use
- Energy Source
- Grid Resilience
- Operations Resilience
- Clean Air

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)

Requirements

Minimum Expectation

The project must comply with **all three** of the following criteria:

- Metering and Monitoring
- Commissioning and Tuning
- Building Information

Metering and Monitoring

Metering distribution

The building has accessible energy and water metering for all distinct uses and major uses. Metering is provided for each separate tenancy or unit. Floor by floor metering is provided if the entire floor has a single use. Refer *Guidance* for further information for different building classes.

A metering schedule is provided in accordance with steps 7-10 in CIBSE's *TM39 Building Energy Metering* including energy and water meters.

Metering and monitoring attributes

All meters including utility meters and sub-meters:

- Provide continual information (up to 1-hour interval readings) to the connected monitoring system.
- Are commissioned and validated in accordance with the most current version of NABERS' *Metering and Consumption Rules*.
- Are pattern approved by the National Measurement Institute (NMI) or by another recognised standard. Refer *Definitions* for recognised standards.

An automatic monitoring system is implemented that provides reports on consumption trends and raises an alarm when the energy or water use increases beyond certain parameters and automatically issues an alert to the facilities manager.

For Class 2 build to sell apartments, only the consumption trends of the base building are provided to the facilities manager. Meters for each sole-occupancy unit are not required to be connected to the monitoring system.

Tenanted buildings

Where the base building metering and monitoring strategy relies on connection of tenant meters, project teams may use a tenancy fitout guide and model lease clauses to demonstrate tenant requirements regarding metering, including rules for connection of meters and programming of monitoring systems.

Commissioning and Tuning

Environmental performance targets and information

Prior to schematic design, the project team sets and documents the environmental performance targets for the project in a design intent report or an owner's project requirements (OPR) document.

As a minimum, the report/document:

- Lists the targets for the project energy use, water consumption, indoor environment quality and the airtightness targets for the building.
- Outlines the operational monitoring expectations of energy, water and indoor environment quality.
- Is signed off by the building owner.

Services and maintainability review

Prior to construction, a services and maintainability review of the project is conducted. The review involves the building owner/building owner's representative, design consultants, architect, facilities manager, main works head contractor and the Independent Commissioning Agent (where nominated).

The review addresses the commissionability, controllability, maintainability, operability and safety of all systems and its outcomes are summarised in a Services and Maintainability Report.

All items are addressed, closed-out and documented within the final Services and Maintainability Report and are signed off by all involved parties.

Building commissioning

Prior to the start of construction works for the relevant trade packages, the process of commissioning, the identification of commissioning documentation and technical requirements for commissioning are included in the construction documentation.

During construction of the relevant trade packages, a commissioning plan is developed prior to the start of commissioning. The commissioning plan details the process, activities and program to commissioning the metering and monitoring system, for airtightness and all nominated building systems in accordance with a recognised commissioning standard or guideline (Refer Definitions for examples).

When the building is commissioned, it is completed in accordance with the same recognised commissioning standard or guideline.

Airtightness

Prior to schematic design, airtightness targets are set. The targets are defined by the project team are based on the *ATTMA Australia Guide for Airtightness Targets*. The targets are included as part of the environmental performance targets and included in the energy modelling where relevant.

Prior to the end of design development, the air barrier system schematic is reviewed to identify and reduce risks to achieving airtightness targets.

Prior to the start of construction works, an approach to delivering airtightness is developed. It includes:

- An outline of responsibilities and coordination of relevant project team members and trades required to achieve targets.
- An airtightness testing and commissioning plan (included as part of the overall project commissioning plan) including approach for defect rectification.

Prior to practical completion, the building is subject to airtightness testing of the conditioned envelope. The testing is carried out by a suitably qualified practitioner in accordance with the latest revision of *AS/NZS ISO 9972 Method 1*. Airtightness testing is carried out on the whole building, or across a sample of areas of the whole building that are representative of the range of external envelope constructions, including different façade types, junctions and building geometries as recommended by a suitably qualified practitioner. Both typical assemblies as well as critical, or high-risk assemblies are tested.

Refer *Guidance* for further information on sampling areas for different building classes.

On sections smaller than the whole building, qualitative procedures such as *ASTM E1186-17* may be used.

All results are shared with the building owner, regardless of whether the airtightness targets have or have not been met. The airtightness test results are also included in the project's energy modelling. Where targets are not achieved, opportunities for improvement are also identified and shared with the building owner.

Building systems tuning

The building owner or developer contractually commits to a tuning process that includes quarterly adjustments and measurements for at least the first 12 months after occupation.

The commitment includes:

- A building tuning manual or plan
- A description of roles and responsibilities of the building tuning team

The building tuning plan can be detailed within the commissioning plan. Where the tuning plan or manual is separate to the commissioning plan, it refers to using the commissioning plan and the commissioning records and results as the baseline data.

The building tuning team includes:

- The facilities manager
- The Independent Commissioning Agent (ICA) or other building owner's representative
- The head contractor
- Subcontractors responsible for the mechanical, electrical and BMS as a minimum. Other subcontractors, where relevant, may be required.

Building Information

Operations and maintenance information

The project team provides operations and maintenance information for all nominated building systems to the building owner (or designated representative).

As a minimum, the operations and maintenance information:

- Contains maintenance instructions including procedures, schedules and requirements, service contacts, warranties and as built mechanical, electrical and hydraulic drawings for all nominated building systems.
- The appropriate user group has access to the information they require to deliver best practice environmental outcomes.
- Includes guidance for the facilities management team on how to keep the information up to date and how to assess, correct and validate alerts or faults identified by the building's monitoring system.

Building logbook

A building logbook developed in accordance with *CIBSE TM31 Building Logbook Toolkit* and covers all nominated building systems is presented to the building owner (or designated representative) prior to project occupation.

Building user information

The project team provides building user information to the building owner and facilities management team prior to occupation.

As a minimum, the building user information:

- Is publicly available to the intended building users. The building users are the regular occupants and representatives of the building tenants.
- Includes information relevant to the target audience to support the everyday operations of the building. The information is communicated in a way that can be easily understood by the target audience.
- Is provided in an editable, digital format and is accessible to be updated and edited by the facilities management team, or other appropriate stakeholder groups.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with **one** of the following criteria:

- Soft Landings Approach
- Independent Commissioning Agent

For projects with a Total Building Services Value of over \$20m, **both** requirements must be met.

Soft Landings Approach

Stages 1 to 4 of the soft landings approach outlined in CIBSE ANZ's *The Soft Landings Framework Australia and New Zealand* are implemented on the project. The sample worksheets from CIBSE ANZ's *The Soft Landings Framework Australia and New Zealand* for Stage 1 to 3 are completed and actions for Stage 4 are identified.

The facilities management team (or building owner's representative) for the building is involved in the soft landings approach by:

- Being involved in commissioning and handover process.
- Taking part in the development of a brief technical guide for the building and the building operations and maintenance manual.
- Signing-off on the operations and maintenance manual.
- Being trained before handover. The training includes a demonstration of the building management system and any control mechanisms.

The facilities management team has continued access to critical design and construction team members for two years after practical completion to allow for transitioning the responsibility for the building.

Independent Commissioning Agent

Prior to design development, an Independent Commissioning Agent (ICA) is appointed. The ICA advises, monitors and verifies the commissioning and tuning of the nominated building systems throughout design development, tender, construction, commissioning, and tuning phases.

The specified commissioning requirements is overseen by a qualified independent commissioning professional(s).

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Air barrier system schematic

The schematic is to clearly define:

- Building envelope boundaries and any penetrations within these boundaries.
- Key testing / commissioning points, including source of pressurization, pressure measurement points and envelope areas.
- Expected relative pressures for each building compartment, including acceptable ranges.

The schematic is to provide sufficient detail to assist in guiding the building pressure test process and to provide a clear design and acceptance criteria for the test.

Automatic monitoring system

Automatic monitoring systems are defined as systems that record consumption and demand of energy, water, and indoor environment quality. These systems can process this information to produce reports at user adjustable intervals.

Independent commissioning agent

The ICA is defined as a person who is:

- An advocate for, and reports directly to, the project owner.
- Independent of any consultant, contractor or sub-contractor organisation that has been involved in the design or installation of the nominated systems.
- A registered professional engineer or qualified technician with demonstrated knowledge and competency of commissioning of each of the nominated systems and has previous experience with the commissioning process of at least 2 projects similar in scope (type, size and complexity).

The qualified ICA role can be fulfilled by one or multiple persons, if all meet the requirements laid out above. It can also be fulfilled by a person who is part of the client's organisation if the person is qualified to do so. An independent commissioning company may also meet these requirements.

Nominated building systems

Nominated building systems are defined by the project team. Examples of nominated building include, but are not limited to:

- Mechanical systems (such as HVAC and refrigeration systems; mechanically operable systems such as blinds and actuated shading devices).
- Building Management and Control System (BMCS).
- Lighting and associated controls.
- Electrical systems (such as electrical generation, electrical supply, distribution systems, security and access systems, and alarm systems).
- Hydraulic systems (such as gas and water supply distribution systems, sewage collection and distribution systems, stormwater collection and distribution systems; pumps).
- Fire detection systems, smoke alarm systems and emergency warning systems.
- Fire protection systems, including pumps and other equipment.
- Lifts and any other vertical transport devices.
- Any other system that has an impact on the energy or water consumption of the building, or impact on any other targeted credits within the Submission Guidelines, as identified by building owner or building operator.

Recognised standard

Metering and monitoring attributes

Alternatives to being pattern approved by the National Measurement Institute include:

- A test certificate from the European Measuring Instruments Directive - 2004/22/EC
- An accuracy certificate compliant to International Electrotechnical Commission (IEC) standards.

Building commissioning

Examples of a recognised commissioning standard or guideline include:

- AIRAH DA27 – Building Commissioning 2011
- ASHRAE Standard 202-2024 – The Commissioning Process Requirements for New Buildings and New Systems
- CIBSE – Commissioning Code M (and the ancillary codes for relevant services)
- SA TA 5342:2021 – Standards Australia Technical Specification for Building Commissioning

Suitably qualified practitioner

For the purposes of the Airtightness criterion, a suitably qualified practitioner is a member of the Air Tightness Testing and Measurement Association (ATTMA). The level of tester experience and qualification must be matched to the size and complexity of the project. For example, a Level 1 tester may be appropriate for small, simple enclosures requiring only one fan to test such as individual apartments, while a Level 2 tester may be required for larger, more complex enclosures requiring multiple fans to test, such as an entire apartment building tested at once.

This requirement is intended to ensure a quality testing outcome given the testing practitioner's membership with an industry recognised body. For a current listing of members, please visit the ATTMA website. Should project teams wish to demonstrate an alternative yet equivalent qualification, a Technical Question must be submitted.

GBCA also recommends project teams refer to guidance published by the ABCB in regard to practitioners qualified to sign off JV4 reports.

Total Building Services Value

This refers to the building services contract value or the cost of the building services equipment provided. The building services are defined as lighting, heating, ventilation, vertical transportation, acoustics, hydraulic, power supply, energy management and security and safety systems.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Metering

Metering distribution

The following distribution of meters should be provided as a minimum when determining the extent of metering for the relevant building class space type:

Building class	Metering distribution
Class 2 excluding build to rent	<ul style="list-style-type: none">One meter for energy and one meter for water is provided for all base building common areas and each sole-occupancy unit. Authority meters may be used.Where hot water is provided centrally, water metering is provided for each sole-occupancy unit.Additional sub-metering for energy and water is provided for each distinct use if a floor has multiple uses (e.g., if there is a swimming pool and a gym on the same floor, these are sub-metered separately).
Class 2 build to rent and Class 3 spaces	<ul style="list-style-type: none">One meter for energy and one meter for water per floor if the entire floor has a single use.Where hot water is provided centrally, a meter is provided per floor.Additional sub-metering for energy and water is provided for each distinct use if a floor has multiple uses.
Class 7b and 8 industrial spaces leased to tenants	<ul style="list-style-type: none">One meter for energy and one meter for water is provided for each tenancy.Where a common energy use exceeds 5% of the total energy consumption of the building or 100kW, it is metered independently.Where a common water use exceeds 10% of the total water use of the building, it is metered independently.
Small buildings (GFA, excluding car parks, is less than 1000m ²)	<ul style="list-style-type: none">One for energy and one for water.Where there is specialist equipment with an annual power consumption of 100kW or more, it is metered independently.If accessible to the building manager, the utility meter is acceptable provided it meets the <i>Metering and monitoring attributes</i> criterion.
All other building classes	<ul style="list-style-type: none">One for energy and one for water per floor if the entire floor has a single use.Additional sub-metering for energy and water is provided for each distinct use or tenant if a floor has multiple uses or tenancies.

Building class	Metering distribution
	<ul style="list-style-type: none">– For Class 6 retail spaces, staff only areas are metered separately from retail areas due to different usage patterns.– For Class 9b education spaces, different learning spaces are metered separately (e.g., classrooms, assembly halls, lecture halls, laboratories etc.) due to different usage patterns.• Where an energy load for a single item exceeds 5% of the total energy consumption of the building or 100kW, it is metered independently.• Where a common water use exceeds 10% of the total water use of the building, it is metered independently.

Metering can be installed above and beyond the examples above.

Refer *CIBSE TM39 Building Energy Metering standard* for guidance on breaking down end uses.

Metering schedule

The schedule includes the estimated loads for energy and water and lists:

- Incoming input (electricity, gas, water etc.);
- Outgoing energy or water (on-site solar export or non-potable water export);
- End use (lighting, HVAC etc.);
- Estimated energy consumption for the end use and which meters provide the required information; and
- Initial estimated end consumption.

Refer *CIBSE TM39 Building Energy Metering standard* for an example schedule and a template.

CIBSE TM39 Building Energy Metering standard

Although this standard has been created to be used for developing energy metering and monitoring strategies, for the purpose of this credit, the same principles described in the Standard should be used for developing water metering and monitoring strategies.

Operational monitoring expectations

- Energy: Performance measurement procedures including quarterly reporting against targets.
- Water: Performance measurement procedures including quarterly reporting against targets.
- Indoor Environment Quality: can be via occupant comfort survey targets, HVAC system maintenance targets, quarterly reporting of indoor air quality, thermal comfort or lighting comfort performance measurements.

Commissioning plan

For the commissioning plan, it is not enough to state that systems must be commissioned to the relevant standard. Details are to be provided.

Airtightness

The intent of this criterion is to integrate attention to airtightness during the design and construction of the project to ensure it is considered meaningfully and is integrated into the commissioning process.

Setting targets

Airtightness targets are set prior to schematic design. The intent of deciding these early in the design phase is to ensure the project team and building owner are in agreement on the goals of the project and will aid the meaningful integration of airtightness into the design.

The targets are to be based on the *ATTMA Australia Guide for Airtightness Targets*. This means that where there is a recommended design air permeability target available for the project's building type, this target is used as a starting point to define a project-specific target. Project teams may then have specific project goals that could influence the starting value to result in a different value to be chosen as the final target (e.g., the project is aiming to retain as much of the existing building as possible therefore a less stringent

target would be more appropriate). Different airtightness targets may be set for different compartments of the building based on the space function and the goals of the project.

Reviewing the air barrier system

A review of the air barrier system is suggested in two phases during design:

- At schematic design phase: This includes creation of an air barrier system schematic, definitions of different space conditioning requirements, and delineation of the extent of the conditioned building envelope. This process should fit in the same timeline with other such building envelope commissioning steps, such as definition of fire separation boundaries in the building.
- Design development phase: A review for airtightness is completed. The air barrier system includes façade elements, but also interior separations between conditioned and unconditioned spaces, and integration of HVAC, electrical, communications, and plumbing elements into the system. This includes plan reviews for air barrier continuity on building plans, sections, and details. To be considered:
 - Constructability and construction sequence
 - Costs of completion of the air barrier system
 - Scope of work and necessary coordination between trades and responsibilities

Relevant project team members and trades

This includes architects and building designers, façade and mechanical/services engineers, airtightness consultant, the head contractor, Independent Commissioning Agent (ICA) (if appointed), services contractors and installers and airtightness testers.

Commissioning plan

Airtightness is considered in the commissioning plan where stages of commissioning for airtightness are defined. The plan should include builder and mechanical contractor statements of understanding and commitment of resources and personnel necessary for, and commitment to assist with, airtightness test preparation, regardless of scale of planned testing.

Testing for airtightness

The aim of the airtightness testing is to understand how the building envelope has performed against the airtightness targets set.

Project teams conducting partial testing should do so prior to the envelope being fully completed, to provide early indication of weak points and allow time to address any issues identified during the testing process. Such tests may be considered qualitative and evaluate the effectiveness of the air barrier system. Nearer project completion, a quantitative test such as a AS/NZS ISO 9972:2015 on a whole building may also be used.

If a sample of areas is being tested, the following are suggested for the relevant building class:

Building class	Sampling areas
Class 2 and 3 buildings	<p>Testing should be completed on a minimum of 10 dwelling units or 10% of the total number of dwelling units, whichever is greater. The sample of units includes:</p> <ul style="list-style-type: none">• A representative of the lower-most, upper-most, and intermediate floors;• A representative of the external envelope construction including different façade types and building geometries;• A representative of each apartment typology (by number of bedrooms, Accessibility/DDA etc.);• The unit with lowest-performing NatHERS rating.
All other building classes	<p>Testing should be completed on a total of either 5,000m² or 20% of the building's envelope area, whichever is greater.</p>

The quantitative tests are recommended to be filed with ATTMA Lodgement for verification of tester qualification, equipment calibration, and calculation methods and a Certificate of Air Permeability Test is provided.

Opportunities for improvement

Where targets are not achieved, opportunities of improvement are included as part of the commissioning process as far as practically possible and the design is reviewed with the project design team to share any lessons learnt for future projects with the project team and building owner.

Building user information

As the building user information is to be provided in an editable, digital format that can be updated when needed, a digital format is recommended when displaying the information to the intended building users. This may be in the format of digital signage, interactive information kiosks, induction or training material, a website and/or a mobile application.

Soft landings

The intent of soft landings is to reduce the gaps between predicted and achieved performance and create a smooth transition into use. The CIBSE framework outlines 5 stages. Stage 5 is optional, but highly encouraged.

Multiple project roles – GSAP and ICA

In some cases, the GSAP's employer may also be engaged in other roles on the Green Star project. This does not constitute a conflict of interest where individuals are able to perform each role independently to meet the requirements of each credit. For example, an organisation may fulfil the role of both GSAP and Independent Commissioning Agent (ICA) however the individuals are different and the ICA is not involved in the Green Star strategy and vice versa.

In this case, project teams should confirm that there is no conflict of interest by including relevant discussion in the submission.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Metering and Monitoring

- As built drawings showing the location of all energy and water meters and the associated energy and water uses.
- Metering schedule.
- Evidence that all distinct and major uses are metered with calculations to support estimates.
- Letter of confirmation from the contractor/metering provider/manager demonstrating that the metering systems are continually and automatically monitored by a system that is able to produce alerts if any inaccuracies are found
- Completed metering validation documents to demonstrate metering system meets the NABERS rules for validation.
- Product data sheets or similar to demonstrate pattern approval by the NMI or that the meters meet another recognised standard.
- Extracts from commissioning reports demonstrating correct operation of meter reading, reporting and alarm generation.

Commissioning and Tuning

- Extracts from design intent report or OPR highlighting environmental performance targets and airtightness targets.
- Evidence to demonstrate a services and maintenance review was conducted prior to construction.
- Extracts from Service and Maintainability Report, where the service and maintainability review is summarised and all items are listed, addressed and closed-out.

- Extracts from the commissioning report demonstrating that comprehensive pre-commissioning activities and commissioning activities have been performed.
- Extracts of commissioning plan.
- Evidence of how airtightness targets were determined.
- Evidence of air barrier system schematic review (e.g., marked up drawings) and that it is completed prior to the end of design development.
- Building airtightness testing report detailing air flow rates, details of design for airtightness and other relevant details or a copy of the project's ATTMA Green Star Commissioning for Air Tightness report.
- Extracts from energy modelling report.
- Signed confirmation from the building owner that the results have been sighted.
- A summary of recommendations for improvements provided to the building owner (where relevant).
- Extracts of building tuning plan and roles and responsibilities.
- A commitment or contract from the building owner and head contractor demonstrating that there is a requirement for a building tuning process.

Building Information

- Extracts of operations and maintenance information.
- Building logbook.
- Building user information.
- Evidence that the operations and maintenance information and building logbook are provided to the building owner.
- Evidence that building user information is provided to the building owner and facilities management in an editable format.

Soft Landings Approach

- Evidence of implementation of CIBSE ANZ framework.

Independent Commissioning Agent

- CV of the Independent Commissioning Agent detailing the qualifications and experience relevant to the project.
- Letter from building owner confirming the appointment of an ICA.
- Evidence to demonstrate that the ICA was involved from the design stage through to tuning.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AIRAH DA27 – Building Commissioning 2011
- AIRAH DA28 – Building Management and Control Systems (BMCS) 2011
- ASHRAE Guideline 0-2019 – [The Commissioning Process](#)
- ASHRAE Commissioning Guideline 1.1-2007 – [HVAC&R Technical Requirements for The Commissioning Process](#)
- ASHRAE Standard 202-2024 – [The Commissioning Process Requirements for New Buildings and New Systems](#)
- AS/NZS ISO 9972:2015 Thermal performance of buildings – Determination of air permeability of buildings – Fan pressurisation method

- ASTM E779-10 Standard test method for determining air leakage rate by fan pressurisation
- ATTMA – [ATTMA Australia Guide to Air Tightness Targets](#)
- BSRIA Soft Landings Framework
- CIBSE – [TM39 Building energy metering](#)
- CIBSE – Commissioning Code M (and the ancillary codes for relevant services)
- CIBSE – [Soft Landings Framework – Australia and New Zealand](#)
- NABERS – [Metering and Consumption Rules](#)
- NIBS Guideline 3-2012 – National Institute of Building Sciences Building Enclosure Commissioning Process BECx
- SA TA 5342:2021 – Standards Australia Technical Specification for Building Commissioning

Responsible Resource Management

Outcome

Operational waste and resources can be separated and recovered in a safe and efficient manner.

Criteria

- | | | |
|----------------------------|------------|---|
| Minimum Expectation | Nil | <ul style="list-style-type: none">• Collection of Waste Streams: The project is designed for the collection of separate waste and resource streams.• Dedicated Waste Storage Area: The building provides a dedicated and adequately sized waste and resource storage area.• Safe and Efficient Access to Waste Storage: The building ensures safe and efficient access to waste and resource storage areas for both occupants and waste and resource collection contractors. |
|----------------------------|------------|---|

Additional information

Scope of credit

Operational waste forecasted to be generated by all occupants in the building.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)
- Goal 12 (Responsible Construction and Production)
- Goal 13 (Climate Action)

Requirements

Minimum Expectation

The project must comply with **all three** of the following criteria:

- Collection of Waste Streams
- Dedicated Waste Storage Area
- Safe and Efficient Access to Waste Storage

Collection of Waste Streams

The project enables the building owner or operator to collect waste from building occupants in separate streams.

Waste Streams

As a minimum, the following waste streams are able to be collected separately:

- General waste going to landfill.
- Recycling streams to be collected by the building's waste collection service, including:
 - Paper and cardboard
 - Glass
 - Plastic
- One additional waste stream identified by the project team such as organics, e-waste, batteries etc.

Collection of any other single waste stream (except food waste) that is expected to represent more than 5% of total annual operational waste and resources (by volume) is provided.

Refer *Guidance* for further information about comingled recycling collection.

Collection

The project provides chute intakes, bins or storage containers to ensure the applicable waste streams are collected separately as close to its point of generation as possible. The chute intakes, bins or storage containers are labelled and easy to access.

Fitout scope

Project teams may use a tenancy fitout guide and model lease clauses, or a supply contract for bins or storage containers to demonstrate compliance for cold shell or excluded tenancy spaces. Any tenancy spaces with fitout works within the scope of the rating must meet the requirements.

Dedicated Waste Storage Area

Dedicated Area

The project has a dedicated area, or areas, for the storage and collection of the applicable waste streams to ensure they remain separate prior to being transported off-site. The storage area is sized to accommodate all bins or containers, for all applicable waste streams, for at least one collection cycle. The calculations used to demonstrate that the area provided is adequately sized to handle the waste streams specified are based on:

- Forecasted waste generated by occupants
- Collection frequency for each waste stream

The calculations for waste generation rates are based on figures outlined within third-party best practice guidelines. Refer *Guidance* for more information.

Access

The storage area(s) are safe and easy to access for collection vehicles by providing the following:

- Collection vehicles have access to park adjacent to the dedicated waste storage area in the building.
- Driveways, height clearances, manoeuvring area and parking area adjacent to the dedicated waste storage areas is in accordance with AS 2890.2:2018 - *Parking facilities – Part 2: Off-street commercial vehicle facilities*.

Tenanted buildings

The dedicated waste storage area and strategy accounts for the potential waste quantities from the excluded tenancy spaces. This can be estimated based on the building class type. Where the tenants are known, an estimate of their waste quantities are included.

Safe and Efficient Access to Waste Storage

A waste specialist and/or waste contractor sign-off on the designs to confirm they are adequately sized and located for the safe and convenient storage and collection of the waste streams identified.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

General waste materials

Includes all waste streams not clearly identified as being recyclable / reusable materials and resources.

Recyclable / reusable materials

Materials that can reused or be made into new products to prevent them from being sent to landfill.

Waste specialist

A professional that is working for a waste consultant, building owner or waste contractor and has a minimum of three years' experience developing operational waste management plans.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Co-mingled recycling

Waste streams may be collected in separate bins or in the same bin where commingled recycling is available. Cmingled recycling is permissible to the extent that is accepted by the waste collection service. For example, if glass and plastic are collected as commingled recycling, then paper and cardboard are still required to have a separate recycling bin or container.

Easy to access bins or storage containers

Bins or storage containers are considered to be easy to access when distributed evenly across the floor plate. Chute intakes are easy to access when located centrally on the floor plate in the common area of the building and within 30m from the entry/exit of each unit or tenancy. Buildings with larger floor plates may require multiple chute intakes to meet this distance.

Off-site recycling

Where recyclable waste is taken off-site to be sorted and hence equipment for the different recyclable waste streams will not be provided, the building must demonstrate that the waste will be sorted into the streams required by the credit. This can be demonstrated through a contract for the waste to be removed and sorted or that this is standard for the local council.

Third-party best practice guidelines

The City of Sydney's Guidelines for Waste Management in New Developments is a recognised third-party best practice guideline that may be used to calculate waste generation rates and justify access arrangements. Alternative guidelines may be used provided they achieve similar or better outcomes.

Waste specialist and/or waste contractor

The design and signoff of the project's waste management strategy can be provided by the same party.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Collection of Waste Streams

- Extracts from operational waste management plan.
- Photos or as built drawings to highlight location, labelling and access to chute intakes, bins or storage containers.
- Photos or as built drawings to highlight the different waste streams being collected separately.
- Calculations of forecasted operational waste and the different streams.

Dedicated Waste Storage Area

- Extracts from operational waste management plan.
- Photos, as built site plans and drawings highlighting the location and layout of the waste storage area.
- Calculations of forecasted operational waste and that the dedicated waste storage area provided is adequately sized.
- Evidence of collection frequency assumptions.
- Details on how the dedicated waste collection areas meet best practice guidelines, in line with third-party best practice guidelines.

Safe and Efficient Access to Waste Storage

- Extracts of sign-off from waste specialist and/or waste contractor.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AS 2890.2:2018 - Parking facilities – Part 2: Off-street commercial vehicle facilities.
- Better Buildings Partnership – [Operational Waste Guidelines](#)
- City of Perth – [Waste Guidelines for Developments](#)
- City of Sydney - [Guidelines for Waste Management in New Developments](#)
- NSW EPA – [Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities](#)
- Sustainability Victoria – [Waste Management and Recycling in Multi-unit Developments Better Practice Guide](#)
- Zero Waste SA – [Better Practice Guide Waste Management for Residential and Mixed Use Developments](#)

Responsible Procurement

Outcome

The procurement process for key products, materials, and services for the building's design and construction follows best practice environmental and social principles.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">• Risk and Opportunity Assessment: The building's design and construction procurement processes follow <i>ISO 20400 Sustainable Procurement – Guidance</i> by undertaking a risk and opportunities assessment.• Responsible Procurement Plan: A responsible procurement plan is developed to mitigate risks and implement opportunities identified in the assessment.
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Additional information

Scope of credit

All materials and products specified in the project's design and construction procurement processes. It does not include operational procurement decisions.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
Synergies with other credits							
• Responsible Structure				• Responsible Finishes			
• Responsible Envelope				• Procurement and Workforce Inclusion			
• Responsible Systems				• Inclusive Construction Practices			
Sustainable Development Goals							
• Goal 8 (Decent Work and Economic Growth)				• Goal 12 (Sustainable Consumption and Production)			
• Goal 10 (Reduced Inequalities)							
Relevant reporting initiatives							
• GRESB							
• Modern Slavery							

Requirements

Credit Achievement

The project must comply with **both** of the following criteria:

- Risk and Opportunity Assessment
- Responsible Procurement Plan

Risk and Opportunity Assessment

Prior to appointment of the head contractor for the main works, a project-specific risk and opportunities assessment is completed by the project design team with input from the building owner.

The assessment:

- Identifies 10 or more key items in the project's supply chain with at least two building services and at least one building material.
- Identifies and evaluates the environmental, social and human health risks, and opportunities for each key item and within the supply chain, such as in the extraction, manufacture, or transport of key materials. As a minimum, the risks and opportunities in the following issues, as described in Clause 4.3 in *ISO 20400:2017 Sustainable Procurement – Guidance*, are analysed and prioritised:
 - Human rights
 - Labour practices
 - The environment
 - Fair operating practices
 - Consumer issues
 - Community involvement and development

Refer to Annexes A in *ISO 20400:2017* for further guidance.

Responsible Procurement Plan

A responsible procurement plan is developed by the project design team to manage the risks and implement the opportunities identified in the risk and opportunity assessment.

The plan:

- Identifies project-level environmental, social, economic objectives to manage the risks and implement the opportunities identified in the risk and opportunities assessment.
- Outlines requirements for data collection and impact measurement, monitoring and reporting. Refer to Clause 6.5 in *ISO 20400:2017* for further guidance.
- Provides a framework for incentivising the achievement of the plan with relevant contractors and trades.

The plan is embedded in tender documentation for the head contractor and relevant trades. Where the head contractor is engaged under a design and construct contract, the responsible procurement plan is developed prior to procurement activities and embedded in tender documentation for subcontractors and relevant trades. The head contractor is involved in developing the responsible procurement plan.

During construction, the plan is implemented in partnership with relevant contractors and trades, demonstrating data collection, monitoring, and reporting has been carried out. Refer to Clause 7 in *ISO 20400:2017* for further guidance.

Definitions

Definitions provided here must be applied to Requirements unless agreed with GBCA via a Technical Question.

Building materials

This includes any materials and products used on the building's structure, envelope, systems and finishes.

Building services

This includes lighting, heating, ventilation, vertical transportation, acoustics, hydraulic, power supply, energy management and security and safety systems. Examples of systems making up the Building Services include, but are not limited to:

- Mechanical systems (such as HVAC and refrigeration systems; mechanically operable systems such as blinds and actuated shading devices).
- Building Management and Control System (BMCS).
- Lighting and associated controls.
- Electrical systems (such as electrical generation, electrical supply, distribution systems, security and access systems and alarm systems).
- Hydraulic systems (such as gas and water supply distribution systems, sewage collection and distribution systems, stormwater collection and distribution systems; pumps).
- Fire detection systems, smoke alarm systems and emergency warning systems.
- Fire protection systems, including pumps and other equipment.
- Lifts and any other vertical transport devices.
- Any other system that has an impact on the energy or water consumption of the building as identified by building owner or building operator.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

ISO 20400 Sustainable Procurement – Guidance

ISO 20400: Sustainable Procurement – Guidance provides guidance to organisations, independent of their activity or size, on integrating sustainability within procurement. It identifies the principles and core subjects of sustainable procurement and considerations to managing risks and opportunities. It also describes how sustainability considerations are integrated within the procurement practices of an organisation and the organisational conditions and management techniques to implement sustainable procurement. The last section sets out the procurement process itself, including planning, sourcing and contract management.

It is expected that the design team, head contractor and sub-contractors follow ISO 20400:2017 to manage procurement risk in their supply chains to meet the requirements of this credit. It is not expected that all organisations downstream in the supply chain, such as suppliers, follow ISO 20400:2017 as the guidance is for stakeholders involved in procurement decisions. Suppliers may wish to review the guidance to understand how to improve sustainability in their procurement practices however this is outside the scope of this credit.

Risk and opportunity assessment

The risk and opportunities assessment must be completed by the project design team and building owner prior to appointing the head contractor of the main works. The intent of this is to ensure that the building owner provides input into the analysis and prioritisation of the risks and opportunities relevant to the project.

Where the head contractor of the main works identifies an additional building service or material to the key items identified in the risk and opportunities assessment prior to procurement activities, the head contractor should provide an equivalent assessment of the risks and opportunities to demonstrate the item has an equivalent or improved risk and opportunity profile with the input of the building owner. A procurement plan for the item is also developed as per the *Responsible Procurement Plan* criterion.

Responsible procurement plan

This can be part of an organisational plan or a stand-alone plan.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Risk and Opportunity Assessment

- Extracts from risk and opportunity assessment.

Responsible Procurement Plan

- Responsible procurement plan.
- Extracts from tender documents demonstrating responsible procurement plan was incorporated for at least 10 items.
- Extracts of impact and data reporting undertaken through the construction process in partnership with relevant trades and contractors.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resource supports this credit:

- [ISO 20400: Sustainable Procurement – Guidance](#)

Responsible Structure

Outcome

The building's structure is comprised of responsibly manufactured products.

Criteria

Credit Achievement	Up to 2 points	<ul style="list-style-type: none">• Good Practice Products: 50% of all structural components (by cost) meet a Responsible Products Value of at least 10.
Exceptional Performance	Up to 2 points	<p>In conjunction with <i>Credit Achievement</i>:</p> <ul style="list-style-type: none">• Best Practice Products: 10% of all products in the structure (by cost) meet a Responsible Products Value of at least 15 or• Good Practice Products: 80% of all products in the structure (by cost) meet a Responsible Products Value of at least 10.

Additional information

Scope of credit

All products and materials in the structure of project.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Responsible Envelope
- Responsible Systems
- Responsible Finishes
- Impacts Disclosure
- Upfront Carbon Emissions

Sustainable Development Goals

- Goal 9 (Industry, Innovation and Infrastructure)
- Goal 12 (Sustainable Consumption and Production)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Good Practice Products

Good Practice Products

A percentage all structural components (by cost) within the project meets a Responsible Products Value (RPV) of at least **10**.

Values for each product are calculated by using the *Responsible Products calculator*.

Available points	Percentage of components (by cost)
1 point	At least 35% at a RPV of at least 10.
1 additional point	At least 50% at a RPV of at least 10.

Exceptional Performance

In conjunction with the *Credit Achievement*, the project must comply with **one** of the following criteria:

- Best Practice Products
- Good Practice Products

Best Practice Products

A percentage of all structural components (by cost) within the project meets a Responsible Products Value (RPV) of at least **15**. These products do not need to be in addition to *Credit Achievement*; they can be used towards meeting *Credit Achievement*.

Values for each product are calculated by using the *Responsible Products calculator*.

Available points	Percentage of components (by cost)
1 point	At least 5% at a RPV of at least 15.
1 additional point	At least 10% at a RPV of at least 15.

Good Practice Products

A percentage all structural components (by cost) within the project meets a Responsible Products Value (RPV) of at least **10**.

Values for each product are calculated by using the *Responsible Products calculator*.

Available points	Percentage of components (by cost)
1 point	At least 65% at a RPV of at least 10.
1 additional point	At least 80% at a RPV of at least 10.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Structure

The structure is defined as load bearing and stability components of a building, including load bearing elements in the superstructure and substructure. Temporary formwork is excluded from meeting compliance with the Responsible Products Value part of the credit, however, is included in the cost of the structure where projects choose to use the 'total cost' approach.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Responsible Products Value

The Responsible Products Value (RPV) for a product is calculated for a product based on the type and the number of third-party certifications that the product holds and how the third-party certification measures up against the Responsible Products Guideline. The list of recognised third-party certification initiatives can be found in the Responsible Products Score Checker.

Products are to be recognised against the version of the Responsible Products Guideline at the time the project is registered.

Refer to *Guidance for Responsible Products Credits* for further information.

Leadership Challenge

Projects that achieve both criteria in *Exceptional Performance* are eligible for the *Responsible Products Leadership Challenge*. The factsheet is available on the Green Star resources portal.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Responsible Products calculator**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Receipts confirming purchase of stated products.
- Bill of quantities from a registered quantity surveyor or quantities summary from material supplier or similar.
- Evidence that claimed products with required RPV constitute required cost of all structural components.
- Certificate/s of the third-party certification the product is recognised by. This may be available in the Responsible Products calculator.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- GBCA – [Responsible Products Guidelines](#)
- GBCA – [Responsible Products Score Checker](#)
- GBCA – Guidance for Responsible Products credits (available on Green Star resources portal)

Responsible Envelope

Responsible

Credit: 7

Points: 4

Outcome

The building's envelope is comprised of responsibly manufactured products.

Criteria

Credit Achievement	Up to 2 points	<ul style="list-style-type: none">Good Practice Products: 30% of all building envelope components (by cost) meet a Responsible Products Value of at least 10.
In conjunction with the Credit Achievement:		
Exceptional Performance	Up to 2 points	<ul style="list-style-type: none">Best Practice Products: 10% of all products in the building envelope (by cost) meet a Responsible Products Value of at least 15. orGood Practice Products: 60% of all products in building envelope (by cost) meet a Responsible Products Value of at least 10.

Additional information

Scope of credit

All products and materials in the envelope of project.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Responsible Structure
- Responsible Systems
- Responsible Finishes
- Impacts Disclosure
- Upfront Carbon Emissions

Sustainable Development Goals

- Goal 9 (Industry, Innovation and Infrastructure)
- Goal 12 (Sustainable Consumption and Production)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Good Practice Products

Good Practice Products

A percentage of all envelope components (by cost) within the project meets a Responsible Products Value (RPV) of at least **10**.

Values for each product are calculated by using the *Responsible Products calculator*.

Available points	Percentage of components (by cost)
1 point	At least 15% at a RPV of at least 10.
1 additional point	At least 30% at a RPV of at least 10.

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with **one** of the following criteria:

- Best Practice Products
- Good Practice Products

Best Practice Products

A percentage of all envelope components (by cost) within the project meets a Responsible Products Value (RPV) of at least **15**. These products do not need to be in addition to *Credit Achievement*; they can be used towards meeting *Credit Achievement*.

Values for each product are calculated by using the *Responsible Products calculator*.

Available points	Percentage of components (by cost)
1 point	At least 5% at a RPV of at least 15.
1 additional point	At least 10% at a RPV of at least 15.

Good Practice Products

A percentage of all envelope components (by cost) within the project meets a Responsible Products Value (RPV) of at least **10**.

Values for each product are calculated by using the *Responsible Products calculator*.

Available points	Percentage of components (by cost)
1 point	At least 45% at a RPV of at least 10.
1 additional point	At least 60% at a RPV of at least 10.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Envelope

The envelope is defined as the above ground elements that surround a building such as the façade, and all façade components such as external shading and insulation, as well as roofing systems.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Responsible Products Value

The Responsible Products Value (RPV) for a product is calculated for a product based on the type and the number of third-party certifications that the product holds and how the third-party certification measures up against the Responsible Products Guideline. The list of recognised third-party certification initiatives can be found in the Responsible Products Score Checker.

Products are to be recognised against the version of the Responsible Products Guideline at the time the project was registered.

Refer to *Guidance for Responsible Products Credits* for further information

Leadership Challenge

Projects that achieve both criteria in *Exceptional Performance* are eligible for the *Responsible Products Leadership Challenge*. The factsheet is available on the Green Star resources portal.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Responsible Products calculator**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Receipts confirming purchase of stated products.
- Bill of quantities from a registered quantity surveyor or quantities summary from material supplier or similar.
- Evidence that claimed products with required RPV constitute required cost of all structural components.
- Certificate/s of the third-party certification the product is recognised by. This may be available in the Responsible Products calculator.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resource supports this credit:

- GBCA – [Responsible Products Guidelines](#)
- GBCA – [Responsible Products Score Checker](#)
- GBCA – Guidance for Responsible Products credits (available on Green Star resources portal)

Responsible Systems

Outcome

The building's mechanical, hydraulic, transportation and electrical systems are comprised of responsibly manufactured products.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">• Good Practice Products: 20% of all active building systems (by cost) meet a Responsible Products Value of at least 6.
In conjunction with Credit Achievement:		
Exceptional Performance	1 point	<ul style="list-style-type: none">• Best Practice Products: 5% of all active building systems (by cost) meet a Responsible Products Value of at least 11. or• Good Practice Products: 35% of all active building systems (by cost) meet a Responsible Products Value of at least 6.

Additional information

Scope of credit

All products and materials in the building systems of the project.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Responsible Structure
- Responsible Envelope
- Responsible Finishes
- Disclosure of Impacts
- Upfront Carbon Emissions

Sustainable Development Goals

- Goal 9 (Industry, Innovation and Infrastructure)
- Goal 12 (Sustainable Consumption and Production)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Good Practice Products

Good Practice Products

At least **20%** of all active building systems (by cost) within the project meets a Responsible Products Value of at least **6**.

Values for each product are calculated by using the *Responsible Products calculator*.

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with **one** of the following criteria:

- Best Practice Products
- Good Practice Products

Best Practice Products

At least **5%** of all active building systems (by cost) within the project meets a Responsible Products Value of at least **11**. These products do not need to be in addition to *Credit Achievement*; they can be used towards meeting *Credit Achievement*.

Values for each product are calculated by using the *Responsible Products calculator*.

Good Practice Products

The project must have **35%** of all active building systems (by cost) meet a Responsible Products Value of at least **6**.

Values for each product are calculated by using the *Responsible Products calculator*.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Systems

Active building systems are characterised by energy and movement, and include all mechanical, hydraulic, transportation and electrical systems present in the building. Lighting, security, and fire systems are also included. Products that make up active systems such as pipes, cables, ducts etc are included. Passive systems such as a fixed façade shading device are not included.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Responsible Products Value

The Responsible Products Value (RPV) for a product is calculated for a product based on the type and the number of third-party certifications that the product holds and how the third-party certification measures up against the Responsible Products Guideline. The list of recognised third-party certification initiatives can be found in the Responsible Products Score Checker.

Products are to be recognised against the version of the Responsible Products Guideline at the time the project was registered.

Refer to *Guidance for Responsible Products Credits* for further information.

Leadership Challenge

Projects that achieve both criteria in *Exceptional Performance* are eligible for the *Responsible Products Leadership Challenge*. The factsheet is available on the Green Star resources portal.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Responsible Products calculator**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Receipts confirming purchase of stated products.
- Bill of quantities from a registered quantity surveyor or quantities summary from material supplier or similar.
- Evidence that claimed products with required RPV constitute required cost of all structural components.
- Certificate/s of the third-party certification the product is recognised by. This may be available in the Responsible Products calculator.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- GBCA – [Responsible Products Guidelines](#)
- GBCA – [Responsible Products Score Checker](#)
- GBCA – Guidance for Responsible Products credits (available on Green Star resources portal)

Responsible Finishes

Outcome

The building's internal finishes are comprised of responsibly manufactured products.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">• Good Practice Products: 40% of all internal building finishes (by cost) meet a Responsible Products Value of at least 7.
Exceptional Performance	1 point	<p>In conjunction with the Credit Achievement:</p> <ul style="list-style-type: none">• Best Practice Products: 10% of all internal building finishes (by cost) meet a Responsible Products Value of at least 12. or• Good Practice Products: 60% of all internal building finishes (by cost) meet a Responsible Products Value of at least 7.

Additional information

Scope of credit

All products and materials for the internal finishes of the project.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Responsible Structure
- Responsible Envelope
- Responsible Systems
- Disclosure of Impacts
- Upfront Carbon Emissions

Sustainable Development Goals

- Goal 9 (Industry, Innovation and Infrastructure)
- Goal 12 (Sustainable Consumption and Production)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Good Practice Products

Good Practice Products

At least **40%** of all internal building finishes (by cost) within the project meets a Responsible Products Value of at least **7**.

Values for each product are calculated by using the Responsible Products calculator.

Fitout scope

Products and materials for the internal finishes are delivered in at least 80% of the GFA, excluding car parks. This includes tenanted spaces.

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with **one** of the following criteria:

- Best Practice Products
- Good Practice Products

Best Practice Products

At least **10%** of all internal building finishes (by cost) within the project meets a Responsible Products Value of at least **12**. These products do not need to be in addition to *Credit Achievement*; they can be used towards meeting *Credit Achievement*.

Refer *Credit Achievement* requirements.

Fitout scope

Products and materials for the internal finishes are delivered in at least 80% of the GFA, excluding car parks. This includes tenanted spaces.

Good Practice Products

At least **60%** of all internal building finishes (by cost) within the project meets a Responsible Products Value of at least **7**.

Refer *Credit Achievement* requirements.

Fitout scope

Products and materials for the internal finishes are delivered in at least 80% of the GFA, excluding car parks. This includes tenanted spaces.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Finishes

Internal finishes include flooring, plasterboard, paints, ceilings, partitions, doors, insulation, glazing partitions or similar installed inside the envelope of the building. Joinery used as part of a wall finish is included, e.g., wall panelling or fixed shelving/cupboards that make up a partition. Sealants and adhesives used for finishes are also included. Loose furniture or joinery is not included.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Responsible Products Value

The Responsible Products Value (RPV) for a product is calculated for a product based on the type and the number of third-party certifications that the product holds and how the third-party certification measures up against the Responsible Products Guideline. The list of recognised third-party certification initiatives can be found in the Responsible Products Score Checker.

Products are to be recognised against the version of the Responsible Products Guideline at the time the project was registered.

Refer to *Guidance for Responsible Products Credits* for further information.

Leadership Challenge

Projects that achieve both criteria in *Exceptional Performance* are eligible for the *Responsible Products Leadership Challenge*. The factsheet is available on the Green Star resources portal.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Responsible Products Calculator**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Receipts confirming purchase of stated products.
- Bill of quantities from a registered quantity surveyor or quantities summary from material supplier or similar.
- Evidence that claimed products with required RPV constitute required cost of all structural components.
- Certificate/s of the third-party certification the product is recognised by. This may be available in the Responsible Products calculator.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- Better Building Partnership – [Green Leasing](#)
- GBCA – [Responsible Products Guidelines](#)
- GBCA – [Responsible Products Score Checker](#)
- GBCA – Guidance for Responsible Products credits (available on Green Star resources portal)

Impacts Disclosure

Outcome

The building's environmental impacts are disclosed.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">• Life Cycle Impacts Disclosure: Life cycle impacts are disclosed.• Pollution and Resource Use Metrics Disclosure: Metrics related to pollution and resource use are disclosed.
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Additional information

Scope of credit

Life Cycle Impacts Disclosure

All materials and resources used in the project boundary for the lifecycle of the project.

Pollution and Resource Use Metrics Disclosure

All stages of construction in the control of the building owner.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Responsible Structure
- Responsible Envelope
- Responsible Systems
- Responsible Finishes
- Responsible Construction
- Upfront Carbon Emissions

Sustainable Development Goals

- Goal 9 (Industry, Innovation and Infrastructure)
- Goal 12 (Sustainable Consumption and Production)

Requirements

Credit Achievement

The project must comply with **one** of the following criteria:

- Life Cycle Impacts Disclosure
- Pollution and Resource Use Metrics Disclosure

Life Cycle Impacts Disclosure

Life cycle impacts from a whole-of-building, whole-of-life (cradle to grave) Life Cycle Assessment (LCA), as defined by *EN 15978*, are disclosed to the GBCA. All *EN 15978* modules (A to D) are included in the assessment and reported individually in the *Impacts Disclosure Template*.

The following indicators are disclosed as defined by *EN 15804+A2*:

- Impact Categories
 - Climate change – total (kg CO₂ eq)
 - Stratospheric ozone depletion potential (kg CFC11 eq)
 - Acidification potential of land and water (mol H⁺ eq)
 - Eutrophication, marine (kg N eq)
 - Eutrophication, freshwater (kg P eq)
 - Eutrophication, terrestrial (mol N eq)
 - Photochemical ozone creation potential (kg NMVOC eq)
 - Abiotic depletion, minerals & metals (kg Sb eq)
 - Abiotic depletion, fossils (MJ, net calorific value)
- Resource Use
 - Net use of fresh water (m³)

Data

The selection of data is based on *EN 15978* for construction materials. Data quality is reported and verified according to *EN 15978* by a peer reviewer. Use of locally based data, preferably *EN 15804* compliant Environmental Product Declarations (EPDs), take precedence over generic or global data, where available unless it is for imported products.

The standard for non-construction product EPDs is *ISO 14025*.

Data for the assessment uses conservative estimates when product values are unknown, aligning with the NABERS Embodied Carbon tool and complying with *EN 15978* Clause 10.

Environmental indicators are calculated according to *EN 15978* Clause 11, and reporting complies with Clause 12, as applied to the context of a building.

Quality assurance

The LCA report complies with quality assurance requirements by meeting one of the following pathways.

Pathway	Requirements
Option A	The report produced by an LCA Certified Practitioner is subject to organisational quality assurance, which has a current certification in accordance with ISO 9001.
Option B	The report produced by an Experienced Individual is peer reviewed by an LCA Certified Practitioner or independent Experienced Individual.

Refer *Definitions* for competency requirements.

Pollution and Resource Use Metrics Disclosure

Metrics related to pollution and resource use defined by the *Taskforce for Nature Financial Disclosure* (TNFD) are disclosed to the GBCA by completing the *Impacts Disclosure Template*. This includes:

- Volume of water discharged (m³)
- Water withdrawal and consumption (m³) from areas of water scarcity
- Quantity of high-risk natural commodities (tonnes)
- Quantity of high-risk natural commodities (tonnes) sourced under a sustainable management plan or certification program

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

LCA certified practitioner

A person who is qualified as an "LCA Certified Practitioner" by ALCAS, LCANZ or ACLA, or another similar scheme.

Experienced individual

An individual who has produced, co-produced and/or independently reviewed at least five LCA studies of precincts, buildings or building products in accordance with ISO 14040/14044, within the past three years.

Independent experienced individual

Defined as an Experienced Individual who is:

- Not employed in a full-time or part-time role by the commissioner or practitioner of the LCA study.
- Not the practitioner of the LCA study.
- Not involved in defining the scope or conducting the LCA study.
- Has no direct or indirect incentive or interest linked to the outcome of the LCA results.

Manufactured commodities

In accordance with the TNFD, manufactured commodities include brick, cement, concrete, carpet, glass, insulation products, rubber and steel.

Natural commodities

In accordance with the TNFD, natural commodities include aluminium, copper, gypsum, iron, lead, sand and timber.

Peer review

A peer review is performed by an independent practitioner as stated in ISO14044 Clauses 6.1 and 6.2, and in accordance with ISO 14071. The review provides assurance of the credibility of the LCA and its results. The peer review aims to provide a third-party opinion on how the LCA was conducted and whether the results are acceptable to demonstrate credit compliance.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Impacts Disclosure Template

Data provided for this credit will be used by GBCA for research purposes and future benchmarking. Data on results, as well as information on assumptions, impact content, quantities, etc, must be provided in accordance with GBCA's template.

Pollution and Resource Use metrics

The below metrics are the core global disclosure metrics in the TNFD's *Additional sector guidance – Engineering, construction and real estate*. Further guidance can be found in Table 12: Guidance on the application of the core global disclosure metrics.

Metric no.	Indicator	Metric	Metric description
C2.1	Wastewater discharged	Volume of water discharged	Volume of water discharged (m ³), split into: <ul style="list-style-type: none">• Total;• Freshwater; and• Other.
C3.0	Water withdrawal and consumption from areas of water scarcity	Water withdrawal and consumption	Volume of water withdrawn (m ³), split into: <ul style="list-style-type: none">• Greywater;• Blackwater;• Treated wastewater;• Groundwater;• Rainwater; and• Other potable and non-potable water source.
C3.1	Quantity of high-risk natural commodities sourced from land/ocean/freshwater	Quantity of high-risk natural commodities <ul style="list-style-type: none">Quantity of high-risk natural commodities sourced under a sustainable management plan or certification program	Quantity of commodities (tonnes), split into: <ul style="list-style-type: none">• Natural; and• Manufactured. Quantity of natural commodities (tonnes) that are certified under an initiative recognised by the Responsible Products Guidelines.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Impacts Disclosure template**

- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Life Cycle Impacts Disclosure

- LCA report.
- Peer review statement.
- LCA practitioner competencies statement or LCACP certificate for practitioner and peer reviewer.
- As built building quantities such as as built bill of quantities, quantities summary from material supplier or similar.
- Product data sheets such as an Environmental Product Declaration.

Pollution and Resource Use Metrics Disclosure

- As built building quantities such as as built bill of quantities, quantities summary from material supplier or similar.
- Evidence supporting the water volumes disclosed.
- Certificate/s of the third-party certification the product is recognised by. This may be available in the Responsible Products calculator.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resource supports this credit:

- EN 15804 Sustainability of Construction Work - Environmental Product Declarations - Core Rules for the Category of Construction Products
- EN 15978 Sustainability of Construction Works – Assessment of environmental performance of buildings - Calculation method
- ISO 14025 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- ISO 14040 Environmental management – Life cycle assessment – Principles and framework
- ISO 14044 Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 14071 Environmental management – Life cycle assessment – Critical review processes and reviewer competencies
- Taskforce on Nature-related Financial Disclosures (TNFD) – [Disclosure recommendations](#)
- TNFD – [Additional sector guidance – Engineering, construction and real estate](#)

Healthy

Because we spend most of our time within buildings, the built environment has a large influence over our health and wellbeing. Green Star Buildings sets a clear expectation of a building that does not hinder human health and promotes actions and solutions that can enhance occupant health and wellbeing.

Credits in this category:

- Regulate air, thereby having a positive health impact on people
- Account for circadian rhythms with regards to lighting
- Reduce harmful exposure to toxins from building materials and finishes
- Maintain acoustic levels that reduce physical and mental stress
- Provide dedicated rooms that maximise amenity and convenience for occupants
- Foster connection with nature through the instillation of greenery or through nature-inspired design

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance
11	Clean Air	●	2	
12	Light Quality	●	2	2
13	Acoustic Comfort	●	2	
14	Exposure to Toxins	●	2	
15	Amenity and Comfort		2	
16	Connection to Nature		1	1

Clean Air

Outcome

Pollutants entering the building are minimised, and a high level of air quality is provided to reduce the impact of pollutants and the risk from the spread of infectious diseases.

Criteria

		<ul style="list-style-type: none">• Ventilation System Attributes: Levels of indoor pollutants are maintained at acceptable levels.• Provision of Outdoor Air: A high level of effective outdoor air is provided.• Exhaust or Elimination of Pollutants: Pollutants entering the building are minimised.
Minimum Expectation	Nil	In addition to <i>Minimum Expectation</i> :
Credit Achievement	2 points	<ul style="list-style-type: none">• Ventilation System Attributes: The building's ventilation systems allow for easy maintenance.• Provision of Outdoor Air: A high level of effective outdoor air is provided.

Additional information

Scope of credit

All building ventilation systems being delivered in the internal, regularly occupied areas of the building. This includes existing and new building systems.

Spaces can be excluded with confirmation via a Technical Question if the use of the space justifies specific ventilation conditions. Refer to *Guidance* for examples.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Amenity and Comfort
- Verification and Handover
- Energy Use

Sustainable Development Goals

- Goal 3 (Good Health and Wellbeing)

Requirements

Minimum Expectation

The project must comply with **all three** of the following criteria:

- Ventilation System Attributes
- Provision of Outdoor Air
- Exhaust or Elimination of Pollutants

Ventilation System Attributes

Separation from pollutants

The building's ventilation system meets minimum separation distances between pollution sources and outdoor air intakes in 95% of the regularly occupied areas. Project teams must choose from at least one of the following pathways relevant to the project's building class space type.

Pathway	Requirement		
The building meets the separation distances outlined in the table below. Separation distances are measured in accordance with AS 1668.2:2024 – <i>The use of ventilation and air-conditioning in buildings – Part 2: Mechanical Ventilation in buildings</i> .			
	Design airflow rate within the minimum distance (L/s)	Minimum separation distances from discharges to intakes, or natural ventilation opening of adjacent Sole Occupancy Unit or site boundary (m)	Minimum separation distances from discharges to intakes, or natural ventilation opening within Sole Occupancy Unit (m)
	<100L/s	1	N/A
	<150L/s	1.25	1
	<200L/s	1.5	1
Class 2 and 3	<300L/s	2.25	2
	<400L/s	3	2
	<600L/s	4	3
	<800L/s	5.5	4
	<1000L/s	6.2	5
	>1000L/s	7.5	6

If the kitchen exhaust rate is <200L/s, the separation distance from discharges to intakes, or natural ventilation openings within the same Sole Occupancy Units do not apply.

Pathway	Requirement
All other building classes	<p>The building meets the minimum separation distances determined by one of the following:</p> <ul style="list-style-type: none">• The greater distance from either Table 5-1 in ASHRAE Standard 62.1:2022 – Ventilation for Acceptable Indoor Air Quality or Table 2.1 in AS 1668.2:2024. Distances are measured in accordance with the relevant standard.• The distance determined by the analytical method in Appendix B of ASHRAE Standard 62.1: 2022.

All openable windows, doors, openings, vents, grilles, and skylights are considered outdoor air intakes.

Diversity factors cannot be applied in meeting this credit.

Tenanted buildings

This applies to base building ventilation systems only. Airflow rates for the base building systems account for the anticipated use and design occupancy that includes the tenanted spaces.

Cleaning ductwork

New and existing ductwork in 95% of the regularly occupied areas is cleaned prior to occupation in accordance with one of the following or another recognised standard:

- ACR 2021 – *The NADCA Standard for Assessment, Cleaning and Restoration of HVAC Systems*.
- SMACNA – *IAQ Guidelines for Occupied Buildings under Construction*.

Cleaning of new ductwork occurs after installation.

This includes ductwork from the air handling unit(s) to the supply vents. If no ductwork exists, these requirements are deemed to be met.

Tenanted buildings

This applies to base building ventilation systems only. Tenant supplementary systems where the design, maintenance and ownership are determined and controlled by the tenant can be excluded. Refer *Guidance* for further information on determining this.

Provision of Outdoor Air

The building provides a high level of effective outdoor air to 95% of the regularly occupied areas. Project teams may choose one or more of the following pathways as relevant to the project's building class type(s). Mixed-use projects, where more than 20% of the GFA, excluding car parks, is not the predominant building type, may be required to comply with more than one pathway.

Pathway	Requirement
Class 2 and 3	<p>Effective outdoor air is provided by one of the following:</p> <ul style="list-style-type: none">• Mechanical ventilation that is in accordance with AS1668.2:2024 for the default occupancy of the regularly occupied, habitable rooms.• Natural ventilation that is in accordance with AS1668.4:2024 – <i>The use of ventilation and air-conditioning in buildings – Part 4: Natural Ventilation of buildings</i> for the default occupancy of the regularly occupied, habitable rooms.• Mixed mode ventilation that meets the requirements for natural ventilation when the mechanical system is not in use and the requirements for mechanical ventilation when the mechanical system is in use. <p>The building also provides a dedicated make-up air path for kitchen, bathroom and laundry spaces that meets Clause 2.3 from AS 1668.2:2024.</p>

Pathway	Requirement
All other building classes	<p>Effective outdoor air is provided by one of the following:</p> <ul style="list-style-type: none">• Mechanical ventilation where there is a 50% improvement of outdoor air required by AS 1668.2:2024 to regularly occupied areas based on the design occupancy. Demand controlled ventilation may be used.• Natural ventilation that is in accordance with AS 1668.4:2024 for the design occupancy. Substantial cross-ventilation is also provided in accordance with Clause 3.5.2 in AS 1668.4:2024 with no reduction to the openable area.• Mixed mode ventilation that meets the requirements for natural ventilation when the mechanical system is not in use and the requirements for mechanical ventilation when the mechanical system is in use.
Performance based approach	<p>CO₂ sensors are provided to continuously monitor CO₂ levels within the breathing zone and are linked to controls to adjust the amount of effective outdoor air to each space to maintain CO₂ levels at or less than 800ppm within each space in the regularly occupied areas at all times in the default occupancy period.</p> <p>CO₂ sensors are located within the breathing zone to ensure accurate representative readings of CO₂ concentrations with at least one in each individually controlled supply air zone and every enclosed space. The location of the sensors is justified by a qualified mechanical engineer.</p>
Equivalent clean airflow approach	Where compliance with the <i>Equivalent clean airflow approach</i> pathway in Credit Achievement is demonstrated, the <i>Provision of Outdoor Air</i> criteria in Minimum Expectation is considered met.

Tenanted buildings

Tenant supplementary systems where the design, maintenance and ownership are determined and controlled by the tenant can be excluded. The base building systems account for the anticipated use and design occupancy that includes the tenanted spaces.

Exhaust or Elimination of Pollutants

Pollutants are limited within 95% of the regularly occupied areas. Sources of pollutants include printing and photocopying equipment, cooking processes and equipment and vehicles. Project teams may choose from one of the following pathways.

Pathway	Requirement
Eliminating pollutant sources	No sources of pollutants are provided.
Limiting pollutant sources	<p>All sources of pollutants are compliant with at least one of the following minimum emissions standards or another recognised standard:</p> <ul style="list-style-type: none">• <i>DE-UZ 219 – Blue Angel for Office Equipment with Printing Function</i> (superseded revisions of this standard such as DE-UZ 205 and RAL-UZ 171 are also acceptable).• <i>ECMA-328 – Determination of Chemical Emission Rates from Electronic Equipment</i>.• <i>UL 2819 – GREENGUARD Certification Program for Chemical and Particle Emissions for Electronic Equipment</i> (superseded revisions of this standard such as GGPS.003 are also acceptable).

Fitout scope

Where there are fitout works excluded from the rating, sources of pollutants being delivered comply with the requirements. Minimum emissions are included in a tenancy fitout guide and model lease clauses for tenants.

Pathway	Requirement
	<p>Pollutants are exhausted directly to the outside of the project in accordance with AS 1668.2:2024, AS 1668.4:2024 and/or physically separated from occupants.</p>
Exhausting pollutants	<p>Fitout scope</p> <p>Where there are fitout works excluded from the rating, the base building systems account for sources of pollutants based on the anticipated use of the tenanted spaces. Requirements that align with the project team's assumptions are included in a tenancy fitout guide and model lease clauses for tenants.</p>

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with **both** of the following criteria:

- Ventilation Systems Attributes
- Provision of Outdoor Air

Ventilation System Attributes

The building's ventilation system has adequate access to both sides of all moisture and debris-catching components for maintenance within the air distribution system in 95% of the regularly occupied areas.

Where it is demonstrated that it is not possible to provide access to both sides for cleaning and maintenance purposes (e.g., ducted split system fan coil units (DX split/VRF/VRV)), the system:

- Has access to the upstream side of fan coil units where the coils are protected by a filter rated at MERV 8 or F5 or higher
- Provides one of the following:
 - Heating only.
 - Cooling only where the coil assembly is no more than 4 rows deep.
 - Dual heating and cooling where the coil assembly no more than 4 rows deep.
- Where fan coil units or air handling units are located within a ceiling void, one of the following is provided:
 - Access panels in unit / ductwork that are near the coil to be cleaned.
 - Access panels in the ceiling below the unit that are near the unit / ductwork access panel.
 - The upstream surface of the coil is accessible within 1m of the ceiling panel.

Where a wall-mounted unit is installed, the unit has:

- Access to one side of the coil for cleaning and maintenance purposes;
- A filter system that is equivalent to a MERV 8 filter; and
- A coil assembly is no more than 4 rows deep.

Where the base building design requires the installation of moisture or debris generating components (e.g., chilled beams, fan coil units or heating coils within VAV boxes) this criteria cannot be claimed.

Tenanted buildings

This applies to base building systems only. Tenant supplementary systems where the design, maintenance and ownership are determined and controlled by the tenant can be excluded. Refer *Guidance* for further information on determining this.

Provision of Outdoor Air

The building provides a high level of effective outdoor air in 95% of the regularly occupied areas. Project teams may choose from at least one of the following pathways relevant to the project's building class space type. Mixed use projects, where more than 20% of the GFA, excluding car parks, is not the predominant building type, may be required to comply with more than one pathway.

Pathway	Requirement
	<p>Effective outdoor air is provided by one of the following:</p> <ul style="list-style-type: none">• Mechanical ventilation where there is a 50% improvement of outdoor air required by AS1668.2:2024 to regularly occupied, habitable rooms for the default occupancy.• Natural ventilation that is supplemented by a mechanical ventilation system that delivers outdoor air to habitable rooms via a continuous, intermittent or demand-controlled mechanism. The minimum design supply airflow rate of the system is: $Q = 0.075A + 3.5(N_b + 1)$Where A = total internal area of the sole-occupancy unit N_b = number of bedrooms or 0.5 of a studio Q = minimum design supply airflow rate The airflow rate per m² (i.e.. Q/A) is no less than 0.2L/s/m². For bedrooms, the minimum design supply airflow rate is the greater between Q and 3.5L/s. The ventilation system has at minimum a F5 grade filter.
Class 2 and 3	<ul style="list-style-type: none">• Mixed mode ventilation that meets the requirements for natural ventilation when the mechanical system is not in use and the requirements for mechanical ventilation when the mechanical system is in use.
All other building classes	<p>Effective outdoor air is provided by one of the following:</p> <ul style="list-style-type: none">• Mechanical ventilation where there is a 100% improvement of outdoor air required by AS 1668.2:2024 to regularly occupied areas based on the design occupancy. Demand controlled ventilation may be used.• Natural ventilation where there is a 50% improvement of outdoor air required by AS 1668.4:2024 to regularly occupied areas based on the design occupancy.• Mixed mode ventilation that meets the requirements for natural ventilation when the mechanical system is not in use and the requirements for mechanical ventilation when the mechanical system is in use.
Performance based approach	<p>CO₂ sensors are provided to continuously monitor CO₂ levels within the breathing zone and are linked to controls to adjust the amount of effective outdoor air to each space to maintain CO₂ levels at or less than 700ppm within each space in the regularly occupied areas at all times in the default occupancy period.</p> <p>CO₂ sensors are located within the breathing zone to ensure accurate representative readings of CO₂ concentrations with at least one in each individually controlled supply air zone and every enclosed space. The location of the sensors is justified by a qualified mechanical engineer.</p>

Pathway	Requirement
Equivalent clean airflow approach	<p>The minimum Equivalent Clean Airflow (ECAi) per person as outlined in Table 5-1 in <i>ASHRAE Standard 241:2023 – Control of Infectious Aerosols</i> is permanently provided. The ECAi meets the safety and performance requirements within Section 7 and Appendix A of <i>ASHRAE Standard 241:2023</i>. A Building Readiness Plan, as mentioned in <i>ASHRAE 241</i>, is not required.</p> <p>Where compliance with the <i>Equivalent clean airflow approach</i> pathway in <i>Credit Achievement</i> is demonstrated, the <i>Provision of Outdoor Air in Minimum Expectation</i> is considered met.</p>

Tenanted buildings

Tenant supplementary systems where the design, maintenance and ownership are determined and controlled by the tenant can be excluded. The base building systems account for the anticipated use and design occupancy that includes the tenanted spaces.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Default occupancy

Occupancy rates in accordance with Table A1 in Appendix A of AS 1668.2:2024.

Default occupancy period

The times where the spaces are occupied in accordance with the default operating profiles used for the *Energy Use* credit. Refer to GBCA's *Energy Use calculation guide* for further information.

Design occupancy

The intended occupancy rate that the spaces have been designed for. Assumptions for the proposed occupancy rate are included in the project's submission. Where the design occupancy is unknown, the default occupancy may be used.

Ducted fan coil units

This is defined as:

- Proprietary packaged DX split systems, and variable refrigerant flow/variable refrigerant volume (VRF/VRV) systems;
- Proprietary packaged water-cooled heat pump fan coil units; and
- Proprietary packaged chilled water/heating hot water (CHW/HHW) fan coil units.

Habitable room

The definition is as per NCC 2022 which states:

A room used for normal domestic activities, and–

- a) *includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom; but*
- b) *excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.*

Regularly occupied area

This is defined as areas of the building that are continuously occupied or occupied for more than two hours (previously known as 'primary' and 'secondary' spaces) including living and sleeping areas in Class 2 and Class 3 units. Cold shell retail and office areas are considered to be regularly occupied areas. Areas that are either transient or accessed intermittently such as corridors, storage, back of house or plant rooms can be excluded.

Qualified mechanical engineer

A chartered mechanical engineer under Engineers Australia.

Ventilation

Mechanical and natural ventilation

For the purposes of this credit, this is defined by NCC 2022 Section F Part F6D6.

Mixed mode ventilation

Where the building relies on natural ventilation for extended periods during favourable conditions and mechanical ventilation for extended periods when conditions for natural ventilation are not appropriate or as desired by the occupant.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Separation from pollutants for Class 2 and Class 3 spaces

The separation from pollutants for Class 2 and Class 3 buildings table is an increase above Table 3.5 in AS 1668.2:2024. Table 5-1 in ASHRAE 62.1:2022 is considered too stringent, and thus not appropriate for local Class 2 and Class 3 building context. The minimum separation distances requirements for Class 2 and Class 3 buildings provides appropriate best practice targets between Australian Standards and ASHRAE.

Tenant supplementary systems

For further guidance regarding tenant supplemental systems refer to the most current version of NABERS' *Energy and Water for Offices Rules* to determine base building and tenant allocation. Where NABERS assesses a system as a tenant load, these systems can be excluded from the credit, where NABERS assesses a system as base building, these systems must be shown to be compliant for the credit to be awarded. Systems which are excluded for the purposes of a NABERS base building rating may also be excluded for this credit.

Recognised standard

Where another recognised standard is proposed, a Technical Question may be submitted to the GBCA for confirmation. Project teams are to explain why the proposed standard is equivalent to those listed in the credit requirements.

Provision of outdoor air for Class 2 and 3 space by natural ventilation

Make-up air systems that provide effective outdoor air to any habitable rooms may be counted towards the ventilation rates prescribed in the requirements (based on typical usage assumptions), provided that their flow path is defined and clearly passes through the habitable space(s) before being exhausted.

For Class 2 spaces, where the supplementary mechanical ventilation system operates intermittently, it is controlled with a timer.

Excluded spaces

Below are some examples of spaces that can be typically excluded for different criteria. If the project has other types of spaces where the function justifies specific ventilation conditions, a Technical Question may be submitted to the GBCA for confirmation to be excluded.

Exhaust or Elimination of Pollutants

Example of spaces that can be excluded include kitchenette and tea preparation areas that do not require local exhaust in accordance with Clause 3.3.1 in AS 1668.2:2024.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Mechanical drawings for each ventilated space with annotations highlighting compliance with targeted criteria (i.e. separation distances, CO₂ sensor locations, supply air zones, access for cleaning etc.).
- For naturally ventilated buildings, provide drawings of openings and opening schedule.
- Extracts from the ventilation system specification for each system.
- Extracts from equipment specifications highlighting emissions.
- Certificates demonstrating compliance with emissions standards.
- Extracts from the Environmental Management Plan that specify ventilation cleaning.
- Extract from the Commissioning Report demonstrating that the HVAC and CO₂ monitoring systems are operating as intended.
For naturally ventilated areas, this is only relevant where automation systems and the like are included.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources supporting this credit:

- ACR 2021 – The NADCA Standard for Assessment, Cleaning and Restoration of HVAC Systems.
- AS1668.2:2024 – The use of ventilation and air-conditioning in buildings – Part 2: Mechanical ventilation in buildings
- AS1668.4:2024 – The use of ventilation and air-conditioning in buildings – Part 4: Natural Ventilation of buildings
- ASHRAE Standard 241:2023 – Control of Infectious Aerosols
- ASHRAE Standard 62.1:2022 – Ventilation for Acceptable Indoor Air Quality
- DE-UZ 219 – Blue Angel for Office Equipment with Printing Function
- ECMA-328 – Determination of Chemical Emission Rates from Electronic Equipment
- NABERS – [Energy and Water for Offices Rules](#)
- SMACNA – IAQ Guidelines for Occupied Buildings under Construction
- UL 2819 – GREENGUARD Certification Program for Chemical and Particle Emissions for Electronic Equipment

Light Quality

Outcome

The building provides good daylight and its lighting is of high quality.

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">• Lighting Comfort: Lighting within the building meets minimum comfort requirements.• Glare from Light Sources: Good lighting levels suitable for the typical tasks in each space are available.• Daylight Strategy: The building aims to maximise access to daylight.
In addition to <i>Minimum Expectation</i> :		
Credit Achievement	2 points	<ul style="list-style-type: none">• Artificial Lighting: The building provides best practice artificial lighting. or• Daylight: The building provides best practice access to daylight.
In conjunction with <i>Credit Achievement</i> :		
Exceptional Performance	2 point	<ul style="list-style-type: none">• Artificial Lighting: The building provides best practice artificial lighting.• Daylight: The building provides best practice access to daylight.

Additional information

Scope of credit

Lighting being delivered in the regularly occupied, internal and unenclosed covered areas of the building. Spaces can be excluded with confirmation via a Technical Question if the use of the space justifies specific lighting conditions. Refer *Guidance* for examples.

Emergency lighting, decorative light fixtures and landscaping fixtures are excluded if it is not a primary source of lighting.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Amenity and Comfort
- Verification and Handover

Sustainable Development Goals

- Goal 3 (Good Health and Wellbeing)

Requirements

Minimum Expectation

The project must comply with **all three** of the following criteria:

- Lighting Comfort
- Glare from Light Sources
- Daylight Strategy

Lighting Comfort

The lighting within 95% of the regularly occupied, fully enclosed covered areas and unenclosed covered areas in the project boundary meets one of the following pathways based on the building class space type delivered. Mixed use projects, where more than 20% of the GFA, excluding car parks, is not the predominant building type, may be required to comply with more than one pathway.

Criteria	Class 2, 3 and 9c requirements	High bay lighting in Class 7b and 8 requirements	All other building classes
Colour Rendering Index	Min of 85	Min of 80	Min of 85
MacAdam Ellipses or a Standard Deviation Colour Matching	3 or lower	5 or lower	3 or lower
Flicker free	'Low Risk' or 'No Observable Effect' in accordance with <i>IEEE 1789-2015 Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers</i> . or A PstLM ≤1.0 measured according to <i>IEC TR 61547-1</i> and a Stroboscopic Visibility Measure (SVM) ≤ 0.4.		
Uniformity	Nil	A uniformity of no less than that specified in Table 3.2 of AS/NZS 1680.1:2006, with a maintenance factor method as defined in AS/NZS 1680.4.	

Fitout scope

Where there are fitout works excluded from the rating, the lighting that is installed in the regularly occupied areas complies with the requirements. Lighting requirements for tenant installed lighting are included in a tenancy fitout guide and model lease clauses for tenants.

Glare from Light Sources

Glare from light sources is limited in 95% of the regularly occupied areas. Project teams may choose at least one of the following pathways. A combination of methods can be used to demonstrate compliance to suit different spaces.

Pathway	Requirements
Prescriptive method 1	Bare light sources are fitted with baffles, louvers, translucent diffusers, ceiling design, or other means that obscures the direct light source from all viewing angles of occupants, including occupants looking directly upwards.

Pathway	Requirements
Prescriptive method 2	Where the nature of the tasks, layout, and surface reflectance in a space are not known (e.g., shell and core) the lighting system must comply with the Luminaire selection system as detailed in Clause 8.3.4 of AS/NZS 1680.1:2006.
Performance method	The Unified Glare Rating (UGR) calculated for the lighting on a representative floor does not exceed the maximum values listed in the AS/NZS 1680.2 series applicable to the space use or Table 8.2 of AS/NZS 1680.1:2006 where the space use is not specifically covered in the AS/NZS 1680.2 series. The UGR is calculated in accordance with Clause 8.3.3 of AS/NZS 1680.1:2006. The project team may nominate a grid for the calculation based on the specific requirements of the project.

Fitout scope

Where there are fitout works excluded from the rating, the lighting that is installed in the regularly occupied areas complies with the requirements. Glare reduction requirements for tenant installed lighting are included in a tenancy fitout guide and model lease clauses for tenants.

Daylight Strategy

A daylight strategy is prepared by the project team. The strategy outlines how the building's design will provide access to daylight beyond regulatory requirements.

As a minimum, the strategy includes:

- A description of how the building's design:
 - Maximises access to daylight in the regularly occupied areas.
 - Controls or mitigates external glare in the daylit spaces.
 - Provides building occupants with unrestricted access to daylit regularly occupied common areas.
- A description of any barriers (if present) to providing access to daylight in all regularly occupied areas and the measures taken to mitigate loss of daylight quality for occupants.
- A simple calculation of the proportion of regularly occupied areas in the building that have access to daylight. Refer to the GBCA's *Daylight and Views calculation guide* on how to calculate this.

Where compliance with the *Daylight* criterion in *Credit Achievement* is demonstrated, this criterion is deemed to be met.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with **one** of the following criteria:

- Artificial Lighting
- Daylight

Artificial Lighting

The artificial lighting in the regularly occupied areas provides high quality light exposure that supports task visibility, visual comfort and well-being. Project teams must choose one of the following pathways relevant to the project's building class space type.

Pathway	Requirement
Class 2, 3 and 9c	<p>Artificial lighting in 95% of the regularly occupied areas is provided that meets both of the following:</p> <ul style="list-style-type: none">• Task areas including kitchen and study areas: Horizontal illuminance levels meet or exceed the maintained illuminance levels in relevant AS/NZS 1680.2 series for the type of activity at the working plane. Where an activity is not specifically covered, the maintained illuminance values are selected from Table 3.1 in AS/NZs 1680.1. At least 50% of the maintained illuminance value reaches average eye height when performing the task. This is calculated using a vertical illuminance calculation grid.• Other regularly occupied areas: Horizontal illuminance levels meet or exceed the maintained illuminance levels for general lighting systems in Table 3.2 in AS/NZS 1680.1. At least 20% of the vertical area of the wall in the field of view is illuminated to create demonstrable contrast and visual interest. The contrast between spaces do not exceed the maximum luminance ratios in Table 3.2 in AS/NZS AS 1680.1.
All other building classes	<p>Artificial lighting in 95% of the regularly occupied areas meets one of the following based on how the space will be used:</p> <ul style="list-style-type: none">• Task areas: Horizontal illuminance levels meet or exceed the maintained illuminance levels in relevant AS/NZS 1680.2 series for the type of activity at the working plane. Where an activity is not specifically covered, the maintained illuminance values are selected from Table 3.1 in AS/NZs 1680.1. At least 50% of the maintained illuminance value reaches average eye height when performing the task. This is calculated using a vertical illuminance calculation grid.• Other regularly occupied areas: Horizontal illuminance levels meet or exceed the maintained illuminance levels in relevant AS/NZS 1680.2 series for the type of interior at a working plane of 0.85m above floor level. <p>In addition, the contrast between spaces do not exceed the maximum luminance ratios in Table 3.2 in AS/NZS AS 1680.1.</p>

Fitout scope

Compliant lighting is delivered in at least 80% of the GFA, excluding car parks. This includes tenanted spaces.

Daylight

Daylight levels

The building provides access to high levels of daylight. Project teams must choose one of the following pathways relevant to the project's building class space type.

Pathway	Requirement
Class 2 and 3	In at least 95% of units, at least 60% of the combined regularly occupied areas of each unit receives high levels of daylight with at least 20% of each bedroom and living area having high levels of daylight.
All other building classes	In at least 95% of the regularly occupied areas of the building, at least 40% of the area receives high levels of daylight with at least 20% of each floor or tenancy (whichever is smaller) having high levels of daylight. Where there are regularly occupied common areas, at least 20% of this area receives high levels of daylight.

Daylight calculation

Daylight is calculated using Daylight Autonomy, measuring illuminance for at least every hour within the nominated hours. A Daylight Autonomy of at least 160 lux for 80% of the nominated hours is provided to be considered as providing high levels of daylight.

External glare control

Glare from sunlight through all viewing façades and skylights are reduced in the regularly occupied areas where occupants are expected to be stationary. Refer *Guidance* for examples of excluded spaces.

For Class 2 and 3 spaces, blackout blinds are provided to all bedrooms. If blinds are part of a packaged décor, blackout blinds are offered as standard inclusion.

For all other building class space types where occupants are expected to be stationary, project teams must choose from at least one of the following pathways. A combination of methods can be used to demonstrate compliance to suit different spaces.

Pathway	Requirement
Fixed shading devices	<p>The nominated plane in 95% of the regularly occupied areas is shaded from direct sunlight for 80% of the nominated hours for each day of the autumn and spring equinoxes and the summer and winter solstices.</p> <p>Refer <i>Guidance</i> for further guidance on the nominated plane.</p>
Blinds or screens	<p>At least 95% of the combined area of the viewing facades and skylights have blinds or screens to provide glare reduction. The blinds or screens have a visual light transmittance (VLT) of ≤ 10%.</p> <p>The blinds or screens are controlled by one of the following:</p> <ul style="list-style-type: none">• Manually by the occupants of the space.• Automatically by a centralised management system or activated by a switch. If centralised, a manual override function is available to the occupants in each of the adjacent spaces served.
Performance method	A combination of tinted glazing, fixed shading devices and other solutions is demonstrated via modelling to provide a reduction of glare equivalent to that provided by one of the above pathways.

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with **both** of the following criteria:

- Artificial Lighting
- Daylight

Artificial Lighting

Refer *Credit Achievement* for requirements.

Daylight

Refer *Credit Achievement* for requirements.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Decorative lighting fixtures

Lighting fixtures not required to achieve minimum lux requirements and not included in the lighting performance modelling.

Field of view

The area that is visible by an occupant from where the occupant is expected to be working or utilising the space.

Nominated hours

Nominated hours are defined by the project team. The project team shall provide a summary of space types, uses, and nominated hours. Projects that are operational outside of daylight hours only need to demonstrate compliance for operational daylight hours. These hours must align with the assumptions made for the *Energy Use* credit.

Nominated plane

For viewing facades (except skylights) the nominated plane is at ground level and is 1.5m wide band along the entire length of viewing façade, 1.5m in from the viewing façade. For skylights, the nominated plane is at ground level and consists of the projected area of the skylight and a surrounding 1.5m wide band.

Regularly occupied area

This is defined as areas of the building that are continuously occupied or occupied for more than two hours (previously known as 'primary' and 'secondary' spaces) including living and sleeping areas in Class 2 and Class 3 units. Cold shell retail and office areas are considered to be regularly occupied areas. Areas that are either transient or accessed intermittently such as corridors, storage, back of house or plant rooms can be excluded.

Task areas

Areas where an occupant is expected to work or be stationary to focus on a specific task.

Working plane

The horizontal plane above floor level in which the visual task lies. Recommended working plane heights in Table 3.2 in AS/NZS 1680.1 may be used. These are noted to be 0.7m for tasks at desk height and 0.85m for tasks at bench height. Alternatively, where furniture and joinery are provided, the height that the task will be performed may be used.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Daylight strategy

As adequate daylight promotes improved productivity and wellbeing, buildings that have spaces that prioritise learning, healing and living are encouraged to maximise daylight in these spaces. This includes classrooms in schools, patient rooms in hospitals and living and bedroom areas in apartments.

Wall in the field of view

This is any wall that is visible from where the occupant is expected to be working or utilising the space. Joinery, doors or glazing installed at the time of submission are not included in the vertical area of the wall.

Calculating Daylight Autonomy

There are a number of dynamic simulation software programs that are available to calculate Daylight Autonomy including, but not limited to, IESVE Radiance, Daysim, ESP-r, Lightswitch Wizard, and SPOT (>Ver 4.0). Where other programs are used, the project team demonstrates that the software is based on the Radiance simulation engine, and that it uses the statistical sky, the daylight coefficients and Perez All Weather Sky model, or the annual CIE sky simulation algorithms.

Excluded spaces

Below are some examples of spaces that can be typically excluded for different criteria. If the project has other types of spaces where the function justifies specific lighting conditions, a Technical Question may be submitted to the GBCA for confirmation to be excluded.

Daylight

Example of spaces that can be excluded include spaces that require a high degree of privacy, operating rooms and spaces that require controlled lighting for performances or projection such as theatres and cinemas.

For Class 2 and 3 spaces, bathroom and kitchen areas can be excluded. Where there are no physical barriers around the kitchen and adjacent rooms, the excluded area is a 1.5m band from the wall behind the counter.

External glare control

Example of spaces that can be excluded include, but are not limited to, retail spaces, supermarket floors, logistics warehouse areas and office lobbies however it is noted that glare control is to be provided to screen-based task areas such as the check out or occupied reception desks.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Daylight modelling report or manual calculations.
- Lighting Drawings.
- Architectural Drawings.
- Lighting Specifications/Schedules.
- Product Data Sheets.
- Isolux Plot Drawings.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AS1680 series – Interior and workplace lighting
- AS/NZS1158
- IEEE 1789-2015 - IEEE Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers
- Better Building Partnership Green Leasing: <https://www.betterbuildingspartnership.com.au/projects/green-leasing/>

Acoustic Comfort

Outcome

The building provides acoustic comfort for building occupants.

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">• Acoustic Comfort Strategy: An Acoustic Comfort Strategy is prepared to describe how the building and acoustic design aims to deliver acoustic comfort to the building occupants.
Credit Achievement	2 points	In addition to <i>Minimum Expectation</i> : <ul style="list-style-type: none">• Acoustic Performance: The building achieves appropriate levels of acoustic performance relevant to the building class space type.

Additional information

Scope of credit

The internal regularly occupied areas of the building including walls that are shared with non-regularly occupied areas. Spaces can be excluded with confirmation via a Technical Question if the use of the space justifies specific acoustic conditions. Refer *Guidance* for examples.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Amenity and Comfort
- Verification and Handover

Sustainable Development Goals

- Goal 3 (Good Health and Wellbeing)

Requirements

Minimum Expectation

The project must comply with the following criterion:

- Acoustic Comfort Strategy

Acoustic Comfort Strategy

An Acoustic Comfort Strategy is prepared by a qualified acoustic consultant during the design stage. The strategy describes how the building design will deliver acoustic comfort to the building occupants.

As a minimum, the strategy includes:

- A list of the Standards, legislation, best practice guidelines, and other functional requirements that apply to the project.
- A summary of the different space types and which of the following acoustic considerations are relevant and why. For those deemed relevant, performance metrics are proposed. Refer *Guidance* for examples of performance metrics.
 - Quiet enjoyment of space
 - Functional use of space
 - Control of intrusive or high levels of noise
 - Privacy
 - Noise transfer
 - Speech intelligibility
- A description of how the design solution is intended to achieve the proposed performance metrics.

Where compliance with *Credit Achievement* is demonstrated, this criterion is deemed to be met.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with the following criterion:

- Acoustic Performance

Acoustic Performance

The building complies with the specified number of acoustic criteria for the relevant building class space type shown in the table below. Where a building has multiple building classes, the set of criteria relevant to the building class of the space is demonstrated. Where the building class is less than 5% of the GFA, excluding car parks, it can be excluded. Not more than 5% of the GFA can be excluded.

Building class	Maximum Internal Noise Levels	Minimum Internal Noise Levels	Acoustic Separation	Impact Noise Transfer	Reverberation Control	Requirement for 2 points
Class 2, 3 and 9a (Residential, hotel and healthcare – wards only)	•	•	•	•		2/3

Building class	Maximum Internal Noise Levels	Minimum Internal Noise Levels	Acoustic Separation	Impact Noise Transfer	Reverberation Control	Requirement for 2 points
Class 5 Fitout (Commercial)	•	•	•	•	•	4/5
Class 5 Base build (Commercial)	•		•			2/2
Class 6 Fitout (Retail)	•		•	•	•	3/4
Class 6 Base build (Retail)	•		•			2/2
Class 7b and 8 (Industrial)	•		•			2/2
Class 9a (Healthcare – non-ward spaces)	•		•	•	•	3/4
Class 9b (Sport, Leisure and Libraries)	•		•	•	•	3/4
Class 9b (Schools and Universities)	•	•	•	•	•	3/5

Fitout scope

Where there are fitout works excluded from the rating for Class 5 and Class 6 spaces, those spaces are to comply with the base build set of criteria. Where fitout works are included in the rating for Class 5 and Class 6 spaces, those spaces are to comply with the fitout set of criteria.

Maximum Internal Noise Levels

Internal ambient noise levels in the regularly occupied areas are no greater than the upper value of the design sound level range specified in Table 1 in AS/NZS 2107:2016 for the relevant activity type in each space.

For Class 2, 3 and 9 buildings, noise levels in bedroom or sleeping spaces do not exceed recommended Sleep Disturbance criteria as defined in the *NSW Road Noise Policy 2011*:

- Up to two noise events per night: maximum internal noise levels below 70 dB L_{Max}
- All other events: maximum internal noise levels below 55 dB L_{Max}

Measuring noise levels

Noise levels are measured and reported in accordance with Clause 6 and 7 in AS/NZS 2107:2016 by a qualified acoustic consultant.

Noise measurements account for all internal and external noise including noise arising from building systems operating under normal conditions, outdoor sources such as traffic, speech masking, and (where known) noise from industrial process. For Class 2 and 3 type spaces, noise from services under the direct control of the occupant are excluded.

If the space is naturally ventilated, noise measurements are taken when all openings closed and open to no less than 10% of the minimum natural ventilation area required for the ventilation design of the building.

Measurement locations

For open plan spaces, the number of measurements conducted is as below. Every floor of the building is to be tested.

Open plan area (m ²)	Sampling points per open plan space
≤ 500m ²	2
≤ 1000m ²	3
> 1000m ²	4 with 1 additional measurement per 1000m ²

For enclosed rooms, 10% of the regularly occupied enclosed rooms are to be tested. The rooms tested are justified to be representative of the spaces within the building and reflect the range of external noise impacts on the building. The selected representative rooms include the most conservative with respect to both internal and external noise sources.

Minimum Internal Noise Levels

Internal ambient noise levels in the regularly occupied areas are no less than 5 dB below the lower value of the design sound level range specified in Table 1 in AS/NZS 2107:2016 for the relevant activity type in each space.

Measuring noise levels and Measurement locations

Refer to *Maximum Internal Noise Levels* for requirements. The same measurements are used to demonstrate compliance with this criterion.

Acoustic Separation

Noise transmission through walls and floors that surround a regularly occupied enclosed room is addressed by one of the following pathways:

- Sound transmission
- Sound insulation

Sound transmission

Project teams must choose one of the pathways relevant to the project's building class space type.

Pathways	Requirements
Class 2 and 3	<ul style="list-style-type: none"> • All walls and floors (excluding rise walls) exceed the values specified in NCC 2022 Section F Part F7P1 and F7P2 by 5. • Party walls separating open plan kitchens (where joinery units are fixed) from another open plan kitchen/living room are discontinuous in construction as defined in NCC 2022 Section F Part F7D4 (3). • Entry doors to the sole-occupancy unit have perimeter and threshold seals.

The sound insulation between internal spaces complies with: Dw + LAeqT > X.

Where:

Dw = Weighted sound level difference measured between two spaces

LAeqT = Indoor ambient noise level in the space adjacent to the enclosed space

X = 75 except for:

- X = 60 for any partition with a door,
- X = 80 for walls/partitions separating areas with elevated privacy requirements (e.g., meeting rooms, classrooms, wards, etc.)

Pathways	Requirements
Measurements are conducted in accordance with ISO 16283-1:2014.	

Sound insulation

Project teams must choose one of the pathways relevant to the project's building class space type.

Pathways	Requirements
Class 2 and 3	All walls and floors (excluding riser walls) exceed the values specified in NCC 2022 Section F Part F7D5 and F7D6 by 5.
All other building classes	<p>The partitions between the spaces have a weighted sound reduction index (dB R_w) of:</p> <ul style="list-style-type: none">At least 45 for all partitions separating enclosed spaces which are:<ul style="list-style-type: none">Fixed without a doorGlazed partitions without a door* (refer to <i>Guidance for alternatives</i>)At least 40 for all partitions fronting a room (from an open plan area)At least 35 (in composite with door and partition) for all partition types that contain a doorAt least 50 through floors between occupied spaces

Impact Noise Transfer

Impact noise transfer for floors located above regularly occupied areas and between different tenancies is minimised. Project teams must choose one of the pathways relevant to the project's building class space type.

Pathways	Requirements
Class 2 and 3	The floors above Class 2 and 3 spaces have a standardised impact sound pressure ($L_{nT,w}$) of less than 55.
All other building classes	The floors above other building class space types have a standardised impact sound pressure ($L_{nT,w}$) of less than 60.

Measurements are in accordance with ISO 16283-2:2020.

Reverberation Control

Reverberation times in the regularly occupied areas meet the recommended design reverberation time specified in Table 1 of AS/NZS 2107:2016.

For spaces that are referred to 'See Note 1' in Table 1 of AS/NZS 2107:2016, including open plan office spaces, acoustic absorption is installed to minimise reverberation time in accordance with one of the following:

- 50% of the combined floor and ceiling area is treated with a material that has a noise reduction coefficient (NRC) of at least 0.5. The acoustic absorption is applied in locations appropriate to the function of the space and located to maximise the acoustic performance of materials selected.
- The performance of the installed acoustic absorption results in a reverberation time equivalent to or lower than the reverberation time predicted for treating at least 50% of the combined floor and ceiling area with a material that has a NRC of at least 0.5.

Measuring reverberation time

Reverberation is measured in accordance with the relevant section of ISO 3382 including the range of measurement locations. All relevant buildings systems are operating under normal conditions at the time of measurement.

Measurements are conducted in all open plan spaces and at least 10% of the regularly occupied enclosed rooms. The rooms tested are justified to be representative of the spaces within the building.

Fitout scope

Compliant acoustic comfort is delivered in at least 80% of the GFA, excluding car parks. This includes tenanted spaces. For criteria that relies on on-site measurements, refer to the relevant criteria for measurement distribution requirements.

Projects that have a GFA, excluding car parks, of less than 500m² have conducted measurements in spaces that make up at least 80% of the regularly occupied area.

Definitions

Definitions provided here must be applied to Requirements unless agreed with GBCA via a Technical Question.

Enclosed room

Enclosed room is defined as meeting rooms, private offices, classrooms, bathrooms, bedrooms, and any other similar space where it is expected that noise should not carry over from one space to the next. An enclosed room may be located within another enclosed room such as a bathroom within a Class 2 sole-occupancy unit or partition walls in a warehouse or office.

Regularly occupied area

This is defined as areas of the building that are continuously occupied or occupied for more than two hours (previously known as 'primary' and 'secondary' spaces in earlier Green Star rating tools) including living and sleeping areas in Class 2 and Class 3 units. Areas that are either transient or accessed intermittently such as corridors, storage, back of house or plant rooms can be excluded.

Reverberation time

Reverberation time refers to the time taken for reverberantly decaying sound pressure level to decrease by 60 decibels in a room.

Qualified acoustic consultants

A Member or Fellow of the Australian Acoustical Society (MAAS, FAAS) or qualified staff member within an Association of Australasian Acoustical Consultants (AAAC) member firm.

Alternative options can be considered through a Technical Question.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relevant standards

The following Standards and Guidelines are examples of those that can be referenced in the Acoustic Comfort Strategy. The acoustic consultant will identify which apply to this project based on building type, location, and client requirements.

- National Construction Code
- AS/NZS 2107:2016
- Association of Australasian Acoustical Consultants (AAAC) Guidelines (www.aaac.org.au)
- NSW Road Noise Policy
- Other government guidelines and legislation

- Client's acoustic requirements (if applicable)

Performance metrics

The proposed performance metrics may include the following parameters which are typically used to design acoustically comfortable spaces inside buildings. Each parameter may contribute to more than one of the Acoustic Comfort Issues:

- Control of external noise intrusion
- Control of internal noise sources
- Background noise masking
- Acoustic separation of spaces
- Control of reverberation
- External noise emissions

Acoustic criteria by building class table

Maximum and minimum internal noise levels have been shown separately to allow for flexibility and to allow it to be made not applicable for project where appropriate.

Excluded spaces – Acoustic Performance

A space can be excluded if the applicable Standard recommends that specialist advice be sought, such as in a cinema, theatre, laboratory. Other applications that require lower acoustic separation for safety reasons (e.g., hospital wards or rooms in aged care facilities) may also be excluded. If the project has other types of spaces where the function justifies specific acoustic conditions, a Technical Question may be submitted to the GBCA for confirmation to be excluded.

Internal noise levels

Timing of measurement

Clause 6.1.4 in AS/NZS 2107:2016 notes that measurements are taken at the relevant time according to the occupancy of the space. It is recommended that for living spaces, commercial spaces and other occupational spaces, measurements are taken between 7am – 7pm at traffic peak time and for sleeping areas (hospital wards, bedrooms, and the like), measurements are taken between 10pm – 7am.

Operating conditions of the building

Sounds from systems under the control of the building occupant include systems such as split system air-conditioning units and switchable exhaust fans (e.g., toilet, kitchen hoods and laundries).

Acoustic separation

The key difference between the pathways in the Acoustics Separation criteria is that Sound transmission is demonstrated through on-site testing while Sound insulation is demonstrated through design and material specification.

Sound insulation

The qualified acoustic consultant can use their discretion to determine whether an R_w of 35 or 45 is more applicable when using glazed partitions. The selected Weighted Sound Reduction index must be justified in terms of adjoining space use, required levels of noise sensitivity between spaces and any other aspects which would help to achieve acoustic separation.

Impact Noise Transfer

Where the building is one storey, the Impact Noise Transfer criteria cannot be targeted.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence:

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Acoustic Comfort strategy.
- Detailed Drawings detailing the acoustic design features relevant to this credit.
- Report by a qualified acoustics consultant confirming credit compliance.
- Extracts from the commissioning report detailing relevant measured noise levels and target noise levels.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- ABCB - National Construction Code 2022
- AS/NZS 2107:2016 – Acoustics – Recommended design sound levels and reverberation times for building interiors
- Department of Environment, Climate Change and Water NSW - [NSW Road Noise Policy](#)
- ISO 3382-1:2009 – Acoustics – Measurement of room acoustic parameters – Part 1: Performance spaces
- ISO 3382-2:2008 – Acoustics – Measurement of room acoustic parameters – Part 2: Reverberation time in ordinary rooms
- ISO 3382-3:2022 – Acoustics – Measurement of room acoustic parameters – Part 3: Open plan offices
- ISO 16283-1 :2014 – Acoustics – Field measurements of sound insulation in buildings and of building elements – Part 1: Airborne sound insulation
- ISO 16283-2:2020 – Acoustics – Field measurements of sound insulation in buildings and of building elements – Part 2: Impact sound insulation

Exposure to Toxins

Outcome

The building's occupants are not directly exposed to toxins in the spaces they spend time in.

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">• Paints, Adhesives, Sealants, and Carpets: The building's paints, adhesives, sealants, and carpets are low in toxins or non-toxic.• Engineered Wood Products: The building's engineered wood products are low in toxins or non-toxic.• Banned or Highly Toxic Materials: Occupants are not exposed to banned or highly toxic materials in the building.
Credit Achievement	2 points	In addition to <i>Minimum Expectation</i> : <ul style="list-style-type: none">• VOC and Formaldehyde Levels: On-site tests verify the building has low Volatile Organic Compounds (VOC) and formaldehyde levels.

Additional information

Scope of credit

All fully enclosed covered areas of the project excluding car parks.

Banned or Highly Toxic Materials

All existing buildings within the project boundary at the time of site purchase that are being retained.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Amenity and Comfort
- Responsible Finishes

Sustainable Development Goals

- Goal 3 (Good Health and Wellbeing)

Requirements

Where standards are cited for compliance, the latest version applies once it has been in place for over two years.

Minimum Expectation

The project must comply with **all three** of the following criteria:

- Paints, Adhesives, Sealants, and Carpets
- Engineered Wood Products
- Banned or Highly Toxic Materials

Paints, Adhesives, Sealants, and Carpets

Toxins are limited in at least 95% of all internally applied paints, adhesives, sealants (by volume) and carpets (by area). Project teams must choose from at least one of the following pathways. A combination of methods can be used to demonstrate compliance to suit different spaces or products:

Pathway	Requirement
Eliminating toxin sources	No paints, adhesives, sealants, and carpets are installed.
Recognised certification scheme	The product(s) are certified under a Recognised Product Certification Scheme listed in the GBCA's <i>Exposure to Toxins Product Certifications Schemes Index</i> . The certification is valid at the time of purchase.
	The product(s) have a Total Volatile Organic Compounds (TVOC) content less than the limits below.
	Paints, adhesives and sealants
Product category	TVOC content (g/L)
General purpose adhesives and sealants	50
Interior wall and ceiling paint, all sheen levels	16
Trim, varnishes, and wood stains	75
Primers, sealers, and prep coats	65
One and two pack performance coatings for floors	140
Acoustic sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

Pathway	Requirement	
TVOC content in paints are determined in accordance with ISO 11890-1, ISO 11890-2, ISO 17895 or ASTM D3960. TVOC content in adhesive and sealants are determined in accordance with ASTM D3960. Refer Guidance for further information.		
Carpets		
Compliance option	Test protocol	TVOC Limit
ASTM D5116	ASTM D5116 - TVOC limit	0.5mg/m ² /hr
ISO 16000 / EN 13419	ASTM D5116 - 4-PC (4-Phenylcyclohexene)	0.05mg/m ² /hr
ISO 10580 / ISO/TC 219 (Document N238)	ISO 16000 / EN 13419 - TVOC at three days	0.5mg/m ² /hr
	ISO 10580 / ISO/TC 219 (Document N238) - TVOC at 24 hours	0.5mg/m ² /hr

Refer Guidance for excluded products.

Where Credit Achievement is demonstrated using the Laboratory testing or Building monitoring methods, evidence of the Minimum Expectation may be reduced. This is not applicable to projects that use the Real-time measurements method. Refer Guidance and Submission content for further information.

Engineered Wood Products

Toxins are limited in at least 95% (by area) of engineered wood products. Project teams may choose from at least one of the following pathways. A combination of methods can be used to demonstrate compliance to suit different spaces or products:

Pathway	Requirement						
Eliminating toxin sources	No engineered wood products are installed.						
Recognised certification scheme	The product(s) are certified under a Recognised Product Certification Scheme listed in the GBCA's <i>Exposure to Toxins Product Certifications Schemes Index</i> . The certification is valid at the time of purchase.						
Laboratory testing	<p>The product(s) are tested and the formaldehyde emissions are less than the limits below:</p> <table> <thead> <tr> <th>Test protocol</th> <th>Formaldehyde Emissions Limit</th> </tr> </thead> <tbody> <tr> <td>AS/NZS 2269, testing procedure AS/NZS 2098.11 method 10 for Plywood</td> <td>≤1mg/L</td> </tr> <tr> <td>AS/NZS 1859.1 - Particle Board, with use of testing procedure AS/NZS 4266.16 method 16</td> <td>≤1.5mg/L</td> </tr> </tbody> </table>	Test protocol	Formaldehyde Emissions Limit	AS/NZS 2269, testing procedure AS/NZS 2098.11 method 10 for Plywood	≤1mg/L	AS/NZS 1859.1 - Particle Board, with use of testing procedure AS/NZS 4266.16 method 16	≤1.5mg/L
Test protocol	Formaldehyde Emissions Limit						
AS/NZS 2269, testing procedure AS/NZS 2098.11 method 10 for Plywood	≤1mg/L						
AS/NZS 1859.1 - Particle Board, with use of testing procedure AS/NZS 4266.16 method 16	≤1.5mg/L						

Pathway	Requirement	
	AS/NZS 1859.2 - MDF, with use of testing procedure AS/NZS 4266.16 method 16	≤1mg/L
	AS/NZS 4357.4 - Laminated Veneer Lumber (LVL)	≤1mg/L
	Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	≤1mg/L
	JIS A 5908 - Particle Board and Plywood, with use of testing procedure JIS A 1460	≤1mg/L
	JIS A 5905 - MDF, with use of testing procedure JIS A 1460	≤1mg/L
	JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1mg/m ² /hr
	ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1mg/m ² /hr
	ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1mg/m ² /hr (at 3 days)
	ASTM D6007 (Refer Guidance for further information)	≤0.12mg/m ³
	ASTM E1333 (Refer Guidance for further information)	≤0.12mg/m ³
	EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m ³
	EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m ² /hr

Refer *Guidance* for excluded products.

Where *Credit Achievement* is demonstrated using the Laboratory testing or Building monitoring methods, evidence of the *Minimum Expectation* may be reduced. This is not applicable to projects that use the Real-time measurements method. Refer *Guidance* and *Submission content* for further information.

Banned or Highly Toxic Materials

A comprehensive hazardous materials survey is carried out on any existing buildings or structures on the project site, in accordance with the relevant Environmental and Work Health and Safety (WHS) legislation.

Where the survey identified asbestos, lead, or polychlorinated biphenyls (PCBs) in any existing buildings or structures, the materials are stabilised or removed and disposed of in accordance with best practice guidelines. Refer *Guidance* for suggested guidelines.

Projects that do not have existing buildings on the site at the time of purchase or are not retaining any existing buildings on the site are exempt from the *Banned or Highly Toxic Materials* criterion.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with the following criterion:

- VOC and Formaldehyde Levels

VOC and Formaldehyde Levels

Toxin levels are verified on-site after practical completion and prior to occupants moving into the building.

Verification methods

TVOC and formaldehyde levels are verified by one of the following methods:

Method	Requirements
Laboratory testing	<p>Laboratory tests are conducted to verify that the concentrations are below the following limits:</p> <ul style="list-style-type: none">• Benzene: 0.002ppm• Toluene: 0.08ppm• Formaldehyde: 0.02ppm <p>Samples are collected and analysed in accordance <i>ISO 16000-6, ASTM D5197 or EPA TO-17</i>.</p>
Building monitoring	<p>Air quality monitors that measure TVOC and formaldehyde are installed. Measurements are taken prior to building occupation to verify that the concentrations are below the following limits:</p> <ul style="list-style-type: none">• TVOC: 0.27ppm (as isobutylene)• Formaldehyde: 0.02ppm <p>The monitors continuously measure for TVOCs and formaldehyde within the breathing zone and are located away from openings or HVAC vents.</p>
Real-time measurements (for small buildings only where the GFA, excluding car parks, is less than 1000m ²)	<p>Real-time measurements are to be taken to verify that the concentrations are below the following limits:</p> <ul style="list-style-type: none">• TVOC: 0.27ppm (as isobutylene)• Formaldehyde: 0.02ppm <p>Measurements are taken using equipment that complies with Section 6.5 Real-time monitoring and sampling equipment in the <i>NABERS Indoor Environment for Offices Rules</i>. A sample is considered an average reading of at least 5 minutes in the same location.</p>

Sampling is conducted before 12pm and under normal operating conditions. Refer *Definitions* for further information.

Sample distribution

Project teams may choose from one of the following pathways to determine the minimum number of samples to be taken based on the building's height to width ratio:

Pathway	Requirements	Number of samples per floor
Low height to width ratio (e.g., warehouse-type or shopping centre projects)	GFA < 10,000m ²	3

Pathway	Requirements		
	For every additional 10,000m ² thereafter 1 additional sample		
The required samples are determined by whichever is larger between occupied areas or floors. At least three samples are to be taken per floor. At a minimum, the ground floor, the top most floor and the floor with the highest estimated occupants are sampled.			
High height to width ratio (e.g., all other building types)	GFA	Number of floors	Number of floors to be sampled
	< 2,000m ²	< 2	1
	< 5,000m ²	< 8	2
	< 10,000m ²	< 15	3
	< 20,000m ²	< 25	4
	< 40,000m ²	< 35	5
	> 40,000m ²	> 35	6

Definitions

Definitions provided here must be applied to Requirements unless agreed with GBCA via a Technical Question.

Normal operating conditions

For the purposes of this credit, normal operation conditions refer to the ventilation mode that the building is designed for. For example, for mechanically ventilated spaces, the HVAC system is operating during normal hours or for naturally ventilated spaces, the windows are open.

Test certificate

A test certificate that is from a laboratory accredited by National Association of Testing Authorities (NATA) or other ISO/IEC 17025 accredited laboratory. The test certificate includes:

- The numerical result
- The test method used to obtain the results
- For tinted products, the TVOC value must be inclusive of tints

For paints, adhesives and sealants, a safety data sheet (SDS) that includes VOC information is also an acceptable test certificate. The TVOC content of the product is presented numerically in g/L of ready-to-use product and also includes a statement as to how the results was obtained, meaning either through experimental testing or theoretical calculations.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Excluded products

The following items are excluded from the scope of *Paints, Adhesives, Sealants, and Carpets* criterion:

- Glazing film, tapes, and plumbing pipe cements;
- Paints, adhesives and sealants applied off-site, for example, applied to furniture items in a manufacturing site and later installed in the fitout; and
- Adhesives and mastics used for temporary formwork and other temporary installations.

The following items are excluded from the scope of *Engineered Wood Products* criterion:

- Non-engineered wood products, such as milled timber
- Formwork

Testing protocols

Paints

The most relevant standard varies depending on the VOC content:

- ISO 17895:2024, for a material with a presumed VOC content <1%
- ISO 11890-2:2020, for a material with a presumed VOC content <15%
- ISO 11890-1:2024, for a material with a presumed VOC content >15%

ASTM D3960, which is comprised of four individual testing procedures that measures TVOC (D2369) as well as density (D1475) and water content (D4017). Exempt compounds (D4457) must not be subtracted in the calculation of VOC content.

Adhesives and sealants

The testing method for adhesive and sealants is the ASTM D3960 as detailed for paints. For more information on ASTM D3960, refer to South Coast Air Quality Management District Rule 1168.

Carpets

Products that have been tested in accordance with the California Department of Public Health (CDPH) Standard Method v1.2-2017 using the private office scenario are accepted as they comply with the ASTM D5116 test protocol.

Engineered wood products

Products that use ASTM D6007 and ASTM E1333 will be required to convert the final results into a EN717-1 equivalent (i.e.. in mg/m³) using a correlation ratio of 0.98.

Theoretical VOC calculations

Paints, sealants and adhesives that are one of the following may use theoretical calculations:

- A custom product such as, but not limited to, paints with a custom tint or two part adhesives combined and applied on site.
- Not used for more than 10% of the internally applied areas.

The theoretical calculation methodology is to follow APAS AP-D181 7.1 whereby it is based on the subtotal of the known VOC values of the product's raw material components. The calculations provided are to include the following:

- Numerical TVOC results expressed in g/litre of product; and
- Statement that the results have been obtained based on the subtotal of the known TVOC values of the product's raw ingredients.

Lead, asbestos, and PCBs

In the case of a refurbishment, this criterion is exempt for projects where the existing building on the project site began construction after 1 January 2005. This includes projects that are refurbishments or building extensions of existing buildings for which construction started after 1 January 2005. The use of the hazardous materials targeted by this credit element have been banned in Australia for several years, so this topic presents no environmental benefit to new buildings.

Relevant standards and legislation

Hazardous materials

Relevant Standards and Legislation

Asbestos

Occupational Health and Safety (OH&S) legislation, Work Health and Safety (WH&S) legislation and relevant environmental legislation

Lead

AS/NZS 4361.1:2017 and AS/NZS 4361.2:2017: Guide to Hazardous Lead Paint Management

Polychlorinated Biphenyls (PCBs)

ANZECC Polychlorinated Biphenyls Management Plan

Relationship with the Responsible Construction credit

The intent of this credit is to limit occupant exposure to toxins from hazardous materials during the building's operation. The management of hazardous materials in existing buildings that are being demolished are to be addressed in the EMP under the *Responsible Construction* credit.

VOC emission testing

To mitigate the risk of failing the VOC on-site test, it is recommended that projects specify products that have undergone an emissions test in accordance with the following Standards:

- ANSI/BIFMA e3-2011 Furniture Sustainability Standard sections 7.6.1 or 7.6.2, tested in accordance with ANSI/BIFMA Standard Method M7.1-2011
- California Department of Public Health (CDPH) Standard Method v.1.2-2017
- EPA Method T011 Determination of Formaldehyde in Ambient Air using Adsorbent Cartridge Follow by High Performance Liquid Chromatography (HPLC)
- GEV-Emicode EC1 or EC1 Plus after 28 days

Earliest stage for on-site testing

For the purposes of the *Credit Achievement*, testing can occur once all finishes and furniture have been installed.

Project teams wanting to use NABERS IE results to demonstrate compliance with the credit should submit a Technical Question to the GBCA.

Real-time measurements

All sample measurements taken must be below the levels listed above.

Evidence for Minimum Expectation

Where *Credit Achievement* is demonstrated using the Laboratory testing or Building monitoring methods, evidence provided for the *Minimum Expectation* may be reduced to the following:

- A summary table with products used in the project and their compliance e.g., VOC content of each product and whether they comply with the required limits.
- Head contractor sign-off on the summary table that these were the products used for the project, and that the emissions limits were reviewed.

This is not applicable to projects that use the Real-time measurements method.

Submission content

Submissions for this credit must contain

- **Submission form** through Green Star Online

- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Paints, Adhesives, Sealants and Carpets and Engineered Wood Products

- Specifications that demonstrate emission levels or formaldehyde contents.
- Safety Data Sheets that demonstrate the compliant emission levels or formaldehyde content.
- Product VOC test certificates that demonstrate emission levels or formaldehyde contents.
- Product certificates that demonstrate certification under a recognised product certification scheme or recognised standard.
- Invoices or proof of purchase.
- Finishes schedule or similar summarising all paints, adhesives, sealants, carpets, engineered wood products and carpets installed.

Where *Credit Achievement* demonstrated using the Laboratory testing or Building monitoring methods, evidence provided for the *Minimum Expectation* may be the following:

- A summary table with products used in the project and their compliance e.g., VOC content of each product and whether they comply with the required limits.
- Head contractor sign-off on the summary table that these were the products used for the project, and that the emissions limits were reviewed.

Banned or Highly Toxic Materials

- Hazardous materials survey.
- Remediation plan.
- Site plan at the time of purchase.

VOC and Formaldehyde Levels

- On-site VOC test results.
- As built drawings showing the location of the test samples.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- GBCA - Exposure to Toxins Product Certification Scheme Index (available on the Green Star resources portal)
- NABERS – [Indoor Environment for Offices Rules](#)

Amenity and Comfort

Healthy

Credit: 14

Points: 2

Outcome

The building provides internal amenities that improve occupant experience of using the building.

Criteria

Credit Achievement	2 points	<ul style="list-style-type: none">• Comfortable Amenity Rooms: The building has dedicated amenity rooms.
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Additional information

Scope of credit

The amenity rooms are delivered with the minimum requirements. This includes tenanted buildings.

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- Design for Equity
- Acoustic Comfort
- Light Quality
- Clean Air

Sustainable Development Goals

- Goal 3 (Good Health and Wellbeing)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Comfortable Amenity Rooms

Comfortable Amenity Rooms

Occupants

The number of occupants is based on the function of the building as one of the following:

- For building types which are purposely built for visitors, the number of occupants include both users that would be regularly occupying the building and visitors. Refer *Guidance* for examples.
- For all other building types, the number of occupants includes the users that would be regularly occupying the building. Refer *Guidance* for examples.

Room design and quantity

The building includes at least one of the following amenity types internally that meet the corresponding design requirements to promote either inclusivity, mindfulness or exercise. Where multiple amenity types are included, the minimum number of rooms is not cumulative (i.e. where there are 800 occupants, at least 2 parent rooms and 1 multi-faith room are included in the building).

Amenity type	Minimum number of rooms	Additional design requirements
Parent room	At least 1 room per 200 occupants	<p>The room(s) meets the following:</p> <ul style="list-style-type: none">• At least 10m²• Has a benchtop, armchair, sink, refrigerator, microwave and electrical outlets accessible from the armchair• <i>Credit Achievement</i> under the <i>Lighting Comfort</i> credit• <i>Credit Achievement</i> for Class 9b leisure spaces under the <i>Acoustic Comfort</i> credit• Equitable access requirements in <i>Credit Achievement</i> under the <i>Design for Equity</i> credit.
Relaxation, meditation or multi-faith room	At least 1 room per 400 occupants	<p>The room(s) meet the following:</p> <ul style="list-style-type: none">• At least 15m²• Has a table, armchair and storage for cushions and footwear• If a multi-faith room, an additional 4m² washroom for religious ablutions is accessible from the main space.• <i>Credit Achievement</i> under the <i>Lighting Comfort</i> credit• <i>Credit Achievement</i> for Class 9b leisure spaces under the <i>Acoustic Comfort</i> credit• Equitable access requirements in <i>Credit Achievement</i> under the <i>Design for Equity</i> credit.
Exercise room	At least 1 room	<p>The room(s) meet the following:</p>

Amenity type	Minimum number of rooms	Additional design requirements
		<ul style="list-style-type: none">At least 25m² with an additional 5m² per 200 occupants above 200.<i>Credit Achievement</i> for Class 9b sport spaces under the <i>Acoustic Comfort</i> creditEquitable access requirements in <i>Credit Achievement</i> under the <i>Design for Equity</i> credit.

The amenity rooms are separate from bathrooms, showers, lockers, and end of trip facilities.

Definition

Building types which are purposely built for visitors

This refers to building types where the primary function is to accommodate and serve people that are not regular or permanent occupants. Examples of these building types include shopping centres, hotels, conference facilities, sport facilities and venues and hospitals.

Exercise room

A room that provides space for occupants to do physical activity at no cost to the occupants.

Number of occupants

This is based on the design occupancy which is the intended occupancy rate that the spaces have been designed for. The number of occupants that would be regularly occupying the building is to be consistent with the design occupancy assumed in other credits. Assumptions for the proposed occupancy rate are included in the project's submission.

Where the design occupancy is unknown, a default occupancy that is 75% of the number of persons to be accommodated in accordance with NCC 2022 Section D Part D2D18(a).

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Number of occupants – building types

Building types which are purposely built for visitors

Examples of these building types and who would be included in the occupancy figure include:

- Shopping centres – retail staff and retail patrons
- Hotels – hotel staff and hotel guests
- Conference facilities – venue staff and conference attendees
- Sports facilities or venues – facility staff, sports facility users and spectators
- Hospitals – hospital staff, patients and visitors

Other building types

Examples of these building types and who would be included in the occupancy figure include:

- Offices – facilities management staff, front-of-house services staff and tenant staff

- Apartments – facilities management staff, front-of-house services staff and residents
- Industrial – facilities management staff, office and warehouse workers
- Schools – facilities management and teaching staff

Amenity rooms

Parent room

The [Australian Health Facilities Guidelines](#) and the [American Institute of Architects](#) provide a recommended layout for parent rooms which can be used as a guide.

Multi-faith room

The [Australian Health Facilities Guidelines](#) describes considerations that should be accounted for in a multi-faith space.

Types of spaces

If a project would like to claim a different type of room that provides a unique amenity to occupants, a Technical Question must be submitted to the GBCA.

Multi-functional rooms

Rooms can be dedicated to one purpose or can be a multi-functional room that caters to several of these at once. If rooms are multi-functional, then all necessary equipment for the types of use must be provided.

Rooms should be designed and built based on the needs of the demographics of the building users. The rooms should also be sized and spaced to suit the needs of the building users.

It is recommended that where multiple rooms are designed, a diverse range of room types be provided.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- A narrative describing the various rooms.
- As built drawings showing the location and size of the rooms.
- Evidence that all necessary equipment for the room type has been provided.
- Evidence that the rooms comply with the relevant credits.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- American Institute of Architects - [Recommendations for designing lactation/wellness rooms](#)
- WuduMate – [A Guide to Best Practice Multi-Faith Room Design](#)

Connection to Nature

Outcome

The building fosters connection to nature for building occupants.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">• Views: The building provides views. <p>And with at least one of the following:</p> <ul style="list-style-type: none">• Plants: The building includes indoor plants• Nature-inspired Design: The building incorporated nature-inspired design
		In conjunction with <i>Credit Achievement</i> , the project meets both of the following:
Exceptional Performance	1 point	<ul style="list-style-type: none">• Plants: The building includes indoor plants• Nature-inspired Design: The building incorporated nature-inspired design

Additional information

Scope of credit

The internal and external regularly occupied areas of the building.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Biodiversity Enhancement

Sustainable Development Goals

- Goal 3 (Good Health and Wellbeing)
- Goal 15 (Life on Land)

Requirements

Credit Achievement

The project must comply with **both** of the following criteria:

- Views
- With **at least one** of the following criteria:
 - Plants
 - Nature-inspired Design

Views

At least 60% of regularly occupied areas have a clear line of sight to a high quality internal or external view. Only areas within 8m from a compliant view are considered to have a clear line of sight.

Plants

Plant quantity and location

The building has plants in regularly occupied areas. Project teams must choose one of the pathways relevant to the level of access that the building operator has.

Pathway	Requirement
Buildings where the building operator has limited, regular access to tenancies	<p>The building has plants distributed thoroughly in both of the following locations:</p> <ul style="list-style-type: none">• Indoors in at least two regularly occupied, base building spaces which are accessible by all building occupants. The total area of the regularly occupied, base building spaces is at least 250m² or 2.5% of the GFA, excluding car parks (whichever is greater). The total soil surface area of plants provided is at least 2% of the regularly occupied, base building areas.• Outdoors as vertical or horizontal planted area and is physically accessible by building occupants. The total planted area is equivalent to at least 2% of the building's regular occupied area or the area bounded by the project boundary (whichever is greater). The allocated area is accessible and has the necessary infrastructure to allow the activity to occur (e.g. water source or taps for irrigation, storage area for tools and equipment).
All other buildings – outdoor plants only	<p>The building has vertical or horizontal planted areas outdoors that are physically accessible by building occupants. The total planted area is equivalent to at least 5% of the building's regular occupied area or the area bounded by the project boundary (whichever is greater). The allocated area is accessible and has the necessary infrastructure to allow the activity to occur (e.g. water source or taps for irrigation, storage area for tools and equipment).</p>
All other buildings – indoor plants only	<p>The building has plants with a soil surface area totalling at least 0.33% of every 15m² of all regularly occupied spaces. The plants are distributed thoroughly across the regularly occupied spaces.</p>

Plant maintenance

An ongoing maintenance plan is established to ensure plant health is maintained.

As a minimum, the plan includes:

- A 2-year contract with a plant maintenance contractor to enact the plan
- A schedule of plants within the nominated space
- Servicing requirements including frequency of service and cleaning commitments
- A policy regarding the maintenance of soil moisture, pH, nutrients, pests, cutting back of old growth and plant replacement when needed

Nature-inspired Design

The building integrates five additional nature-inspired design interventions. As a minimum, the interventions:

- Provide multiple natural sensory experiences
- Reflect natural and cultural patterns and forms
- Use natural materials
- Are large scale and holistically incorporated natural motifs and art

A narrative is provided by the project team to explain how the interventions meet the attributes above.

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with **all** of the following criteria:

- Plants
- Nature-inspired Design

Plants

Refer *Credit Achievement* for requirements.

Nature-inspired Design

Refer *Credit Achievement* for requirements.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

High quality external views

A high quality external view is defined as extending to the outside towards natural elements such as large bodies of vegetation, a body of water or the sky.

High quality internal views

A high quality internal view is defined as a view towards an area that is landscaped or contains a water feature, or an atrium. A landscaped area contains either high plant density, xeriscape gardens or arid climate landscaping. The landscaping may be horizontal or vertical.

Physically accessible

For outdoor planted areas to be considered physically accessible, the planted area is less than 20m from an entry or exit point and the occupants can physically interact with the planted area.

Regularly occupied area

This is defined as areas of the building that are continuously occupied or occupied for more than two hours (previously known as 'primary' and 'secondary' spaces) including living and sleeping areas in Class 2 and Class 3 units. Cold shell retail and office areas are considered to be regularly occupied areas. Areas that are either transient or accessed intermittently such as corridors, storage, back of house or plant rooms can be excluded.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relationship with *Biodiversity Enhancement* credit

Biodiversity Enhancement focuses on external landscaping that promotes biodiversity (i.e., diverse, resilient etc). This credit instead encourages occupant interaction with nature directly such as through access to planting or indirectly such as through external views to support occupant wellbeing and health. The credits are not mutually exclusive and can be used in conjunction with one another. For example, should an accessible green roof comply with the requirements of the *Biodiversity Enhancement* credit, it can be used towards compliance in both credits.

External landscaping that is captured as part of the *Biodiversity Enhancement* credit may only be claimed in this credit under the *Views* criterion (that is, as a high-quality external view).

Views

The line of sight is measured by extending a perpendicular line from the view, be it a window, opening or internal view. A line at 45° can be used at the corners of the view. The thickness of the external walls must be considered in the calculations.

Internal or external columns can be ignored.

Plants

Buildings where the building operator has limited, regular access to tenancies

Examples of these building class types include Class 2 apartments, Class 3 student accommodation and Class 5 commercial buildings.

Physically accessible outdoor planted areas

Examples include a garden or a green wall that occupants can interact with.

Excluded spaces

If a space is completely enclosed on all sides and smaller than 25m², such as a meeting room, this space can be excluded. The use of plants in enclosed areas cannot contribute towards achieving the required number of plants in areas neighbouring this space.

If the project has other types of spaces where the function justifies specific conditions, a Technical Question may be submitted to the GBCA for confirmation to be excluded.

Nature-inspired Design

Using design interventions to connect people to nature builds on the other aspects of this credit. The Plants and Views criteria encourage direct connections with nature through plants and indirectly through external views however there are other ways that occupants can experience nature that can be explored for this requirement. The International Living Building Institute's [Biophilic Design Guidebook](#) and Kellert, S. & Calabrese, E (2015) [The Practice of Biophilic Design](#) provide design guidance and examples of design interventions.

It is encouraged that these design interventions are considered early in the design process so that they can be integrated together appropriately and each intervention reinforces and complements one another.

The narrative provided by the project team does not need to be extensive however should be supported with drawings and/or product information.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Views

- As built drawings showing access to views and/or line-of-site showing that no obstructions exist.

Plants

- As built drawings showing the location of plants and the location of relevant infrastructure (if relevant).
- Extracts from the ongoing management plan for plants.

Nature-inspired Design

- Narrative of the five nature-inspired design features including design principles setting the project's ambition for connection to nature.
- As built drawings showing the interventions.
- Product information or specifications.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resource supports this credit:

- Better Building Partnership - [Green Leasing](#)
- Global Wellness Institute – [Creating Positive Spaces – Using Biophilic Design](#)
- Kellert, S. & Calabrese, E – [The Practice of Biophilic Design](#)
- International Living Future Institute - [Biophilic Design Guidebook](#)
- International Living Future Institute – [Biophilic Design Initiative and Biophilic Design Toolkit](#)
- Terrapin Bright Green – [Biophilic Design Case Studies](#)

Resilient

We are more reliant on a range of interdependent assets and services than ever - to move, work, play, thrive and maintain relationships. Our reliance can be disrupted as a result of climate change and other externalities ranging from health pandemics or terrorism to infrastructure failure. The credits in this category recognise buildings that are designed and constructed to withstand and recover from these disruptions.

Providing building owner insight into these issues is also encouraged to demonstrate to investors and the community that risks that threaten the short- and long-term performance of the building have been considered. The five credits in the category respond to principles developed as part of extensive research of several resilience frameworks such as the Taskforce for Climate Related Disclosures (TCFD), Global Real Estate Sustainability Benchmark (GRESB), the United Nation's Sustainable Development Goals (SDGs) and the 100 Resilient Cities program.

Credits in this category:

- Enable the building owner to understand the potential climate risks that may impact the building and that the building has been designed to reduce the key risks.
- Understand how the building will withstand other shocks and stresses that may impact the future operations of the building, including its ability to keep occupants safe during a power loss event.
- Contribute to building the resilience of the local community that interact with the project.
- Reduce the building's contribution to the heat island effect.
- Support the functioning of the grid as it transitions to a higher level of renewable energy capacity.

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance
17	Climate Resilience	●	1	
18	Operations Resilience		2	
19	Community Resilience		1	
20	Heat Resilience		1	
21	Grid Resilience		2	

Climate Resilience

Outcome

The building has been built to respond to the direct and indirect impacts of climate change.

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">• Climate Change Pre-screening Checklist: The project team completes the climate change pre-screening checklist and communicates the building's exposure to climate risks to the applicant.
Credit Achievement	1 Point	<ul style="list-style-type: none">• Climate Change Risk and Adaptation Assessment: The project team develops a project-specific climate change risk and adaptation assessment for the building.• Managing Risks: Extreme and high risks are addressed.

Additional information

Scope of credit

All areas of the project in the control of the building owner within the Green Star project boundary.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Energy Use
- Operations Resilience
- Community Resilience
- Contribution to Place
- Impacts to Nature

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)
- Goal 13 (Climate Action)

Relevant reporting initiatives

- GRESB
- TCFD
- ASRS

Requirements

Minimum Expectation

The project must comply with the following criteria:

- Climate Change Pre-screening Checklist

Climate Change Pre-screening Checklist

The potential risks and impacts from climate change on the project are considered by completing the *Climate Change Pre-screening Checklist*. The potential risks and impacts include, but are not limited to:

- Direct damage or failure of project components.
- Accelerated deterioration of project components or reduced design life.
- Reduced operating capacity.
- Climate hazard impacts to surrounding areas (e.g., impacting access and egress).
- Impacts to the health and wellbeing of building occupants and other relevant stakeholders.
- Indirect risks from impacts to other interdependent systems and services (e.g., transport networks, power, water, telecommunications).

Both historical and future data are used when completing the checklist.

The *Climate Change Pre-screening Checklist* is signed off by a member of the project leadership team, building owner and the building management representative (where relevant).

Where compliance with the *Climate Change Risk and Adaptation Assessment* criterion in *Credit Achievement* for this credit is demonstrated, this criterion is deemed to be met.

Credit Achievement

The project must comply with **both** the following criteria:

- Climate Change Risk and Adaptation Assessment
- Managing Risks

Climate Change Risk and Adaptation Assessment

A climate change risk and adaptation assessment is undertaken by a suitably qualified professional for the building and its site. The risk profile for the building and its site is established based on historical data and future projections of the project's location.

The assessment:

- Uses future projections of climate change impacts using the information from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report Representative Concentration Pathway 8.5 (RCP 8.5) or IPCC Sixth Assessment Report Shared Socio-economic Pathway 3 (SSP 3-7.0).
- Uses two timescales that are relevant to the project's anticipated lifespan including one medium-term timescale between 2040 to 2050 and one long-term timescale between 2070 to 2090.
- Identifies the primary and secondary climate change variables from Table 2 in AS 5334:2013 *Climate change adaptation for settlements and infrastructure* relevant to the project and each risk. Refer Guidance for a recommended list of variables to consider.

- Provides a short explanation to justify why the remaining climate change variables from Table 2 in AS 5334:2013 were deemed irrelevant to the project.
- Defines and includes the consequence and likelihood tables and risk matrix used to assess climate risks.
- Assesses risks in consultation with the building owner, representatives from engineering, architecture and landscape architecture (where deemed relevant by the project team) disciplines and local government.
- Develops a register of risks to the building and external works and provide treatment options for risks and residual risks identified as 'extreme' or 'high'.
- The risk assessment process aligns with the AS 5334:2013 or ISO 14090:2019 and/or ISO 14091:2021 *Adaptation to Climate Change*.
- Follows the principles of risk management outlined in the AS/NZ ISO 31000:2009 *Risk Management*.

The outcomes of the assessment are communicated to all stakeholders involved in the design and delivery of the project, including the building owner, key tenants (if applicable), building operator/facilities management, all design disciplines and head contractors as a minimum.

The original and residual risk ratings established in the assessment are signed off by the building owner.

Managing Risks

The project team ensure risks are addressed as follows:

- All risks rated as 'Extreme' are addressed through project-specific design responses.
- All risks rated as 'High' are addressed through the project's design or operational responses.
- Regardless of risk rating, at least two risks identified in the assessment are addressed by project-specific design responses.

Tenanted buildings

Additional non-physical adaptation responses, including emergency management plans and information on how to cope during extreme climate events, are communicated to tenants and used to inform relevant tenant agreements (e.g., agreements with tenants to mandate use of blinds and shading to reduce thermal load, reduce energy consumption and reuse water to reduce reliance on mains supply).

Definitions

Definitions provided here must be applied to Requirements unless agreed with GBCA via a Technical Question.

Assessment

In the context of this credit, assessment refers to the climate change risk and adaptation assessment.

External works

Refers to works completed outside the building footprint including landscaping, hardscaping, softscaping, infrastructure related to utilities and stormwater infrastructure.

Suitably qualified professional

In the context of this credit, this is a professional with a formal tertiary qualification in a relevant field with a minimum of five years' experience in climate risk and adaptation assessments.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the

approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Climate Change Pre-screening Checklist

The risks identified in the checklist do not need to be addressed for *Minimum Expectation*.

Climate Change Resilience risk assessment

Staging

The Climate Change Resilience risk assessment is undertaken as early during the project's design phase as possible, such as in the concept or schematic design phase, to allow maximum benefit and opportunity to inform design decisions and implement appropriate and meaningful adaptation responses.

Climate change variables

As a minimum, the following climate change variables should be considered:

- Sea level rise
- Flooding
- Storms
- Extreme rainfall events
- Drought
- Extreme temperature events including heat waves and extreme cold
- Cyclones
- Extreme wind events
- Landslide
- Bushfire
- Smoke

Additional stakeholders to consider for consultation

Additional stakeholders that are recommended to be consulted to contribute to the risk assessment and adaptation planning process are listed below. The building type, location and the stakeholder's relevance and expertise are considered when reviewing whether additional stakeholders beyond those listed in the requirements should be consulted. Examples of these additional stakeholders may include, but are not limited to, the following:

- Building operator/facilities management (if known at the time of consultation)
- Head contractor (if engaged at the time of consultation)
- Emergency services (where associated with a high or extreme risk)
- Relevant local, state or federal government resilience planning experts
- Utility providers
- Affected community groups

Internal consistency

Care should be taken when adapting multiple variables in the climate change risk assessment to ensure the scenarios are internally consistent and not necessarily looking at the worst-case individual climate variables and simply combining them together. Some combinations of variables may not be simulated by climate models (e.g., a higher temperature scenario may always be associated with being wetter for a location, so designing to a worst case (highest) temperature with worst case (lowest) rainfall would be inconsistent as it represents an improbable future).

The climatechangeinaustralia.gov.au website has publicly accessible tools to check for consistency and regional prediction data.

Review process

The assessment should be reviewed and updated whenever the climate change science that informs the scenarios for assessment is updated.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Climate Change Pre-screening Checklist.
- Extracts of climate change risk assessment.
- Risk assessment criteria, including the likelihood and consequence tables, risk matrix, RCP/SSP and timescale, and any assumptions significant in the development of the assessment.
- Evidence (e.g., workshop meeting minutes, photos or similar) of consultation with the relevant stakeholders.
- Details of the adaptation responses in as built drawings or operational procedures provided to the building owner or building operator and how the responses address the identified risk.
- Evidence the assessment was communicated to all stakeholders involved in the design and delivery of the project.
- Project risk register with initial and residual risks, highlighting the 'high' or 'extreme' identified climate change risks.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AASB S1 - General Requirements for Disclosure of Sustainability-related Financial Information
- AASB S2 - Climate-related Disclosures
- AS 5334:2013 - Climate change adaptation for settlements and infrastructure
- AS/NZ ISO 31000:2009 - Risk Management
- CSIRO and Bureau of Meteorology - [Climate Change in Australia](#)
- Coastal Risk Australia - [Predicted Coastal Flooding Resulting from Climate Change](#)
- ISO 14090:2019 - Adaptation to climate change – Principles, requirements and guidelines
- ISO 14091:2021 - Adaptation to climate change – Guidelines on vulnerability, impacts and risk assessment
- IPCC - Fifth Assessment Report (AR5)
- IPCC - Sixth Assessment Report (AR6)
- NSW Government – [NSW and Australian Regional Climate Modelling \(NARCLiM\)](#)

- Queensland Government – [The Long Paddock](#)
- WorldGBC – [Climate change resilience in the built environment](#)

Operations Resilience

Outcome

The building can respond to acute shocks and chronic stresses that can affect its operations over time.

Criteria

Credit Achievement	2 points	<ul style="list-style-type: none">Operations Resilience Assessment: A comprehensive review of the acute shocks and chronic stresses likely to influence future building operations is undertaken.Managing Risks: The building's design and future operational plan address any high or extreme system-level interdependency risks.Addressing Power Loss: The building's design is able to support the basic needs of the occupants in a power loss event.

Additional information

Scope of credit

All areas of the project and all regular occupants and visitors.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Verification and Handover
- Climate Change Resilience
- Grid Resilience
- Community Resilience
- Energy Use
- Water Use

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)

Relevant reporting initiatives

- GRESB
- TCFD

Requirements

Credit Achievement

The project must comply with **all three** of the following criteria:

- Operations Resilience Assessment
- Managing Risks
- Addressing Power Loss

Operations Resilience Assessment

An operations resilience assessment is undertaken for the building in operation by a suitably qualified professional.

The assessment:

- Identifies a set of clear resilience objectives and performance goals for the building. Where the project is located in a local council that has an existing community resilience plan, the goals are incorporated.
- Identifies the relevant acute shocks and chronic stresses likely to impact the functionality of the building and its ability to meet performance goals in collaboration with key internal and external project stakeholders. As a minimum, the following shocks and stresses are reviewed:

Shocks

- Failure of critical infrastructure (power, water and digital)
- Health pandemic
- Water security
- Geological hazards (landslides, earthquakes, tsunamis)
- Direct attack (cyber and physical)

Stresses

- Ageing infrastructure
- Rising cyber dependency
- Increasing energy costs
- Lack of transport accessibility and availability
- Identifies the interdependent infrastructure systems, networks, services and assets on which the building relies.
- Identifies system-level vulnerabilities related to identified shocks and stresses that may impact the building through reduced capacity and/or functionality.
- Develops a register of risks and outlines response procedures in the event of an identified shock event impacting the building and the local community. The risk assessment process aligns with the standards outlined in the *Climate Change Risk and Adaptation Assessment* criterion in *Credit Achievement* in the *Climate Resilience* credit.
- Consults with relevant authorities regarding evacuation procedures and emergency actions.

Managing Risks

The project team ensures risks are addressed as follows:

- All risks rated as 'Extreme' are addressed through project-specific design responses.
- All risks rated as 'High' are addressed through project-specific design or operational responses.

- Regardless of risk rating, at least two risks identified in the assessment are addressed by project-specific design responses.

Tenanted buildings

Additional non-physical adaptation responses, including emergency management plans and information on how to cope during extreme climate events, are communicated to tenants and included in leasing agreements.

Addressing Power Loss

A strategy is developed of how the building will provide for its occupants in a power loss event where evacuation is not possible and the occupants are required to shelter in place immediately.

As a minimum, the strategy describes:

- The basic needs of occupants to ensure the occupants can shelter in place during the blackout, and the critical equipment that requires continuous operation and the level of service required to provide these needs. The basic needs identified are reflective of building's functional purpose. As a minimum, the occupants have access to lighting, drinkable water, sanitation, telecommunication services and adequate levels of ventilation and thermal comfort. Refer to *Guidance* for further information.
- Locations in the building where occupants can shelter in place in the building and how this will be accessed safely by occupants during the blackout.
- How the critical equipment will operate without power from the grid for the design occupancy. Considerations such as the loss of internet services for the building management system is included.
- The appropriate duration that the building is to service the occupants' needs during the blackout.
- How the building will be able to smoothly revert to its normal operations after the power is reinstated.

The building's design integrates the solutions identified in the strategy and includes the strategy in the operations and maintenance information provided to the building owner.

Tenanted buildings

Where the tenant is known, the functional requirements of the tenant are considered if present. For example, if a tenant requires uninterrupted power supply, the building will need to consider if an appropriate response can be formulated to meet this requirement, and how this will affect the core function of the building. Outcomes are communicated to tenants.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Assessment

In the context of this credit, assessment refers to the operations resilience assessment.

Critical equipment

The equipment that supports the occupant's access to basic needs and ensures their safety. These may include fire, ventilation, temperature control, hydraulics and telecommunication systems. The level of service of the systems does not need to be at full capacity if this is not required to service the needs of the occupants.

Suitably qualified professional

In the context of this credit, this should comprise a professional with a formal tertiary qualification in environmental science, risk management, or engineering with a minimum of five years' experience in risk management or business continuity.

System-level

In the context of this credit, this refers to the building as a system interacting with its surroundings. It does not refer to the mechanical building systems, such as HVAC.

Shocks and stresses

Shocks are relatively short-lived events that can be human made (such as conflict or technological shocks) or naturally occurring (such as droughts or floods). Stresses are longer-term pressures that undermine the stability of a system (such as unemployment or ageing infrastructure).

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Staging

The operations resilience assessment is completed as early during the project's design phase as possible, such as in the concept or schematic design phase, to allow maximum benefit and opportunity to inform design decisions and implement appropriate and meaningful responses.

Climate Change Resilience

There is a strong link between this credit and the *Climate Resilience* credit, and it is encouraged that these are done in parallel, ideally within the same risk assessment.

If the *Climate Resilience* credit has been completed, the climate-related shocks and stresses addressed in the credit do not need to be repeated for this credit. However, if the *Climate Resilience* credit has not been completed, climate-related shocks and stresses will form part of the assessment for this credit, with appropriate physical and non-physical responses identified. Refer to the *Climate Change Resilience* credit for examples of climate-related shocks and stresses.

Basic needs

Additional needs based on the building's functional purpose and design should be considered. This may include the building being used by the community as refuge in the case of a blackout if it has an importance level of 3 and 4 in accordance with NCC Section B Table B1D3a.

Adequate levels of ventilation and thermal comfort is defined as the minimum requirements that will not negatively impact the occupants.

Telecommunication services

Telecommunication services not reliant on internet services and landlines are recommended. Mobile signal may be considered however a secondary telecommunication system that is not reliant on mobile signals is to be provided. Emergency telecommunication systems must continue to operate during blackouts.

Operating without grid power

On-site renewable generation, energy storage or passive design principles may be used to support the provision of basic needs.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Operations resilience assessment.
- Evidence of collaborating with key internal and external stakeholders.
- Evidence of consultation with relevant authorities.
- As built drawings or operational procedures of how shocks and stresses have been addressed.
- Strategy of how the building addresses power loss during a blackout with design responses.
- Evidence of inclusion in the operations and maintenance information.
- Evidence of responses being communicated with tenants.
- Extracts from leasing agreements.
- Evidence of consultation with tenants to understand functional requirements.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AS/NZ ISO 31000:2009 Risk Management
- UNFCCC – [C40 Infrastructure Interdependencies + Climate Risk Report](#)

Community Resilience

Outcome

The building contributes to improving the resilience of the local community.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">• Community Resilience Plan: A plan is developed and implemented to improve community resilience.
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Additional information

Scope of credit

The surrounding local community that interacts directly and indirectly with the project. This includes but is not limited to regular occupants, visitors and local communities and neighbourhoods in proximity to the building.

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- Climate Resilience
- Operations Resilience
- Contribution to Place
- Movement and Place

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)

Relevant reporting initiatives

- GRESB
- TCFD

Requirements

Credit Achievement

The project must comply with the following criterion:

- Community Resilience Plan

Community Resilience Plan

Plan

A community resilience plan is developed by a suitably qualified professional to identify ways that the project can contribute to strengthening community cohesion.

As a minimum, the plan identifies:

- The surrounding local community, the groups that will interact directly or indirectly with the project and the social considerations that may have an underlying impact on groups.
- Resilience objectives and performance goals for the community. Where the project is located in a local council that has an existing community resilience plan, the goals are incorporated into the project's community resilience plan.
- The shocks and stresses that impact the project's ability to service the community (including climate-related shocks and stresses if *Credit Achievement* in the *Climate Resilience* credit is not targeted).
- A set of at least five social indicators relevant to the project.
- How the shocks and stresses identified for the building may impact the local community and identified groups through the social indicators identified. Refer *Definitions* for further information.

Community engagement is conducted with representatives from the local community and the identified groups that will interact with the project to prioritise the impacts identified in the community resilience plan.

The plan is made available to relevant stakeholders engaged in the process and any additional stakeholders deemed relevant such as community groups, local council, local residents and businesses.

Implementation

At least two of the top five impacts are addressed through project-specific building attributes.

At least one community capacity building activity is carried out prior to project completion. Refer *Definitions* for further information.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Community capacity building activity

An organised activity or gathering that brings together the surrounding local community, and the groups which rely on or interact directly or indirectly with the building for the purpose of community engagement.

Shocks and stresses

Shocks are relatively short-lived events that can be man-made (such conflict or technological shocks) or naturally occurring (such as droughts or floods). Stresses are longer-term pressures that undermine the stability of a system, such as unemployment or ageing infrastructure.

Social Indicators

Social indicators are statistics within the community which can be used to determine the health and wellbeing of a community. Indicators such as quality of life, well-being, human development, economic prosperity, ecological sustainability can be used to gauge the health and wellbeing of a community.

Suitably qualified professional

This should comprise a professional with a formal tertiary qualification in environmental science or social sciences with a minimum five years' experience in resilience and adaptation assessment, or community engagement.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Social considerations

The below are examples of social considerations that projects may identify as potential stresses facing the community:

- Support and improve community wellbeing and social cohesion.
- Improve community health and wellbeing to counter increasing instances of chronic illness, lifestyle diseases and the demand on health services and infrastructure.
- Minimise the impacts associated with rising energy costs.
- Provide opportunities for local employment, skills development, training, and education.
- Support the provision of, and access to, public and active transport modes.
- Reduce dependency on energy, power, digital and transport networks and build redundancy in the event of failure or disruption.

Physical and non-physical responses

The implementation of responses may form part of design of the building (physical), or include further stakeholder engagement during construction, or defer to the operation phase (non-physical). The physical and non-physical responses must be prioritised based on self-assessment (e.g., based on standard assessment criteria such as cost, ease of implementation, effectiveness towards achieving intended outcome, delivery of co-benefits etc.).

Community resilience frameworks

This credit is focused on community resilience and thus community resilience frameworks can be a useful resource when working through the credit. Various tools, frameworks and guidelines exist that either aim to address community impacts beyond a project footprint or are established at the community or city scale. These tools document principles and processes for addressing community level risks associated with disaster and building capacity to respond. Examples include the UN Office of Disaster Risk Reduction, and 10 Essentials for City Resilience.

Community engagement

The level of effectiveness of this credit will be influenced by the level of engagement with the community, therefore community engagement throughout the project life cycle is recommended. For the project to deliver the best results, early engagement should be sought.

Community members for Class 2 and Class 3 buildings may include residents, nearby residents, local community and interest groups, staff, regular visitors, or users of facilities accessible to the public. For commercial and mixed-use premises this can also include tenant businesses, customers, staff, and nearby residents who may be affected by the development.

Making the community resilience plan available may be via website or other digital means.

While this credit only requires one community engagement activity, it is encouraged that projects engage with their community on several occasions.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Community resilience plan.
- Evidence of community engagement and the outcomes from the engagement.
- Summary of the community capacity building activity.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- Better Buildings Partnership – [Creating resilient communities](#)
- City of Melbourne – [Liveability and Quality of Life](#)
- City of Sydney – [Community Wellbeing Indicators](#)
- FutureEarth – [A National Strategy for Just Adaptation](#)
- GBCA and Hassell – [Social value in the built environment](#)
- Resilience Cities Network – [Resilience Toolkit](#)
- Rockefeller Foundation – [100 Resilient Cities](#)
- United Nations Office for Disaster Risk Reduction (UNDRR) – [The TEN Essentials for Making Cities Resilient](#)

Heat Resilience

Resilient

Credit: 19

Points: 1

Outcome

The building reduces its impact on heat island effect.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">Heat Island Reduction: At least 75% of the project boundary area comprises of one or a combination of strategies that reduce the heat island effect.
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Additional information

Scope of credit

All areas of the project within the project boundary.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Contribution to Place
- Enjoyable Places
- Climate Resilience

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)

Relevant reporting initiatives

- TCFD

Requirements

Credit Achievement

The project must comply with the following criterion:

- Heat Island Reduction

Heat Island Reduction

At least 75% of the surface site area within the project boundary has one or a combination of the following:

- Vegetation.
- Green roofs.
- Roofing materials, including shading structures, having the following:
 - For roof pitched <15° – a three-year SRI of minimum 64
 - For roof pitched >15° – a three-year SRI of minimum 34
- Unshaded hardscaping elements with a three-year SRI of minimum 34 or an initial SRI of minimum 39.
- White cement concrete (excluding decorative concretes with exposed aggregates).
- Hardscaping elements shaded by overhanging vegetation.
- Water bodies and/or water courses.
- Is shaded by permanent structures (e.g., part of a car park to the south of a tall building) at noon local time on the summer solstice.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Green Roofs

A green roof is defined as a roof of a building that is partially or completely covered with vegetation and a growing medium.

Heat Island Effect

The heat island effect describes the condition where built-up areas have a higher average temperature than its rural surroundings owing to the make-up of the built environment.

Project boundary

Refers to the Green Star rating boundary.

Solar Reflectance Index (SRI)

The Solar Reflectance Index (SRI) is a composite measure of a material's Total Solar Reflectance (TSR) and thermal emittance. It is calculated in accordance with ASTM E1980-11. It is based on the material or product's emittance values and total solar reflectance. Material suppliers often provide SRI data for products.

An initial SRI refers to the SRI of a new product. Over time the SRI of a product or surface will be reduced due to the material's exposure to the elements. The rate of degradation over time from such exposure is measured by the SRI of the product at three years.

Unshaded hardscape

Unshaded hardscape is defined as hardscape that is not shaded by vegetation or roof structures and includes roads, plazas, paths and open unshaded car parks and sports fields. Hard scaping excludes roof areas.

Vegetation

Vegetation is defined as landscaped areas, parkland, green space, and trees, whether new or pre-existing on the site. Shading from newly planted trees is measured based on predicted spread at five years after planting.

Water bodies and water courses

Water bodies and other permanent (non-ephemeral) watercourses are to be measured to the highest level of the water body or watercourse. Artificial pools are considered a water body.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Selection of hardscape materials

Hardscape paving materials are defined as all materials in roads, plazas, paths, and open unshaded car parks. Typical initial SRI values are provided below for reference. These typical SRI values are provided as a guide only and cannot be used to demonstrate compliance with this credit.

- Grey concrete: 35
- Standard white paint: 100
- Standard black paint: 5
- New asphalt: 0

Project-specific SRI values must be identified for the materials used in the project except for white cement concrete.

Where the three-year Solar Reflectance Index (SRI) for products is not available, use the following:

- For roof pitched <15° – an initial SRI of minimum 82
- For roof pitched >15° – an initial SRI of minimum 39

Solar hot water and photovoltaic panels

Although these roof structures have low SRI values, given the nature of their function, they provide a source of low-emission energy production which results in flow-on sustainability benefits. These features are to be excluded from the calculation of site area percentages for both compliant and non-compliant areas.

The surface area in plan view covered using solar hot water or photovoltaic panels should be subtracted from the total site area of the project. At least 75% of the remaining site area must meet the compliance requirements for this credit to be claimed.

Shaded at summer solstice

This is an accepted pathway because the sun tracks north in the Southern hemisphere, causing buildings to cast shadows to the South. Any areas that are shaded by the building at noon local time at the summer solstice can be included in the calculation as the shadows will be the shortest on this day.

Overhanging vegetation

For overhanging vegetation to qualify, it must provide shading all year round. Vegetation that provides seasonal shading cannot count towards compliance.

Green roof

Only areas of the roof that are covered by plants or vegetation (either through landscaping or planter boxes) may contribute towards the compliant areas. In the case of planter boxes, evidence of their installation or purchase must be provided at the time of submission.

Skylights

Project teams may exclude the skylights from the calculations of the area when assessed in a plan view. Glazing over an atrium or void qualifies as a skylight. These features are to be excluded from the calculation of site area percentages for both compliant and non-compliant areas.

Translucent polycarbonate roof sheeting

Translucent polycarbonate roof sheeting can be excluded from the calculation of site area percentages. The surface area in plan view covered by translucent roof sheeting may be subtracted from the total site area of the project for both the compliant and non-compliant areas. This is on the following condition(s):

- The translucent roof area is to comprise no more than 20% of the overall roof area
- At least 75% of the remaining site area must meet the compliance requirements for this credit to be claimed
- The project team must demonstrate how the translucent roof sheeting has other flow-on sustainability benefits that make it equivalent to solar hot water and photovoltaic panels

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Site plan highlighting all relevant areas as referenced within the area schedule.
- Area schedule listing the areas of each of the relevant site elements and where relevant, the SRI values and referencing plan drawings for the site.
- Supplier documentation material data sheet for compliant roofing and hardscape materials.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resource supports this credit:

- ASTM E1980-11 – Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces
- Western Sydney Regional Organisation of Councils (WSROC) – [Cool Suburbs Assessment](#)

Grid Resilience

Outcome

The building contributes to grid stability.

Criteria

Credit Achievement	2 points	or	<ul style="list-style-type: none">Demand Response: The building has a demand response strategy.Passive Design Solutions: The building has reduced its reliance on grid energy through passive design.

Additional information

Scope of credit

All centrally controlled building systems under the control of the building operator.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Verification and Handover
- Energy Use
- Energy Source
- Climate Resilience
- Operations Resilience

Sustainable Development Goals

- Goal 7 (Affordable and Clean Energy)
- Goal 13 (Climate Action)

Relevant reporting initiatives

- GRESB
- TCFD

Requirements

Credit Achievement

The project must comply with **one** of the following criteria:

- Demand Response
- Passive Design Solutions

Demand Response

Energy Management and Information Systems

In addition to the requirements in *Credit Achievement* in the *Energy Source* credit, the energy management and information systems has:

- The ability to receive external control signals.
- A pre-programmed load shedding response that can be triggered by the facilities management or automatically triggers upon the receipt of an external signal.
- A demand management dashboard that shows the peak demand target, current, historical demand, the demand shedding priorities and enabling button alongside the critical performance characteristics (typically comfort temperature).

Load Shedding Strategy

The building can shed at least 10% of the annual peak grid electricity demand for at least 4 hours and this is tested during the building commissioning process. A load shedding strategy is developed and included in the operations and maintenance information provided to the building owner and facilities management.

As a minimum, the strategy identifies:

- The systems and how much they contribute to the demand reduction on grid electricity. This may be a combination of a reduced level of service from building systems and using on-site renewable generation. Where there is a reduced level of service from building systems, occupant amenity and the functioning of the building will not be negatively impacted.
- The communication strategy to notify occupants how they will be impacted on the day of a potential event.

On-site renewable generation is only considered to contribute to demand reduction if the project demonstrates one of the following:

- The on-site generation system can continue to provide power to the building when disconnected from the grid.
- No more than 30% of electricity generated during peak solar generation period is exported to the grid.
- There is an agreement with the network operator that explicitly allows exports greater than 30% of the electricity generated during peak solar generation periods.

Tenanted buildings

The annual peak grid electricity demand includes tenant energy use as per the *Energy Use calculation guide* (i.e. the most energy intensive fitout is assumed if fitout works are excluded from the rating) even if fitout works are excluded from the rating.

Where there are systems that service tenanted spaces included in the strategy and are controlled centrally by the building operator, the leasing or sale contracts outline the load shedding strategies and what impacts these may have on tenant/s. If the strategy relies on tenant-controlled systems to contribute to demand reduction, this is triggered alongside the centrally controlled systems and there is an agreement with the tenant/s.

Passive Design Solutions

The building has reduced reliance on grid energy through passive design by having the following attributes:

- The facade demonstrates a 10% improvement over a reference building. The reference building is a building modelled to NCC 2022 Section J, or the version of the code applicable to the building's construction, whichever is later. The reference building is based on NCC J1V3 or the minimum requirements in NCC J4D2 to J4D7 using calculations in accordance with Method 2 when using Specification 37.
- No mechanical cooling or heating for at least 80% of the building's regularly occupied areas.
- The regularly occupied areas are less than 3,000m² and at least 20% of the building's GFA, excluding car parks.

This criterion cannot be targeted by Class 7b and 8 industrial buildings.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Annual peak electricity demand

The building's predicted annual peak electricity demand that is calculated as per the *Energy Use calculation guide* for the *Energy Use* credit. On-site renewable generation and energy storage is excluded.

Peak solar generation period

For the purposes of this credit, the peak solar generation period is defined as 8 am – 4 pm.

Occupant amenity

Occupant amenity is defined as: temperature ranges are within the typical design days, all lighting is running, and vertical and horizontal transportation is not impaired. All other health and safety systems (hydraulic, fire, etc) are also functioning.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relationship with Energy Source

The requirements of this credit are intended to be complimentary to the *Energy Source* credit. Both credits take into consideration the changing landscape of the grid to one that will be made up of more renewables however the challenges and opportunities that arise are addressed differently.

The increase in renewables in the grid provides an opportunity for buildings to maximise their use of renewables. This is the opportunity that has influenced the *Energy Source* credit which aims to ensure the building has implemented systems and a load shifting strategy to set the building up to maximises the use of renewables.

Meanwhile the *Grid Resilience* credit focuses on the building's contribution to grid stability during operation to smooth out peaks in supply and demand and other related shocks. This is provided by buildings that are able to adjust their demand in response to the needs of the grid at a point in time. The same systems may contribute to demonstrating compliance with both credits however as the intent of the credit is different, the way the systems are used will be different.

Alternate approaches

There are four key components to this credit:

- The degree to how much the building is impacting on the grid during peak times or similar shocks
- The opportunity for the building to provide short or on-demand flexibility to manage its energy consumption
- Aligning supply of unscheduled generation (wind, solar) and demand for energy
- The opportunity for the building to increase the grid's resilience during its peak

If alternative solutions exist that address two or more of these components, project teams are encouraged to contact GBCA to develop an alternative path.

External control signals

External control signals include communications from the energy retailer for buildings that sign up to a demand response programs. Projects are not required to be signed up to a demand response program however the energy management system is able to receive these signals. This is to allow buildings to sign up for a demand response program in the future.

Contributing systems

Examples of systems that could contribute demand shedding include, but are not limited to, HVAC, lighting, hot water and EV charging. The level of service of these systems can be temporarily reduced. On-site renewable generation and energy storage can also contribute to reducing peak demand. Energy storage solutions may be electricity storage (e.g., batteries) or thermal storage (e.g., chilled water tanks).

Excluded systems

On-site diesel generators are not recognised for the purposes of this credit. While diesel generators may be an effective way to reduce demand on the grid, this credit is aiming to provide a best practice approach to delivering its outcome.

On-site energy generation

This element of the credit aims to optimise energy generation onsite with the demand profile, either through demand response, sizing of renewables or using on-site energy storage solutions such as batteries. The purpose is not to unnecessarily reduce renewable energy generation. The intent is to encourage the availability of renewable energy at times of peak demand.

The 30% energy export has been calculated to allow for weekend energy export assuming there is no energy used onsite during that same period.

Micro-grids

As the aim of this credit is for the building to work with the wider grid, a building connected to a micro-grid can use the flexibility and capacity of the micro-grid to optimise the building's impact on the wider grid.

The inclusion of micro-grids recognises precinct scale energy masterplans where some buildings have significantly higher renewable energy generation potential than it can use, such as industrial buildings. This allows buildings to export locally in a micro-grid that is designed to support the volume of energy trading, without impacting the wider electricity network.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Demand Response

- Load shedding strategy.
- Extracts from energy modelling report of annual peak grid electricity demand.
- As built drawings highlighting building systems and on-site renewable generation systems.
- Evidence that the strategy has been implemented into building commissioning processes and tested.
- Extract of agreement with network operator.
- Extracts of leasing or sale contracts highlighting the inclusion of load shedding strategies and impacts.
- Extracts of agreement with tenants including details of their contribution and permission to be involved in the building's demand response strategy.

Passive Design Solutions

- Extracts from an energy modelling report.
- As built drawings demonstrating no mechanical cooling or heating and regularly occupied areas.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AEMO – [Wholesale demand response mechanism](#)
- Australian Renewable Energy Agency – [Demand response](#)
- AS 4755.1 – Demand response capabilities and supporting technologies for electrical products. Part 1: Demand response frame and requirements for demand response enabling devices (DREDs)
- GBCA - [From net zero to zero: A discussion paper on grid-interactive buildings](#)
- IEEE 2030.5 – Smart Energy Profile Application Protocol
- International Energy Agency - [Managing the Seasonal Variability of Electricity Demand and Supply](#)
- Lawrence Berkeley National Laboratory – [Introduction to Commercial Building Control Strategies and Techniques for Demand Response](#)

Positive

The Positive category in Green Star Buildings sets a clear trajectory for the built environment to meet Australia's climate goals and align with a 1.5°C pathway. It recognises that decarbonisation requires more than just switching to renewables—it demands a holistic approach that reduces energy use, eliminates fossil fuels, and addresses all sources of emissions across a building's lifecycle.

Buildings must be designed to be fossil fuel free, highly efficient, and ready for a future dominated by renewable energy. They must also drastically reduce upfront carbon emissions and compensate for any remaining impact. These requirements are embedded in the Climate Positive Pathway, which scales in ambition over time and by star rating. More information is available in the introduction and individual credits in this category.

The category also responds to Australia's increasing climate risks, including prolonged droughts, by prioritising water efficiency. It further integrates circular economy principles to reduce waste and extend the life of materials, recognising the environmental impacts that occur beyond a building's operational phase and at end-of-life.

Together, the credits in this category form a blueprint for climate-positive buildings—those that not only minimise harm but actively regenerate the environment and support a resilient, low-carbon future.

Credits in this category:

- Require buildings to be all-electric and energy efficient.
- Ensure the building is prepared for a future where the electricity grid is mostly made up of renewables.
- Lead to low upfront carbon design and encourages the transition to low carbon materials.
- Support the transition of the electricity grid by procuring renewable energy.
- Ensure the building's equipment and plant room is future-ready for the upcoming refrigerant phase-down.
- Support the transition to electric vehicles.
- Lower water consumption through efficient designs and selection of fixtures.
- Encourages the integration of circular design principles or more circular materials.

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance
22	Energy Source	●	2	2
23	Energy Use	●	3	3
24	Upfront Carbon Reduction	●	3	3
25	Upfront Carbon Compensation		1	2
26	Future-ready Refrigeration Equipment	●	1	2
27	Low-Emissions Transport		1	
28	Design for Circularity		2	1
29	Water Use	●	3	3

Credits highlighted in yellow are included in the Climate Positive pathway.

Energy Source

Outcome

The building is fossil fuel free, powered by renewables and designed to maximise renewable grid interaction.

Climate Positive Pathway

Registering from 2025 onwards	4 Star	Meets <i>Minimum Expectation</i>
	5 Star	
Registering from 2028 onwards	6 Star	Meets <i>Credit Achievement</i>
	4 Star	Meets <i>Minimum Expectation</i>
Registering from 2030 onwards	5 Star	Meets <i>Credit Achievement</i>
	6 Star	
Registering from 2030 onwards	4 Star	
	5 Star	Meets <i>Credit Achievement</i>
	6 Star	

Pathways

There are two pathways available in this credit. Projects can choose from one of the following based on their building type:

- Pathway A: Owner Operated pathway – Available to buildings where the building owner retains control over the majority of base building energy use and infrastructure. This includes buildings where the owner is responsible for managing, monitoring, and procuring energy for services such as heating, cooling, lighting, and hot water, and can implement energy strategies directly.
- Pathway B: Tenant Operated pathway – Available to buildings where the tenant/s have signed a lease agreement that makes them responsible for managing, monitoring and use of up to 80% of the GFA. This may include Class 2 apartments, Class 3 hotels and student accommodation and Class 5 offices.
- Pathway C: Industrial pathway – **In development**; this pathway will be available in future.

Criteria

Pathway A: Owner Operated pathway

Minimum Expectation	Nil	<ul style="list-style-type: none">• All-electric Building Services: The building is all-electric and has no infrastructure for fossil fuels for hot water, space heating and cooking.• Remaining Emissions Roadmap: If there are other uses of fossil fuels, a roadmap is provided to eliminate these.
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In addition to *Minimum Expectation*:

Credit Achievement	2 points	<ul style="list-style-type: none">• Renewable Ready: The building has management systems and a strategy to shift its electricity consumption to utilise grid energy when there are more renewables. or• Renewable Electricity: 100% of the electricity under the building owner's control comes from renewables.
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In addition to *Credit Achievement*:

Exceptional Performance	2 points	<ul style="list-style-type: none">• Renewable Ready: The building has management systems and a strategy to shift its electricity consumption to utilise grid energy when there are more renewables.• Renewable Electricity: 100% of the electricity under the building owner's control comes from renewables.
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Pathway B: Tenant Operated pathway

Minimum Expectation	Nil	<ul style="list-style-type: none">• All-electric Building Services: The building is all-electric and has no infrastructure for fossil fuels for hot water, space heating and cooking.• Remaining Emissions Roadmap: If there are other uses of fossil fuels, a roadmap is provided to eliminate these.
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In addition to *Minimum Expectation*:

Credit Achievement	2 points	<ul style="list-style-type: none">• Renewable Ready: The building has management systems and a strategy to shift its electricity consumption to utilise grid energy when there are more renewables.• Renewable Electricity: 100% of the electricity under the building owner's control comes from renewables.
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In addition to *Credit Achievement*:

Exceptional Performance	2 points	<ul style="list-style-type: none">• Tenant engagement: The building owner engages with tenants to source renewable energy.
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Pathway C: Industrial pathway

Minimum Expectation	Nil	In development
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Credit Achievement	2 points	In development
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Exceptional Performance **2 points** In development

Additional information

Scope of this credit

All energy under the control of the building owner and all non-electricity energy provided for uses that are not under the building owner's control (e.g., tenant use for hot water, space heating and cooking). Electricity use for tenant loads is excluded.

Stage implementation

Strategy Brief Concept Design **Tender** Construction Handover Use

Synergies with other Credits

- Verification and Handover
- Energy Use
- Grid Resilience
- Operations Resilience

Sustainable Development Goals

- Goal 7 (Affordable and Clean Energy)
- Goal 13 (Climate Action)

Relevant reporting initiatives

- GRESB
- TCFD

Energy Source – Pathway A: Owner Operated pathway

Requirements

Minimum Expectation

The project must comply with **both** of the following criteria:

- All-electric Building Services
- Remaining Emissions Roadmap

All-electric Building Services

The building operates with no connection to or provision for fossil fuel infrastructure for any hot water, space heating and cooking uses by the base build or tenants.

Fossil fuel infrastructure for the following uses is excluded:

- Process loads
- Emergency power
- Laboratory equipment

Any fossil fuels used for:

- Process loads are addressed in the Remaining Emissions Roadmap.
- Emergency power is used in emergency situations only, is less than 1% of the total building energy consumption and is offset for the first five years of operation.
- Laboratory equipment is less than 1% of the total building energy consumption and is offset for the first five years of operation.

Remaining Emissions Roadmap

Where there are fossil fuels used for process loads, a Remaining Emissions Roadmap for the building is developed. The Roadmap covers the consumption, procurement, and generation of process loads under the control of the building owner and infrastructure for non-building owner process loads.

The Roadmap identifies:

- Alternative fossil fuel free options for process loads that use fossil fuels. Where viable fossil fuel free options are not known, consideration is given to hydrogen and biofuels.
- Changes that are required to be undertaken to the identified alternative fossil fuel free options. This includes spatial considerations and physical interventions.
- A pathway with estimated timeframes to transition to the alternative fossil fuel free options including strategies to incentivise current tenants if there are fossil fuels used for tenant process loads.
- Strategies to encourage fossil fuel free options to be adopted by future tenants.
- A target date for the building to be fossil fuel free.

The Roadmap is signed off by the building owner prior to the construction phase of the project and included in the operations and maintenance information provided to the building owner.

Where there are no fossil fuels user for process loads, projects are exempt from this criterion.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with **one** of the following criteria:

- Renewable Ready
- Renewable Electricity

Renewable Ready

Energy Management and Information Systems

The building has real-time energy management and information systems that sets up the building to be grid interactive.

As a minimum, the system can:

- Monitor the local electricity network's demand and greenhouse gas (GHG) emissions intensity (\leq 15-minute intervals) to allow for an appropriate and timely demand response.
- Measure, process and report on energy used by all major energy uses of the building in \leq 15-minute intervals.
- Report on GHG emissions based on the near real-time (\leq 15-minute intervals) carbon intensity of grid electricity supplies, in addition to the most recent electricity grid's average annual GHG emissions factors for the building's location published in the National Greenhouse Accounts Factors.
- Measure input and output energy and GHG emissions (calculated using 15-minute increment GHG emission factors) from systems that generate and/or store electricity, e.g., quantify emissions from the discharge of Battery Energy Storage Systems (BESS) by accounting for the time-varying emissions intensity of the electricity used for charging.
- Allow the building to automatically control different energy uses in the building to minimise GHG emissions and reduce peak demand.

Load Shifting Strategy

A strategy to shift at least 10% of the building's electricity consumption from a 3 hour period of high GHG emissions intensity in the grid to periods of low GHG emissions intensity is developed.

As a minimum, the strategy describes:

- The systems that contribute to shifting energy consumption.
- How each system shifts energy, how much it contributes towards the target and how it does not compromise occupant amenity or the functioning of the building. Detailed energy modelling is not required and contributions can be estimated by the project's building services engineers.
- The intended control strategy including whether any systems are linked directly to signals from the electricity network operator.

The strategy is included in the operations and maintenance information provided to the building owner.

Renewable Electricity

All energy under the control of the building owner is accounted for and sourced from renewables. Electricity use for tenant loads is excluded from this credit.

Both on-site or off-site renewables or a combination of both are acceptable.

Where the project team claims the credit through off-site renewables, a renewable energy contract is to be in place. The shortest contract length is:

- Three years
- One year, where the building is owned and managed by an entity that has signed to the Global Commitment for Net Zero Carbon Buildings managed by WorldGBC. Other commitments may be acceptable through a Technical Question.

The contract can be part of a corporate power purchasing agreement for a building portfolio.

Refer to the *Climate positive buildings and our net zero ambitions* document for more information on suitable options recognised by Green Star.

The project's rating is valid provided the procurement of renewable electricity or energy continues. Should the building not continue to be powered by renewables, the building owner can no longer communicate the rating.

Exceptional Performance

In addition to *Credit Achievement*, the project must comply with **both** of the following criteria:

- Renewable Ready
- Renewable Electricity

Renewable Ready

Refer *Credit Achievement* for requirements

Renewable Electricity

Refer *Credit Achievement* for requirements.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Laboratory equipment

This includes scientific equipment that uses fossil fuels for the purposes of education, research or for the manufacture of medicine or chemicals.

Major energy uses

This should align with the major energy sources identified in the *Metering and Monitoring* criteria in *Minimum Expectation* in the *Verification and Handover* credits that are being metered and monitored.

Occupant amenity

Occupant amenity is defined as: temperature ranges are within the typical design days, all lighting is running, and vertical and horizontal transportation is not impaired. All other health and safety systems (hydraulic, fire, etc) are also functioning.

Process loads

A process load is defined as the load on a project resulting from the consumption of energy by a manufacturing, industrial or commercial process, and are unrelated to operating building systems such as lighting, heating, ventilation, cooling and water heating or the comfort of occupants. Examples of a process load include, but are not limited to, industrial-scale dryers and roller irons.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relationship with Grid Resilience

The requirements of this credit are intended to be complimentary to the *Grid Resilience* credit. Both credits take into consideration the changing landscape of the grid to one that will be made up of more renewables however the challenges and opportunities that arise are addressed differently.

The increase in renewables in the grid provides an opportunity for buildings to maximise their use of renewables. This is the opportunity that has influenced the *Energy Source* credit which aims to ensure the building has implemented systems and a load shifting strategy to set the building up to maximises the use of renewables.

Meanwhile the *Grid Resilience* credit focuses on the building's contribution to grid stability during operation to smooth out peaks in supply and demand and other related shocks. This is provided by buildings that are able to adjust their demand in response to the needs of the grid at a point in time. The same systems may contribute to demonstrating compliance with both credits however as the intent of the credit is different, the way the systems are used will be different.

Emergency power

Emergency situations

AS/NZS 3009:1998 provides guidance on the areas and functions for which emergency power is required. If this exceeds 1% of the total building energy consumption, project teams should submit a Technical Question.

Calculating emissions

For fire systems, diesel pumps and other emergency services that use fossil fuels, the amount of carbon emissions to be offset should be based on estimated fuel use from regular scheduled testing and predicted peak shaving events (where it is anticipated systems will be deployed for this use). The fuel-specific emissions factor from National Greenhouse Accounts factors published at the year of project registration (or any subsequent year by choice) is applied.

Renewable electricity

The building is considered to have all of its electricity considered as renewables if the sum of all renewable energy generated on-site and off-site is equal to, or greater than, the total electricity use of the building annually.

Market-based method and the renewable power percentage (RPP)

Project teams can claim the percentage of renewable energy in the grid (the RPP) as published by the Clean Energy Regulator at the date of Practical Completion of the building as off-site renewable energy supply.

For further information, refer <http://www.cleanenergyregulator.gov.au/RET/Scheme-participants-and-industry/the-renewable-power-percentage>

Projects located in ACT where the state government has purchased 100% Green Power can claim this as off-site renewable electricity.

Renewable ready

The intent of the criteria is to set the building up to be able to load shift when needed. The project does not need to actively load shift however the capability is demonstrated.

Near real-time greenhouse gas emissions

This information is available at [Open Electricity](#).

Periods of emissions intensity in the grid

The following time periods can be assumed as high GHG emissions intensity:

- 6:00am to 9:30am
- 4:30pm to 8:00pm

Alternative timeframes can be proposed if the above time periods are not appropriate for the building type and/or building's electricity consumption profile.

The three hours of load shifting should occur during the normal operating hours of the building wherever possible (e.g., an office building operating from 8am to 6pm could have load shifting from 8:00am to 9.30am and 4.30pm to 6:00pm to 11:00am to 2:00pm)

Contributing systems

Examples of systems that could contribute to load shifting include, but are not limited to, HVAC, domestic hot water and electric vehicle charging. On-site renewable generation and energy storage can also contribute to load shifting. Energy storage solutions may be electricity storage (e.g., batteries) or thermal storage (e.g., domestic hot water storage tanks, chilled water tanks).

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

All-electric Building Services

- As built drawings demonstrating the absence of fossil fuel systems and infrastructure.
- Evidence of support estimate of emergency power testing and peak shaving events.
- Evidence to support estimate of laboratory equipment usage.
- Evidence of purchase of offsets (e.g., contract) clearly showing the length of offset.

Remaining Emissions Roadmap

- Extract of operations and maintenance information of the Remaining Emissions Roadmap.
- Sign off from building owner.
- Evidence of no fossil fuels as process loads.

Renewable Ready

- Evidence that the energy management and information system has implemented the minimum system requirements.
- Extract of operations and maintenance information of the Load Shifting Strategy.

Renewable Electricity

- Signed energy contract or PPA or evidence of on-site generation.
- Public commitment to the Global Commitment for Net Zero Carbon Buildings managed by WorldGBC.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- CSIRO - [Real-time carbon emissions intensity of the National Electricity Market](#)
- Department of Climate Change, Energy, the Environment and Water – [National Greenhouse Accounts Factors](#)
- Energy Efficiency Council – [Clean Energy Clean Demand](#)
- GBCA - [From net zero to zero: A discussion paper on grid-interactive efficient buildings](#)

- [New Building Institute](#)
- Open Electricity - [Open Electricity Tracker](#)

Energy Source – Pathway B: Tenant Operated pathway

Requirements

Minimum Expectation

The project must comply with **both** of the following criteria:

- All-electric Building Services
- Remaining Emissions Roadmap

All-electric Building Services

Refer to *Minimum Expectation* in the *Energy Source – Owner Operated pathway* for requirements.

Remaining Emissions Roadmap

Refer to *Minimum Expectation* in the *Energy Source – Owner Operated pathway* for requirements.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with **both** of the following criteria:

- Renewable Ready
- Renewable Electricity

Renewable Ready

Energy Management and Information Systems

Refer to *Minimum Expectation* in the *Energy Source – Owner Operated pathway* for requirements.

Load Shifting Strategy

A strategy to shift at least 10% of the base building's electricity consumption from a 3 hour period of high emissions intensity in the grid to a 3 hour period of low emissions intensity is developed.

As a minimum, the strategy describes:

- The systems that contribute to shifting energy consumption.
- How each system shifts energy, how much it contributes towards the target and how it does not compromise occupant amenity or the functioning of the building. Detailed energy modelling is not required and contributions can be estimated by the project's building services engineers.
- The intended control strategy including whether any systems are linked directly to signals from the electricity network operator.

The strategy is included in the operations and maintenance information provided to the building owner.

Tenant engagement

The building owner or the building management team actively engages with the tenants to participate in the building's load shifting strategy by including at least one of the following in all standard leasing agreements:

- Provide permission for tenant-controlled domestic hot water or HVAC systems to be controlled by the base building energy management system in a load shifting event.
- Commit to installing systems that can facilitate flexible demand.

The removal of the above from the leasing agreement is only done when the tenant proposes an alternative approach that meets a similar outcome.

Renewable Electricity

Refer to *Credit Achievement* in *Energy Source – Owner Operated pathway* for requirements.

Projects that have no electricity under the control of the building owner are exempt from the *Renewable Electricity* criterion.

Exceptional Performance

In addition to *Credit Achievement*, the project must comply with the following criterion:

- Tenant Engagement

Tenant Engagement

The building owner or the building management team actively engages with the tenants to encourage the procurement of renewable electricity.

Tenant engagement

All standard leasing documents have a clause for tenants to procure 100% renewable electricity.

The building owner actively engages tenants during lease negotiations to propose a renewable electricity option. The removal of any provisions related to procurement of renewable electricity is only done at the tenant's request after the building owner has exhausted all options to provide them with a renewable electricity solution.

Energy source information

The building owner has mechanisms in place to collect information from building tenants on their type of energy sources. This can be through leasing requirement for tenants to disclose their annual energy consumption and energy source data.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Occupant amenity

Occupant amenity is defined as: temperature ranges are within the typical design days, all lighting is running, and vertical and horizontal transportation is not impaired. All other health and safety systems (hydraulic, fire, etc) are also functioning.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relationship with Grid Resilience

The requirements of this credit are intended to be complimentary to the *Grid Resilience* credit. Both credits take into consideration the changing landscape of the grid to one that will be made up of more renewables however the challenges and opportunities that arise are addressed differently.

The increase in renewables in the grid provides an opportunity for buildings to maximise their use of renewables. This is the opportunity that has influenced the *Energy Source* credit which aims to ensure the building has implemented systems and a load shifting strategy to set the building up to maximises the use of renewables.

Meanwhile the *Grid Resilience* credit focuses on the building's contribution to grid stability during operation to smooth out peaks in supply and demand and other related shocks. This is provided by buildings that are able to adjust their demand in response to the needs of the grid at a point in time. The same systems may contribute to demonstrating compliance with both credits however as the intent of the credit is different, the way the systems are used will be different.

Periods of emissions intensity in the grid

The following time periods can be assumed as high GHG emissions intensity:

- 6:00am to 9:30am
- 4:30pm to 8:00pm

Alternative timeframes can be proposed if the above time periods are not appropriate for the building type and/or building's electricity consumption profile.

The three hours of load shifting should occur during the normal operating hours of the building wherever possible (e.g., an office building operating from 8am to 6pm could have load shifting from 8:00am to 9.30am and 4.30pm to 6:00pm to 11:00am to 2:00pm)

Contributing systems

Examples of systems that could contribute to load shifting include, but are not limited to, HVAC, domestic hot water and electric vehicle charging. On-site renewable generation and energy storage can also contribute to load shifting. Energy storage solutions may be electricity storage (e.g., batteries) or thermal storage (e.g., domestic hot water storage tanks, chilled water tanks).

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

All-electric Building Services

- As built drawings demonstrating the absence of fossil fuel systems and infrastructure.
- Evidence of support estimate of emergency power testing and peak shaving events.
- Evidence to support estimate of laboratory equipment usage.

- Evidence of purchase of offsets (e.g., contract) clearly showing the length of offset.

Remaining Emissions Roadmap

- Extract of operations and maintenance information of the Remaining Emissions Roadmap.
- Sign off from building owner.
- Evidence of no fossil fuels as process loads.

Renewable Ready

- Evidence that the energy management and information system has implemented the minimum system requirements.
- Extract of operations and maintenance information of the Load Shifting Strategy.
- Extracts of tenant leasing agreements.

Renewable Electricity

- Signed energy contract or PPA or evidence of on-site generation.
- Public commitment to the Global Commitment for Net Zero Carbon Buildings managed by WorldGBC.

Tenant Engagement

- Extracts of leasing documents.
- Evidence of active engagement with tenants.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- CSIRO - [Real-time carbon emissions intensity of the National Electricity Market](#)
- Energy Efficiency Council – [Clean Energy Clean Demand](#)
- GBCA - [From net zero to zero: A discussion paper on grid-interactive efficient buildings](#)
- [New Building Institute](#)
- Open Electricity - [Open Electricity Tracker](#)

Energy Use

Outcome

The building has low energy consumption.

Climate Positive Pathway

	4 Star	Meets Minimum Expectation
Registering from 2025 onwards	5 Star	Meets requirement for all points in <i>Credit Achievement</i>
	6 Star	
	4 Star	
Registering from 2028 onwards	5 Star	Meets requirement for all points in <i>Credit Achievement</i>
	6 Star	
	4 Star	
Registering from 2030 onwards	5 Star	Meets requirement for all points in <i>Credit Achievement</i>
	6 Star	

Pathways

There are five pathways available for this credit. Projects can choose from one of the following based on their building type:

- Pathway A: Reference building pathway
- Pathway B: NABERS Commitment Agreement pathway – Available to Class 3 hotels, Class 5 offices, Class 6 standalone retail stores and shopping centres, Class 7b warehouses and cold stores, Class 9b schools and Class 9c residential aged care and retirement living facilities
- Pathway C: Residential pathway – Available to Class 2 residential buildings only
- Pathway D: Small non-residential buildings pathway
- Pathway E: Industrial pathway – **In development**; this pathway will be available in future

Refer below for pathway criteria.

Mixed use projects may use a combination of these pathways, however they must meet the criteria for all targeted pathways to be eligible for points. Where multiple pathways are used, points will only be awarded where both pathways meet the requirements of the same points value for the targeted performance level. Points will not be averaged across multiple pathways. For *Credit Achievement* and *Exceptional Performance*, up to 1,000 m² or 20% of the building's GFA, excluding car parks, (whichever is smaller) can be excluded if it is a different building class to the majority of the building.

Criteria

Pathway A: Reference building pathway

Minimum Expectation	Nil	<ul style="list-style-type: none">• Reducing Energy Use: The building's energy use is at least 10% less than a reference building.
Credit Achievement	Up to 3 points	In conjunction with <i>Minimum Expectation</i> : <ul style="list-style-type: none">• Reducing Energy Use: The building's energy use is at least 20% less than a reference building.
Exceptional Performance	Up to 3 points	In conjunction with <i>Credit Achievement</i> : <ul style="list-style-type: none">• Reducing Energy Use: The building's energy use is at least 30% less than a reference building.

Pathway B: NABERS commitment agreement pathway

Minimum Expectation	Nil	<ul style="list-style-type: none">• NABERS Commitment Agreement: The building's energy use is modelled to perform at a specified minimum NABERS star rating (by building class).
Credit Achievement	Up to 3 points	In conjunction with <i>Minimum Expectation</i> : <ul style="list-style-type: none">• NABERS Commitment Agreement: The building's energy use is modelled to perform at a specified NABERS star rating (by building class).
Exceptional Performance	Up to 3 points	In conjunction with <i>Credit Achievement</i> : <ul style="list-style-type: none">• NABERS Commitment Agreement: The building's energy use is modelled to perform at a specified NABERS star rating (by building class).

Pathway C: Residential pathway

Minimum Expectation	Nil	<ul style="list-style-type: none">• NatHERS Ratings: The building has a weighted-area average of NatHERS 7.5 stars and at least a NatHERS 6 stars for each sole-occupancy unit.• Domestic Hot Water Demand: The building addresses domestic hot water demand.• Pool Covers: Where a pool exists, it has a pool cover.• Energy Efficiency Requirements: The building complies with NCC Parts J3 to J8.
Credit Achievement	3 points	In conjunction with <i>Minimum Expectation</i> : <ul style="list-style-type: none">• NatHERS Ratings: The building has a weighted-area average of NatHERS 7.5 Stars and at least a NatHERS 6.5 Stars for each sole-occupancy unit.• Buildings Services: The building addresses four out of nine building services energy uses.
Exceptional Performance	3 points	In conjunction with <i>Credit Achievement</i> : <ul style="list-style-type: none">• NatHERS Ratings: The building has a weighted-area average of NatHERS 8 Stars and at least a NatHERS 7 Stars for each sole-occupancy unit.

-
- **Buildings Services:** The building addresses six out of nine building services energy uses.
-

Pathway D: Small non-residential buildings pathway

Minimum Expectation	Nil	<ul style="list-style-type: none">• Building Envelope Attributes: The building has several efficient building fabric attributes.• Building Systems Attributes: The building has several efficient building systems attributes.• Energy Consumption Estimate: The project estimates its energy use.
Credit Achievement	3 points	In conjunction with <i>Minimum Expectation</i> : <ul style="list-style-type: none">• Building Envelope Attributes: The building has several more efficient building fabric attributes.• Building Systems Attributes: The building has an increased number of efficient building systems attributes.

Pathway E: Industrial pathway

Minimum Expectation	Nil	In development
Credit Achievement	3 points	In development
Exceptional Performance	3 points	In development

Additional information

Scope of credit

All energy use in the project related to building systems that have been installed by the building owner. Refer to the relevant pathway for further information.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Verification and Handover
- Disclosure of Impacts
- Climate Change Resilience
- Operations Resilience

- Grid Resilience

Sustainable Development Goals

- Goal 7 (Affordable and Clean Energy)
- Goal 13 (Climate Action)

Relevant reporting initiatives

- GRESB
- TCFD

Energy Use – Pathway A: Reference building pathway

Requirements

Where reference is made to Section J requirements of the National Construction Code (NCC), this refers to Volume One 2022 version. All projects must use the requirements in NCC 2022, irrespective of location. No state amendments or exclusions are allowed.

If the building's approval is subject to a later code, the building must use that version and the project is subject to the requirements of the later version for this credit. Please contact the GBCA prior to registration if your project is subject to a later version than NCC 2022.

Minimum Expectation

The project must comply with the following criterion:

- Reducing Energy Use

Reducing Energy Use

The building's energy use is at least 10% less than a reference building.

Calculating energy use reductions

The energy use reductions are calculated by comparing the predicted energy use of the project against a reference building.

The predicted energy use of the project includes the predicted annual energy (in MJ/year) consumed by building systems.

The reference building is a building modelled to NCC 2022 Section J or later. If the building's approval is subject to a later code, the building must use that version.

On-site renewable energy generation systems connected behind the meter **do not** contribute to reductions in energy use.

Refer to the *Energy Use calculation guide* for more information.

Minimum Provisions

Each building systems is compliant with the relevant parts of NCC Section J:

- The performance of wall-glazing constructions and display windows (Part J4D6) comply with the total system R value, total system U value and system SHGC requirements, inclusive of thermal bridging effects.
- The performance of fan systems (Part J6D5), pump systems (Part J6D8), refrigerant chillers (Part J6D11) and heat rejection equipment (Part J6D13) comply with the applicable efficiency requirements.
- The performance of artificial lighting systems (Part J7D3) complies with the overall lighting efficiency requirements.

Tenanted buildings

Modelling of energy use is based on the provision of base building systems to the tenancy and an assumption that minimum NCC requirements will be met for tenant systems. Modelled energy use for tenanted spaces to be based on the most energy-intensive allowed by base building system requirements outlined in the tenancy fitout guide and NCC DTS provisions. For cold shell spaces where there is no provision for connection to base building systems, the project team are to model standalone (supplementary) tenant systems based on the most energy-intensive allowed by requirements outlined in leasing agreement documentation.

Tenancy fitout guide identifies (including but not limited to) the tenant's allowable internal loads (tenant lighting and equipment power allowances), HVAC system zoning requirements (internal and perimeter zones with independent temperature control), HVAC system type & design capacities, and outdoor air rates. The design team must demonstrate the design provision (e.g., space allowance) that has been made for accommodating the system type modelled.

Consumption from tenant systems such as plug loads, domestic appliances, and manufacturing or process loads are excluded from the calculation.

Refer to the *Energy Use calculation guide* for more information.

Credit Achievement

In conjunction with *Minimum Expectation*, the project must comply with the following criterion:

- Reducing Energy Use

Reducing Energy Use

The building's energy use is at least 20% less than a reference building.

Refer *Minimum Expectation* for further information on calculating energy use reductions.

Stepped points are available for energy use reductions between 10% to 20% as below. Projects meeting the *Climate Positive Pathway* must demonstrate at least 20% less than a reference building for this performance level.

Available points	Percentage requirements
1 point	At least 13% less energy use than a reference building.
1 additional point	At least 16% less energy use than a reference building.
1 additional point	At least 20% less energy use than a reference building.

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with the following criterion:

- Reducing Energy Use

Reducing Energy Use

The building's energy use is at least 30% less than a reference building.

Refer *Minimum Expectation* for further information on calculating energy use reductions.

Stepped points are available for energy reductions between 20% to 30% as below.

Available points	Percentage requirements
1 point	At least 23% less energy use than a reference building.
1 additional point	At least 26% less energy use than a reference building.
1 additional point	At least 30% less energy use than a reference building

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Energy Use calculator**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Energy modelling report reflecting as built conditions.
- Extracts from commissioning reports confirming all systems have been commissioned and are operating as designed.
- As built drawings and schedules of the façade / building envelope.
- Product data sheets or similar.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- Australian Building Codes Board (ABCB) - [National Construction Code 2022 Volume One](#)
- GBCA - Climate positive buildings and our net zero ambitions
- GBCA - Climate Positive Roadmap
- GBCA - Energy Use calculation guide
- World GBC - [Net Zero Carbon Buildings Commitments](#)

Energy Use – Pathway B: NABERS Commitment Agreement pathway

Requirements

Minimum Expectation

The project must comply with the following criterion:

- NABERS Commitment Agreement

NABERS Commitment Agreement

The project has a NABERS Energy Commitment Agreement to predict the energy and greenhouse gas performance and achieves a target rating that is equivalent or greater than the rating outlined in the below table for its building class.

Building class	NABERS Energy Commitment Agreement target rating	NABERS Energy Estimate model rating progress metric
Class 3 hotels	4.5 Stars	4.5 Stars
Class 5 offices	5.5 Stars	5.5 Stars
Class 6 retail stores	4 Stars	4 Stars
Class 6 shopping centres	5 Stars	5.2 Stars
Class 7b warehouses and cold stores	4 Stars	4.5 Stars
Class 9b schools	4 Stars	4.5 Stars
Class 9c residential aged care and retirement living facilities	4 Stars	4.5 Stars

On-site renewable energy generation systems connected behind the meter **do not** contribute to reductions in energy use for the NABERS Energy estimate model rating progress metric.

Modelling requirements

The scope of the NABERS Energy rating is as per the NABERS Energy Rules for the respective building classes.

The energy performance results use reference scenario modelling inputs, not off-axis scenario inputs. Refer to the *Handbook for Estimating NABERS ratings* for more information.

Credit Achievement

In conjunction with *Minimum Expectation*, the project must comply with the following criterion:

- NABERS Commitment Agreement

NABERS Commitment Agreement

The project has a NABERS Energy Commitment Agreement to predict the energy and greenhouse gas performance and achieves a target rating that is equivalent or greater than the rating outlined in the below table for its building class.

Stepped points are available. Projects meeting the *Climate Positive Pathway* must achieve the highest target rating noted for the relevant building class for this performance level.

Building class	Available points	NABERS Energy Commitment Agreement target rating	NABERS Energy Estimate model rating progress metric
	1 point	4.5 Stars	4.6 Stars
Class 3 hotels	1 additional point	4.5 Stars	4.8 Stars
	1 additional point	5 Stars	5 Stars
	1 point	5.5 Stars	5.5 Stars*
Class 5 offices	1 additional point	5.5 Stars	5.6 Stars
	1 additional point	5.5 Stars	5.7 Stars
	1 point	4 Stars	4.2 Stars
Class 6 retail stores	1 additional point	4 Stars	4.4 Stars
	1 additional point	4.5 Stars	4.5 Stars
	1 point	5 Stars	5.3 Stars
Class 6 shopping centres	1 additional point	5 Stars	5.4 Stars
	1 additional point	5.5 Stars	5.5 Stars
	1 point	4.5 Stars	4.6 Stars
Class 7b warehouses and cold stores	1 additional point	4.5 Stars	4.8 Stars
	1 additional point	5 Stars	5 Stars
	1 point	4 Stars	4.2 Stars
Class 9b schools	1 additional point	4 Stars	4.4 Stars
	1 additional point	4.5 Stars	4.5 Stars
Class 9c residential aged care and retirement living facilities	1 point	4.5 Stars	4.6 Stars
	1 additional point	4.5 Stars	4.8 Stars

Building class	Available points	NABERS Energy Commitment Agreement target rating	NABERS Energy Estimate model rating progress metric
	1 additional point	5 Stars	5 Stars

*The energy performance results using reference scenario modelling inputs and off-axis scenario inputs both meet the minimum requirements.

On-site renewable energy generation systems connected behind the meter **do not** contribute to reductions in energy use for the NABERS Energy estimate model rating progress metric.

Refer *Minimum Expectation* for further information on modelling requirements.

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with the following criterion:

- NABERS Commitment Agreement

NABERS Commitment Agreement

The project has a NABERS Energy Commitment Agreement to predict the energy and greenhouse gas performance and achieves a target rating that is equivalent or greater than the rating outlined in the below table for its building class.

Building class	Available points	NABERS Energy Commitment Agreement target rating	NABERS Energy Estimate model rating progress metric
Class 3 hotels	1 point	5 Stars	5.2 Stars
	1 additional point	5 Stars	5.3 Stars
	1 additional point	5.5 Stars	5.5 Stars
Class 5 offices	1 point	5.5 Stars	5.8 Stars
	1 additional point	5.5 Stars	5.9 Stars
	1 additional point	6 Stars	6 stars
Class 6 retail stores	1 point	4.5 Stars	4.7 Stars
	1 additional point	4.5 Stars	4.8 Stars
	1 additional point	5 stars	5 stars
Class 6 shopping centres	1 point	5.5 Stars	5.7 Stars
	1 additional point	5.5 Stars	5.8 Stars
	1 additional point	6 Stars	6 stars

Building class	Available points	NABERS Energy Commitment Agreement target rating	NABERS Energy Estimate model rating progress metric
Class 7b warehouses and cold stores	1 point	5 Stars	5.2 Stars
	1 additional point	5 Stars	5.3 Stars
	1 additional point	5.5 Stars	5.5 stars
Class 9b schools	1 point	4.5 Stars	4.7 Stars
	1 additional point	4.5 Stars	4.8 Stars
	1 additional point	5 Stars	5 stars
Class 9c residential aged care and retirement living facilities	1 point	5 Stars	5.2 Stars
	1 additional point	5 Stars	5.4 Stars
	1 additional point	5.5 Stars	5.5 stars

On-site renewable energy generation systems connected behind the meter **do not** contribute to reductions in energy use for the NABERS Energy estimate model rating progress metric.

Refer *Minimum Expectation* for further information on modelling requirements.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Class 6 retail stores

This refers to standalone, free-standing retail buildings that do not share walls with adjacent buildings.

Class 7b warehouses and cold stores

This refers to industrial buildings with logistics and distribution functions only. Industrial buildings that function primarily to manufacture or transform goods from one state to another are not eligible.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

NABERS commitment agreement

Project teams must demonstrate that the project is subject to a NABERS Energy Commitment Agreement. This pathway recognises NABERS Energy Commitment Agreements where a NABERS-recognised Independent Design Reviewer has completed a full peer review of the base building design and associated energy performance simulation assessment.

Mixed use buildings

For mixed use buildings, this pathway may be used to assess the areas where requirements for the relevant building class are available. Areas where the relevant building class is not available must use another pathway to demonstrate compliance.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Energy Use calculator**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Signed copy of the NABERS Energy Commitment Agreement.
- NABERS Design Reviewed Target Rating certified.
- NABERS Energy Independent Design Review report.
- NABERS Energy Estimation model report.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- GBCA - Climate positive buildings and our net zero ambitions
- GBCA - Climate Positive Roadmap
- NABERS - [Commitment Agreements](#)
- NABERS – [Handbook for estimating NABERS ratings](#)

Energy Use – Pathway C: Residential pathway

Where reference is made to Section J requirements of the National Construction Code (NCC) it refers to Volume One 2022 version. All projects must use the requirements in NCC 2022, irrespective of location. No state amendments or exclusions are allowed.

If the building's approval is subject to a later code, the building must use that version and the project is subject to the requirements of the later version for this credit. Please contact the GBCA prior to registration if your project is subject to a later version than NCC 2022.

Requirements

This pathway is available to Class 2 buildings (or parts of buildings) only.

Minimum Expectation

The project must comply with **all** the following criteria:

- NatHERS ratings
- Domestic Hot Water Demand
- Pool Covers
- Energy Efficiency Requirements

NatHERS ratings

Area weighted average

The weighted-area average of all sole occupancy units in the building achieves a NatHERS energy rating of at least 7.5 stars.

Sole Occupancy rating

Each sole-occupancy unit achieve a NatHERS energy rating of at least 6 stars.

Domestic Hot Water

The below fixtures and water-using appliances installed have a minimum WELS ratings of the following:

Fixture type	WELS rating
Showers	3 Stars with a maximum flow rate of 9L/min
Taps – kitchen	4 Stars with a maximum flow rate of 7.5L/min
Taps – hand wash basins	5 Stars with a maximum flow rate of 6L/min

Pool Covers

Where heated pools are installed, a pool cover with a minimum R-value of 0.075 for external pools or 0.05 for internal pools is installed.

Projects that do not have heated pools are exempt from the *Pool Covers* criterion.

Energy Efficiency Requirements

The building complies with the requirements under NCC Section J Parts J5 to J9 with no state amendments or exclusions except for projects in NSW that comply with BASIX.

Projects in NSW must comply with the following:

- BASIX Version 4.0 or later.
- NCC Section J Parts NSW J2D2 (2), (3), (4) and (5).

Credit Achievement

In conjunction with *Minimum Expectation*, the project must comply with **both** of the following criteria:

- NatHERS ratings
- Building Services

NatHERS ratings

Area weighted average

The weighted-area average of all sole occupancy units in the building achieves a NatHERS energy rating of at least 7.5 stars.

Sole Occupancy rating

Each sole-occupancy unit achieve a NatHERS energy rating of at least 6.5 stars.

Building Services

The building complies with **one** of the following:

- Building Services Requirements
- BASIX Building Services

Building Services Requirements

The building includes at least **four** out the nine building services requirements.

Domestic Hot Water	All showers have a minimum WELS rating of 4 Stars with a maximum flow rate of 7.5L/min.
Domestic Hot Water Generation	All hot water pipes outside of the sole-occupancy units are insulated with a minimum R-value of 1.0. All hot water pipes inside sole-occupancy units are insulated with a minimum R-value of 0.5.
Heating and Cooling of Sole Occupancy Units	<p>The building provides one or a combination of:</p> <ul style="list-style-type: none">• A solar thermal heating system is provided, or heat is recovered from another process (e.g., chiller heat recovery) or a combination of both, which contributes at least 30% of the annual thermal energy requirement for water heating.• The primary non-renewable heat source for domestic hot water is an electric heat pump with a minimum COP of 3.0 at 20°C ambient and 65°C leaving temperature.
	<p>The building provides efficient outcomes for heating and cooling.</p> <p>For cooling, the building provides one or a combination of the following:</p> <ul style="list-style-type: none">• DX split systems: a minimum 3.5 Star ZERL Cooling Star Rating (average zone).

- Centralised condenser water system: water cooled packaged units with a minimum cooling EER of 3.5 AND the condenser water system exceeds energy efficiency requirements of NCC Section J Part J6D8 and J6D13 by at least 10%.
- Central chilled water system: the chiller and chilled water systems exceed energy efficiency requirements of NCC Section J Part J6D8 and J6D11 by at least 10%. If a cooling tower is installed, then this must exceed energy efficiency requirements of NCC Section J Part J6D13 by at least 10%.
- No refrigerant-based cooling is provided.

For heating, the building provides one or a combination of the following:

- DX split systems: 3 Star ZERL Heating Star Rating (average zone).
- Centralised condenser water system: water cooled package units with a minimum heating EER of 4.0 AND the condenser water pump system exceeds energy efficiency requirements of NCC Section J Part J6D8 by at least 10%.
- Central heating hot water system: the heat source is a heat pump with a with a minimum COP of 4.0 at 10°C ambient outside air temperature AND the heating hot water pumping system exceeds energy efficiency requirements of NCC Section J Part J6D8 by at least 10%.
- Electric heater: 10% better than NCC Section J Part J6D10 requirements.
- No electric or combustion-based heating is provided.

95% of dwellings have the following:

- Access to an external clothes drying facility.

And complies with **one** of the following:

- Has no available space for a clothes dryer.
or
- Has a heat pump clothes dryer with auto-sensing feature.

Clothes Drying

Ceiling Fans

Car Parking

Vertical Transportation

Ceiling fans are installed in all bedrooms and living rooms and comply with the requirements of NCC Section J0.3.

The building complies with **one** of the following:

- No undercover car parking is provided.
- 75% of undercover car parking is naturally ventilated with no mechanical ventilation systems.
- Undercover car parking is limited to 1 car space per 5 sole-occupancy units.

Where undercover parking is provided, lighting control linked to occupancy sensors must be installed, with minimum lighting levels provided for safety and security purposes.

The energy associated with lift machinery or other vertical transportation complies with **all** the following:

- The minimum lift energy efficiency is class A or B in accordance with ISO 25745-2.
- The lift idle and standby energy performance level is 1 in accordance with ISO 25745-2.
- The minimum escalator energy performance is class A+ to A+++ in accordance with ISO 25745-3.

Requirements are met for all relevant systems where present.

Lift lobbies and hallways (excluding main entrance lobby to the building) are either:

- Lift Lobbies and Corridors**
- Naturally ventilated
 - Supply / exhaust air only with no heating or cooling (A/C or tempered)
-

BASIX

Projects in NSW achieve a BASIX Energy score 20% better than minimum compliance (rounded down to nearest integer).

Calculating BASIX Energy Score

Fridges are entered as “not specified” for the purposes of this credit.

All other inputs are to be as per the BASIX assessment used for the Occupancy Certificate.

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with **both** the following criteria:

- NatHERS ratings
- Building Services

NatHERS ratings

Area weighted average

The weighted-area average of all sole occupancy units in the building must achieve a NatHERS energy rating of at least 8 stars.

Sole Occupancy rating

Each sole-occupancy unit must achieve a NatHERS energy rating of at least 7 stars.

Building Services

Project teams must comply with one of the following:

- Building Services Requirements
- BASIX Building Services

Building Services Requirements

The building includes at least **six** out the nine building services requirements.

Refer *Credit Achievement* for requirements.

BASIX

Projects in NSW achieve a BASIX Energy score 30% better than minimum compliance (rounded down to nearest integer).

Calculating BASIX Energy Score

Fridges are entered as “not specified” for the purposes of this credit.

All other inputs are to be as per the BASIX assessment used for the Occupancy Certificate.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Passivhaus Certification

Projects which have achieved a Passivhaus Certification are considered to meet the *NatHERS Ratings* criterion in the *Minimum Expectation, Credit Achievement and Exceptional Performance*. Project teams must submit a Technical Question outlining how they have also met similar outcomes for the Building Services requirement.

NatHERS

The NatHERS modelling must be carried out by an accredited assessor and the NatHERS Universal Certificate produced by an NatHERS accredited assessor.

- Projects located in NSW must meet the maximum heating and cooling loads as per the BASIX® Thermal Comfort Protocol.
- Projects located in all other states must meet the heating and cooling loads applicable as per the ABCB Standard - NatHERS heating and cooling loads limits.
- NatHERS rating is based on thermal loads only and excludes any Star rating benefit provided by ceiling fans, water tanks or other ESD provisions allowable in some States.

ABCB Standard - NatHERS heating and cooling loads limits

For further information about the heating and cooling load limits, please refer to the ABCB web page

<https://www.abcb.gov.au/Resources/Publications/Education-Training/NatHERS-heating-and-cooling-load-limits>

External clothes drying facility

External balconies alone are not considered to be an external clothes drying facility. The intent of the credit is to ensure tenants have access to dedicated zero-energy clothes drying facilities that are energy efficient, such as, fixed or wall-mounted clothes lines, hoist, or similar equipment, either privately for each apartment or as part of an on-site dedicated communal facility. These may be located outdoors or in naturally ventilated in each apartment (e.g., balconies or bathrooms), provided the clothes drying facilities are purpose-built for drying and not incidental to other uses.

Electric vehicle charging

Requirements relating to electric vehicle charging provisions are included in the *Low-Emissions Transport* credit. Load management systems for electric vehicle charging can also contribute to the *Energy Source* and *Grid Resilience* credits.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- NatHERS certification summary report issued to the Building Certifier at time of Building Approval.
- As built documentation showing compliance with the nominated building services requirements.
- BASIX Certificate.

- BASIX Report showing BASIX score without fridges (unless BASIX certificate already excludes these).

Domestic Hot Water

- Schedule demonstrating that all fittings achieve the required WELS rating.

Domestic Hot Water Generation

- Manufacturers' documentation showing the gross thermal efficiency or coefficient of performance (COP) of the heating appliance.
- Documentation demonstrating that the solar heating system and/or heat recovery systems contributes at least 30% of the annual requirement.

Heating and Cooling

- Schedule identifying all air-conditioners installed in the building, their capacities and the manufacturer and model of each.
- Manufacturers' documentation or information from www.energystar.gov.au confirming the energy star rating applicable to each air-conditioner or heater.

Clothes Drying

- As built drawings demonstrating provision of external drying facilities.
- Documentation demonstrating the specification of the dryer installed.

Ceiling Fans

- As built drawings demonstrating that ceiling fans have been provided to all living rooms and bedrooms.
- Schedule identifying all ceiling fans installed the in the building, and the manufacturer and model of each.

Car Parking

- As built drawings demonstrating that no undercover parking is provided.
- Extract from the Commissioning Report demonstrating enclosed car parking areas are naturally ventilated.
- Documentation showing that no more than 1 car space per 5 sole-occupancy units is provided.
- Documentation showing location and CO sensors and Variable Speed Drive on all fans.

Vertical Transportation

- Schedule identifying all vertical transportation systems installed in the building, and the manufacturer and model of each.
- Documentation showing the energy efficiency class and idle and standby energy performance level in accordance with ISO 25745-2 for all installed lifts (where applicable).
- Documentation showing the energy performance class in accordance with ISO 25745-3 for all installed escalators (where applicable).
- Extract(s) from the commissioning report demonstrating (through supporting evidence) that the vertical transportation systems have been commissioned and operate as intended by the design.

Lift lobbies and corridors

- As built drawings for each naturally ventilated space showing openings, with dimensions clearly indicated, and ventilation inlets and outlets.
- Documentation showing supply / exhaust air only with no heating or cooling.

Pool Cover

- Product data sheets showing the R value of the pool cover installed.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- Australian Building Codes Board (ABCB) - [National Construction Code 2022 Volume One](#)
- GBCA - Climate positive buildings and our net zero ambitions
- GBCA - Climate Positive Roadmap
- Sustainability Victoria - [Reduce clothes dryer costs at home](#)

Energy Use – Pathway D: Small non-residential pathway

Where reference is made to Section J requirements of the National Construction Code (NCC), this refers to the 2022 version. All projects must use the requirements in NCC 2022, irrespective of location. No state amendments or exclusions are allowed.

If the building's approval is subject to a later code, the building must use that version and the project is subject to the requirements of the later version for this credit. Please contact the GBCA prior to registration if your project is subject to a later version than NCC 2022.

Requirements

This pathway is only available to spaces that meet all the following prerequisites:

- The building class space type is not Class 2.
- The net conditioned area (NCA) is less than 1,000m² or a contract value of at most \$10m.
- Less than or equal to three storeys.
- Has heating load and cooling load of less than 250kW.

Minimum Expectation

The project must comply with all the following criteria:

- Building Envelope Attributes
- Building Systems Attributes
- Minimum Energy Efficiency
- Energy Consumption Estimate

Building Envelope Attributes

The building includes the following building envelope attributes:

- Roof lights
- At least **two** out of the five remaining attributes:

Where the total area of roof lights exceeds 2% of the total GFA of the building, all roof lights have both of the following:

- A total system U-value not more than U3.0.

Roof lights

- A total system SHGC of less than or equal to 85% of the maximum values specified in NCC Section J Table J4D5.

Where the total area of roof lights is less than 2% of the total GFA of the building, all roof lights comply with NCC Section J J4D5.

All display glazing has both of the following:

Display glazing

- A total system U-value not more than U4.0.

	<ul style="list-style-type: none">A total system SHGC of less than or equal to 85% of the maximum values specified in NCC Section J J4D4 (7).
Roof and ceiling insulation	All roofs and ceilings have a total R-Value that is R0.75 greater than the minimum specified by NCC Section J Part J4D4.
Walls and glazing	The walls and glazing comply with both of the following: <ul style="list-style-type: none">All wall-glazing construction has a total system U-value of less than or equal to 85% of the maximum values specified in NCC Section J Part J4D6 (1) calculated in accordance with Specification 37.All wall components of all wall-glazing construction have a R-value that is R0.5 higher than minimum required in NCC Section J Part J4D6 (4) calculated in accordance with Specification 37.
Externally facing wall-glazing construction	All externally facing wall-glazing construction have a solar admittance that is at least 15% less than NCC Section J Part J4D6 (5) calculated in accordance with Specification 37.
Floors	All floors have a total R-value that is R0.5 greater than the minimum specified in NCC Section J Table J4D7.

Building Systems Attributes

The building includes at least **three** out of the nine following building systems attributes:

	<p>The fan motor input power per unit of flowrate is 15% lower than the reference fan motor input power per unit flow rate calculated from the deemed-to-satisfy requirements of NCC Section J Parts J6D5 (2), (3), (4) and (5).</p>
Fans and duct systems	<p>This is calculated on an average weighted basis for all fans in the building based on their rated power in kW.</p> <p><i>If the annual fan energy consumption is estimated to be less than 5% of the total building energy consumption this cannot be targeted.</i></p>
	<p>The pump motor input power per unit of flowrate is 15% lower than the reference pump motor input power per unit flow rate calculated from the deemed-to-satisfy requirements of NCC Section J Part J6D8 (2), (3) and (4).</p>
Pumps	<p>This is calculated on an average weighted basis for all pumps in the building based on their rated power in kW.</p> <p><i>If the annual pump energy consumption is estimated to be less than 5% of the total building energy consumption this cannot be targeted.</i></p>
	<p>The building complies with one or a combination of the following:</p> <ul style="list-style-type: none">No heating provided.Air conditioning systems up to 65kW: a minimum 4 Star Heating Star Rating (mixed zone).Electric heat pump systems greater than 65kW: a minimum annual coefficient of performance (ACOP) of 3.5 measured in accordance with Greenhouse and Energy Minimum Standards (Air Conditioners above 65kW) Determination) 2022.
Space Heating	<p><i>If the capacity (kW) of any direct electric heating elements is more than 20% of the total heating capacity in the building this cannot be targeted.</i></p>

Space Cooling

The building complies with one or a combination of the following:

- No cooling provided.
- Air conditioning systems up to 65kW: a minimum 4 Star Cooling Star Rating (mixed zone).
- Electric heat pump systems up to 65 kW: a minimum annual energy efficiency ratio (AEER) of 3.5 measured in accordance with Greenhouse and Energy Minimum Standards (Air Conditioners above 65kW) Determination) 2022.
- Unitary air conditioning equipment greater than 65 kW: an energy efficiency ratio 15% more than the minimum requirements in Part J6D12 from NCC 2022.
- Refrigerant chillers: an energy efficiency ratio 15% more than the minimum requirements in Part J6D11 from NCC 2022.
- Heat rejection equipment: a motor rated power 10% less than that required in Part J6D13 from NCC 2022.

Internal artificial lighting

The aggregate design illumination power load of the internal lighting is 20% less than the sum of allowances calculated in accordance with Part J7D3(2) from NCC 2022.

Domestic Hot Water

At least 85% of annual domestic hot water consumption is supplied via an electric heat pump system (which has a minimum COP of 3.0 at 20°C ambient and 65°C leaving temperature or equivalent performance).

If the annual DHW energy consumption is likely to be less than 5% of the total building energy consumption this cannot be targeted.

Natural Ventilation

Where at least 50% of the regularly occupied areas are naturally ventilated, it is controlled by the occupants and is designed to operate for at least 50% of standard operating hours without mechanical systems operating.

Ceiling Fans

Where at least 70% of the regularly occupied areas have ceiling fans, it is able to be controlled directly by the occupants, and with a coverage of 1 fan per 25m².

Ventilation Heat Recovery

Where the regularly occupied areas have a ventilation heat recovery system, the system complies all of the following:

- A thermal efficiency of at least 70%.
- A bypass for when heat recovery is not beneficial.
- Covers at least 80% of the building's outside air supply.

Minimum Energy Efficiency

The building, irrespective of location, complies with the requirements under NCC 2022 Section J for all elements not targeted under the *Building Fabric Attributes* or *Building Systems Attributes*. No state amendments or exclusions are applicable.

Energy Consumption Estimate

The annual electricity consumption in kWh and an approximate breakdown by building system is estimated for the project. This can be based on rules of thumb or other benchmarking and does not require energy modelling.

Credit Achievement

In conjunction with *Minimum Expectation*, the project must comply with **both** of the following criteria:

- Building Envelope Attributes
- Building Systems Attributes

Building Envelope Attributes

The building includes at least **three** out of the four building envelope attributes.

Roof and ceiling insulation	All roofs and ceilings have a total R-Value that is R1.5 greater than the minimum specified by NCC Section J Part J4D4.
The walls and glazing comply with both of the following:	
Walls and glazing	<ul style="list-style-type: none">• All wall-glazing construction has a total system U-value of less than or equal to 85% of the maximum values specified in NCC Section J Part J4D6 (1) calculated in accordance with Specification 37.• All wall components of all wall-glazing construction have a R-value that is R0.5 higher than minimum required in NCC Section J Part J4D6 (4) calculated in accordance with Specification 37.
All externally facing wall-glazing construction have a solar admittance that is at least 30% less than the maximum specified in NCC Section J Table J4D6b/c for the relevant building class.	
Floors	The total R-value of the floor is R0.5 greater than that required in Table J4D7 from NCC 2022.

Building Systems Attributes

The building includes at least **five** out of the nine building systems attributes.

Refer *Minimum Expectation* for requirements.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Roof lights and Internal artificial lighting

- As built architectural drawings.
- Lighting schedule and data sheets.

Display glazing, Roof and ceiling insulation, Walls and glazing, Externally facing wall-glazing construction and Floors

- As built architectural and façade drawings.

- Glazing data sheets

Fans and duct systems, Pumps, Space Heating, Space Cooling, Domestic Hot Water and Ventilation Heat Recovery

- Schedule identifying all systems installed in the building, their capacities and the manufacturer and model of each.
- Manufacturers' documentation demonstrating the relevant attributes.
- Information from www.energystar.gov.au confirming the energy star rating applicable to each air-conditioner or heater.

Natural ventilation

- As built architectural drawings including openings.
- Evidence of conditioning times.

Ceiling Fans

- As built drawings demonstrating location of ceiling fans.
- Schedule identifying all ceiling fans installed the in the building, and the manufacturer and model of each.

Minimum Energy Efficiency

- Evidence of compliance with Section J

Energy Consumption Estimate

- Energy consumption estimates with assumptions included.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Upfront Carbon Reduction

Outcome

The building's upfront carbon emissions have been reduced.

Climate Positive Pathway

Registering from 2025 onwards	4 Star	Meets <i>Minimum Expectation</i>
	5 Star	
Registering from 2028 onwards	6 Star	Meets requirement for all points in <i>Credit Achievement</i>
	4 Star	Meets <i>Minimum Expectation</i>
Registering from 2030 onwards	5 Star	Meets requirement for all points in <i>Credit Achievement</i>
	6 Star	Meets requirement for all points in <i>Exceptional Performance</i>
Registering from 2030 onwards	4 Star	Meets requirement for all points in <i>Credit Achievement</i>
	5 Star	Meets requirement for all points in <i>Exceptional Performance</i>
	6 Star	

Pathways

There are two pathways available for this credit. Project teams can choose from one of the following:

- Pathway A: Benchmark pathway – Available for Class 2 apartments, Class 5 commercial and Class 7b or 8 industrial only.
- Pathway B: Reference building pathway
- Pathway C: NABERS Embodied Carbon pathway – **In development**; refer to note below.

Mixed use projects are to use the same pathway for the whole building.

Please note: A NABERS Embodied Carbon pathway that uses a project's NABERS Embodied Carbon rating will be available in future and will include details of a transition phase to being the primary way in which Green Star projects demonstrate outcomes in this credit. The Benchmark and Reference buildings pathways both reference NABERS rules for consistency across the pathways, and these rules apply despite the NABERS pathway not yet existing in this rating tool.

Project teams seeking recognition for achieving a NABERS rating for upfront embodied carbon before the Green Star Buildings pathway is released should do so via a Technical Question.

Criteria

Pathway A: Benchmark pathway

Minimum Expectation	Nil	<ul style="list-style-type: none">Reducing Upfront Carbon Emissions: The building's upfront carbon emissions are at least 10% less than a benchmark.
Credit Achievement	Up to 3 points	In conjunction with <i>Minimum Expectation</i> : <ul style="list-style-type: none">Reducing Upfront Carbon Emissions: The building's upfront carbon emissions are at least 20% less than a benchmark.Existing Building Compensation: Demolition of existing buildings less than 50 years old are offset.
Exceptional Performance	Up to 3 points	In conjunction with <i>Credit Achievement</i> : <ul style="list-style-type: none">Reducing Upfront Carbon Emissions: The building's upfront carbon emissions are at least 40% less than a benchmark.

Pathway B: Reference building pathway

Minimum Expectation	Nil	<ul style="list-style-type: none">Reducing Upfront Carbon Emissions: The building's upfront carbon emissions are at least 10% less than a reference building.
Credit Achievement	Up to 3 points	In conjunction with <i>Minimum Expectation</i> : <ul style="list-style-type: none">Reducing Upfront Carbon Emissions: The building's upfront carbon emissions are at least 20% less than a reference building.Existing Building Compensation: Demolition of existing buildings less than 50 years old are offset.
Exceptional Performance	Up to 3 points	In conjunction with <i>Credit Achievement</i> : <ul style="list-style-type: none">Reducing Upfront Carbon Emissions: The building's upfront carbon emissions are at least 40% less than a reference building.

Pathway C: NABERS Embodied Carbon pathway

Minimum Expectation	Nil	In development
Credit Achievement	Up to 3 points	In development
Exceptional Performance	Up to 3 points	In development

Additional information

Scope of credit

All areas in the control of the building owner. Refer to the *NABERS Embodied Carbon Rules* for further guidance on minimum material coverage. For building types not included in the *NABERS Embodied Carbon Rules*, projects are to include the structure, envelope and systems as a minimum. This scope is applicable for all pathways in this credit.

In tenanted buildings, upfront carbon emissions from fitout works are considered in the *Upfront Fitout Emissions* sector specific credit.

Stage implementation

Strategy	Design	Refurbishment	Acquisition	Construction	Operation	Completion
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Synergies with other credits

- Energy Use
- Disclosure of Impacts
- Responsible Structure
- Responsible Envelope
- Responsible Systems

Sustainable Development Goals

- Goal 7 (Affordable and Clean Energy)
- Goal 13 (Climate Action)

Relevant reporting initiatives

- GRESB
- TCFD

Upfront Carbon Reduction – Pathway A: Benchmark pathway

Requirements

Minimum Expectation

The project must comply with the following criterion:

- Reducing Upfront Carbon Emissions

Reducing Upfront Carbon Emissions

The building's upfront carbon emissions are at least 10% less than the following benchmarks:

Building class	Benchmark
Class 2 Apartments	800 kgCO ₂ e/m ²
Class 5 Commercial	700 kgCO ₂ e/m ²
Class 7b Warehouse and storage	450 kgCO ₂ e/m ²

Calculating upfront carbon emission reductions

An accredited NABERS Assessor calculates the building's upfront carbon emissions by completing the *Upfront Carbon Reduction calculator* in accordance with the *NABERS Embodied Carbon rules*. This includes how stored biogenic carbon and carbon neutral products do not contribute to upfront carbon emission reductions and when product-specific emission factors and the default emission factors from the *NABERS National material emission factors database* are used. The rules in Chapter 8 of the *NABERS Embodied Carbon rules* may be amended such that all materials can be considered non-key materials and acceptable estimates outlined in Section 8.3.5 can be used. Refer *Guidance* for further information.

Quality assurance

The initial NABERS Assessor provides a signed verification that the *Upfront Carbon Reduction calculator* has been completed in accordance with the approach prescribed in this pathway and the relevant documentation has been used.

The *Upfront Carbon Reduction calculator* and associated documentation is peer reviewed and signed off by an independent, accredited NABERS Assessor.

Credit Achievement

In conjunction with *Minimum Expectation*, the project must comply with **both** of the following criteria:

- Reducing Upfront Carbon Emissions
- Existing Building Compensation

Reducing Upfront Carbon Emissions

The building's upfront carbon emissions are at least 20% less than a benchmark.

Refer *Minimum Expectation* for the benchmarks and for further information on calculating upfront carbon emission reductions and quality assurance.

Stepped points are available for upfront carbon reductions between 10% to 20% as below. Projects meeting the *Climate Positive Pathway* must demonstrate at least 20% less than the relevant benchmark for this performance level.

Available points	Percentage requirements
1 point	At least 13% less upfront carbon emissions than the relevant benchmark.
1 additional point	At least 16% less upfront carbon emissions than the relevant benchmark.
1 additional point	At least 20% less upfront carbon emissions than the relevant benchmark.

Existing Building Compensation

Where an existing building within the control of the building owner is less than 50 years old and has been fully or partly demolished for construction, the embodied carbon of the demolished portion is compensated for with offsets. Beyond 50 years, there are no requirements.

Calculating embodied carbon emissions of the demolished portion

The embodied carbon of the demolished portion of the existing building is determined by one of the following:

- Using the benchmarks in *Minimum Expectation* and the GFA of the demolished portion.
- Using data or drawings of the existing building to determine quantities.

This is calculated using *Upfront Carbon Reduction calculator*.

Addressing emissions

Where the existing building is 30 years old or less, 100% of the embodied carbon emissions associated with the demolished portion are offset.

Where the existing building is between 30 to 50 years old, the embodied carbon emissions associated with the demolished portion that are offset are discounted at 10% for every two additional years past year 30.

The purchased offsets are nature-based and produced by a GBCA recognised entity. Further information is available in *Climate Positive Buildings and our Net Zero Ambitions*.

Exceptional Performance

In conjunction with the *Credit Achievement*, the project must comply with the following criteria:

- Reducing Upfront Carbon Emissions

Reducing Upfront Carbon Emissions

The building's upfront carbon emissions are at least 40% less than a benchmark.

Refer *Minimum Expectation* for the benchmarks and further information on calculating upfront carbon emission reductions and quality assurance.

Stepped points are available for upfront carbon reductions between 20% to 40% as below. Projects meeting the *Climate Positive Pathway* must demonstrate at least 40% less than the relevant benchmark for this performance level.

Available points	Percentage requirements
1 point	At least 26% less upfront carbon emissions than the relevant benchmark.
1 additional point	At least 33% less upfront carbon emissions than the relevant benchmark.
1 additional point	At least 40% less upfront carbon emissions than the relevant benchmark.

Definition

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Accredited NABERS Assessor

An accredited individual authorised by NABERS to conduct NABERS Embodied Carbon ratings.

Independent, accredited NABERS Assessor

An accredited NABERS Assessor, as defined above, that is

- Not employed in a full-time or part-time role by any members of the project team.
- Not involved in the project.
- Has no direct or indirect incentive or interest linked to the outcome of the project.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Benchmarks

The benchmarks proposed in this pathway are based on a review of the data collected from Green Star Buildings v1 submissions to date. The benchmarks have been provided for the building classes where sufficient data was available and based on the average emissions intensity of the Reference Project from a variety of submissions. An uplift factor was included to ensure projects continue to demonstrate upfront carbon reductions that align with the Intergovernmental Panel on Climate Change (IPCC) recommendations on the built environment.

Overtime, benchmarks for other building classes may become available based on the data that can be collected or will be superseded by the *NABERS Embodied Carbon pathway*.

Calculating upfront carbon emissions reduction

The rules outlined in Chapter 8 Material quantities in the *NABERS Embodied Carbon Rules* can be amended such that all materials can be considered non-key materials. This means that as-built data is not mandatory to demonstrate the quantity of key materials and to use product-specific emission factors but instead, acceptable estimates as outlined in Section 8.3.5 can be used to demonstrate the as-built quantities. Evidence of product-specific emission factors is still to be provided.

Carbon neutral products

The upfront carbon (modules A1 to A3) of products certified under the Climate Active Carbon Neutral Standard may be used however any offsets will not contribute to the upfront carbon reduction of the project. Refer to Chapter 9.4 and 10 in the *NABERS Embodied Carbon Rules* for further information. The offsets made as part of the Climate Active Carbon Neutral certification are recognised under the *Upfront Carbon Compensation* credit.

Bio-based materials

Stored biogenic carbon from bio-based materials cannot be used to reduce the carbon for another product or other modules and is only recognised under the *Upfront Carbon Compensation* credit.

Absent existing building data

In the absence of available data or drawings of the existing building, the existing building can be assumed to follow current NCC compliant construction techniques. The project teams must justify any simplifications or approximations made.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Upfront Carbon Reduction calculator**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Reducing Upfront Carbon Emissions

- NABERS Assessor accreditation from both the initial assessor and the peer reviewer.
- Sign off from the initial assessor and peer reviewer, verifying the calculator has been completed in accordance with the approach in this pathway.

Existing Building Compensation

- As built drawings or similar of the existing building.
- Demolition drawings.
- Evidence of the age of the existing building.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following document(s) are referenced in this credit:

- GBCA – Climate positive buildings and our net zero ambitions
- GBCA – Upfront Carbon calculation guide
- NABERS – [Find an Accredited Assessor](#)
- NABERS – [NABERS Embodied Carbon Rules](#)
- NABERS – [National material emission factors database](#)

Upfront Carbon Reduction – Pathway B: Reference building pathway

Requirements

Minimum Expectation

The project must comply with the following criteria:

- Reducing Upfront Carbon Emissions

Reducing Upfront Carbon Emissions

The building's upfront carbon emissions are at least 10% less than a reference building.

Calculating upfront carbon emission reductions

The upfront carbon emission reductions are calculated by completing one of the following:

- The *Upfront Carbon Reduction calculator* for the reference building and proposed building.
- A comparative Life Cycle Assessment (LCA) and reporting the climate change impact category for modules A1 to A5, as defined by EN 15978, for a reference building and the proposed building. Refer to the *Impacts Disclosure* credit for LCA data and quality assurance requirements.

The reference building is defined as per the *Upfront Carbon calculation guide*. Assumptions are disclosed by completing the *Upfront Carbon modelling report* template. Where a project deviates from the default material specifications in the *Upfront Carbon calculation guide*, it is peer reviewed by an independent experienced professional.

The upfront carbon of the proposed building is calculated in accordance with the *NABERS Embodied Carbon rules*. This includes how stored biogenic carbon and carbon neutral products do not contribute to upfront carbon emission reductions and when product-specific emission factors and the default emission factors from the *NABERS National material emission factors database* are used. The rules in Chapter 8 of the *NABERS Embodied Carbon rules* may be amended such that all materials can be considered non-key materials and acceptable estimates outlined in Section 8.3.5 can be used. Refer *Guidance in the Upfront Carbon Reduction – Benchmark pathway* for further information.

Credit Achievement

In conjunction with *Minimum Expectation*, the project must comply with **both** of the following criteria:

- Reducing Upfront Carbon Emissions
- Existing Building Compensation

Reducing Upfront Carbon Emissions

The building's upfront carbon emissions are at least 20% less than a reference building.

Refer *Minimum Expectation* for further information on calculating upfront carbon emission reductions.

Stepped points are available for upfront carbon reductions between 10% to 20% as below. Projects meeting the *Climate Positive Pathway* must demonstrate at least 20% less than a reference building for this performance level.

Available points	Percentage requirements
1 point	At least 13% less upfront carbon emissions than a reference building.
1 additional point	At least 16% less upfront carbon emissions than a reference building.
1 additional point	At least 20% less upfront carbon emissions than a reference building

Existing Building Compensation

Refer *Existing Building Compensation* in *Credit Achievement* in the *Upfront Carbon Reduction – Benchmark pathway* for requirements.

Exceptional Performance

In conjunction with the *Credit Achievement*, the project must comply with the following criteria:

- Reducing Upfront Carbon Emissions

Reducing Upfront Carbon Emissions

The building's upfront carbon emissions are at least 40% less than a reference building.

Refer *Minimum Expectation* for further information on calculating upfront carbon emission reductions.

Stepped points are available for upfront carbon reductions between 20% to 40% as below. Projects meeting the *Climate Positive Pathway* must demonstrate at least 40% less than a reference building for this performance level.

Available points	Percentage requirements
1 point	At least 26% less upfront carbon emissions than a reference building.
1 additional point	At least 33% less upfront carbon emissions than a reference building.
1 additional point	At least 40% less upfront carbon emissions than a reference building.

Definition

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Independent experienced individual

In the context of this credit, an independent experienced individual is a registered architect under the Australian Institute of Architects or a chartered engineer under Engineers Australia. Only the profession with the relevant expertise for the building elements that deviate from the *Upfront Carbon calculation* g are required to conduct a review.

An individual is independent if they are:

- Not employed in a full-time or part-time role by any members of the project team.
- Not involved in the project.
- Has no direct or indirect incentive or interest linked to the outcome of the project.

Reference building

A hypothetical project of the same size, shape, location, floor area and glazing areas as the proposed building. Refer to the *Upfront Carbon calculation guide* for further guidance.

Guidance

Guidance is supporting information for credit requirements and not mandatory to apply. However, where project teams deviate from guidance, they should articulate in the narrative as to why it is not relevant. An assessor may use their discretion to determine if this results in a non-conformance. Project teams may submit a Technical Question to the GBCA prior to submission.

Calculating upfront carbon emissions reduction

The rules outlined in Chapter 8 Material quantities in the *NABERS Embodied Carbon Rules* can be amended such that all materials can be considered non-key materials. This means that as-built data is not mandatory to demonstrate the quantity of key materials and to use product-specific emission factors but instead, acceptable estimates as outlined in Section 8.3.5 can be used to demonstrate the as-built quantities. Evidence of product-specific emission factors is still to be provided.

Carbon neutral products

The upfront carbon (modules A1 to A3) of products certified under the Climate Active Carbon Neutral Standard may be used however any offsets will not contribute to the upfront carbon reduction of the project. Refer to Chapter 9.4 and 10 in the *NABERS Embodied Carbon Rules* for further information. The offsets made as part of the Climate Active Carbon Neutral certification are recognised under the *Upfront Carbon Compensation* credit.

Bio-based materials

Stored biogenic carbon from bio-based materials cannot be used to reduce the carbon for another product or other modules and is only recognised under the *Upfront Carbon Compensation* credit.

Social infrastructure projects

Social infrastructure projects, such as schools and hospitals, should refer to the Infrastructure & Transport Ministers' Meetings (ITMM) [Embodyied Carbon Measurement for Infrastructure: Technical Guidance](#) and Infrastructure NSW's [Embodyied Carbon Measurement for Infrastructure: Technical Guidance](#) when developing the Reference building. Refer to Section 5 in both documents for guidance.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Upfront Carbon modelling report**
- **Upfront Carbon Reduction calculator**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Reducing Upfront Carbon Emissions

- As built drawings
- As built building quantities such as as built bill of quantities, quantities summary from material supplier or similar.
- Product data sheets such as an Environmental Product Declaration.

- Peer review statement from independent experienced individual and relevant credentials.
- Extracts from LCA report of the reference and proposed building including a comparison table of material changes.
- Comparison table of the key material changes that have contributed towards the upfront carbon reductions, this is to include the carbon intensity of each material.
- LCA peer review statement.
- LCA practitioner competencies statement or LCACP certificate for practitioner and peer reviewer.

Existing Building Compensation

- As built drawings or similar of the existing building and demolition drawings.
- Evidence of the age of the existing building.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following document(s) are referenced in this credit:

- GBCA – Climate positive buildings and our net zero ambitions
- GBCA – Upfront Carbon calculation guide
- Infrastructure and Transport Ministers - [Embodied Carbon Measurement for Infrastructure: Technical Guidance](#)
- Infrastructure NSW - [Embodied Carbon Measurement for Infrastructure: Technical Guidance](#)
- NABERS – [NABERS Embodied Carbon Rules](#)
- NABERS – [National material emission factors database](#)

Upfront Carbon Compensation

Outcome

The building's remaining upfront carbon emissions have been compensated for with nature-based solutions, stored biogenic carbon or certified carbon neutral products.

Climate Positive Pathway

Registering from 2025 onwards	4 Star	Optional
	5 Star	
	6 Star	Meets requirement for all points in <i>Exceptional Performance</i>
Registering from 2028 onwards	4 Star	Optional
	5 Star	Meets requirement for all points in <i>Credit Achievement</i>
	6 Star	Meets requirement for all points in <i>Exceptional Performance</i>
Registering from 2030 onwards	4 Star	Meets requirement for all points in <i>Credit Achievement</i>
	5 Star	
	6 Star	Meets requirement for all points in <i>Exceptional Performance</i>

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">• Remaining Upfront Carbon Emissions: 30% of remaining upfront carbon emissions are compensated.
Exceptional Performance	Up to 2 points	In conjunction with <i>Credit Achievement</i> : <ul style="list-style-type: none">• Remaining Upfront Carbon Emissions: All remaining upfront carbon emissions are compensated.

Additional information

Scope of credit

All areas of the project as determined in the *Upfront Carbon Reduction* credit.

Stage implementation

Category	Scope	Concept	Design	Order	Instruction	Delivery	Notes
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Synergies with other credits

- Energy Source
- Upfront Carbon Reduction

Sustainable Development Goals

- Goal 7 (Affordable and Clean Energy)
- Goal 13 (Climate Action)

Relevant reporting initiatives

- GRESB
- TCFD

Requirements

Credit Achievement

The project must comply with the following criterion:

- Remaining Upfront Carbon Emissions

Remaining Upfront Carbon Emissions

At least 30% of the building's upfront carbon emissions are compensated.

Emissions calculation

Upfront carbon emissions are as calculated for the proposed building in the *Upfront Carbon Reduction* credit.

Addressing emissions

The calculated remaining upfront carbon emissions are compensated for through one or a combination of the following:

- Stored biogenic carbon. Where biogenic carbon emissions from timber, biomass or paper material are used, it is source from a sustainably manage forest certified under the Forest Stewardship Council (FSC) or Responsible Wood as part of the Programme for the Endorsement of Forest Certification (PEFC) and they cannot have been part of another carbon offsetting program, such as an ACCU generated from forestry activities.
- Climate Active Carbon Neutral certified products
- Directly purchased nature-based offsets. Further information on acceptable offsets is available in *Climate Positive Buildings and our Net Zero Ambitions*.

Exceptional Performance

In conjunction to *Credit Achievement*, the project must comply with the following criterion:

- Remaining Upfront Carbon Emissions

Remaining Upfront Carbon Emissions

Up to 100% of the building's remaining upfront carbon emissions are compensated.

Stepped points are available for upfront carbon emissions compensated between 30% to 100% as below. Projects meeting the *Climate Positive Pathway* must demonstrate 100% of the building's remaining upfront carbon emissions are compensated for this performance level.

Available points	Percentage requirements
1 point	At least 60% of remaining upfront carbon emissions are compensated
1 additional point	100% of remaining upfront carbon emissions are compensated

Refer to *Credit Achievement* for requirements.

Definitions

Definitions provided below must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Stored biogenic carbon

Carbon dioxide which is stored as biogenic carbon within the building for a minimum of 20 years.

Upfront carbon emissions

Upfront carbon emissions are the carbon emissions from modules A1 to A5 as defined in EN 15978.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Excluded equipment

Equipment that is not part of a building service can be excluded. Where this equipment is connected to fossil fuel sources, it must be included in *Remaining Emission Roadmap* in *Minimum Expectations* in the *Energy Source* credit.

Offsets

Refer to the *Climate Positive Buildings and our Net Zero ambitions* for more information on eligible offset accreditation schemes and attributes.

Stored biogenic carbon

Materials such as timber, hemp or other plant-based materials may have stored biogenic carbon. The quantity of stored biogenic carbon may be reported in the product's Environmental Product Declaration (EPD) as BCC-prod. Refer to Section 10.4 in the *NABERS Embodied Carbon Rules* for further information locating on this and how to determine the stored biogenic carbon if this data is not available.

Carbon neutral certification

Any offsets from products or on-site construction operations that have been certified as carbon neutral are considered in this credit and not in the *Upfront Carbon Reductions* credit. Only products certified under the Climate Active Carbon Neutral Standard can contribute toward compliance. If a project seeks to use a different Standard, a Technical Question must be submitted to the GBCA demonstrating its equivalency.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online.
- **Upfront Carbon Compensation calculator**
- **Evidence** to support claims made in the submission.

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Extract from Upfront carbon calculator of upfront carbon emissions.
- Summary of compensation methods and quantities.
- Product data sheets such as EPDs.
- Calculation of stored biogenic carbon value (where relevant).
- FSC or PEFC certification (where relevant).
- Climate Active Carbon Neutral certification.
- Evidence of purchase of offsets (e.g., contract) clearly showing the length of offset.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- Climate Active – [Certified Brands](#)
- GBCA – Climate positive buildings and our net zero ambitions
- NABERS – [NABERS Embodied Carbon Rules](#)
- World GBC – [Net Zero Carbon Buildings Commitments](#)

Future-ready Refrigeration Equipment

Outcome

The building's design and refrigerant-based equipment are ready for a low-emissions future.

Climate Positive Pathway

Registering from 2025 onwards	4 Star	Meets <i>Minimum Expectation</i>
	5 Star	
	6 Star	Meets <i>Credit Achievement</i>
Registering from 2028 onwards	4 Star	Meets <i>Minimum Expectation</i>
	5 Star	Meets <i>Credit Achievement</i>
	6 Star	Meets <i>Exceptional Performance</i>
Registering from 2030 onwards	4 Star	Meets <i>Credit Achievement</i>
	5 Star	
	6 Star	Meets <i>Exceptional Performance and Leadership Challenge: Ultra-low GWP Refrigerants</i>

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">Future-ready Buildings: The building considers future-proofing the building for equipment that uses ultra-low GWP refrigerants
In addition to Minimum Expectation:		
Credit Achievement	1 point	<ul style="list-style-type: none">GWP Limits: The refrigerants in the building do not exceed the GWP limits. orLow Initial Charge: The building has a low initial charge of refrigerants orCompensation for Refrigerant Emissions: Refrigerant emissions are compensated
In addition to Credit Achievement:		
Exceptional Performance	2 points	<ul style="list-style-type: none">Compensation for Refrigerant Emissions: Refrigerant emissions are compensated

And one of the following:

- **Lower GWP Limits:** The refrigerants in the building do not exceed the lower GWP limits.
or
- **Lower Initial Charge:** The building has a lower initial charge of refrigerants

Additional information

Scope of credit

All refrigerants used in building systems or appliances installed in the scope of the rating.

Stage implementation

Category	Type	Concept	Design	Under	Instruction	Procedure	Notes
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Synergies with other credits

- Energy Source
- Energy Use
- Upfront Carbon Reduction

Sustainable Development Goals

- Goal 7 (Affordable and Clean Energy)
- Goal 13 (Climate Action)

Relevant reporting initiatives

- GRESB
- TCFD
- ASRS

Requirements

Minimum Expectation

The project must comply with the following criterion:

- Future-ready Buildings

Future-ready Buildings

A register of all refrigerant-using equipment, the refrigerant installed, the leakage detection systems installed and potential alternate refrigerants for the same equipment class is developed.

The potential impacts of alternate refrigerants on the building design are considered by completing the *Future-ready Refrigerant Design Register*.

The *Future-ready Refrigerant Design Register* is completed by the project's building services engineers and included in the operations and maintenance information and provided to the building owner.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with **one** of the following criteria:

- GWP Limits
- Low Initial Charge
- Compensation for Refrigerant Emissions

Global Warming Potential Limits

All new refrigeration equipment uses refrigerants with a Global Warming Potential (GWP) below the limits prescribed in the table below.

System type	Equipment examples	GWP limit
Stationery air conditioning and heat pumps	Small AC (<10kW)	700
	Medium AC (<700kW)	700
	Large AC (>=700kW)	10
Domestic hot water heat pumps		10
Commercial heat pumps	Commercial heat pump and multi-function chillers, water source and ground source hot water heat pumps	150
Domestic and standalone retail refrigeration	Domestic refrigerators, display and storage cabinets, vending machines	10
Large scale refrigeration	Walk-in cold rooms, display cases, supermarket refrigeration	10

Leak detection systems are provided where required in accordance with AS/NZS 5149:2016.

Low Initial Charge

The Total System Direct Environmental Impact (TSDEI) of the refrigerant systems in the building are below 20 as calculated using the *Refrigerants calculator*.

Leak detection systems are provided where required in accordance with AS/NZS 5149:2016.

Compensation of Refrigerant Emissions

All emissions from the initial refrigerant charge are offset. The purchased offsets are nature-based and produced by a GBCA recognised entity. Further information is available in *Climate Positive Buildings and our Net Zero Ambitions*.

Leak detection systems are provided where required in accordance with AS/NZS 5149:2016.

Exceptional Performance

In addition to *Credit Achievement*, the project must comply with the following criteria:

- Compensation for Refrigerant Emissions
- With one of the following criteria:
 - Lower GWP limits
 - Lower Initial Charge

Compensation of Refrigerant Emissions

Refer to *Credit Achievement* for requirements.

Lower GWP Limits

All new refrigeration equipment uses refrigerants with a GWP below the limits prescribed in the table below.

System type	Equipment examples	GWP limit
	Small AC (<10kW)	150
Stationery air conditioning and heat pumps	Medium AC (<700kW)	500
	Large AC (>=700kW)	10
Domestic hot water heat pumps		10
Commercial heat pumps	Commercial heat pump and multi-function chillers, water source and ground source hot water heat pumps	10
Domestic and standalone retail refrigeration	Domestic refrigerators, display and storage cabinets, vending machines	10
Large scale refrigeration	Walk-in cold rooms, display cases, supermarket refrigeration	10

Leak detection systems are provided where required in accordance with AS/NZS 5149:2016.

Lower Initial Charge

The Total System Direct Environmental Impact (TSDEI) of the refrigerant systems in the building are below 10 as calculated using the *Refrigerants calculator*.

Leak detection systems are provided where required in accordance with AS/NZS 5149:2016.

Definitions

Alternate refrigerants

This refers to a different refrigerant that is used in equipment of the same function, product category and capacity. The identified refrigerant(s) may be used in the same equipment in the Australian market or overseas.

Guidance

Future-ready Refrigerant Design Register

Projects are encouraged to include a unique identifier in the register for each equipment.

Global Warming Potential (GWP) values

For the purposes of this credit, GWP values are to be based on values published by the DCCEEW which are based on the 100 year GWPs from the Intergovernmental Panel on Climate Change (IPCC) fourth assessment report, 2007 (AR4). The Montreal Protocol will continue to use AR4 values to maintain consistency for the HFC phase-down.

Calculating emissions from initial refrigerant charge

Carbon emissions are calculated by multiplying the initial refrigerant charge by the GWP for each type of refrigerant present in the building and adding the emissions together.

Total System Direct Environmental Impact (TSDEI)

This calculation aims to provide a capacity-weighted average to evaluate multiple pieces of HVAC equipment of different sizes, types of refrigerants, and types of building systems. It considers leakage rates and global warming potential (GWP) of the refrigerants used, as well as the type of refrigeration equipment used and the quantity of refrigerant.

$$TSDEI = \frac{\sum(LCGWF \times Q_i)}{Q_t}$$
$$LCGWF = \frac{GWP \times m \times (L \times Life + E)}{Life}$$

Where:

LCGWF = life cycle global warming factor [kg CO₂ / kW_r.year]

Q_i = cooling capacity of rated equipment (kW_r)

Q_t = sum of cooling capacity of all rated equipment included in the building (kW_r)

GWP = Global Warming Potential (100-year), 0 < GWP < 12,000 kg CO₂/kg

m = Specific refrigerant charge (kg of refrigerant per kW_r cooling capacity), 0.1 < m < 2 kg/kW_r

L = Refrigerant leak rate (% of refrigerant charge leaked per year)

E = End of life loss, 0.1 (default 10%)

Life = Equipment service life, 10 < Life < 35 years

The specific refrigerant charge (kg/kWr) is a measure of the refrigerant mass a system requires to produce a specific amount of cooling capacity. The higher this number, the more charge-intensive the system, leading to the risk of higher volumes of leakage.

Where the actual annual refrigerant leak rate is known, this is to be used. Where the actual leak rate is unknown, the leak rate for the relevant equipment class from [Refrigerant Leak Study – A data-driven insight from Australia 2024](#) may be assumed.

No refrigerants

Projects that do not install refrigerant-using equipment are considered to comply with *Exceptional Performance* in this credit.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Future-ready Refrigerant Design Register**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Future-ready Buildings

- As built drawings or on-site photos showing all building systems.
- Product data sheets.
- Extracts from operations and maintenance information showing the inclusion of the Future-ready Refrigerant Design Register.

GWP Limits and Lower GWP Limits

- As built drawings of leak detection systems.

Low Initial Charge and Lower Initial Charge

- Refrigerant calculator.
- As built drawings of leak detection systems.

Compensation of Refrigerant Emissions

- Calculations showing the total refrigerant charge to be offset.
- Evidence of purchase of offsets (e.g., contract) showing the length of offset.
- As built drawings of leak detection systems.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AIRAH – [Refrigerant Handling Code of Practice – Part 1: Self-contained low charge systems](#)
- AIRAH – [Refrigerant Handling Code of Practice – Part 2: Systems other than self-contained low charge systems](#)
- AIRAH – [Resilience Checklist](#)

- AS/NZS 5149 series – Refrigerating systems and heat pumps - Safety and environmental requirements
- Department of Climate Change, Energy, the Environment and Water (DCCEEW) – [Hydrofluorocarbon \(HFC\) phase-down](#)
- DCCEEW – [Cold Hard Facts 4](#)
- GBCA – Freeze Frame
- GBCA - Climate positive buildings and our net zero ambitions
- Introba - [Refrigerants & Environmental Impacts: A Best Practice Guide](#)
- Refrigerants Australia – [Refrigerant leak study – A data-driven insight from Australia 2024](#)

Low-Emissions Transport

Outcome

The building provides electric vehicle charging to facilitate the uptake of electric vehicles.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">Electric Vehicle Charging: The building has facilities to support the use of electric vehicles.
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Additional information

Scope of credit

Parking provided under the scope of the rating. If no parking is provided as part of the development, the credit cannot be claimed.

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- Energy Source
- Grid Resilience

Sustainable Development Goals

- Goal 7 (Affordable and Clean Energy)
- Goal 13 (Climate Action)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Electric Vehicle Charging

Electric Vehicle Charging

The project provides electric vehicle (EV) chargers based on the number of car parks provided as part of the building's development. Projects must choose one of the pathways relevant to the project's building type.

Pathways	Requirements
Class 2 EV infrastructure	<p>The building provides:</p> <ul style="list-style-type: none">• Ready to use EV charging points with a capacity of at least 7kW (32A) for at least two dedicated EV car parking spaces or 5% of the total parking spaces, whichever is higher.• Electrical distribution boards and charging control systems that are sized to support the future installation of charging equipment to the remaining car parking spaces. The mix of EV chargers assumed (e.g., 7kW vs 22kW) are included in the operations and maintenance information provided to the building owner.• A dedicated, unobstructed route from the electrical supply point which allows for the future provision of all necessary electrical cabling without the need for substantial builders work in connection to the electrical cabling installation. The project team outlines how spatial and electrical barriers to the roll out of future provisions have been considered and addressed.• A strata- or building-managed fund is established, with funds equalling 80% of the total cost of installing EV charging to all remaining carparks. The building owner provides the option for prospective apartment owners or renters to have an EV charger installed when purchasing or leasing the apartment.
Class 2 EV chargers	<p>The building provides:</p> <ul style="list-style-type: none">• Level 1 (slow) chargers (10A 2kW or 15A 2kW) on a dedicated circuit to all car parks, or one Level 2 (7.2kW 240V AC single phase connection) shared between two carparks so that all car parks have access to a charger, including for car sharing and visitor parking spaces (where provided).
Class 5 or 6	<p>The building provides:</p> <ul style="list-style-type: none">• Ready to charge EV charging points with a capacity of at least 7kW (32A) to at least 5% of the total parking spaces.• Electrical distribution boards and charging control systems that are sized to support the future installation of charging equipment to an additional 5% of all car parking spaces. The mix of EV chargers assumed (e.g., 7kW v 22 kW) are included in the operations and maintenance information provided to the building owner.• A dedicated, unobstructed route from the electrical supply point which allows for the future provision of all necessary electrical cabling without the need for substantial builders work in connection to the electrical cabling installation. The project team outlines how spatial and electrical barriers to the roll out of future provisions have been considered and addressed.

Pathways	Requirements
All other building classes	<p>The building provides:</p> <ul style="list-style-type: none">• Ready to charge EV charging points with a capacity of at least 7kW (32A) to at least 15% of the total parking spaces.• Electrical distribution boards and charging control systems that are sized to support the future installation of charging equipment to an additional 5% of all car parking spaces. The mix of EV chargers assumed (e.g., 7kW v 22 kW) are included in the operations and maintenance information provided to the building owner.• A dedicated, unobstructed route from the electrical supply point which allows for the future provision of all necessary electrical cabling without the need for substantial builders work in connection to the electrical cabling installation. The project team outlines how spatial and electrical barriers to the roll out of future provisions have been considered and addressed.

For all pathways, the building provides the following:

- All electrical distribution boards and charging control systems are designed as per NCC 2022 Section J Part J9D4 (regardless of whether the building is certifying to an earlier code). The requirements in the targeted pathway supersedes NCC 2022 Section J Part J9D4(e).
- Where car share spaces are proposed as part of the *Sustainable Transport* criterion in the *Movement and Place* credit, ready to charge EV charging points are provided to these spaces, regardless of whether the vehicles are electric at the time of completion. These spaces are no included percentage of ready to charge EV charging points stated in each pathway.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Load management plan and system

Load management systems should be hardware agnostic and localised to prevent building trips when communications drop out. The load management system should manage both AC and DC charging stations.

Cabling route for EVs

This is achieved using any combination of electrical containment systems, such as electric cable ducting including drawstrings, electric cable trunking or conduits, or electric cable trays and cable ladders.

Provision for EVs at practical completion

EV infrastructure should comply with all relevant standards and health and safety legislation, be easily accessible and be located undercover.

Car share spaces

Car share spaces are dedicated to car share programs and cannot be used by private EVs. Cables and a Level 1 (slow) charger (10A 2kW or 15A 2kW) is provided to these spaces as a minimum.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Electric Vehicle Charging

- Photos and/or as built drawings highlighting location of EV charging points.
- As built electrical drawings highlighting capacity for future installation of charging equipment.
- As built drawings to support explanation of reducing spatial and electrical barriers to rolling out future provisions.
- Evidence of strata fund and options for apartment owners.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- [Electric Vehicle Council](#)
- QLD Government - [Electric Vehicle \(EV\) Charging Infrastructure Practice Note](#)

Design for Circularity

Outcome

The building's circularity is improved through its design and material choices.

Criteria

Credit Achievement	2 points	<ul style="list-style-type: none">• Circular Design Strategies: The project implements circular design strategies.or• Circularity Measurement: The project measures the circularity of key materials in the building.
		In addition to <i>Credit Achievement</i> , both of the following:
Exceptional Performance	1 point	<ul style="list-style-type: none">• Circularity Improvement: When compared against a reference building, the project shows an improvement in circularity.

Additional information

Scope of credit

The structure, envelope, systems and/or finishes of the building. Loose furniture, joinery and external works are excluded.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Responsible Procurement
- Responsible Structure
- Responsible Envelope
- Responsible Systems
- Responsible Finishes
- Upfront Carbon Reduction

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)
- Goal 12 (Responsible Consumption and Production)

Relevant reporting initiatives

- TCFD
- TNFD

Requirements

Credit Achievement

The project must comply with **one** of the following criteria:

- Circular Design Strategies
- or
- Circularity Measurement

Circular Design Strategies

Circularity Assessment

Prior to construction, a feasibility study of circular design strategies is completed. The feasibility study:

- Assesses the feasibility of implementing the following strategies for the building's structure and at least one other building layer (i.e.. envelope, finishes or systems):
 - Resource efficiency strategies (designing out waste): dematerialisation, reuse and adaptive reuse and product-as-a-service.
 - End-of-use strategies (how can the product/material remain at its highest purpose): design for disassembly, design for lifespan, design for flexibility and design for modularity.
- Identifies at least one end-of-use strategy and at least one resource efficiency strategy that is not business as usual practice that can be integrated into the design.
- Sets measurable targets for the identified strategies.

Implementation

The building incorporates the circular design strategies identified in the circularity assessment and develops relevant manuals to support the end-of-use strategies.

Upon practical completion, the project assesses how the project performed against the targets set initially. Where targets are not met, the project team reviews the design of the project, identifying lessons learned, areas of improvement and key achievements.

Handover documents are provided to the building owner and the facilities management in a digital format. Information on where the manuals can be located is included in the operations and maintenance information.

Circularity Measurement

The circularity of the top three materials (by mass, cost or volume) in at least three of following layers of the building are calculated:

- Structure
- Envelope
- Finishes
- Systems

Calculating circularity

Calculations use a methodology that complies with *ISO 59020:2024 Circular economy – Measuring and assessing circularity performance* such as the Material Circularity Indicator (MCI) or Circular Transition Indicator (CTI).

The circularity of each material is reported as a single percentage value incorporating the core and optional indicators from ISO 59020:2024.

Exceptional Performance

In addition to *Credit Achievement*, the project must comply with the following criterion:

- Circularity Improvement

Circularity Improvement

The building is at least 10% circular.

Calculating circularity

Refer *Credit Achievement* for requirements.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Design for disassembly

Creating buildings and components that can be easily recovered without damage, enabling reuse, recycling, or repurposing of materials.

Design for lifespan

Creating buildings and components that are durable, easy to maintain, and repairable to extend their useful life.

Design for flexibility

Creating buildings and spaces that can adapt to changing needs or functions over time, reducing the need for major alterations or demolition.

Design for modularity

Creating buildings and components in standardised, prefabricated modules, that can be adjusted or reassembled to changing needs and functions over time without significant structural alterations.

Dematerialisation

Reducing the quantity of materials used in a building while maintaining functionality and performance. This includes the quantity of waste produced during construction.

Reuse and adaptive reuse

Repurposing existing assets, materials or components from existing built assets to minimise demand for new resources.

Product-as-a-service

Procurement of services rather than products. As the focus shifts from ownership to usage, users pay for the service of a product provides rather than ownership.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the

approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Circularity assessment

The assessment may include reviewing existing assets, building documents, conducting site surveys, creating a digital twin or evaluating the potential for reuse. Findings should be summarised in a report format. Refer to GBCA's *A practical guide to circular procurement* for further guidance.

Business as usual

A practice is considered business as usual if it is a practice that is typically used in the local industry by the building owner or developer or by buildings of a similar typology. For example, if a warehouse-type project used structural steel, this would be considered business as usual and therefore would not be considered a design for disassembly strategy however if a disassembly plan was also provided by the project team to the building owner and a strategy was in place to be able to disassemble the column base connections, this could be considered design for disassembly. Extracts of as built drawings from at least 3 past projects can be used to demonstrate what is considered as business as usual.

Measurable targets

The following metrics are recommended for each circular strategy. Refer to GBCA's *A practical guide to circular procurement* for further information and guidance on the metrics.

Circular strategy	Recommended metrics	Metric
Design for disassembly	<ul style="list-style-type: none">● Percentage of building that can be disassembled● Products that can be disassembled	<ul style="list-style-type: none">● % by contract value or mass● % of cost
Design for lifespan	<ul style="list-style-type: none">● Circular lifecycle cost (CLC)	<ul style="list-style-type: none">● Cost savings
Design for flexibility	<ul style="list-style-type: none">● Percentage of building that can be adapted for a different function	<ul style="list-style-type: none">● % by area
Design for modularity	<ul style="list-style-type: none">● Percentage of building that is modular	<ul style="list-style-type: none">● % by mass
Dematerialisation	<ul style="list-style-type: none">● Amount of waste generated● Material Intensity	<ul style="list-style-type: none">● kg/m²● kg/m²
Reuse and adaptive reuse	<ul style="list-style-type: none">● Reuse index● Residual salvage value assessment	<ul style="list-style-type: none">● Out of 1● % of construction costs
Product-as-a-service	<ul style="list-style-type: none">● Products with service agreements	<ul style="list-style-type: none">● % of cost

ISO 59020:2024 Circular economy – Measuring and assessing circularity performance

The following are the core circularity indicators from the standard:

- Average reused content
- Average recycled content
- Average renewable content
- Percent actual reused products and materials
- Percent actual recycled material
- Percent actual recirculated material in the biological cycle

The following optional circularity indicator outlined may also be used:

- Average lifetime of product or material relative to industry average

Circular Improvement

Common circularity calculation methodologies typically provide a score for the building's circularity where a low score indicates low circularity or a linear material flow. Examples of the required scores in these common calculation methodologies to meet the credit requirements are included below:

- MCI: a fully circular building would have a score of 1 and a fully linear building would have a score of 0.1. To demonstrate a building is 10% circular, a score of 0.19 is required.
- CTI: a fully circular building would have a material circularity percentage of 100% and a fully linear building would be 0%. To demonstrate a building is 10% circular, a material circularity percentage of 10% is required.

Other calculation methodologies may be used. Projects are to indicate the scale that is used including the scores of a fully linear building and a fully circular building.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Circular Design Strategies

- Extracts from the circularity feasibility study assessment.
- As built drawings annotated to highlight circular design strategies.
- Manuals to support end-of-use strategies (e.g., a disassembly plan if the building includes design for disassembly or a manual to highlight modularity options).
- Summary of performance against targets.
- Summary of lessons learned, areas of improvement and key achievements.
- Extracts from the relevant handover documents.
- Contracts specifying circularity / circular design outcomes.

Circularity Measurement

- Circularity calculations.
- Product data sheets or similar supporting the relevant circularity claims.
- Bill of quantities or bill of materials (where relevant for offsite assembly).

Circularity Improvement

- Circularity calculations for building.
- Product data sheets or similar supporting the relevant circularity claims.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- Arup – [Circular Buildings toolkit](#)
- Built & Coreo – [How to write a Building Disassembly Plan](#)
- GBCA – [A practical guide to circular procurement](#)
- UKGBC – [Circular Economy How-to Guide: Reusing products and materials in built assets](#)
- World Business Council for Sustainable Development (WBCSD) – [Circular Transition Indicators \(CTI\) for buildings – Sector guidance](#)

Water Use

Outcome

The building has low water use.

Criteria

		<ul style="list-style-type: none">• Sanitary Fixture and Appliance Efficiency: The building has efficient water fixtures.
Minimum Expectation	Nil	or
		<ul style="list-style-type: none">• Reducing Water Use: The building is more water efficient than a reference building.
		In conjunction with <i>Minimum Expectation</i> :
Credit Achievement	Up to 3 points	<ul style="list-style-type: none">• Reducing Water Use: The building has high water efficiency compared to a reference building.• Recycled Water Infrastructure: Where relevant, the building has infrastructure for recycled water connection.
		In conjunction with <i>Credit Achievement</i> :
Exceptional Performance	Up to 3 points	<ul style="list-style-type: none">• Reducing Water Use: The building has very high water efficiency compared to a reference building.

Additional information

Scope of credit

All water use in the project including water used for sanitation, appliances, heat rejection, irrigation, washdown, swimming pools, fire protection systems and process cooling.

Bath taps, laboratory taps, taps dedicated to cleaning and facility management for container filling (e.g., cleaning buckets) and kitchen or café taps dedicated to pot, container or cup filling can be excluded.

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- Operations Resilience

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)
- Goal 12 (Responsible Consumption and Production)

Relevant reporting initiatives

- Dow Jones Sustainability Index (DJSI)
- GRESB

Requirements

Minimum Expectation

The project must comply with **one** of the following criteria:

- Sanitary Fixture and Appliance Efficiency
- Reducing Water Use

Sanitary Fixture and Appliance Efficiency

All fixtures and water-using appliances installed have a minimum WELS ratings of the following:

Fixture type	WELS rating
Taps – hand wash basins	5 star
Taps – kitchen or laundry sink	4 star
Urinals	5 star
Toilets	4 star
Showers	3 star
Clothes washing machine	4 star
Dishwashers with more than 11 place settings	5 star
Dishwashers with 7 to 11 place settings	4 star
Dishwashers with 6 or less place settings	3.5 star

Reducing Water Use

The building's potable water use is less than a reference building. Project teams must choose at least one of the pathways relevant to the project's building class space type.

Pathway	Requirements
Class 2 and 3	The building uses at least 10% less potable water than a reference building.
All other building classes	The building uses at least 15% less potable water than a reference building.

Calculating water use reductions

Water use reductions are calculated by completing the *Water Use calculator*. Refer to the *Water Use calculation guide* for further information.

Credit Achievement

In conjunction with *Minimum Expectation*, the project must comply with **both** of the following criteria:

- Reducing Water Use
- Recycled Water Infrastructure

Reducing Water Use

The building's potable water use is less than a reference building. Project teams must choose at least one of the pathways relevant to the project's building class space type.

Pathway	Available points	Percentage requirements
Class 2 and 3	1 point	The building uses at least 16% less potable water than a reference building.
	1 additional point	The building uses at least 23% less potable water than a reference building.
	1 additional point	The building uses at least 30% less potable water than a reference building.
All other building classes	1 point	The building uses at least 25% less potable water than a reference building.
	1 additional point	The building uses at least 35% less potable water than a reference building.
	1 additional point	The building uses at least 45% less potable water than a reference building.

Refer *Minimum Expectation* for further information on calculating water use reductions.

Recycled Water Infrastructure

Where the project is located in a district or location where local council or water authorities (or similar) have planned for installation of recycled water infrastructure, the building has infrastructure installed for recycled water.

Projects not located in areas of planned recycled water infrastructure are exempt from this criterion.

Exceptional Performance

In conjunction with the *Credit Achievement*, the project must comply with the following criterion:

- Reducing Water Use

Reducing Water Use

The building's potable water use is less than a reference building. Project teams must choose at least one of the pathways relevant to the project's building class space type.

Pathway	Available points	Percentage requirements
Class 2 and 3	1 point	The building uses at least 36% less potable water than a reference building.
	1 additional point	The building uses at least 43% less potable water than a reference building.
	1 additional point	The building uses at least 50% less potable water than a reference building.
All other building classes	1 point	The building uses at least 55% less potable water than a reference building.
	1 additional point	The building uses at least 65% less potable water than a reference building.
	1 additional point	The building uses at least 75% less potable water than a reference building.

Refer *Minimum Expectation* for further information on calculating water use reductions.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Blackwater

Blackwater is water from kitchen sinks and toilets that is contaminated with human waste or food.

Greywater

Greywater can be recovered from sinks and showers, washing machines, cooling towers and other water sources that do not contain food or human waste.

Rainwater

Rainwater refers to the water that arrives on the site through rain events, falling on roofs within the site boundary and captured through various types of systems.

Reclaimed water

Reclaimed water refers to water that is recaptured, treated to some degree, and reused within a building.

Recycled water

Recycled water refers to water that is treated at a centralized wastewater treatment plant and then made available for reuse, often through "purple pipe" systems.

Stormwater

Stormwater refers to the water that arrives on the site through rain events, falling on hard surfaces other than roofs within the site boundary.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Mixed use projects

Minimum Expectation

All building class types must demonstrate compliance with these requirements. Different criteria may be used in different class types (i.e. Class 2 spaces may demonstrate compliance with *Reducing Water Use* while a Class 6 retail space in the same building may demonstrate compliance with *Sanitary Fixture and Appliance Efficiency*).

Credit Achievement and Exceptional Performance

Where more than 20% of the GFA, excluding car parks, is not the predominant building class, multiple pathways may be required to demonstrate compliance (i.e. a building with both Class 2 and 6 spaces would be required to comply with different benchmarks). Points can only be awarded to the level where both pathways meet the requirements for (i.e. a building where the Class 2 spaces demonstrate a 30% and the class 6 spaces demonstrate a 15% reduction will be deemed to comply with *Minimum Expectation*).

Where less than 20% of GFA, excluding car parks, is different building class to the majority of the building, it may be excluded.

Shared services

This credit rewards projects for reduction in potable water usage due to the use of reclaimed water from on-site rainwater, greywater, blackwater, stormwater or supplied reclaimed water. Bore water is not a suitable replacement for potable water. The *Water Use calculator* allows for the inclusion of the amount of non-potable water that is available from a central or shared service for use within the building.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Sanitary Fixture and Appliance Efficiency

- WELS certificates.
- Manufacturer's data.
- Fixtures and equipment schedule.

Reducing Water Use

- Water Use calculator.
- WELS certificates.
- Manufacturer's data.
- Fixtures and equipment schedule.
- As built drawings showing the location of all heat rejection equipment and process cooling water usage loops.
- As built landscape drawings listing the name, location, and plant species zone as it appears in the calculator.
- As built hydraulic drawings showing the location of landscape irrigation, isolation valves for floor-by-floor testing of the fire sprinkler system, on-site water storage and re-use system(s).
- Manufacturer's information showing that the application efficiency for the landscape irrigation system.
- Manufacturer's information including backwash volume and frequency of filter cleaning.

Recycled Water Infrastructure

- Evidence that demonstrates there is no planned recycled infrastructure in the district or council (where relevant).
- Evidence that there is planned recycled infrastructure in the district or council (where relevant).
- As built drawings showing recycled water infrastructure.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- GBCA - Water Use calculation guide

Places

The *Places* category puts people at the forefront of design. It focuses on the integration of the building into the urban fabric and delivers places that increase social cohesion.

Buildings cannot be seen in isolation; they have an impact – positive or negative – on their wider surroundings. The *Places* category recognises this and seeks to maximise the positive impacts whilst limit any negative ones.

Importantly, the category celebrates where we come from and our Aboriginal and Torres Strait Islander communities and uses placemaking to give a sense of belonging to the spaces we spend time at.

A Green Star building should be a place where an occupant or visitors feels welcome and enjoys their stay – and the *Places* category serves this purpose.

Credits in this category:

- Reduce the impact of private vehicle use in the built environment by supporting the uptake of active and public transport.
- Ensure occupants get the benefits of active movement.
- Provide communal spaces where community comes alive, where bonds are strengthened and where a sense of belonging is fostered.
- Ensure the building contextually responsive and a good ‘fit’ in the location, is positively received by the community and can be considered a ‘good neighbour’.
- Allow the building to carry a significant meaning to locals or those that provide a window to the past and the current culture.

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance
30	Movement and Place	●	2	
31	Enjoyable Places		2	
32	Contribution to Place		2	
33	Culture, Heritage, and Identity		1	

Movement and Place

Outcome

The building's design and location encourage occupants and visitors to use active and public transport options instead of private vehicles.

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">Changing Facilities: The building includes showers and changing facilities for building occupants.Safe Ingress: Access to changing facilities is located in a safe and protected space.
Credit Achievement	2 points	In addition to <i>Minimum Expectation</i> : <ul style="list-style-type: none">Sustainable Transport: A Sustainable Transport Plan has been prepared and implemented to encourage active transport and reduce private vehicle usage.Active Transport Facilities: The building has facilities to support the use of active transport.Encouraging Walkability: The building's design and location encourage walking.

Additional information

Scope of credit

Changing Facilities

The number of facilities provided are based on the number of users that would be regularly occupying the building, not including visitors and residents. This means the following:

- Residents in Class 2 and 4 spaces are excluded.
- Only staff in Class 3 and 9 spaces are included. Short or long-term residents, visitors and patients are excluded.
- Only regular occupants in Class 5, 6, 7b and 8. Visitors are excluded.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Community Resilience
- Low-Emissions Transport

Sustainable Development Goals

- Goal 3 (Good Health and Wellbeing)
- Goal 11 (Sustainable Cities and Communities)

Requirements

Minimum Expectation

The project must comply with **both** of the following criteria:

- Changing Facilities
- Safe Ingress

Changing Facilities

Showers

The building provides showers based on the design occupancy of the building:

Occupants	Showers
0 - 49	1 Unisex
50-99	2
100 - 200	4
200+	Additional 1 per 200 occupants above 200

A pro-rata approach to calculating the number of showers required for the number of regular building occupants can be taken.

All showers are at least 900 mm x 900 mm to enhance usability. Showers and bathrooms provided to meet statutory accessibility requirements, or showers provided in statutorily required facilities (e.g., adult changing facilities) do not count towards the minimum showers required to meet this criterion.

Lockers

One locker is provided for every eight occupants based on the design occupancy. The lockers are secure and located within the end-of-trip facilities.

Lockers provided within tenancies, not in or near changing rooms, do not count toward this credit.

Mixed use buildings with tenants

Mixed use buildings that made up of a majority of Class 2 and Class 3 student accommodation spaces are exempt from providing changing facilities for retail and office where the total amount of retail and/or office tenancy is less than 1% of the building's GFA, excluding car parks, or less than 200m².

Safe Ingress

Access from the site boundary and between buildings to the changing facilities is safe and protected by providing users with the following:

- A separate or distinct access path from the vehicle ingress/entries;
- Access that is free from steep gradients and has appropriate surface grip; and
- Clear signed across the site.

The changing facilities street level entry is well-lit, clearly signed and has an awning that provides users protection from the elements. The changing facilities have lighting in accordance with AS/NZS 1680.2.1:2008 *Interior and workplace lighting, Part 2.1: Specific applications – Circulation spaces and other general areas*.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with **all three** of the following criteria:

- Sustainable Transport
- Active Transport Facilities
- Encouraging Walkability

Sustainable Transport

A Sustainable Transport Plan is prepared by a suitably qualified transport planner or engineer. Requirements or recommendations made in the Sustainable Transport Plan are reflected in the design of the building's facilities and ongoing operational processes.

As a minimum, the Sustainable Transport Plan includes:

- A definition of the typical mode share of the development location and development type.
- A target mode share for the development that prioritises active and public transport modes, and recommendations on how to achieve them.
- Outline of how other modes of transport (carpooling, electric vehicles, and drop-off points) will be encouraged over private vehicle use.
- Identification of future infrastructure projects (such as bike lanes, precinct development, new transport services etc) which may change or influence mode share (such as planned, or under construction infrastructure) and the year of completion for the new infrastructure.
- Roles and responsibilities for implementing, monitoring, and auditing the Sustainable Transport Plan in the building's operational phase.

Reducing Private Vehicle Use

The Sustainable Transport Plan encourages active transport and reduces private vehicle kilometres travelled when compared to a reference building by demonstrating:

- Active mode encouragement: 90%
- Vehicle Kilometres Travelled (VKT) reduction: 20%

This is demonstrated by completing the *Movement and Place calculator*.

Active Transport Facilities

Bicycle parking

The project provides bicycle parking where the amount of parking is informed by the Sustainable Transport Plan.

At a minimum, the bicycle parking is designed in accordance with Table 1.1 from AS 2890.3:2015 *Parking facilities, Part 3: Bicycle parking*.

Access to and entry to bike parking meets the *Safe Ingress* requirements in *Minimum Expectation*.

Personal Electric Vehicles (PEVs) parking

Parking for PEVs (e.g., electric bikes, electric scooters) is provided. The amount of parking is determined by the Sustainable Transport Plan. Projects may choose one of the pathways relevant to the project's building type.

Pathways	Requirements
Class 2	<p>The building provides:</p> <ul style="list-style-type: none">• 1 charging point per 10 PEV parking spaces. This may be in the form of an easily accessible power point.• All designated PEV parking spaces are in a room that has controlled access such as an occupant access card or similar. The room has opaque walls or wall coverings and is accessible via a wide, non-swinging door (unless automatic). Parking spaces in the secure room accommodate a range of PEV sizes and weights.
Class 5 or 6	<p>The building provides:</p> <ul style="list-style-type: none">• 1 charging point per 4 electric PEV parking spaces, or 1 point per 10 regular bike parking spaces. This may be in the form of an easily accessible power point.• A designated PEV parking area that is located close to the entrance of the building or within a secure bike parking facility. The parking spaces are to allow both front and back wheels to be secured, is wide enough to accommodate all bike sizes and do not require lifting.• A ramp of a maximum gradient of 1:14 or non-ramped access to the PEV parking area. Wheel tracks or ramps down the side of a set of stairs are not acceptable as ramped access.

Encouraging Walkability

Roads

Roads within the site boundary prioritises pedestrians over vehicles and have a maximum speed of 10km/hr. Pedestrians and/or active transport have right of way.

Amenity diversity

Occupants have access to a diversity of amenities by having at least 10 amenities across five categories within 400m of the building, as determined by the *Movement and Place calculator*. Refer *Guidance* for the categories of amenities.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Default occupancy

For this credit, the default occupancy is 75% of the building population determined using NCC 2022 Section D2D18.

Design occupancy

The intended occupancy rate that the spaces have been designed for. Assumptions for the proposed occupancy rate are included in the project's submission. Where the design occupancy is unknown, the default occupancy may be used.

Qualified transport planner

The suitably qualified transport planner shall hold a relevant tertiary qualification (including, but not limited to, architecture, engineering, sustainability, and planning) and comply with at least one of the following:

- Minimum of five years' experience in transport planning.
- Has co-authored at least five building Sustainable Transport Plans / Green Travel Plans or similar.

Reference project

A hypothetical building of a similar type located within the same Statistical Areas Level 2 (SA2) as that of the proposed project.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Location of changing facilities

Facilities (including showers, changing rooms and lockers) may be provided in a neighbouring building, within a 5 min walk to the Green Star rated project. The number of facilities in the neighbouring building must cater for the combined building population of the Green Star rated project, and any other neighbouring buildings that rely on the same facilities. The neighbouring building is not required to be targeting or certified to a Green Star rating, however the facilities must be under full or partial operational control of the building owner/management of the project seeking a rating. Clear signage must be provided and access to the facilities, and project occupants are to be made aware of changing facilities in the neighbouring building at the point of onboarding or equivalent.

Changing facilities

The design of the shower facilities must be appropriate to encourage their use. The building should consider features such as ironing boards, iron, hanging racks, power points, mirrors, facial lighting, and any other facilities to encourage uptake. The project team is expected to justify how their location, locker sizes, privacy requirements, and size meet this aim.

Showers may be unisex or can be assigned for gender provided NCC provisions are met.

All-gender facilities can be included in the total where provided.

Location of bike parking/storage

Bike parking/storage does not have to be located on the same floor/area as the changing facilities but must be within easy access of the bike storage. Some examples of what can be accepted:

Acceptable

- Dedicated end-of-trip facilities on another floor, easily accessible by a short walk (not through high traffic areas) or elevator.
- Dedicated end-of-trip facilities located outside of the building but within easy access (e.g., one end-of trip facility for a complex of buildings).
- Lockers provided within end-of-trip facilities

Not Acceptable

- Shower facilities on another floor or within tenancies, with access to them through high traffic areas, past tenancies or though main part of building where lots of people are expected to be working, visiting or living.
- Showers provided within other bathrooms that are there to meet statutory accessibility requirements.
- Use of communal showers within a hotel/hostel environment, that customers and occupants use.
- Lockers provided far away from changing facilities.

Amenity categories

The categories of amenities include:

- Grocery: e.g., Convenience stores, supermarkets
- Health and wellbeing e.g., dentist, doctor, psychologist
- Food and Beverage: e.g., cafes, restaurants, bars
- Retail: e.g., clothing, homeware, hardware, book, gift stores
- Bank Services: e.g., banks, credit unions, ATMs
- Education and Childcare: e.g., Primary, secondary, tertiary, or childcare facilities
- Recreation: e.g., movie theatres, fitness centres, swimming pools
- Public facilities: e.g., Libraries, local or state government service centres, post office
- Outdoor facilities: e.g., Playgrounds, parks

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Changing Facilities

- Evidence of design occupancy.
- As built drawings highlighting location and size of showers and lockers.

Safe Ingress

- Photos and/or as built drawings highlighting the relevant building attributes to demonstrate the changing facilities are safe to access.

Sustainable Transport Plan

- Extracts from Sustainable Transport Plan.
- Credentials of suitably qualified transport planner or engineer.
- Movement and Place calculator

Active Transport Facilities

- As built drawings highlighting location of bicycle parking and PEV parking.
- As built drawings and product data sheets of bicycle parking.
- Photos and/or as built drawings highlighting the relevant building attributes to demonstrate the bicycle parking is safe to access.
- Photos and/or as built drawings highlighting the PEV parking spaces have the required attributes.

Encouraging Walkability

- Photos and/or as built drawings highlighting road signage and markings.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AS 2890.3:2015 – Parking facilities – Part 3: Bicycle parking
- AS/NZS 1680.2.1:2008 – Interior and workplace lighting – Part 2.1 Specific applications – Circulation spaces and other general areas
- GBCA - Movement and Place calculation guide

Enjoyable Places

Outcome

The building provides places that are enjoyable and inclusive.

Criteria

Credit Achievement	2 points	<ul style="list-style-type: none">Publicly Accessible Spaces: The project provides new, publicly accessible spaces that are enjoyable and support community activity and interaction.Activation Strategy: An activation strategy has been developed to ensure placemaking continues after practical completion.
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Additional information

Scope of credit

New areas provided by the building owner within the project boundary.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Contribution to Place
- Amenity and Comfort
- Culture, Heritage, and Identity

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)

Requirements

Credit Achievement

The project must comply with **both** of the following criteria:

- Publicly Accessible Places
- Activation Strategy

Publicly Accessible Spaces

The project provides new, publicly accessible communal spaces that are enjoyable and support community activity and interaction. The communal area provided is based on one of the pathways relevant to the project's building class space type.

Building type	Communal space requirements (m^2)
All building types except Class 2 and 3	0.25 m^2 / occupant or 2.5% of GFA (excluding car parks and back of house), whichever is greater but at least 25 m^2
Buildings that are predominantly Class 2 and 3	1.75 m^2 / dwelling but at least 250 m^2

Where the communal space provided is less than the area prescribed above, the area provided is justified with a needs analysis.

At a minimum, the communal space:

- Accommodates community-based activities.
- Is multi-functional and has the flexibility to be used for different usages.
- Has been designed for enjoyment. Refer *Guidance* for further information.
- Is safe to access independently by a diverse range of users.

Activation Strategy

An activation strategy has been developed to ensure placemaking continues after practical completion. The strategy demonstrates how the future occupants and the wider community can contribute to the place activation, addressing the following:

- Proposed activities, timing, targeted audiences and communication channels.
- How the activation will be funded and managed for the first 12 months of operation and be sustained beyond those months.
- Assigned roles and responsibilities for implementation of the strategy, including evaluation and monitoring.

The strategy is included in the operations and maintenance information provided to the building owner.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Communal space

A space that is publicly accessible and provided for community (i.e. the general public) usage free of charge.

Occupant

The number of occupants for the purposes of this credit is 75% of the number of persons to be accommodated in accordance with NCC 2022 Section D Part D2D18(a).

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Exclusions

Existing space

Existing communal space on the site prior to the building's development is excluded. The purpose of this credit is to create new communal spaces.

Retail tenancies

Net lettable areas and licensed seating areas allocated to retail tenancies such as cafes, restaurants, etc., do not contribute to the overall communal space provided.

Landscaped areas

Landscaped areas may be included if the area is new, has been provided by the project and is an area that is easily accessible to the general public. Areas that are heavily occupied by vegetation (such as garden beds) may not be included in the calculation as it is not conducive to public accessibility.

Publicly accessible amenities and furniture

Publicly accessible amenities and furniture provided by the project may be included in the calculation if it can be shown that the amenities are conducive to be used freely by the general public.

Areas where seating and furniture are owned and controlled by the base building (and not the tenant) may be included in the calculation. Tenant food and beverage spaces cannot be included in this credit requirement.

Publicly accessible areas that are locked outside of building operating hours

Publicly accessible areas that are locked outside of building operating hours may be included if the area is within the operational control of the project's building owner and it is ensured that the area is publicly accessible daily for at least 15 hours. These hours must include building operating hours or overlap with the building operating hours if they exceed 15 hours.

Design for enjoyment

The building can demonstrate that provided spaces are enjoyable through Design Plans, Landscape Plans and Design Report (or equivalent), which describe and demonstrate:

- Application of Crime Prevention Through Environmental Design (CPTED) principles, and design initiatives to support safety.
- Design for people and usage, demonstrating spatial flexibility/adaptability, potential uses/activities in spaces and modes of operation, and day and night uses.
- Placemaking/Place activation approaches.
- Accommodating retail/commercial activity (cafés etc.) and more open public usage.
- Providing a range of experiences: refuge, openness, and enclosure.
- Providing comfort and amenity: seating, shading and shelter from the elements.
- Demonstrate materials and products of high quality and durability.

Tenant engagement

The base building provides the foundations of the *Enjoyable Places* credit. Tenancies can affect the experience and enjoyment of places, through the following ways:

- The nature of frontages to new places.
- Occupation or habitation of places for commercial purposes.
- Activation outcomes (contributing to activity).

Where present, tenant engagement is encouraged to fully achieve the desired outcome.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Publicly Accessible Spaces

- As built drawings showing the size of the communal spaces.
- Letter from the building owner confirming the space is publicly accessible and may be used for free.
- An overview of how the communal spaces comply with the requirements (e.g., flexible).
- A narrative of how the spaces have been designed for enjoyment.
- Needs analysis.

Activation Strategy

- Extracts from activation strategy.
- Extracts from operations and maintenance information to demonstrate inclusion of activation strategy.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- Government Architect NSW – [Better Placed](#)
- Government Architect NSW – [Implementing Good Design](#)
- Government Architect NSW - [Evaluating Good Design](#)
- NSW Department of Urban Affairs and Planning - [Crime prevention and the assessment of development applications](#)
- NSW Government – [NSW Public Spaces Charter](#)
- Office of the Victorian Government Architect – [Good Design – Issue 1](#)
- Victoria Department of Transport and Planning – [Urban Design Guidelines for Victoria](#)

Contribution to Place

Outcome

The building's design makes a positive contribution to the quality of the public environment.

Criteria

Credit Achievement	2 points	<ul style="list-style-type: none">• Contribution to Urban Context: The building's design contributes to the livability of the wider urban context and enhances the public realm.
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Additional information

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- Enjoyable Places
- Culture, Heritage, and Identity
- Community Resilience

Sustainable Development Goals

- Goal 11 (Sustainable Cities and Communities)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Contribution to Urban Context

Contribution to Urban Context

The building contributes to the wider urban context and enhances the public realm. Project teams must use one of the following pathways:

Pathway	Requirements
Urban context report	<p>An urban context report (or similar) is developed and includes an analysis of the urban context to understand the urban context of the project. The analysis includes:</p> <ul style="list-style-type: none">An assessment of the project's site and wider urban context including the identification of physical, social, cultural and economic characteristics and attributes.Identification of any planned changes to the local area (e.g., local or state government visions for the area).Identification of local challenges that the building could help address. <p>The building responds to the findings from the urban context analysis by:</p> <ul style="list-style-type: none">Complementing the characteristics and attributes of the site, and the anticipated future character of the local area.Addressing the identified local challenges.
Independent design review	<p>The building is subject to a design review process to ensure the design is independently evaluated at key points during the design development to contribute to the wider urban context.</p> <p>Staging of design reviews</p> <p>Design reviews are held at key points in the development of the design. At a minimum, these occur at:</p> <ul style="list-style-type: none">Concept design stage or early in the design so there is opportunity to integrate the feedback received into the design.Design development.Building permit stage (after development approval). <p>Composition of design review panel</p> <p>The design review panel is comprised of one panel chair and two panel members. All are independent of the project and have diverse expertise. Refer <i>Definitions</i> for further information.</p> <p>Design principles</p> <p>The design is reviewed against the following design principles:</p> <ul style="list-style-type: none">Integrating with existing developmentsUrban formMix of usesDensity diversity

Pathway	Requirements
	<ul style="list-style-type: none">• Landscape and green infrastructure <p>Refer <i>Guidance</i> for further information.</p>

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Diverse expertise

When all members of the panel:

- Possess project-relevant skills and experience.
- Are recognised experts in their discipline, with a minimum of 10 years' experience.
- Are registered by a relevant professional peak body and are bound by that institutes' code of ethics in relation to objectivity, integrity, and accountability.

The expertise of the panel is considered to be diverse when each member is an expert in a different discipline. Disciplines that are relevant to this credit include, but are not limited to, urban design, planning, architecture, landscape architecture, heritage architecture (if the project or the wider urban context features heritage elements), First Nations cultural heritage and transport planning.

Independent design review panel

Members of the panel are independent when they are not employed by the developer (and subsidiaries) or by any consulting organisations (and subsidiaries) involved in the project. The members have not worked on the project in previous years. Participation in the design review panel is not considered employment for this credit.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relationship between the *Contribution to Place* and *Enjoyable Places* credits

The key difference between the two credits is that the *Contribution to Place* credit deals with the surrounding areas of the building, while the *Enjoyable Places* credit deals with areas on-site. Should projects target both credits, it is encouraged to consider how the building's designs may impact the public spaces provided under the *Enjoyable Places* credit.

Relationship between the *Contribution to Place* and *Culture, Heritage and Identity* credits

The main difference between the two credits is that the *Contribution to Place* credit focuses on the building's place in the urban context while the *Culture, Heritage and Identity* credit concentrates on how the project reflects the local culture, heritage and identity. Design responses may overlap between the two credits.

Both credits include a pathway to demonstrate compliance via an independent design review process. The same design review process may be used for both credits however the design principles differ between the credits and therefore all are to be considered.

Urban context analysis

There are many planning policy documents, design guidelines and other reference documents which provide guidance for responding to context and building frontage. These tend to be at the local government or regional/state government level, so they differ from place to place. However, the overarching principles are generally consistent.

Examples include:

- [Better Placed](#) – Integrated Design Policy for the Built Environment of NSW
- [Evaluating Good Design](#) (NSW) provides nine criteria for 'Better Fit' (page 5)
- [Central Melbourne Design Guide](#) provides quantified requirements for extent of active frontage and ground-level floor space
- [Urban Design Guidelines](#) for Victoria include a Buildings chapter with guidance for interfaces

Some local councils may also require an urban context report to accompany a planning proposal. The relevant extracts of this report may be used for the project's submission.

Public realm interface

The building contributes positively to its context by providing well-designed active frontages. The building's frontages can be articulated by:

- Providing visual and physical permeability on ground level frontages.
- Using designs, materials, colour, and details to break long sections to make it attractive to walking.
- Having sidewalks around the building to encourage safe walking and cycling activities, as well as provide shading for pedestrians and other activities, particularly with trees.
- Designing entrances to be welcoming and to contribute to the public realm.

Independent design review

Staging

Three design reviews are required in this credit to ensure the project's design is continually evaluated as it progresses. The stages included in the requirements have been selected to ensure there is still opportunity for recommendations from the design review to be integrated. This includes one at concept design, to allow recommendations to be adopted without impacting on the project's time and cost constraints, one at design development, where there is further design realisation but there is still opportunity to integrate changes and at the building permit stage, to check the final design.

The stages specified are reflected of typical design practice however are acknowledged to vary on specific projects. Alternate design stages may be used where they are justified to meet the same intent of the specified stages.

Design principles

The following should be considered for the relevant design principles:

Design principle	Guidance
Integrating with existing developments	<ul style="list-style-type: none">• Where developments are infill or sequential in nature, they should maximise local connections (public transport, street, pedestrian and open space connections).• Vehicular connections to the external street system should be appropriate to the site and surrounds.• Provide frontage to and views over adjoining parkland.• Extend linear open space systems and associated pathway networks into the site.• Incorporate and protect important views and view corridors.• Ensure appropriate infrastructure connections are based on the capacity of the external networks.• Acknowledge the heritage and character of the site and surrounding development.
Urban form	<ul style="list-style-type: none">• A movement network has been provided based on a highly interconnected street network that has a logical hierarchy, maximises safety and promotes walking and cycling, and public transport.

Design principle	Guidance
	<ul style="list-style-type: none">• Ensure development provides extensive frontage to and addresses the existing and proposed open space system.• Building height and form should be compatible with the surrounding development.• Create prominent entry points to new development.• The design and layout of the development respond to the project vision and the site and context analysis.
Mix of uses	<ul style="list-style-type: none">• Provide an urban structure that can support a mix of uses, and that is flexible enough to change over time.• Incorporate a range of complementary residential, commercial and retail uses, and community facilities including open space, consistent with the project vision and local needs.
Density diversity	<ul style="list-style-type: none">• Provide a mix of housing types and styles to facilitate housing choice, affordability and ageing in place, and which address local housing needs.• Increase residential densities in suitable locations proximate to activity centres and high frequency public transport stations / stops.
Landscape and green infrastructure	<ul style="list-style-type: none">• Landscaping choices are cohesive with the streetscape.• Utilise water sensitive urban design practices.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Contribution to Urban Context

Urban context report pathway

- Extracts from the urban context analysis, or various relevant reports that address requirements from this credit
- As built or site drawings showing how the building responds to the urban context report

Independent design review pathway

- Evidence to demonstrate that a design review process has been undertaken
- Details of the panel members and their experience relevant to this credit's requirements
- A declaration from the project application confirming that the design review panel meets the independency requirements
- As built drawings indicating the integration of recommendations from the design review panels

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- [Creating Places for People – an urban design protocol for Australian cities](#)
- Government Architect NSW – [Better Placed](#)
- Government Architect NSW – [Local Government Design Review Panel Manual](#)
- National Capital Authority and the ACT Government – [Terms of Reference – National Capital Design Review Panel](#)
- Western Australia Planning Commission – [Local Government Design Review Manual](#)

Culture, Heritage and Identity

Outcome

The building reflects local culture, heritage and identity.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">Local Identity: The building reflects the identity of the local community and surrounding neighbourhood.
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Additional information

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Enjoyable Places
- Contribution to Place
- First Nations Inclusion

Sustainable Development Goals

- Goal 10 (Reduced Inequalities)
- Goal 11 (Sustainable Cities and Communities)
- Goal 16 (Peace, Justice, Strong Institutions)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Local Identity

Local Identity

The building reflects the identity of the local community and surrounding neighbourhood. Project teams must use one of the following pathways:

Pathways	Requirements
Community-led design response	<p>The local community is engaged throughout the design and construction of the building to establish how the building can publicly reflect culture, heritage and identity unique to the project site and surrounding area. The project integrates the recommendations into the design.</p> <p>Engagement with the local community aligns with the International Association for Public Participation Australasia (IAP2) core values for public participation, achieving 'Collaborate' status on the IAP2 Spectrum of Participation.</p> <p>The project documents the community engagement activities undertaken and resultant design responses.</p>
Independent design review	<p>The building is subject to a design review process to ensure the design is independently and continually evaluated to reflect the identity of the surrounding neighbourhood.</p> <p>Refer to <i>Staging of design reviews</i> and <i>Composition of design review panel</i> in the <i>Contribution to Place</i> credit for requirements.</p>
	Design principles <p>The design is reviewed against the following design principles:</p> <ul style="list-style-type: none">• Embedding culture• Acknowledging heritage• Integrating with existing identity

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relationship between the *Contribution to Place* and *Culture, Heritage and Identity* credits

The main difference between the two credits is that the *Contribution to Place* credit focuses on the building's place in the urban context while the *Culture, Heritage and Identity* credit concentrates on how the project reflects the local culture, heritage and identity. Design responses may overlap between the two credits.

Both credits include a pathway to demonstrate compliance via an independent design review process. The same design review process may be used for both credits however the design principles differ between the credits and therefore all are to be considered.

Local analysis

It is recommended that projects undertake an analysis of the local community in order to identify culture, heritage, and identity unique to the location. This analysis should inform the project's strategy and design as early as possible, preferably before Development Application (DA). This is to ensure that the research can meaningfully be integrated into the building design rather than being an afterthought, i.e., spatial designs or land uses that reflect the local culture and identity are preferable to an add-on graphic design on a façade.

The culture, identity and heritage reflected in the building are likely to be those of the past and present. Future users, occupants and the property owner/manager may have different views and the place should be designed so that it can evolve with them.

Community engagement

To achieve meaningful engagement, it is recommended that engagement activities commence as early as possible (i.e., before Development Application) so that the community is involved from the beginning of the project. Engaging the community after most of the decisions are made means their input is unlikely to be reflected it is more difficult to obtain the community's buy-in.

Guidance tools such as the [International Association for Public Participation \(IAP2\)](#), can be used to influence community engagement activities.

While it is recognised that demonstrating deep engagement is difficult and relies on qualitative rather than quantitative assessment, there are success factors that can be used to guide the project team during the engagement process. This will be helped by a focus on:

- Depth of research on community groups and members to be engaged.
- Diversity of individual participants and groups who were engaged.
- Rigour in the data collected from community engagement.
- Extent to which community engagement influenced the project.

The local community engaged pre-DA and pre-occupation can be different from the actual users or occupants. The purpose of the engagement is not to respond to self-interests of the individuals, but rather to gather data and insights on what is important to the existing community and to build on those values and aspirations. Future users, occupants and the property owner/manager may have different views and the place should be designed so that it can evolve with them.

Examples of outcomes

- 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.

Independent design review

Design principles

The following should be considered for the relevant design principles:

Design principle	Guidance
Embedding culture	<ul style="list-style-type: none">• Incorporates nature, forms and/or materials that are culturally significant to the area.• Integrates storytelling into the design.• Provides spaces for cultural practices.
Acknowledging heritage	<ul style="list-style-type: none">• Conservation or acknowledgement of heritage features.• Commemorative spaces.• Integrates storytelling in the design.

Design principle	Guidance
Integrating with existing identity	<ul style="list-style-type: none">• Responds to local character in materiality and form.• Incorporates features that celebrate identity.• Provides spaces that allow for the cultivation of the existing identity.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Local Identity

Community-led design response pathway

- A summary of key findings from the community engagement activities.
- How the community engagement activities influenced the design.
- As built drawings how the culture, heritage, and identity is incorporated into the building's designs.

Independent design review pathway

- Evidence to demonstrate that a design review process has been undertaken.
- Details of the panel members and their experience relevant to this credit's requirements.
- A declaration from the project application confirming that the design review panel meets the independency requirements.
- As built drawings indicating the integration of recommendations from the design review panels.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resource supports this credit:

- Engagement Institute – [IAP2 Quality Assurance Standard](#)
- Engagement Institute – [Resources](#)

People

The *People* category encourages solutions that address the social health of the community by bringing a new dimension to the design and construction of buildings.

It takes steps to recognise the multitude of people that are involved in the delivery and occupation of a building. The built environment has a wide and diverse supply chain. In recognition of this, procurement is increasingly being used to improve environmental and social outcomes beyond the project boundary. It highlights issues such as diversity and gender equity, inclusion, and mental health.

Credits in this category:

- Allow all construction workers on-site to feel safe and benefit from physical and mental health initiatives.
- Connect with and celebrate Aboriginal and Torres Strait Islander people, culture and heritage.
- Create employment opportunities for disadvantaged communities and groups and support small and medium sized enterprises to diversify the supply chain.
- Ensures the building is welcoming and accessible to all.

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance
34	Inclusive Construction Practices	●	1	
35	First Nations Inclusion		2	
36	Procurement & Workforce Inclusion		2	1
37	Design for Equity		2	1

Inclusive Construction Practices

Outcome

The builder's construction practices promote diversity and reduce physical and mental health impacts.

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">Facilities and Equipment: Gender inclusive facilities and protective equipment are provided on-site.Policies and Training: On-site policies are implemented to increase awareness and reduces instances of discrimination, racism and bullying.
Credit Achievement	1 point	<p>In addition to <i>Minimum Expectation</i>:</p> <ul style="list-style-type: none">Physical and Mental Health Programs: Programs are provided to on-site workers.Program Evaluation: The programs delivered are evaluated.

Additional information

Scope of credit

Workers on site for three days or more, who are contracted or sub-contracted by the head contractor of the main works. This includes demolition and early works if included in the same contract as the main works.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Procurement and Workforce Inclusion

Sustainable Development Goals

- Goal 5 (Gender Equality)
- Goal 8 (Decent Work and Economic Growth)

Requirements

Minimum Expectation

The project must comply with **both** of the following criteria:

- Facilities and Equipment
- Policies and Training

Facilities and Equipment

The head contractor ensures the following is implemented on-site:

- Separate gender inclusive bathroom facilities and changing amenities, with acoustic and visual privacy between each facility.
- A policy to ensure fit-for-purpose personal protective equipment (PPE) for diverse body sizes and types are available to all workers and visitors.

The above are provided by the head contractor of the main works for the duration of all works under the contract.

Policies and Training

The head contractor ensures the on-site leadership team are empowered to proactively implement the following:

- Policies to address issues of discrimination, racism and bullying on-site and safe ways to report related incidents.
- On-site redress procedures for any relevant breaches and corrective measures for identified incidents.
- Training on the following areas are provided to 95% of all contractors and subcontractors present on site for at least three days for:
 - Information on drug and alcohol awareness and mental health.
 - Information on policies implemented on discrimination, racism, bullying on-site, and safe ways to report poor behaviour.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with **both** of the following criteria:

- Physical and Mental Health Programs
- Program Evaluation

Physical and Mental Health Programs

The head contractor has introduced programs and solutions on-site.

- For contracts valued less than \$10 million, at least three areas of physical and mental health are to be addressed.
- For contracts valued at over \$10 million, at least five areas of physical and mental health are to be addressed.

The programs and solutions are implemented no later than 3 months of starting construction works and are in place for the remaining duration of construction.

A mix of programs is acceptable. The programs 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 or solutions can be implemented directly by the head contractor or through partnerships with mental and physical health organisations.

Refer *Guidance* for examples of physical and mental health programs.

Program Evaluation

An evaluation report of the programs is provided to the head contractor's head office and subcontractors with the following:

- Information on the programs or initiatives that were delivered, including information on dates, attendance, and available languages.
- Feedback on the programs or initiatives from those that benefitted.
- Recommendations for improving the future delivery of programs.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Gender inclusive

Gender inclusion means not discriminating against a particular sex, social gender, or gender identity.

Personal protective equipment

Personal protective equipment (PPE) is defined as anything that needs to be worn to minimise risk to a worker's healthy and safety. In many instances PPE does not cater to different body types and shapes and in particular for women, they are ill fitting. This risks their health and safety. Examples of PPE include:

- Boots
- Gloves
- Goggles
- Hard hats
- High visibility clothes
- Safety harnesses
- Safety shoes

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Gender inclusivity

This *Minimum Expectation* is seeking to remove physical barriers to participation in the construction workforce for different groups, particularly women who represent less than 2% of the construction and building workforce (<https://tradeswomensaustralia.com.au>). The provision of separate male and female bathrooms and changing facilities are a minimum. This may change in future revisions of the rating tool as the industry evolves.

Should the building's construction identify opportunities to provide additional improvements beyond facilities and gender-specific PPE to celebrate diversity, they should be pursued. Where this is the case, the building may seek an additional point(s) in the *Leadership* category, under *Market Transformation*.

Policy for fit-for-purpose PPE

The intent of the policy is to ensure that fit-for-purpose PPE is made available by the head contractor to reduce on-site hazards for all workers and visitors. This may be in the form of:

- PPE being provided directly by the head contractor. The PPE is available in a variety of sizes and fits.

- PPE being purchased on behalf of the site workers by the head contractor and a diverse range of gender-specific fit-for-purpose PPE is provided by the head contractor for visitors.
- Site workers are responsible for bringing their own PPE to site however education on the importance of fit-for-purpose PPE is provided by the head contractor. A diverse range of gender-specific fit-for-purpose PPE is provided by the head contractor for visitors.

Opportunities to request and be provided with better fitting PPE are also available and provided by the head contractor.

Cultural and language barriers identified on site

When training and policies are developed, consideration should be given to the method and form of delivery and actions are taken to address cultural and language barriers.

Physical and mental health programs

Examples of areas of physical and mental health that can be addressed include:

- Suicide prevention
- Healthy eating and active living
- Reduce harmful alcohol and tobacco consumption and avoid drug use
- Increased social cohesion, community, and cultural participation
- Understanding depression, anxiety and other mental health conditions
- Preventing violence and injury
- Decreased psychological stress and building coping mechanisms
- Finding fulfilment at work or mindful meditation
- Other issues identified by site workers

More than one area of physical and mental health can be addressed by the same program or solution.

Program evaluation report

Feedback from those who benefitted from the programs may be collected by conducting a questionnaire or having conversations in small focus groups or one-on-one with the main intent being that the opinions of those that benefitted from the programs are sought. Where no responses are received, the program team is to demonstrate that considerable effort has been made to collect this information and improvements for collecting this data in future are proposed.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Facilities and Equipment

- Evidence (e.g., photos, register or similar) of the PPE available to construction workers
- Evidence of purchase or availability of appropriate PPE
- Evidence (e.g., photos, correspondence or similar) of separate bathroom facilities and changing amenities

Policies and Training

- Evidence from head contractor that outlines the approach of empowering the on-site leadership team.
- Extracts from relevant policies that address discriminating, racism and bullying.
- Evidence that training has been provided on-site.
- Extracts of the training (e.g., screenshots, presentation content or similar) showing the information provided as part of training.
- Evidence of attendance and that 95% of all contractors and subcontractors on site for at least three days attended.

Needs Analysis

- Needs Analysis report outlining engagement process and outcomes for training.

Physical and Mental Health Programs

- Extracts of evidence detailing the programs implemented to promote health and wellbeing on site, including where applicable reports from third-party provider/s or similar.
- Evidence of attendance and how the programs have covered 80% of the workforce that have attended the site for more than three days from commencement on site to practical completion.

Program Evaluation

- Evaluation report of the training from the on-site, head contractor team including details on the programs, feedback and recommendations for future delivery.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resource supports this credit:

- BSI – [Diversity in Personal Protective Equipment](#)
- Construction Industry Culture Taskforce – [A Culture Standard for the Construction Industry](#)
- Construction Industry Culture Taskforce – [Wellbeing Implementation Guide and Toolkit](#)
- Government of South Australia – Healthy Workplaces – [Conduct a workplace needs assessment](#)

First Nations Inclusion

Outcome

The building celebrates First Nations people, culture and heritage.

Criteria

Credit Achievement	2 points	And one of the following:	<ul style="list-style-type: none">Cultural Capability: Key project personnel undertake training to ensure the design process is grounded in respect and understanding of local cultural protocols and Traditional Knowledge.
			<ul style="list-style-type: none">Reconciliation Action Plan: The project team and project play an active role in the organisational Reconciliation Action Plan.Inclusion of First Nations Design: The building incorporates design elements using the Indigenous design and planning strategies and principles.

Additional information

Scope of credit

All works associated with the design, construction, procurement and delivery of the project.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Procurement and Workforce Inclusion
- Culture, Heritage, and Identity
- Enjoyable Places
- Biodiversity Enhancement

Sustainable Development Goals

- Goal 10 (Reduced Inequalities)
- Goal 11 (Sustainable Cities and Communities)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Cultural Capability

With **one** of the following criteria:

- Reconciliation Action Plan
- Inclusion of First Nations Design

Cultural Capability

Cultural competency training is undertaken by representatives of the key delivery project team organisation for the design and construction stage of the project. The training is delivered by First Nations Peoples and/or an accredited training provider.

New team representatives are trained when turnover occurs, or when a new key delivery project team organisation comes on board.

Reconciliation Action Plan

The project contributes to the key design project teams' organisational Reconciliation Action Plan (RAP) by demonstrating that:

- At least 90% of the deliverables from the organisational RAP/s that are applicable on a project level have been met on the project. A minimum of 10 deliverables is identified to be applicable on a project level across all relevant RAPs.
- The actions implemented on the project related to the applicable RAP deliverables are publicly reported on the key design project teams' website/s.

Inclusion of First Nations Design

The project team engages with local First Nations groups to inform the integration of First Nations cultural practices and heritage into the project's design and construction. Engagement begins as early as possible in the design.

As a minimum, all the following has occurred on the project:

- **First Nations Led:** Aboriginal and Torres Strait Islander communities are regularly engaged to guide the design and delivery of the project.
- **Country Led:** local Aboriginal and Torres Strait Islander communities that hold Knowledge about the project site are engaged and the design supports connection to Country.
- **Respectful of First Nations culture:** local Aboriginal and Torres Strait Islander heritage is protected where present, and the diversity of First Nations cultures are represented.
- **Promoting shared knowledge:** information on the cultural values of the project is available to the public, visitors, and building tenants in the operational phase of the project's life. This may be in the form of physical or digital signage.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Cultural competency training

Training that intends to build a greater understanding of First Nations culture to enhance people's capacity to engage effectively in an intercultural environment. The training is delivered online or in person by a First Nations provider. Examples include Centre for

Cultural Competence Australia and the Australian Institute of Aboriginal and Torres Strait Islander Studies. The training can be self-led but also must include real-time reflection activities or assessment process to gauge participation. GBCA recommends that the training, where possible, is tailored to the specific Country the precinct is on.

Key design project team organisation

Organisations central to the delivery of the design and construction of the project. This includes the developer, head contractor, architect, engineering and ESD consultant.

Reconciliation Action Plan

"A RAP is a strategic document that supports an organisation's business plan. It includes practical actions that will drive an organisation's contribution to reconciliation both internally and in the communities in which it operates." - Reconciliation Australia

RAPs must be ratified and publicly noted on the Reconciliation Australia website to be viable for use. RAPs cannot be written by project teams without engagement from Reconciliation Australia.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Cultural competency training

The design and construction stages are noted as the two key stages that cultural competency training is to take place. This is to ensure that the design and construction processes are grounded in respect and understanding of local protocols and Traditional Knowledge. For the design stage, this training is to occur early enough so that learnings can influence the design.

RAP implementation

Applicable RAP deliverables

RAPs are created on an organisational scale therefore it is not expected that all actions and deliverables will be relevant to the project. Therefore, projects are to refer to the organisational RAPs of the key design project team organisations (refer *Definitions* for the relevant disciplines) and are only required to demonstrate actions on the relevant deliverables in those RAPs. Where a key design project team organisation does not have a RAP or all their RAP deliverables are not relevant to the project, the requirements can still be targeted with just the available organisational RAPs and applicable deliverables.

Summary of RAP actions

A summary of the RAP actions and the applicable deliverables may be extracts from each key design project team organisation's annual report or website (or similar) or could be one summary that is displayed on at least one of the key design project team organisation's annual report or website (or similar).

Engagement

For meaningful engagement to be undertaken, the nominated representatives should be identified and contacted as early in the design process as possible. Best practice guides do exist. Some examples include:

- [Engaging with Indigenous Australia— exploring the conditions for effective relationships with Aboriginal and Torres Strait Islander communities](#)
- [National Science an Environment Program: Indigenous Engagement Guidelines](#)

Regular engagement

To ensure the integration of First Nations cultural practices and heritage in the project's design is First Nations led, engagement with Aboriginal and Torres Strait Islander communities is to be frequent such that they are involved in the decision-making process, not just consulted at key milestones.

Australian Indigenous Design Charter (AIDC)

Projects that demonstrate that the guiding principles from the Australian Indigenous Design Charter have been incorporated in the design are considered to have met the above requirements.

The AIDC is a recognised body of researchers from Indigenous Architect and Design Victoria, Design Institute of Australia and Deakin University which have developed a formal protocol on sharing Indigenous knowledge in communication design practice. There are 10 principles developed to ensure the representation of Aboriginal and Torres Strait Islander culture is developed in a respectful manner. These can be incorporated in any form of design ranging from graphics and art to buildings and infrastructure design.

Database for First Nations consultancies

Project teams wanting to engage with qualified consultants such as Stakeholder Engagement Consultants, Aboriginal Artists, Indigenous Specialists, Local Land Officers should consider [Supply Nation](#) is a starting point for finding these professionals to provide expertise on appropriate and authentic research, analysis, and design services.

Local land councils

Local Lands Councils represent the local communities and Aboriginal landowners during consultation processes of land use proposals. There are councils in each state which are a key source of information for projects based in these areas. Links are provided below as a starting point for project teams.

State	Area	Link
ACT	Region	https://www.communityservices.act.gov.au/atsia/committees/ngunnawal_issues
QLD	North and Central	https://nqlc.com.au/
	Cape York	http://www.cylc.org.au/
NSW	Region	http://alc.org.au/
	Sydney	http://metrolalc.org.au/
VIC	Region	http://www.bglc.com.au/
SA	Region	http://www.anangu.com.au/
	South-West	http://www.noongar.org.au/
	Goldfields	http://www.glsc.com.au/
	Kimberley	http://klc.org.au/
WA	Ngaanyatjarra	http://www.ngaanyatjarra.org.au/
	Region	https://www.acnc.gov.au/charity/307763c5033170591a70072caee1b026
NT	Central	https://www.clc.org.au/
	North	https://www.nlc.org.au/
	Tiwi	https://www.tiwilandcouncil.com/
	Anindilyakawa	https://www.anindilyakwa.com.au/
Torres-Strait Islands	Region	http://www.tsirc.qld.gov.au/

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Cultural Capability

- Evidence of cultural competency training participation

Reconciliation Action Plan (RAP)

- Extract from the Reconciliation Australia website demonstrating their endorsement of the organisational RAP.
- Extracts from the organisation's annual report or website (or similar) demonstrating that the RAP is publicly reported upon.
- A summary (or similar) on the applicable deliverables, which organisation's RAP this is relevant for and actions taken demonstrating that at least 90% of the RAP deliverables have been met.

Inclusion of First Nations Design

- Evidence (e.g., photos, meeting records, correspondence or similar) of First Nations engagement, including who has been engaged and that it has occurred regularly from design through to the project's delivery.
- Evidence that local First Nations groups that hold Knowledge about the project site are engaged.
- Extracts highlighting recommendations that have been provided as part of the engagement process.
- As built drawings or photos of incorporated design attributes that reflect the recommendations.
- Evidence of information being made available to public.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

- [Australian Institute of Aboriginal and Torres Strait Islander Studies](#)
- [Centre for Cultural Competence Australia](#)
- Design Institute of Australia - [Australian Indigenous Design Charter](#)
- Government Architect NSW – [Connecting with Country](#)
- Government of South Australia – [Co-design with Aboriginal and Torres Strait Islander Peoples](#)
- Djinjama - [Aboriginal Cultural Values: An Approach for Engaging with Country](#)
- [Nature Design Guide](#)
- [Reconciliation Australia](#)

Procurement and Workforce Inclusion

Outcome

The building's construction facilitates workforce participation and economic development of disadvantaged and under-represented groups.

Criteria

Credit Achievement	Up to 2 points	<ul style="list-style-type: none">Social Procurement Strategy: The project implements a social procurement plan.Employment Opportunities: At least 2% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups.
		In conjunction with <i>Credit Achievement</i> :
Exceptional Performance	1 point	<ul style="list-style-type: none">Employment Opportunities: At least 4% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups.

Additional information

Scope of credit

All works associated with the construction, procurement and delivery of the project. This includes demolition and early works.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Responsible Construction
- Inclusive Construction Practices
- First Nations Inclusion

Sustainable Development Goals

- Goal 5 (Gender Equality)
- Goal 8 (Decent Work and Economic Growth)

Requirements

Credit Achievement

The project must comply with **both** of the following criteria:

- Social Procurement Strategy
- Employment Opportunities

Social Procurement Strategy

Prior to the appointment of the head contractor of the main works, a social procurement strategy is developed for the project to generate employment opportunities for disadvantaged and under-represented groups with input from the building owner. The strategy can be part of an overall project procurement plan.

As a minimum, the social procurement strategy includes:

- The project's social procurement and workforce objectives, needs and targets. Targets are informed by a demographic study of the local region.
- The roles and responsibilities in the implementation and monitoring of the targets and annual reporting protocols.
- Data collection requirements and integration with procurement contracts and scopes.

Employment Opportunities

Employment Strategies

At least 2% of the building's total contract value is directed to generating employment opportunities for disadvantaged and under-represented groups. This is done through a combination of:

- Directly, through workforce targets, including:
 - Apprentice training
 - Paid traineeships
 - Gender diversity
 - Workforce upskilling
- Indirectly, through social procurement of goods, services, and construction by any of the following means:
 - Aboriginal and/or Torres Strait Islander businesses
 - Social enterprises
 - Disability enterprises
 - Migrant groups

Enterprise providers are independently certified by a third party, accredited organisation. Refer *Guidance* for examples.

Stepped points are available where less than 2% of the building's total contract value is directed to generating employment opportunities as below.

Available points	Percentage requirements
1 point	At least 1% of the building's total contract value is directed to generating employment opportunities

Available points	Percentage requirements
1 additional point	At least 2% of the building's total contract value is directed to generating employment opportunities

Reporting

The project reports on the following by completing the *Procurement and Workforce Inclusion calculator*:

- Dollar spent and total contract value
- Supplier(s) engaged
- Where workforce targets are in place, the metric used is declared including any assumptions and also expressed as Full Time Equivalent
- Number of jobs supported and the groups represented

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with the following criterion:

- Employment Opportunities

Employment Opportunities

At least 4% of the building's total contract value is directed to the generation of employment opportunities for disadvantaged and under-represented groups.

Refer *Credit Achievement* for requirements.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Aboriginal participation

Where the credit refers to Aboriginal businesses or workforce targets, these also apply to Torres Strait Islander people.

Disability enterprise

An Australian Disability Enterprise (ADE) is a not-for-profit organisation, with charitable status, which provides meaningful employment for people with significant disability who would otherwise not be able to work. It is a business that makes products or provides services.

Dollar spent

Dollar spent relates to activities including: any construction, maintenance, rehabilitation, alteration, extension, or demolition of any improvements on land. It includes dollars spent on:

- Design and construction
- Tendering processes
- Project delivery
- Contract administration

Full time equivalent (FTE)

A full-time equivalent (FTE) is a unit of measurement used to determine the number of full-time hours worked by all employees on the project. The full-time hours for a job is based on the specified award rate for that job classification or an average of 7.6 hours/working day in the reporting period.

Indigenous business

An Indigenous business is a legal entity that is majority owned by Aboriginal and/or Torres Strait Islanders persons and is engaging in productive activity and/or other forms of economic activity in the market sector.

Social enterprise

Social enterprises are businesses that trade to intentionally tackle social problems, improve communities, provide people access to employment and training, or help the environment. They derive most of their income from trade (not donations or grants) and use the majority of their profits (at least 50%) to contribute to their social mission.

Social procurement

Social procurement is the use of strategic procurement practice to generate social benefits beyond the products and services required. Social procurement occurs when organisations intentionally choose to purchase a social outcome when buying a good, service or delivering works.

Women in non-traditional roles

A non-traditional trade or profession for women is where female participation is less than 25%.

Workforce

The workforce to be considered in the workforce objectives and targets includes anyone employed as part of the project such as employees of the head contractor, subcontractor, professional services and design consultants. Workers on-site or in office support roles are included.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Design and construct contracts

Where the head contractor for the main works is engaged under a design and construct contract, the social procurement strategy is developed prior to the procurement of the subcontractors and materials. The head contractor may provide input into the strategy.

Disadvantaged and under-represented groups

This credit addresses groups such as, but not limited to:

- Aboriginal and/or Torres Strait Islander people
- Women and transgender people in non-traditional roles/ professions
- Apprentices
- People from a culturally and linguistically diverse (CALD) background and people of colour
- People who identify as LGBTIQA+
- People experiencing long-term unemployment
- Refugees and asylum seekers
- Ex-offenders
- People living with disabilities

A person who is represented by many groups may contribute more than once.

Eligible Aboriginal procurement

Eligible spend includes Aboriginal employment, engagement of Aboriginal-owned businesses, education and training, and engagement or consultation with Aboriginal organisations or businesses.

Accreditation organisation(s)

The accreditation organisations, such as but are not limited to Supply Nation, Social Traders, BuyAbility and government chamber of commerce, provide advisory services to help projects identify opportunities for suitable spend and can provide data demonstrating social impacts.

Workforce targets

Developing workforce targets

When developing targets related to workforce, the project should consider the local conditions as well as the project size.

A demographic study will inform targets to be developed. Government sources such as the [Australian Bureau of Statistics](#); the [NSW Department of Communities and Justice](#) the [National Centre for Vocational Education](#) provide useful statistics and data to help develop project specific targets. The local region can be considered the region within the same [statistical area level 4](#) (SA4) area. Adjacent SA4 areas may be included for capital city regions.

When developing workforce targets the following principles are recommended:

- Allow flexibility in the targets so that they can be adapted depending on the project phase and life cycle.
- Ensure targets and requirements in the Workforce Inclusion Plan can be contractually enforceable.
- Provide value to target group and project.
- Ensure they are realistic, and thus while aspirational, can be achieved.

Engagement with employer providers is recommended to better understand local supply and development needs. While the following list is not exhaustive, it can be used to guide the project:

- [Aboriginal Employment Strategy](#)
- [Apprentice Employment Network](#)
- [Refugee Settlement Program](#)
- [National Association for Women in Construction](#)

Working with the procurement team during the development of the Workforce Inclusion Plan is important, as integration into the overall Procurement Strategy/Plan for the project is the mechanism by which workforce targets can be implemented.

Government projects may be subject to workforce targets.

Incorporating targets into contracts

To ensure the successful implementation of the strategy, the project should incorporate social procurement and/ or workforce targets into key contracts. Contracts should state require data collection requirements, monitoring and reporting requirements, and a framework for incentivising the achievement of targets.

Reporting

Workforce targets can be reported in hours however a conversion to cost must be made to demonstrate compliance. Project teams may use the default conversion rate in the *Procurement and Workforce Inclusion calculator* or justify an alternative with evidence.

Social procurement

Social procurement is being driven at a state level by several governments. The [Victorian Social Procurement Framework](#) is considered a best practice guide that can be used by projects when developing and implementing their Social Procurement Strategy/ Plan.

Other existing guidelines include:

- Social Procurement in NSW

- Insights into Social Procurement: From Policy to Practice

Early engagement with procurement professionals and identified supply chain are important success factors.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Procurement and Workforce Inclusion calculator**
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Social Procurement Strategy

- Extracts from the social procurement strategy.

Employment Opportunities

- A summary report of the data collected, the project's targets and the targets achieved. This may be extracts for a wider organisational report or annual report.
- Evidence of the contract value.
- Evidence of workforce and/or social procurement targets in main contracts and subcontracts.
- Evidence that enterprises are independently certified by third party organisation.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit

- Queensland Government – [Consider social procurement](#)
- Property Council of Australia – [Guide to Social and Indigenous Procurement](#)
- Social Procurement Australasia - [Social Procurement in NSW](#)
- Social Procurement Australasia - [Insights into Social Procurement: From Policy to Practice](#)
- Victorian Government - [Victorian Social Procurement Framework](#)

Design for Equity

Outcome

The building is welcoming to a diverse population and is welcoming to their needs.

Criteria

Credit Achievement	2 points	<ul style="list-style-type: none">Inclusive Design: The building is designed and constructed to be inclusive to a diverse range of people with different needs.
In addition to <i>Credit Achievement</i> :		
Exceptional Performance	1 point	<ul style="list-style-type: none">Needs Analysis: Engagement with target groups has informed the design of publicly accessible areas.

Additional information

Scope of credit

All publicly accessible areas of the building. As a minimum, this includes a publicly accessible lobby area at street level and bathroom amenities. Where the project does not have these spaces or has no publicly accessible areas, this credit cannot be targeted.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Responsible Construction
- Inclusive Construction Practices

Sustainable Development Goals

- Goal 5 (Gender Equality)
- Goal 8 (Decent Work and Economic Growth)

Requirements

Credit Achievement

The project must comply with the following criterion:

- Inclusive Design

Inclusive Design

The building can be navigated and enjoyed by stakeholders of diverse ages, genders, ethnicities and physical, sensory and mental abilities.

As a minimum, the building has strategies for following areas that are beyond the requirements within the NCC:

- **Equitable access** to the building where access is safe and does not segregate users for all principal entry and exit points and main thoroughfares inside and outside the building. The strategies implemented support ease and independence of use.
- **Diverse wayfinding** including a combination of visual, physical, olfactory, and/or auditory solutions to help individuals intuitively navigate the public areas and amenities of the building independently in a safe and enjoyable manner. Visual, physical, olfactory, and auditory solutions are all considered during the design however those deemed most appropriate to the project are implemented.
- **Inclusive spaces** including parent rooms, gender inclusive restrooms, family restrooms, sensory rooms, quiet rooms, and/or social interaction rooms. These rooms are accessible by a diverse range of users.
- **Inclusive digital products** that are delivered in accordance with AS EN 301 549:2020 *Accessibility requirements for ICT products and services*.

Exceptional Performance

In addition to *Credit Achievement*, the project must comply with the following criterion:

- Needs Analysis

Needs Analysis

Early in the design, the project team conducts a needs analysis by consulting people with lived experience representing a balanced cross-section of the community to ensure all publicly accessible areas and amenities are accessible to a diverse range of users of the building.

The needs analysis influences project-specific approaches beyond those required in the *Inclusive Design* criteria and are implemented on the project.

Tenanted buildings

Tenants that are representative of at least 80% of the GFA are to be engaged as part of the needs analysis.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Family restroom

A private toilet and washroom facility that can accommodate individuals, families with children and those with accessibility or assistance needs.

Parent room

A space for parents to undertake activities such as rest, change and care for children.

Publicly accessible areas

Areas of the building that can be accessed by the general public.

Quiet room

A space that provides auditory respite. Examples include pray/meditation/wellness rooms or contemplation spaces.

Sensory room

A space that provides a calming and controlled sensory environment.

Social interaction room

A space that encourages social interaction and can be accessed by a diverse range of users. Examples include common rooms or staff lounge areas.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Diverse stakeholders

This credit intends to provide an accessible building beyond legislative requirements so that a diverse range of stakeholders can use the building independently in a comfortable and safe manner.

Refer to *CEN-CENECL Guide 6: Guide for addressing accessibility in standards* for guidance on considering diversity in physical, sensory and mental abilities.

Diverse wayfinding

All four wayfinding solutions, visual, physical, olfactory, and auditory, are to be considered by the project however not all four solutions are required. The implemented solutions are to be based on the expected users of the publicly accessible areas. Different solutions or different combinations of solutions can be implemented in different locations.

Examples of solutions include:

- Visual: signage that features colours that considers colour blindness
- Physical: changes in flooring texture to signify a change in pace
- Olfactory: fragrant plants to signify an entry way
- Auditory: a small fountain to signify an entry way

Inclusive spaces

Not all rooms listed are required to be delivered for all projects and there is no minimum number of inclusive spaces required per number of regular occupants however the number of inclusive spaces included in the project are to be sufficient to cater for the expected profile and number of occupants of the building.

Needs analysis

How the needs analysis is completed depends on the project and stakeholders – the end-use, types of users, who is undertaking the analysis and why the analysis is being done. Project teams will need to describe the needs analysis and how this contributed to the project's design solutions. The needs analysis may be formal and extensive, or informal and focused, depending on the project-specific circumstances.

People with lived experience should be consulted as part of the needs analysis however do not need to be future tenants or users of the building (i.e.. for an apartment building, people with visual impairments should be consulted however do not need to be a future apartment owner).

Early in the design

The needs analysis should be conducted as early as possible in the design stage (i.e. either during concept or early in the design development stage) so that recommendations and findings are integrated into the design. Where the needs analysis is conducted later than design development, reasons for this are provided and the project team must demonstrate that findings from the analysis can meaningfully integrated into the project's design.

Needs analysis building outcomes

Building solutions that are expected to be included would be assistive technologies, emotional health spaces, acoustic treatments, adaptive strategies, gender, size, and physical appropriate facilities.

Ongoing management

This credit is aimed at providing an accessible building beyond legislative requirements.

In addition to the above, it is strongly recommended the following also occur:

- Training for the project development team on universal design principles and project goals.
- Training for the future building operations and facilities management team on the design features that enable inclusivity, how to maintain them properly, and how to respectfully work with all stakeholders to assist them on their needs.
- Develop policies for the maintenance of the building to ensure a focus on inclusiveness. These policies should include staff training, cleaning procedures, rapid response for maintenance issues, and how to manage emergency situations (e.g., how to support the evacuation of different types of disabled person(s) in a fast and safe manner).

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Inclusive Design

- As built drawings of all principal entry and exit points and main thoroughfares annotated to highlight and explain strategies, wayfinding solutions and inclusive spaces.
- Product data sheets or similar to demonstrate compliance with AS EN 301 549.

Needs Analysis

- Evidence of engagement with people with lived experience across a diverse cross-section of the community.
- A summary of the recommendations from the needs analysis.
- Evidence (e.g., as built drawings, photos or similar) of the inclusive design strategies.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- Australian Disability Network - [Design for Dignity Guidelines: Principles for Beyond Compliance Accessibility in Urban Regeneration](#)
- CEN-CENELEC - [Guide 6: Guide for addressing accessibility in standards](#),
- Centre for Excellence in Universal design – [Building for Everyone](#)
- Champions of Change – [Equity by Design](#)
- London Legacy Development Corporation – [Inclusive Design Standards](#)
- innovative solutions for Universal Design - [Solutions](#)
- NSW Government - [Government accessibility standard for ICT](#)
- Royal Institute of British Architects - [Inclusive Design Overlay for RIBA Plan of Work](#)

Nature

Worldwide and within Australia, rapid urbanisation is putting pressure on ecosystems and threatening biodiversity. Research and evidence demonstrating the positive impacts of green space and biodiversity on people and urban space is significant and continues to grow.

The category is built on five distinct principles:

- Protect ecological and biodiversity value, by encouraging development on land of limited value.
- Minimise impacts to on-site ecology and biodiversity during and after construction.
- Enhance ecological and biodiversity value by improving the site.
- Connect natural networks by creating links between native or built corridors.
- Create and manage off-site natural spaces to restore the impact to nature from development.

These principles shift the focus of the built environment from a passive observer seeking to minimise impacts to one that is actively bringing nature and biodiversity back into cities. It also ensures the built environment considers impacts beyond its boundary and takes responsibility for rebuilding our natural environment. These requirements are embedded in the Nature Positive Pathway, which scales in ambition over time and by star rating. More information is available in the introduction and individual credits in this category.

Credits in this category:

- Limits the development's impacts on the natural world.
- Encourages projects to measure nature-related metrics.
- Specifically focus on creating biodiversity in Australian cities and regions that is indigenous and resilient to climate change.
- Provide natural corridors for animals to migrate.
- Allow buildings to claim reward for taking initiatives that restore biodiversity offsite.
- Protect waterways by reducing harmful pollutants that leave the building site.

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance
38	Impacts to Nature	●	2	
39	Biodiversity Enhancement		3	3
40	Nature Connectivity		2	
41	Nature Stewardship		2	
42	Waterway Protection		2	

Credits highlighted in green form part of the Nature Positive Pathway.

Impacts to Nature

Outcome

Ecological value is conserved and protected.

Nature Positive Pathway

	4 Star	Meets <i>Minimum Expectation</i>
Registering from 2028 onwards	5 Star	Meets <i>Credit Achievement</i>
	6 Star	
	4 Star	
Registering from 2030 onwards	5 Star	Meets <i>Credit Achievement</i>
	6 Star	

Criteria

Minimum Expectation	Nil	<ul style="list-style-type: none">Sensitive Sites and Species Protection: An assessment is conducted to identify if the project's site or adjacent sites, within 100m, contain <i>sensitive sites</i> or <i>sensitive species</i>. Where identified, measures are in place to ensure these are protected from <i>significant impacts</i> from the project's development and operations.Metrics Disclosure: Metrics related to land/freshwater-use change are disclosed.Managing Light Pollution Impacts: The project's light pollution is minimised.
Credit Achievement	2 points	In addition to <i>Minimum Expectation</i> : <ul style="list-style-type: none">Protecting Site Ecological Value: The project demonstrates no net biodiversity loss.

Additional information

Scope of credit

All areas within the site boundary (beyond the Green Star project boundary if different) and adjacent sites.

Managing Light Pollution Impacts

All external lighting in the project boundary. Signage related to emergency exits and external emergency lighting that only illuminates in the event of an emergency/power failure are excluded. Lighting related to other safety requirements are also excluded, for example, the lighting of ATMs.

Protecting Site Ecological Value

All areas within the project boundary.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Nature Connectivity
- Biodiversity Enhancement
- Waterway Protection
- Nature Stewardship

Sustainable Development Goals

- Goal 14 (Life Below Water)
- Goal 15 (Life on Land)

Relevant reporting initiatives

- GRESB
- TNFD

Requirements

Minimum Expectation

The project must comply with **all three** of the following criteria:

- Sensitive Sites and Species Protection
- Metrics Disclosure
- Managing Light Pollution Impacts

Sensitive Sites and Species Protection

Sensitive sites and species assessment

The project team assesses the site to determine whether the project's site or adjacent sites, within 100m, has a risk of containing *sensitive sites* or *sensitive species* (refer *Definitions*). The assessment identifies:

- Risks that the project's site and adjacent sites, within 100m, include any *sensitive sites* or *sensitive species* (permanent or migratory).
- Risks of *significant impact* from the project's development or operations to *sensitive sites* or *sensitive species*.
- For sites near waterways, waterflow reviews are required to ensure no impacts are carried downstream to *sensitive sites* or *sensitive species*.

If the assessment identifies issues under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), and the site is deemed a *controlled action*, it is classified as a *sensitive site* and the project must comply with all subsequent criteria.

If risks are identified, a qualified ecologist conducts an ecological assessment. If the risk is confirmed, the project must comply with the *Protecting sensitive sites and species* and *Actions above and beyond to address impacts* requirements below.

Where no risks of *sensitive sites* or *sensitive species* have been identified as part of the assessment, this criterion is considered met.

Timing of assessment

The assessment is based on the site conditions at earliest purchase date or option contract.

In cases where the site has been owned by the current owner for more than five years (from the project's Green Star registration date), the requirements are applied to the state of the site that existed at least five (but not more than ten years) prior to the project's Green Star registration date.

Where the previous condition of the site is unclear, a qualified ecologist assesses the site to determine its ecological value at the approximate time of purchase.

Protecting sensitive sites or species

Sensitive sites

Where there are *sensitive sites* within, or adjacent to, the site boundary:

- The *sensitive sites* are protected from *significant impacts* and ongoing impacts are managed.
- Adjacent sites have measures in place to prevent *significant impacts* from occurring, and ongoing impacts are managed.

Sensitive species

Where there are *sensitive species* within, or adjacent to, the site boundary:

- Areas used by *sensitive species* (permanent or migratory) are protected from *significant impacts* and ongoing impacts are managed.
- Adjacent sites have measures in place to prevent *significant impacts* from occurring and ongoing impacts are managed.

Protecting from significant impacts

To consider a *sensitive site* or *sensitive species* protected from *significant impacts*:

- Development does not occur in or within 100m of that area, or
- Where development must occur, the project team contacts the GBCA and seeks an allowance to comply with the GBCA's *Above and Beyond Approach*. Refer *Guidance* for further information.

Management of impacts

Where a *sensitive site* or *sensitive species* are identified, but protected from *significant impacts*, ongoing management of impacts is required through a site-specific Biodiversity Management Plan prepared by a qualified ecologist or another qualified professional.

As a minimum, the plan identifies:

- How impacts from noise, waste, pollution and light during construction are managed.
- A process for ongoing monitoring, reporting and management to identify potential *significant impacts* to *sensitive site* or *sensitive species* throughout the duration of project's construction and after practical completion.
- Where important wildlife habitats are identified, a process for mitigation and monitoring the external artificial lighting as per the [*National Light Pollution Guidelines for Wildlife*](#) is included with input from a qualified lighting professional.

Management actions for the construction period of the project are included in the construction Environmental Management Plan (EMP) as required in the *Responsible Construction* credit.

Metrics Disclosure

Metrics related to land and/or freshwater-use change are disclosed.

The following metrics are disclosed as defined by the Taskforce for Nature Financial Disclosure (TNFD):

- Total spatial footprint (km²)
- Extent of land/freshwater ecosystem use change (km²)
- Extent of land/freshwater ecosystem conserved or restored (km²)
- Extent of land/freshwater ecosystem that is sustainably managed (km²)

Refer *Guidance* section for information on TNFD and the metrics.

Managing Light Pollution Impacts

Limiting obtrusive effects

All external lighting on the project complies with all lighting parameters in both Table 3.2 and Table 3.3 from AS/NZS 4282:2023.

The calculation plane is considered at the project's site boundary, with no setback and no consideration of the location of adjacent buildings, unless the boundary is adjacent to one of the following:

- A road
- For Class 7b buildings in an industrial estate: another industrial or commercial development

For these scenarios, the calculation plane location is as per Clause 3.3.1.4 from AS/NZS 4282:2023 for these boundaries.

Direct illuminance to night sky

Direct illuminance from all external lighting on the project produces a maximum initial point illuminance value no greater than:

- 0.5 Lux to the site boundary
- 0.1 Lux to 4.5 metres beyond the site into the night sky, when modelled using a calculation plane set at the highest point of the building

Calculations are in accordance with AS/NZS 4282:2023.

The calculation plane covers the area between the site boundary and building façade or vertical service to be illuminated. The horizontal calculation plane is set at the top of the building fabric, excluding spires. Calculation plane grid points have a 0.5m spacing. All illumination results are reported to within 2 decimal places.

Credit Achievement

In addition to *Minimum Expectation*, the project must comply with the following criterion:

- Protecting Site Ecological Value

Prerequisite: At least 10% of the area within the project boundary or an area equivalent to 0.1% of the total GFA, whichever is larger, is vegetated to target this criterion. This does not include vegetation that has been planted to address *Minimum Expectation*.

Protecting Site Ecological Value

The project demonstrates no net loss of biodiversity value compared to the site conditions prior to development.

An ecological assessment is conducted by a qualified ecologist to evaluate the existing biodiversity and ecological values of the site prior to development early in the planning phase.

Refer *Guidance* section for acceptable calculation methods.

Projects that demonstrate compliance with the *Biodiversity Enhancement* credit and meet the prerequisite for *Credit Achievement* are considered to have met this criterion.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

External lighting

External lighting refers to lighting under the control of the building management. In addition to other types of external lighting, for the purposes of this credit luminaires inside glazed atria and those on the uppermost (uncovered) deck of an outdoor car park are external.

Matters of National Environmental Significance

Matters of National Environmental Significance are protected against actions that have, or are likely to have, a significant impact by the Environmental Protection and Biodiversity Conservation Act 1999. Refer to [Department of Climate Change, Energy, the Environment and Water](#) (DCCEEW) for further information.

Land/freshwater-use change metrics

The following metrics are referenced in the TNFD's [Additional sector guidance – Engineering, construction and real estate](#).

Metric no.	Indicator	Metric	Metric description
C1.0	Total spatial footprint	Total spatial footprint	<p>Total spatial footprint (km²) (sum of):</p> <ul style="list-style-type: none">• Total surface area controlled/managed by the organisation, where the organisation has control (km²);• Total disturbed area (km²); and• Total rehabilitated/restored area (km²).
	Extent of land/freshwater/ocean-use change	Extent of land/freshwater ecosystem use change	<p>Extent of land/freshwater ecosystem use change (km²) by:</p> <ul style="list-style-type: none">• Type of ecosystem; and• Type of business activity.
C1.1	Extent of land/freshwater/ocean-use change	Extent of land/freshwater ecosystem conserved or restored	<p>Extent of land/freshwater ecosystem conserved or restored (km²), split into:</p> <ul style="list-style-type: none">• Voluntary; and• Required by statutes or regulations.
		Extent of land/freshwater ecosystem that is sustainably managed	<p>Extent of land/freshwater ecosystem that is sustainably managed (km²) by:</p> <ul style="list-style-type: none">• Type of ecosystem; and• Type of business activity.

Qualified ecologist

An ecologist who has a degree in ecology or similar and/or a minimum of five years continuous experience working as an ecologist.

Qualified lighting professional

A professional who has a degree in lighting design or similar and a minimum of five years continuous experience working as a lighting designer.

Project boundary

Refers to the Green Star rating boundary.

Project site

Refers to the full site that the project is located on, ie. the area bounded by the site boundary.

Sensitive sites

Sensitive sites are defined as:

- State, regional, or national protected areas.
- National or world heritage areas.
- Native, or primary, forests.
- Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone.
- Areas within declared fish habitat areas.
- Great Barrier Reef Marine Park.
- Water resources, watercourses, groundwater, or similar.
- Any wetlands of national importance listed under the Australian Ramsar Wetlands database, the Directory of Important Wetlands in Australia or wetlands deemed significant under a state register.
- Legally secured offset areas.
- Prime agricultural land.
- Sites that host in a permanent or migratory fashion any sensitive migratory species.
- Aspects considered 'Matters of National Environmental Significance' listed under the EPBC Act (regardless of whether they have been referred to the Federal Environment Minister for consideration and assessed as a 'controlled action' or not.)

Sensitive species

Sensitive species are defined as:

- Ecological communities, habitats, flora, or fauna legally classified as endangered, critically endangered, of concern, or threatened in any federal or state register.
- Species that appear in the European Commission's 'Red list of endangered species' in a state, regional, national, or international databases.
- Listed migratory species (protected under international agreements).
- Listed marine species.

Significant impact

Significant impact is defined as a permanent reduction or loss of a species or of the biological and complexity of an ecosystem. This impact results in the long-term reduction of a species' capacity to continue to exist or impacts the capacity of biodiversity and ecosystem services to restore themselves. The Australian Government has a published guidance document outlining examples of significant impacts across several types of environmental impacts ([Matters of National Environmental Significance - Significant impact guidelines 1.1](#)). Significant impact is to be determined by a qualified ecologist with experience in the region based on the actions to be taken on site.

Site boundary

Refers to the boundary that surrounds the total area owned by the building owner. This includes the building or buildings being developed, landscaping, car parking, ancillary infrastructure, and other existing buildings within a broader precinct owned by the building owner. This may be the same as the project boundary or larger due to the chosen project boundary or where there are existing buildings in a precinct.

Upward light output ratio

The ratio of the luminous flux emitted by a luminaire above the horizontal to that emitted by the lamp.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relationship to the *Biodiversity Enhancement* credit

This credit intends to ensure *sensitive sites and species* are not significantly impacted and that there is minimal impact on the site's ecological value by the building's development. The *Biodiversity Enhancement* credit intends to recognise projects that go beyond this and improve the ecological value of the site.

Site assessment vs ecological assessment

The initial site assessment to identify the potential presence of *sensitive sites and species* can be conducted by the project team. The subsequent ecological assessment is to be conducted by a qualified ecologist. The same ecological assessment may be used for to determine the existing biodiversity and ecological values of the site prior to development if the project team is targeting *Credit Achievement* in this credit and/or the *Biodiversity Enhancement* credit.

EPBC Act

Project teams can determine whether the project site is subject to approval under the EPBC Act by referring to their Development Approval documents.

Above and Beyond Approach

While preventing *significant impacts* is the purpose of the credit, regulatory approval may allow *sensitive sites or sensitive species* to be impacted via a controlled action. In these situations, the project team must contact the GBCA to seek approval to use the *Above and Beyond Approach* to comply with the *Minimum Expectation* and be eligible for a Green Star rating.

The *Above and Beyond Approach* outlines actions that go beyond regulatory requirements (such as those set by planning or statutory regulations e.g., the EPBC Act) to avoid, minimise, compensate and enhance ecological values in line with the conservation and mitigation hierarchy. The use of this approach is solely at the discretion of GBCA and is not automatic. Projects must obtain written approval from the GBCA via an Eligibility Query or Technical Question. Because of the sensitive nature of the issue, these queries may take a significant time to resolve.

Light pollution

Control of upward light output (ULOR)

A luminaire with a ULOR as nominated in the manufacturer's data sheet, will have a different ULOR when the mounting orientation of the luminaire is changed. If any external luminaire is mounted in an orientation other than the one nominated by the manufacturer, the ULOR must be recalculated and provided by project teams.

Awnings

Awnings can be used as a means of achieving compliance with the 5% ULOR requirement where a section drawing showing the light output of the luminaire can be provided, and where the awning has the effect of blocking 95% of the output of the lamp above the horizontal. This requirement is not met where it is not clear if the awning is a permanent structure.

Purpose of the prerequisite in *Credit Achievement*

A minimum area of vegetation is required on site to target *Credit Achievement* as the intent is to encourage projects that have high site ecological value to achieve an equivalent site ecological value after development. Projects that do not meet the prerequisite are encouraged to target the *Biodiversity Enhancement* credit and increase the biodiversity on their site.

Projects that have vegetated areas that are close to the values in the prerequisite may submit a Technical Question to justify why the criteria is relevant to their project.

Early in the planning phase

The ecological assessment is encouraged to be conducted as early as possible so that an accurate understanding of the existing biodiversity and ecological values of the site prior to any changes on site. It is also intended that the assessment informs design decisions in maintaining or enhancing the site's ecological value.

Calculating biodiversity values

Projects registered prior to the release of the Green Star Biodiversity Net Gain methodology can use their preferred method, provided it is relevant to the Australian context and considers the following:

- Habitat size: Larger habitats tend to support greater species richness, provide more ecosystem services, and offer increased ecological stability.
- Habitat distinctiveness and rarity: The uniqueness of a habitat, including its ecological characteristics, and the presence of rare or threatened species highlight its irreplaceable conservation value.
- Ecological condition and quality: The health and quality of the habitat, including vegetation cover, soil health, and absence of invasive species, determine its capacity to support biodiversity and ecosystem functions.
- Connectivity and strategic importance: The habitat's role in connecting with other natural areas, maintaining wildlife corridors, and supporting gene flow and species movement. This includes its ecological importance within local and regional networks.
- Local importance: The value of the habitat to local ecosystems, communities, or cultural practices, emphasising its role in providing services or holding significance at a localised level.

The following tools are available and may assist in the calculation of biodiversity net gain.

- [The United Kingdom's statutory biodiversity metric](#)
- [Victorian Government Habitat Hectare measurement](#)
- [NSW Government Biodiversity Assessment method](#)
- [Biodiversity net gain calculator](#)
- [City of Melbourne's Green Factor Tool](#)

Submission content

Submissions for this credit must contain

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Sensitive Sites and Species Protection

- Extracts from the development application
- Zoning plans
- Evidence of site purchase date
- Site assessment
- Extracts from ecological assessment
- Extracts from Biodiversity Management Plan
- Extracts from construction EMP

Metrics Disclosure

- Impacts Disclosure template

Managing Light Pollution Impacts

- As built drawings indicating the location of all external luminaires and showing the aiming point and mounting orientation of all external luminaires.
- Luminaire schedule for all external lighting, nominating the type, lighting distribution and quantity of each luminaire and including the relevant photometric data such as ULOR.
- Calculation plots for all external lighting, showing that all grid points on the calculation plane return compliant Lux values.
- Excerpt from lighting control system, or similar, demonstrating automatic deactivation of lights, based on external lux levels, where deactivation is required to achieve compliance.

Protecting Site Ecological Value

- Extracts from ecological assessment
- As built drawings
- Biodiversity value calculation

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- AS/NZS 4282:2023 - Control of the Obtrusive Effects of Outdoor Lighting
- DCCEEW - [Environmental Protection and Biodiversity Conservation Act 1999](#)
- DCCEEW - [National Light Pollution Guidelines for Wildlife](#)
- GBCA - [Building with Nature: Prioritising Ecology and Biodiversity for Better Buildings and Cities](#)
- GBCA – [Nature positive roadmap](#)
- [Nature Design Guide](#)
- TNFD - [Taskforce on Nature-related Financial Disclosures \(TNFD\) Recommendations](#)
- TNFD – [Additional sector guidance – Engineering, construction and real estate](#)

Biodiversity Enhancement

Outcome

The building's landscape enhances the biodiversity of the site.

Nature Positive Pathway

	4 Star	No requirement
Registering from 2028 onwards	5 Star	Meets requirement for all points in the <i>Biodiversity net gain</i> pathway in <i>Credit Achievement</i>
	6 Star	
Registering from 2030 onwards	4 Star	
	5 Star	Meets requirement for all points in the <i>Biodiversity net gain</i> pathway in <i>Credit Achievement</i>
	6 Star	

Criteria

Credit Achievement	Up to 3 points	<ul style="list-style-type: none">Increased Biodiversity: The project demonstrates an increase in biodiversity on site.Biodiversity Management Plan: The project team develops a site-specific Biodiversity Management Plan and provides it to the building owner or building owner representative.
Exceptional Performance	Up to 3 points	In addition to <i>Credit Achievement</i> : <ul style="list-style-type: none">Increased Biodiversity: The project demonstrates a greater increase in biodiversity on site.

Additional information

Scope of credit

All areas within the Green Star project boundary.

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- Connection to Nature
- Impacts to Nature
- Nature Connectivity
- Water Use
- Climate Change Resilience
- Culture, Heritage, and Identity

Sustainable Development Goals

- Goal 13 (Climate Action)
- Goal 14 (Life Below Water)

Relevant reporting initiatives

- GRESB
- TNFD

Requirements

Credit Achievement

The project must comply with **both** of the following criteria:

- Increased Biodiversity
- Biodiversity Management Plan

Increased Biodiversity

The site has an established amount of biodiverse area. Project teams must choose from one of the following pathways. Projects required to meet the Nature Positive Pathway must target the *Biodiversity net gain* pathway.

Pathway	Requirement
Biodiversity net gain	The building's site demonstrates an overall biodiversity value increase of at least 10% compared to the site conditions prior to development.
	An ecological assessment is conducted by a qualified ecologist to evaluate the existing biodiversity and ecological values of the site prior to development early in the planning phase. Refer <i>Guidance</i> for acceptable calculation methods for biodiversity net gain.
Prescriptive method	The area of new external vegetated landscaping is equivalent to at least 15% of the project boundary or 0.2% of the total GFA, whichever is larger. Vertical or horizontal landscapes are acceptable. The vegetated landscaping includes the following:
	<ul style="list-style-type: none">• A diverse range of plants where at least 60% are indigenous.• At least one significant (nesting) tree or equivalent habitat provision per 500m² of landscaped area.• No invasive species, as per the Australian Weeds Strategy 2017 to 2027.• Is resilient to climate impacts.

Pathway	Requirement
	<p>The plant selection is based on one of the following:</p> <ul style="list-style-type: none">• The plants do not exceed the following percentages per type:<ul style="list-style-type: none">– 10% of plants from one species– 20% of plants from one genus– 30% of plants from one family <p>The selection of plants is provided by a qualified ecologist and verified to be diverse.</p>

Stepped points are available for the *Biodiversity net gain* pathway only for a biodiversity value increase up to 10% as below. Projects meeting the Nature Positive Pathway must demonstrate a biodiversity value increase of 10% for this performance level.

Available points	Percentage requirements
1 point	At least 3% biodiversity value increase.
1 additional point	At least 6% biodiversity value increase.
1 additional point	At least 10% biodiversity value increase.

Biodiversity Management Plan

A site-specific Biodiversity Management Plan to outline actions to maintain the ecological integrated of biodiversity on the site after practical completion is prepared by a qualified ecologist or a similar qualified professional.

At a minimum, the plan outlines:

- The vision and objectives for the site's biodiversity values.
- The biodiversity profile of the site including the vegetation, habitats for species, fauna on site, potential migratory species.
- Actions to monitor and manage the biodiversity of the site to mitigate any further impacts or threats and who is responsible.
- The plan is included in the operations and maintenance information provided to the building owner.

Exceptional Performance

In conjunction with *Credit Achievement*, the project must comply with the following criterion:

- Increased Biodiversity

Increased Biodiversity

The site has an increased amount of biodiverse area. Project teams must choose from one of the following pathways. Projects required to meet the Nature Positive Pathway must target the *Biodiversity net gain* pathway.

Pathway	Requirement
Biodiversity net gain	<p>The building's site demonstrates an overall biodiversity value increase of at least 20% compared to the site conditions prior to development.</p> <p>Refer <i>Guidance</i> for acceptable calculation methods for biodiversity net gain.</p>

Pathway	Requirement
Prescriptive method	<p>An area of new external vegetated landscaping is equivalent to at least 35% of the project boundary or 0.33% of the total GFA, whichever is larger. Vertical or horizontal landscapes are acceptable.</p> <p>The vegetated landscaping includes the following:</p> <ul style="list-style-type: none">• A diverse range of plants where at least 80% are indigenous and includes critically endangered and/or endangered plant species which are native to the bioregion.• At least one significant (nesting) tree or equivalent habitat provision per 250m² of landscaped area.• No invasive species, as per the Australian Weeds Strategy 2017 to 2027.• Is resilient to climate impacts.• The plant selection provided by a qualified ecologist and verified to be diverse.

Stepped points are available for the *Biodiversity net gain* pathway only for a biodiversity value increase between 10% to 20% as below.

Available points	Percentage requirements
1 point	At least 13% biodiversity value increase.
1 additional point	At least 16% biodiversity value increase.
1 additional point	At least 20% biodiversity value increase.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Biodiversity net gain

A measurable improvement in biodiversity condition and extent, above a defined baseline, resulting from development activities.

Indigenous plant

An indigenous plant is one that is found or occurs in a local area or region. A native plant can be one that is found in Australia, whereas an indigenous plant is found in a specific geographic location, such as a city or local government area.

Qualified ecologist

An ecologist who has a degree in ecology or similar and/or a minimum of five years continuous experience working as an ecologist.

Similar qualified professional

In the context of the *Biodiversity Management Plan* criteria, this is a professional with a formal tertiary qualification in natural sciences, environmental science, horticulture or landscape architecture with a minimum of five years' experience in biodiversity planning or preparing conservation management plans.

Significant (nesting) tree

A large tree that can attain a height of minimum 15m or can be demonstrated to provide wildlife habitat.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relationship with the *Impacts to Nature* credit

The *Impacts to Nature* credit intends to ensure *sensitive sites or species* are not significantly impacted and that there is minimal impact on these by the building's development. This credit intends to recognise projects that go beyond this and improve the ecological value of the site or introduce meaningful biodiversity and nature where it did not previously exist.

Projects that target both *Credit Achievement* in the *Impacts to Nature* credit and this credit may use the same ecological assessment to establish the existing biodiversity and ecological values of the site prior to development.

Projects that target the *Protecting sensitive sites and species* requirements in *Minimum Expectation* in the *Impacts to Nature* credit and this credit may use the same Biodiversity Management Plan to outline a process for protecting biodiversity across the site. Sections of the plan that relate to construction activities are not required to be handed over to the building owner. Where a project is not targeting the *Protecting sensitive sites and species* requirements in *Minimum Expectation* in the *Impacts to Nature* credit, the plan should focus on actions after practical completion.

Relationship with the *Connection to Nature* credit

The *Connection to Nature* credit in the Healthy category deals specifically with internal plants. The only external planting/landscaping that can be counted is an accessible green roof. *Biodiversity Enhancement* deals specifically with external landscaping and has a stronger biodiversity focus. Should a green roof be provided, this can contribute towards both credits provided that the requirements in this credit are also met.

The *Connection to Nature* credit encourages productive plants, which can be both native and non-native. Because *Biodiversity Enhancement* has a strong biodiversity focus, it requires native plants. This does not mean that the credits are mutually exclusive, and both can be satisfied through a wide selection of plants.

Relationship with the *Nature Connectivity* Credit

One pathway under the *Nature Connectivity* credit is to incorporate landscaping for 25% of the external site area. It is a requirement for this landscaping to be contiguous. Should this credit be targeted, the landscaping area may be claimed in the *Biodiversity Enhancement* credit provided the requirements in this credit are also met.

Calculating biodiversity values

Projects registered prior to the release of the Green Star Biodiversity Net Gain Methodology can use their preferred method, provided it is relevant to the Australian context and considers the following:

- Habitat size: Larger habitats tend to support greater species richness, provide more ecosystem services, and offer increased ecological stability.
- Habitat distinctiveness and rarity: The uniqueness of a habitat, including its ecological characteristics, and the presence of rare or threatened species highlight its irreplaceable conservation value.
- Ecological condition and quality: The health and quality of the habitat, including vegetation cover, soil health, and absence of invasive species, determine its capacity to support biodiversity and ecosystem functions.
- Connectivity and strategic importance: The habitat's role in connecting with other natural areas, maintaining wildlife corridors, and supporting gene flow and species movement. This includes its ecological importance within local and regional networks.
- Local importance: The value of the habitat to local ecosystems, communities, or cultural practices, emphasising its role in providing services or holding significance at a localised level.

The following tools are available and may assist in the calculation of biodiversity net gain.

- [The United Kingdom's statutory biodiversity metric](#)
- [Victorian Government Habitat Hectare measurement](#)

- [NSW Government Biodiversity Assessment method](#)
- [Biodiversity net gain calculator](#)
- [City of Melbourne's Green Factor Tool](#)

Indigenous plants

An indigenous plant is one that is found or occurs in a local area or region. A native plant can be one that is found in Australia, whereas an indigenous plant is found in a specific geographic location, such as a city or a local government area.

Landscaping selection

The following resources provide information for the selection of landscaping in line with the credit requirements:

- City of Sydney, Urban Forest Strategy, 2013
- City of Melbourne, Urban Forest Diversity Guidelines, 2011

Submission content

Submissions for this credit must contain

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Increased Biodiversity

- Extracts from ecological assessment.
- Final biodiversity assessment including how biodiversity net gain is determined.
- Site plans marked up with landscaping.
- Schedules of plant species numbers and diversity.

Biodiversity Management Plan

- Extracts from Biodiversity Management Plan.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following document(s) are referenced in this credit:

- Brunswick Valley Landcare – [Climate Resilient Landscapes: A Planting Guide for the Northern Rivers Region](#)
- DAFF - [Australian Weeds Strategy 2017 to 2027](#)
- GBCA – [Building with Nature: Prioritising Ecology and Biodiversity for Better Buildings and Cities](#)
- GBCA – [Nature positive roadmap](#)
- [Nature Design Guide](#)

Nature Connectivity

Outcome

Wildlife movement is facilitated within and adjacent to the site.

Criteria

Credit Achievement	2 points	<ul style="list-style-type: none">Species Connectivity: The site encourages species connectivity through the site, and to adjacent sites.
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Additional information

Scope of credit

All external vegetated landscaped areas within the Green Star project boundary including on the building and external works.

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- Connection to Nature
- Impacts to Nature
- Biodiversity Enhancement
- Waterway Protection

Sustainable Development Goals

- Goal 15 (Life on Land)

Relevant reporting initiatives

- TNFD

Requirements

Credit Achievement

The project must comply with the following criterion:

- Species Connectivity

Species Connectivity

Wildlife Assessment

A report is prepared by a qualified ecologist and includes:

- **Identified species:** Identification of a range of wildlife species that can be supported by connectivity through the project and into surrounding habitat areas.
- **Existing strategies:** Identification of whether the project sits within an existing government blue or green grid strategy.

Implementation

Based on the wildlife assessment, species connectivity is encouraged for at least three identified species. If the project sits within a *Blue* or *Green Grid* strategy, the implemented solutions contribute to the goals of the strategy.

Species connectivity is encouraged by at least one of the following:

- **Landscaping** that is contiguous with existing, restored, and new habitats. The area of landscaping provided is at least 182m² or 25% of the total external area within the project boundary, whichever is larger.
- **Infrastructure** such as a canopy bridge, wildlife tunnels, green roofs, amphibian tunnels and green infrastructure that are used to connect nature on site to adjacent natural areas, which are either existing, restored, or new.

Definitions

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Blue and Green Grid

A Blue and Green Grid is a strategy that aims to increase the interconnectedness of natural spaces within the urban environment. Projects should contact their local municipality to determine whether the project sits within a wider Blue or Green Grid strategy.

Blue Grid

A Blue Grid specifically refers to the hydrological grid of a district. The Blue Grid offers an opportunity to use water systems as an interconnected network and improve the water and ecological quality of waterways along the entirety of the hydrological system.

As per Sydney Green Grid: Spatial Framework and Project Opportunities, considerations for Blue Grids include:

- | | |
|-----------------------------|-------------------|
| • Permanent Water Bodies | • Catchment Data |
| • Wetlands | • Easements |
| • Coastline | • Major Pipelines |
| • Harbour and Estuaries | • Stormwater Pits |
| • Stormwater Infrastructure | • Streets |

Green Grid

A Green Grid specifically refers to the ecological grid of a district. It attempts to protect and enhance the natural resources and biodiversity of the district by improving the quality of watercourses, creating green habitat corridors, and protecting endangered ecological communities.

As per Sydney Green Grid: Spatial Framework and Project Opportunities, considerations for Green Grids include:

- Open space inventory
- Vegetation Mapping by State government department
- Vegetation Zones
- Metropolitan Bike Path Plan
- Regional Trails
- Streets
- Easements
- Major metro infrastructure
- Landform

Qualified ecologist

An ecologist who has a degree in ecology or similar and/or a minimum of five years continuous experience working as an ecologist.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Relationship with the *Biodiversity Enhancement* credit

If landscaping is provided as per the *Biodiversity Enhancement* credit, the area of planting that supports the targeted wildlife species is counted towards this credit.

Building location

Projects do not need to be physically located adjacent to natural areas to demonstrate connectivity. The intent of the credit is that the project contributes to a wider network of natural spaces, such as a local green or blue grid, to contribute to establishing habitat corridors to support wildlife movement.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Site Plans marked up with landscaping, showing it is contiguous.
- Aerial Site Photographs marked up with landscaping, showing it is contiguous.
- Report on the types of infrastructure implemented.
- A reporting establishing the local species identified that a habitat would need to be provided for.
- Report on how designs support targeted wildlife species.

- Drawings detailing that habitat design.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resources support this credit:

- Atelier Groenblauw – [Urban Green-blue Grids](#)
- GBCA - [Building with Nature: Prioritising Ecology and Biodiversity for Better Buildings and Cities](#)
- GBCA – [Nature positive roadmap](#)
- [Nature Design Guide](#)
- NSW Government – [Greener Places](#)
- NSW Government – [Sydney Green Grid](#)

Nature Stewardship

Outcome

Biodiversity is restored beyond the building site.

Criteria

Credit Achievement	1 point	<ul style="list-style-type: none">Protection and Restoration Activities: Areas of restoration and/or protection are provided.
Exceptional Performance	1 point	<ul style="list-style-type: none">Increased Protection and Restoration Activities: An increased area of restoration and/or protection are provided.

Additional information

Scope of credit

Land outside the site boundary and beyond legislated/mandated requirements.

This does not include purchased biodiversity offsets or any actions required to be taken as part of an EPBC action, development approval, or other legislated requirements (including biodiversity offsets, invests in or directly actions land restoration, or similar).

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- Impacts to Nature

Sustainable Development Goals

- Goal 15 (Life on Land)

Relevant reporting initiatives

- GRESB
- TNFD

Requirements

Credit Achievement

The project must comply with the following criterion:

- Restoration and Protection Activities

Restoration and Protection Activities

The building owner undertakes activities to protect and/or restore ecosystems outside the site boundary. The area of restoration or protection is at least 50% of the total GFA of the building or at least 50% of the area within the project boundary, whichever is greater.

Project teams may choose from one or both of the following pathways:

Pathway	Requirements
Direct protection and/or restoration	<p>The building owner protects and restores the ecological values of a purchased site.</p> <p>A Restoration and/or Protection Management Plan for the purchased site is prepared by a suitably qualified ecologist. The plan includes a strategy and timeframes on how the site will be protected to maintain its ecological value and/or how the site will be restored to be equivalent in ecological value to the site prior to development. This is validated by an independent qualified ecologist or a similar suitably qualified professional.</p> <p>The building owner commits to set-aside and manages the site land in perpetuity including on-going funding provision.</p>
Supporting an organisation that restores and/or protects nature on the project's behalf	<p>The building owner establishes a partnership with a relevant organisation to deliver protection, restoration or improvement and ongoing management of land on behalf of the project.</p> <p>The restoration and/or protection activities are verified by an independent qualified ecologist or other suitably qualified professional.</p>

For both pathways, the project team demonstrates land designated for restoration and protection meets the following:

- Location of activities:** Land for restoration or protection is in Australia. The location of the land designated for the offsite restoration is not in the site boundary.
- Verification of ecological value:** A qualified ecologist confirms that the ecological value is equivalent to the land on which the building is being developed and is restored to equivalent ecological value of the site before any developed occurred or protected.
- Exclusivity of land use:** The land being claimed is designated exclusively to the project and not being claimed as restoration activities against any other site.
- Additionality:** Activities go beyond any legislated requirements and demonstrate how these actions achieve outcomes that would not have occurred without the intervention.
- Longevity:** Protection of the land is secured in perpetuity.

The above information is included in the Restoration and/or Protection Management Plan if direct protection and/or restoration is pursued.

Exceptional Performance

The project must comply with the following criterion:

- Increased Restoration and Protection Activities

Restoration and Protection Activities

The building owner undertakes activities to protect and/or restore ecosystems outside the site boundary. The area of restoration or protection is equivalent to the total GFA of the building or the area within the project boundary, whichever is greater.

Refer *Credit Achievement* for pathways for activities.

Definition

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Gross Floor Area (GFA)

As defined in the AIQS to be the fully enclosed covered areas and unenclosed covered areas of the building. Refer *Introduction* for full definition.

Project boundary

Refers to the Green Star rating boundary.

Qualified ecologist

An ecologist who has a degree in ecology or similar and/or a minimum of five years continuous experience working as an ecologist.

Similar suitably qualified professional

In the context of the Restoration and/or Management Plan, this is a professional with a formal tertiary qualification in natural sciences, environmental science or landscape architecture with a minimum of five years' experience in biodiversity planning or preparing conservation management plans.

Site boundary

Refers to the boundary that surrounds the total area owned by the building owner. This includes the building or buildings being developed, landscaping, car parking, ancillary infrastructure, and other existing buildings within a broader precinct owned by the building owner. This may be the same as the project boundary or larger due to the chosen project boundary or where there are existing buildings in a precinct.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Off-site vs. on-site restoration

Actions to enhance biodiversity within the site are addressed by other credits in this category.

As the aim of this project is to increase biodiversity in areas outside the site as far as practicable, solutions that enhance the site, or adjacent buildings that are owned or developed by the same entity, are unlikely to be considered for this credit. There may be exceptions, for example where the enhancement is occurring in another area of a precinct or campus (e.g., a waterway restoration activity). However, in such a situation, it would expect to see how the enhancement is tied to the rated project, how it is being funded, and how it is additional – it wouldn't have happened otherwise.

Restoration activities

The range of possible offsite restoration actions may include the following:

- Habitat improvement, restoration, or expansion
- Direct threat mitigation

- Installation of artificial structures or habitats
- Ecological recycling or re-use of natural materials
- Re-introduction of species or natural processes
- Monitoring and benchmarking

Examples of partner organisations

The below are some example organisations that may be used for the second pathway.

- Local Aboriginal Land Council – refer below
- Biodiversity Conservation Trust of NSW
- Bush Heritage Australia
- Greening Australia
- Landcare Australia
- Queensland Trust for Nature
- Nature Foundation SA
- South Endeavour Trust
- Tasmanian Land Conservancy
- The Nature Conservancy – Australia Program

Other organisations may be used, provided their activities are verified by a third party.

Local land councils

Local Lands Councils represent the local communities and Aboriginal landowners during consultation processes of land use proposals. There are councils in each state which are a key source of information for projects based in these areas. Links are provided below as a starting point for project teams.

State	Area	Link
ACT	Region	https://www.communityservices.act.gov.au/atsia/committees/ngunnawal_issues
QLD	North and Central	https://nqlc.com.au/
	Cape York	http://www.cyclc.org.au/
NSW	Region	http://alc.org.au/
	Sydney	http://metrolalc.org.au/
VIC	Region	http://www.bglc.com.au/
SA	Region	http://www.anangu.com.au/
	South-West	http://www.noongar.org.au/
	Goldfields	http://www.glsc.com.au/
WA	Kimberley	http://klc.org.au/
	Ngaanyatjarra	http://www.ngaanyatjarra.org.au/
TAS	Region	https://www.acnc.gov.au/charity/307763c5033170591a70072caee1b026
NT	Central	https://www.clc.org.au/
	North	https://www.nlc.org.au/
	Tiwi	https://www.tiwilandcouncil.com/

State	Area	Link
	Anindilyakawa	https://www.anindilyakwa.com.au/
Torres Strait Islands	Region	http://www.tsirc.qld.gov.au/

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Restoration and/or Protection Management Plan.
- Evidence of site purchase and its location.
- Evidence of formal partnership.
- Overview of restoration activities.
- Evidence of funding provisions and that the land is secured in perpetuity.
- Evidence of project specific additionality.
- Evidence of independent validation.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resource supports this credit:

- DCCEEW – [Investing in nature](#)
- GBCA – [Building with Nature: Prioritising Ecology and Biodiversity for Better Buildings and Cities](#)
- GBCA – [Nature positive roadmap](#)

Waterway Protection

Outcome

Local waterways are protected, and the impacts of flooding and drought are reduced.

Criteria

Credit Achievement	2 points	<ul style="list-style-type: none">Pollution Reduction Targets: Specified pollution reduction targets are met.Stormwater Volume Management: The project demonstrates an appropriate level of stormwater volume management as determined by a site and water catchment assessment.
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Additional information

Scope of credit

All areas within the Green Star project boundary. If the project is part of a shared sitewide stormwater strategy where the site boundary is beyond the Green Star project boundary, the project's site boundary may be used.

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Nature Connectivity
- Biodiversity Enhancement
- Water Use
- Climate Resilience
- Operations Resilience

Sustainable Development Goals

- Goal 13 (Climate Action)
- Goal 14 (Life Below Water)

Relevant reporting initiatives

- GRESB
- TNFD

Requirements

Credit Achievement

The project must comply with **both** of the following criteria:

- Pollution Reduction Targets
- Stormwater Volume Management
- Pollution Reduction Targets

Pollutant Reduction Targets

All stormwater discharged from site meets specified pollution reduction targets listed in the table below.

Pollutant	Reduction Target (% of the post development annual average load)
Total Suspended Solids (TSS) ¹	85%
Gross Pollutants	90%
Total Nitrogen (TN) ²	45%
Total Phosphorus (TP) ²	65%

¹ Load based on the following particulate size distribution (by mass): 20% <20 µm; 20% 20-60 µm; 20% 60-150 µm; 20% 150-400 µm; 20% 400-2000 µm.

² Load includes particulate and dissolved fraction.

Environmental Management

The risk of chemical pollutants and other toxicants entering the stormwater system is minimised by the following:

- Chemical storage, loading, refuelling or work areas have installed bunding, with any spills draining to trade waste or appropriate treatment devices. These areas also have roofing to separately divert rainfall into the stormwater system.
- If a site has more than 200m² of uncovered areas where vehicles are likely to transit and/or park, these areas drain to a Water Sensitive Urban Design (WSUD) treatments that meet the above pollution reduction targets for pollutant reduction. Electric vehicle only parking areas do not contribute towards the total suspended solids, gross pollutants, total nitrogen and total phosphorus.
- During construction, the construction environmental management plan (EMP) addresses sediment and erosion control.

Stormwater Volume Management

The project conducts a site and water catchment assessment to determine if stormwater volume management is required for the site.

Site and Water Catchment Assessment

An assessment of the project site and the needs of the local waterways is completed by the project team with input from a qualified ecologist and a qualified civil engineer.

As a minimum, the assessment identifies:

- **The local catchment ecological context:** Locate and describe high value waterways, sensitive receiving environments, or priority areas for conservation. Identify sites in the downstream catchment that have high ecological value.
- Local council, water authority and state government targets, policies and guidelines that apply to the site.
- **Local precinct approaches** to stormwater volume management including any water sensitive urban design (WSUD) infrastructure.
- **Opportunities and constraints on site:** Describe if there are opportunities for the site for managing and controlling stormwater runoff by infiltrating, evaporating, storing, treating and detaining it and/ or describe constraints that are preventing the site from reducing high volumes of stormwater runoff.

Where the project can demonstrate one or more of the following is relevant, they are exempt from meeting the requirements in *Stormwater Volume*:

- A coastal site where the project stormwater outflows are directly into tidal areas or the ocean.
- A site where groundwater infiltration is not appropriate due to soil or topographical conditions (refer *Guidance* for examples) and the project has insufficient demand for harvested water.
- In a tropical region (as per NCC climate zones) where retention of high intensity flows on larger sites is not feasible. Sub-tropical sites are required to meet volume criterion.
- Downstream stormwater harvesting or recycling.
- A site where runoff is to be maximised for ecological reasons (e.g., to help flush a stagnant or saline wetland in an arid climate).

Stormwater Volume

Where stormwater volume reduction is required, it is shown to be reduced by demonstrating **one** of the following:

- A reduction in average annual stormwater discharge (ML/yr) of 30% against a Reference case. The reference case is the proposed project without any stormwater volume reduction strategies.
- The runoff volume at the site discharge point is equal pre- and post-development for a 50% Annual Exceedance Probability (AEP) storm.

The project team provides a plan documenting how appropriate evaluation, monitoring, and maintenance of stormwater control measures (and associated reporting of their condition) will be undertaken to enhance their design stormwater treatment function. The plan is included in the operations and maintenance information provided to the building owner.

Definition

Definitions provided here must be applied to *Requirements* unless agreed with GBCA via a Technical Question.

Pre-development

Refers to the condition of the site prior to any development, i.e., the site is fully pervious.

Project boundary

Refers to the Green Star rating boundary.

Qualified civil engineer

A chartered civil engineer under Engineers Australia.

Qualified ecologist

An ecologist who has a degree in ecology or similar and/or a minimum of five years continuous experience working as an ecologist.

Site boundary

Refers to the boundary that surrounds the total area owned by the building owner. This includes the building or buildings being developed, landscaping, car parking, ancillary infrastructure, and other existing buildings within a broader precinct owned by the

building owner. This may be the same as the project boundary or larger due to the chosen project boundary or where there are existing buildings in a precinct.

Water sensitive urban design (WSUD)

WSUD is a land planning and engineering design approach which integrates the urban water cycle, including stormwater, groundwater and wastewater management and water supply, into urban design to minimise environmental degradation and improve aesthetic and recreational appeal. This is also sometimes called Integrated Water Management (IWM).

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Pollutant reduction

A reduction in average annual stormwater pollutant loads refers to the average annual reduction in stormwater pollutant loads discharged from the development, with treatment, compared with the stormwater pollutant loads that would be discharged without treatment.

Modelling

Pollutant export modelling using computer programs such as MUSIC, STORM etc. can be used to predict the discharge pollutant loads for the total site area. The results of the simulation must show a comparison against the relevant reduction targets for offsite reductions.

Site and water catchment assessment

Local catchment ecological context

Downstream catchment sites that have high ecological value may include water catchments, protected wetlands, swimming beaches, streams and rivers with high biodiversity, platypus populations or sensitive fish, insect or amphibian species.

Exemption scenarios

The listed scenarios where a project is exempt from meeting the *Stormwater Volume* requirements are examples where for ecological reasons, stormwater volume reduction is not relevant. If the project is in a scenario that is not listed and can justify that stormwater volume reduction is not relevant for ecological reasons, a Technical Question can be submitted.

Stormwater volume reduction

The aim of stormwater volume reduction is to reduce hydrologic and flooding impacts on downstream ecosystems. There are two methods available to account of location-based challenges including rainfall and site area.

Average annual stormwater discharge reduction

This approach encourages projects to reduce the average annual stormwater discharge leaving the project's site in comparison to a version of the project without any volume reduction strategies.

Pre- and post-development runoff

This approach recognises projects that aim to mimic the natural flows of the site. This approach may be better suited for projects that do not have a high water use demand or have limited site area that can be pervious.

Modelling

Typical urban annual load reductions can be estimated using continuous simulation modelling software such as MUSIC, SWMM, XPSWMM, or InSite. Where available, relevant guideline values for pollutant concentrations for the catchment land use and surface type should be used. In areas where there are no specific guidelines, reference can be made to sources such as Australian Runoff Quality (ARQ, 2006).

Volume management strategies

The strategies to consider for both approaches may include a combination of harvesting, detention for slow release, infiltration and/or other Water Sensitive Urban Design practices. Further guidance is available in the Australian Rainfall & Runoff Guidelines (AR&R 2019).

Harvesting

Stormwater can be harvested, stored and treated for reuse in the project. For projects where the building footprint covers the whole site, projects may use the *Water Use* calculator to demonstrate that the building captures and reuses the required stormwater volume to meet the requirements. The annual average stormwater volume can be based on the average rainfall volume for the whole site, using an impervious area coefficient of runoff of 0.9.

Slow-release devices

This is a method of detaining water and releasing it slowly over the catchment time of concentration (considered to be 6 hours for this credit) to mimic the more natural flow regimes of undeveloped catchments.

Infiltration

In most cases groundwater infiltrated into the ground is deemed to treat water pollution (TSS, TN, TP, and Gross pollutants) (refer CSIRO & Government of Western Australia guidance linked below). The % of stormwater infiltrated is counted towards volume and pollution reduction targets. Usually soil microbes will bio-attenuate the low concentration pollutants found in stormwater. Infiltration systems should be designed with sediment control in mind to prevent them being blocked by fine silts.

Groundwater infiltration has many benefits such as providing water for trees, recharging local aquifers, and encouraging more natural flow regimes in local waterways. Soil filters and purifies stormwater and soil microbes will usually remove most nutrients. Infiltration approaches require designers to consider interaction with soil properties, capacity of aquifers, urban form and local authority guidelines (refer AR&R Book 9, Chapter 3).

Infiltration is not suitable where industrial pollution, hydrocarbon or chemical risks could cause groundwater contamination.

Infiltration will not be appropriate in certain areas including shallow saline aquifers, unstable slopes, capped contaminated soil, impervious soils, sites with existing groundwater contamination, unconsolidated fill and highly reactive impervious clays close to building footings. It is recommended to coordinate with the geotechnical engineer and the structural engineer if there is any doubt about soil suitability for infiltration.

On Site Detention

For some sites, local councils may require limitation of post-development peak event discharge from the site. This is commonly called On Site Detention (OSD). OSD is not an integrated water management solution for Green Star purposes, but relevant local council requirements should also be integrated and included in the design and submission documentation for consistency and buildability.

Pre-determined infrastructure

It is noted that some local governments may provide pre-determined infrastructure solutions that are 'deemed to comply' with the aim of this credit criterion. Some sites may also be 'not applicable' for the volume control target if for example they are in an area of downstream stormwater harvesting and wish to maximise stormwater from the site. If this is the case the project team should submit a Technical Question to have this approach approved.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

Pollution Reduction Targets

- Site plans showing the total areas of uncovered areas where vehicles are likely to transit and/or park (e.g., roads, loading docks, refuelling bays, and car parking, etc).
- As built civil, hydraulic and landscape drawings showing the stormwater collection, storage, infiltration, and treatment facilities and detailing their functional elements.
- Independently verified performance certification for each manufactured stormwater treatment device, proving its ability to achieve the pollution reduction targets.
- Calculation report by a suitably qualified professional describing how the water quality objectives will be achieved referencing calculations, and listing assumptions made.

Stormwater Volume Management

- Site and catchment assessment.
- Calculation report by a suitably qualified professional describing the strategies implemented.
- As built civil and landscape drawings showing the stormwater collection, storage and treatment facilities and detailing their functional elements.
- As built hydraulics drawings showing all the capture, storage, re-use piping and discharge route.
- Evaluation, monitoring and maintenance plan.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Supporting information

The following resource(s) are referenced in this credit:

- Commonwealth of Australia (Geoscience Australia) - [Australian Rainfall & Runoff](#)
- CSIRO - [WSUD Engineering Procedures: Stormwater](#)
- Department of Water and Environmental Regulation, Government of Western Australia – [Stormwater management manual for Western Australia: Chapter 9 Structural controls](#)
- EPA Victoria - [Urban stormwater management guidance](#)
- WALGA and IPWEA – [Code of Practice – Urban and peri-urban drainage modelling](#)
- Wong, T H F – [Australian Runoff Quality](#)

Leadership

The Green Star Buildings *Leadership* category aims to recognise the implementation of innovative practices, processes and strategies that promote achievements in the built environment that are beyond the scope of the rating tool as released.

The *Leadership* category rewards actions that drive market transformation, in particular, it rewards implementing initiatives that substantially contributes to the broader market transformation towards a climate, circular, health or nature positive development. It does this through project's submitting their own claims, or through meeting pre-existing Leadership Challenges.

The Leadership category aims to challenge buildings to be exceptional in their achievements.

No.	Credit	Minimum Expectation	Credit Achievement	Exceptional Performance
43	Market Transformation		5	
44	Leadership Challenges		Per Leadership Challenge. Total Leadership points available to target is unlimited, noting total points limits as outlined in the introduction.	

Market Transformation

Outcome

Celebrates initiatives or outcomes that are deemed new and break barriers, and in turn inspire others to follow.

Criteria

Credit Achievement	Up to 5 points	<ul style="list-style-type: none">The project implements a building solution or process that is considered leading in their targeted sector, nationally or globally that can be replicated.
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Additional information

Stage implementation

Strategy Brief Concept Design Tender Construction Handover Use

Synergies with other credits

- All credits

Sustainable Development Goals

- All credits

Relevant reporting initiatives

- Dependent on the initiative

Requirements

Credit Achievement

The project must comply with the following criterion:

- Innovative Initiatives

Innovative Initiatives

Projects can make up to five claims for this credit. Each claim is only worth one (1) point.

To claim points, the project team shows 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.

Claims are more likely to be awarded for projects that:

- Employ technologies or strategies that achieve an outcome in Green Star through significant improvement or gains when compared against best practice technologies.
- Employ technologies or strategies that are new or adopted from other industries that achieve the relevant Green Star outcome.
- The claim is replicable for other buildings to adopt.

Projects must demonstrate these initiatives align with the GBCA's scoring metrics and are rated highly in at least three metrics and medium in the remaining two. The metrics are:

- **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.
- **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.

	Control of outcome	Scale of impact	Transformation potential	Length of impact	Value generation
Low	Process The project goes through a process to try ensure the outcome is achieved, but there is no certainty.	Low Addresses one SDG, no direct link to GBCA Strategy, limited beneficiaries.	Building only Benefits are only accrued to the building owner or occupants.	1 to 5 years Benefits are felt from construction to around 5 years after practical completion.	Low Claim is mostly standard practice for industry and expected by the market.
	Influence The project has the ability to influence an outcome. The greater the effort, the higher the likelihood of this being achieved. Somewhat certainty.	Medium Addresses at least two SDGs, link to megatrends, at least two beneficiaries.	Surrounding Community The benefits extend beyond the building but are limited to the surrounding neighbourhood.	5 to 20 years Benefits are felt from about 5 years after practical completion to around 20 years.	Medium Claim outcomes are somewhat valued by stakeholders, particularly those looking to get a high Green Star score.

Control of outcome	Scale of impact	Transformation potential	Length of impact	Value generation
High Direct The project is directly responsible for achieving the outcome. Guaranteed certainty.	High Addresses multiple SDGs, aligned with megatrends, multiple beneficiaries.	Market transformation This claim plays a significant role in transforming an industry or sector. It is replicable for other buildings to adopt.	20+ years Benefits are felt for longer than 20 years.	High Claim outcome has broad benefits but is rarely sought after.

Guidance

Guidance is supporting information for the credit requirements and is not mandatory to apply. However, where project teams deviate from guidance, they should provide a narrative as to why. The Certified Assessor(s) may use their discretion to determine if the approach is compliant. Project teams may submit a Technical Question to the GBCA prior to submission to seek clarification on an alternate approach.

Assessing market transformation

Leadership points are assessed and awarded at the discretion of the Certified Assessor(s). In reviewing the submission, the Certified Assessor(s) will consider the relative benefits and improvement as compared to other Green Star credits.

Submission content

Submissions for this credit must contain:

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

The following list of evidence serves as a guide for the Certified submission and is not exhaustive. Project teams are not required to provide all of the listed items and alternate forms of documentation can be used to demonstrate compliance. The key requirement is that evidence is provided to support each claim.

- Description of the claim.
- Description of how and why the claim is considered leading practice.
- Explanation and evidence of how the claim rates with the GBCA's scoring metrics.
- Alternate documentation can also be used by project teams to demonstrate compliance.

Refer to the *Guidance for Submitting for Designed Assessment* available on the Green Star resources portal for further information on submitting evidence for the Designed assessment.

Leadership Challenges

Outcome

Promotes achievements that are considered leading practice in Australia.

Criteria

As per Leadership Challenge

- The project meets the requirements of a Leadership Challenge developed by the GBCA.

Additional information

Stage implementation

Strategy	Brief	Concept	Design	Tender	Construction	Handover	Use
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Synergies with other credits

- Dependent on the initiative

Sustainable Development Goals

- Dependent on the initiative

Relevant reporting initiatives

- Dependent on the initiative

Requirements

Leadership Challenges will be available on the GBCA website via the resources portal as they are developed.

All criteria as listed on the Leadership Challenge must be met to claim reward. Some Leadership Challenges may require credits in the core of the rating tool to be targeted and achieved before points can be awarded.

Project teams may target as many Leadership Challenges as are applicable to their project.

Submission content

Submissions for this credit must contain

- **Submission form** through Green Star Online
- **Evidence** to support claims made in the submission

Recommended evidence

As per Leadership Challenge. The key requirement is that evidence is provided to support each claim made within the Submission form.

Appendix

Appendix A. Acknowledgements

GBCA would like to acknowledge and thank the following individuals for their contribution in the development of Green Star Buildings v1.1.

Board of Directors

- Adrian Pozzo
- Julie Coates
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- Josephine Sukkar AM
- Peter Bailey
- Selina Short
- Guy Templeton
- Anthony Boyd
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Green Star Advisory Committee

- Peter Bailey (Chair)
- Emma Herd
- Samantha Peart
- Sonia Auld
- David Jones
- Sarah Slattery
- Michael Di Russo
- Lauren Kajewski
- James Wewer

Industry Advisory Group

- Sonia Auld (Chair)
- Keith Lucas
- Parag Shinde
- David Clark
- Mark McKenna
- Simon Wilson
- Andrew Cole
- Nikki Paton
- Alex Lawlor
- Sarah Reid

Technical Advisory Group

- Samantha Peart (Chair)
- Bernadette Fitzgerald
- Anne Kovachevich
- Sam Archer
- Clare Gallagher
- Andrew Thai
- David Collins
- Gerard Healey

Expert Reference Panels

Sustainable Buildings

- Patrick Campbell (Chair)
- Phillip Cook
- Victoria Norris
- Gill Armstrong
- Ben Gibbs
- Carmen Prince
- John Bahoric
- Kate Kelly
- Evan Smith
- Jessica Bennett
- Jonathan Lake
- Ian Van Eerden

- Natalie Boston
- Sam Charles-Ginn
- Steve Colomb
- Simon Liley
- Steven McKellar
- Thomas Monkhouse
- Candice Venter
- Bob Wilson

Energy and Carbon

- Rebecca Fitzgerald (Chair)
- Monique Alfris
- Jack Blackwell
- Elizabeth Cuan Castiblanco
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- Dennis Lee
- David Mahony
- Jordan McPeake
- Robert Milagre
- Damon Moloney
- James Mortensen
- Leigh Penney
- Jim Stewart

Resilience

- Erik Moore (Chair)
- Sally Bamber
- Pernille Christensen
- Alistair Coulstock
- Callie Cummings
- Jonathan Dalton
- David Eckstein
- Paul Himberger
- Ralph James Hems
- Jeremy Mansfield
- Nathan Roberston-Ball
- David Uhlmann
- Renae Walton

Responsible Products

- Evalin Ling (Chair)
- David Bell
- Jerusha Beresford
- Rob Campbell
- Robert Crawford
- Gemma Dawson
- Katie Eyles
- Rob Ferrari
- Laura Guccione
- Richard Haynes
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- Valentina Petrone
- Nicole Sullivan
- Matt Williams

Nature and Biodiversity

- Emily Low (Chair)
- Shokry Abdelaal
- Ian Adams
- Vicky Critchley
- Angeliki Dimitriou
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- Kelly Herzog
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- Jessica Holz
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- Steward Monti
- Kate Nason
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- David Baggs
- Adam Garnys
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From the Green Building Council of Australia

Davina Rooney

CEO

Jorge Chapa

Chief Impact Officer

Taryn Cornell

Senior Manager
Strategy and Development

Emily Chung

Manager
Future Focus

Elham Monavari

Head of Green Star
Strategic Delivery

Sonia De Almada

Senior Manager
Green Star Operations and Transformation

Anna Davis

Senior Manager
Green Star Technical Delivery

Nick Alsop

Senior Manager
Market Engagement

Jamie Wallis

Senior Manager
Market Engagement

Katherine Feathersone

Senior Manager
Responsible Products

Rebecca Pettit

Manager
Strategic Projects

Gabrielle Pavicic

Green Star
Program Lead

David Madew

Technical Advisor

Jess Roberts

Technical Advisor

Jim Ng

Technical Services and Initiatives Lead

Elly Williams

Technical Services Advisor

Ella Mudie

Senior Engagement Lead

GBCA Executive

Stephen Thatcher

Chief Operating Officer

Lucy Harris

Head of Industry Development
and Partnerships

Lynne Harman

Legal & Company Secretary

Jeff Oatman

Head of Collaborations and
Membership

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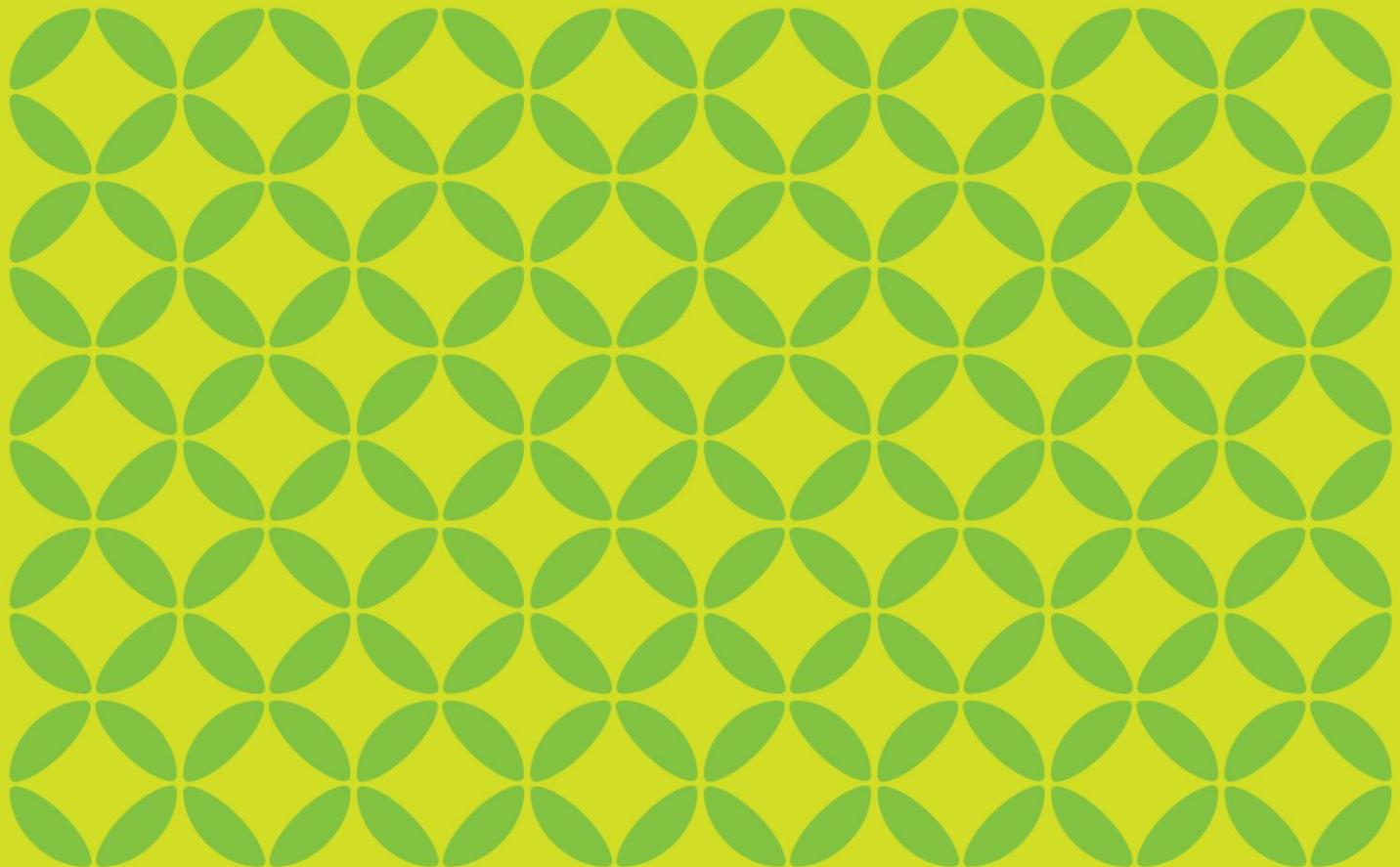
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