GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

PROJECT ADDRESS:
20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party: Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	Guidance
RESPONSIBLE																											
Industry Development	The development facilitates industry transformation through partnership, collaboration and data sharing.	1.0	**Credit Achievement:** The building owner or developer appoints a Green Star Accredited Professional, discloses the cost of sustainable building practices to the GBCA, and markets the building's sustainability achievements.	1	1	N/A	**CREDIT ACHIEVEMENT** The project must comply with all criteria listed below: • Green Star Accredited Professional; • Financial transparency; and • Marketing sustainability achievements **Green Star Accredited Professional** At least one Green Star Accredited Professional (Green Star AP) must be engaged as part of the project team from the time of registration or within one month following. A Green Star AP must be contractually engaged as part of the core project team for the duration of the project. The role of the Green Star AP can be fulfilled by one, or multiple individuals. **Financial transparency** The project team must complete, and include in the submission, the Green Star Financial Transparency Disclosure Template. The template assists the project team to submit the cost of sustainable building practices of the project including design, construction and documentation to the GBCA. The project team must provide the project's financial data in Excel format with the project's Green Star submission, not as a PDF. The Disclosure Template is available on the GBCA website. Project teams must use the latest available version. **Marketing sustainability achievements** To achieve this criterion: • The project's marketing team must complete the Green Star Case Study Template. The template seeks information on the sustainability initiatives that the building targeted to enable it being featured on the GBCA's website; • The project team must detail how the building will detail its sustainability achievements to its stakeholders. The stakeholders are defined as the typical building occupants and visitors; and • The Green Star Certification achieved for the project must be prominently displayed in a location that is visible to the public or visitors.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Green Star Financial Transparency Disclosure Template submitted in excel format • Green Star Case Study Template • Evidence to support claims made in the submission **Suggested evidence:** **Green Star Accredited Professional** • Letter of appointment from the client or head contractor confirming the appointment of a Green Star AP in the project, including the scope of works; • Sample Meeting minutes demonstrating input from the Green Star AP; and • Letter from the Client confirming that the Green Star AP satisfactorily fulfilled their engagement responsibilities as per the scope of works and requirements of this credit **Financial Transparency** • Statement or report from quantity surveyor, project manager or Green Star AP from the project, supporting the costs outlined in the Disclosure Template **Marketing sustainability achievements** • Developed samples of the marketing material; • Samples of information on the benefits of sustainability in a public and prominent way; and • Plans or photographs showing the location where the Green Star certification will be prominently displayed;	x	x								x						x	**Green Star Accredited Professional** The Green Star AP must be enrolled in the Green Building Council of Australia's Continuous Professional Development (CPD) program and must have valid credentials for the duration of their engagement (schematic design through to certification). **Multiple Green Star APs** In some cases, the role of the Green Star AP can be fulfilled by different individuals throughout the project. This is acceptable provided each Green Star AP individually meets the requirements of this credit (apart from the workshop requirement) and this role has been fulfilled continually from schematic design to practical completion. **Multiple project roles** In some cases, the Green Star AP'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 Green Star AP and Independent Commissioning Agent (ICA) where separation exists between the individual roles. In this case, project teams should demonstrate that there is no conflict of interest by including relevant discussion in the Submission Template.
Responsible Construction	The builder's construction practices reduce impacts and promote opportunities for improved environmental and social outcomes.	2.0	**Minimum Expectation:** • The builder or head contractor has an environmental management system in place to manage its environmental impacts on site; • The builder diverts at least 80% of construction and demolition waste from landfill;and • The head contractor provides training on the sustainability targets of the building.	Nil	To Comply	N/A	**MINIMUM EXPECTATION** The project must comply with all criteria below: • Environmental management system; • Environmental management plan; • Construction and demolition waste; and • Sustainability training **Environmental management system** The builder or head contractor (responsible party) must have a formalised systematic and methodical approach to planning, implementing and auditing in place during construction. • For projects valued at less than $10 million, the responsible party must have an Environmental Management System (EMS) that complies with either the NSW Environmental Management System Guidelines or another recognised standard. • For projects valued at over $10 million, the responsible party must have an Environmental Management System (EMS) certified to a recognised standard such as AS/NZS ISO 14001, BS 7750 or the European Community's EMAS. The EMS can be stand-alone or part of an integrated management system and must be valid for the duration of construction activities **Environmental management plan** The Environmental Management Plan (EMP) must be project specific and cover the scope of construction activities. It must be implemented from the start of construction and include all works within the project scope. **Construction and demolition waste** Projects must divert at least 80% of construction and demolition waste from landfill. A Disclosure Statement is required from waste contractors and processing facilities outlining how the company and their reporting aligns with the Green Star Construction and Demolition Waste Reporting Criteria. **Sustainability training** The head contractor must provide the following training to 95% of all contractors and subcontractors present on site for at least three days: • Information on the sustainable building certification(s) sought, including: – the sustainability attributes of the building and their benefits; – the value of certification; and – the role site worker(s) play in delivering a sustainable building.	**Submissions for this credit must contain**: • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Minimum Expectation** • An auditor report showing compliance with the EMS. An auditor report for the organisation, rather than the site, can suffice. If it is for the organisation, the builder or head contractor must confirm effective use of the EMS on the particular site; • 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; and • Evidence of training materials and register of attendance. **Credit Achievement** • Compliance Verification Summaries from waste contractor(s) and waste processing facilities as detailed in the Green Star Construction and Demolition Waste Reporting Criteria document; • Demolition or Site Drawings indicating the structures on site at time of purchase, extent of demolition and retained structure and façade; and • Cumulative waste report generated from the monthly waste reports provided by the waste contractor over the entire duration of construction and demolition works.	x	x			x	x	x	x	x		x			x		**MINIMUM EXPECTATION** **Environmental management plan** The NSW Environmental Management Systems Guidelines contains requirements of EMPs which is considered best practice. **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. **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, and report on the proportion diverted as a percentage. **CREDIT ACHIEVEMENT** **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 Page 44** may be used to convert measurement of waste types from volume to weight.
			Credit Achievement: 90% of construction and demolition waste is diverted from landfill, and waste contractors and facilities comply with the Green Star Construction and Demolition Waste Reporting Criteria.	1	1		**CREDIT ACHIEVEMENT** **Construction and demolition waste diversion** Projects must divert at least 90% of construction and demolition waste from landfill. • Green Star Buildings Responsible Construction The waste contractors and waste facilities must comply with the Green Star Construction and Demolition Waste Reporting Criteria																	
Verification and Handover	The building has been optimised and handed over to deliver a high level of performance in operation.	3.0	**Minimum Expectation:** The building has been commissioned and will be tuned. The building was set up for optimum ongoing management due to its appropriate metering and monitoring systems. The project team create and deliver 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.	Nil	To Comply	N/A	**MINIMUM EXPECTATION** The project must comply with all criteria listed below: • Metering and monitoring • Commissioning and tuning • Building information **Metering and monitoring** The building must have accessible energy and water metering for all common uses, major uses, and major sources. The meters must be connected to a monitoring system capable of capturing and processing the data produced by the meters. The meters and monitoring systems must: • Provide continual information (up to 1-hour interval readings); • Be commissioned and validated per the most current 'Validating Non-Utility Meters for NABERS Ratings' protocol, or National Measurement Institute (NMI) standards; • Be capable of identifying inaccuracies in the meter network and producing alerts. Inaccuracies are defined as those over meter tolerances based on their metering accuracy class (e.g. 'Class 1' meters shall not have inaccuracies of more than 1% due to metering accuracy class); and • Be sufficient to support future achievement of a NABERS rating. **Commissioning and tuning** The project team must perform the following prior to construction: • Set environmental performance targets; and • Perform a services and maintainability review During construction and practical completion: • Commission the building; and • Engage building tuning service provider After practical completion: • Tune the building over the next 12 months **Environmental performance targets and information** At design, the project team must set and document environmental performance targets for the project outlining: • The targets for the project energy and water consumption for all nominated building systems; • Metering diagrams for energy and water, and expectations relating to the monitoring of energy and water, as well as indoor environment quality, in operation; • Descriptions of the functions, intended operation and maintenance requirements of nominated building systems; and • Design airtightness targets as described in the Energy Use credit. Examples of common methods for demonstrating compliance with this is through the development (early in the design phase) of a design intent report or an owner's project requirements (OPR) document. **Services and maintainability review** Before construction, the project team must conduct a services and maintainability review of the building. The review must include the head contractor, the owner's representative, the commissioning agents, the design consultant and the facilities manager, where possible. The review must address the following: • Commissionability; • Controllability; • Maintainability; • Operability; and • Safety of all systems. The services and maintainability review and its outcomes must be summarised in a 'Service and Maintainability Report'. It must be signed off by all involved parties. **Building commissioning** During construction and before practical completion, all building systems must be commissioned per a recognised commissioning standard (CIBSE or ASHRAE commissioning guides). A commissioning specification must be included in the construction documentation listing requirements for each system. Airtightness must be considered as part of the commissioning process during the following stages: • Schematic design: review of design including an air barrier system schematic; • Design Development: review for tightness including air barrier continuity on building plans, sections and details. Scope of work and necessary coordination between trades and responsibilities must be considered; • Construction: A plan for stages of commissioning for air tightness must be defined and included in the project timeline; and • The building must undertake an airtightness test in accordance with AS/NZS ISO 9972:2015 Thermal performance of buildings determination of air permeability of buildings - Fan pressurisation method. **Building systems tuning** The owner or developer must contractually commit to a tuning process that includes quarterly adjustments and measurements for at least the first 12 months after occupation. The commitment must include: • A building tuning manual or plan; • A description of the building tuning team; and • Confirmation the owner has engaged parties to tune the nominated systems The building tuning team must include:	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Minimum Expectation** **Metering and Monitoring** • Drawings showing the location of all energy and water meters in the project and the associated energy and water uses; • 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; • Copy of Monitoring Strategy document specific to the building; and • Automatic monitoring system data sheet describing the systems features and capabilities. **Commissioning and Tuning** • Service and Maintainability Report where the service and maintainability review is summarised; • Extract(s) from the Commissioning Report demonstrating that comprehensive pre-commissioning activities and commissioning activities have been performed; • Building Tuning Commitment or contract demonstrating that there is a requirement for a building tuning process; • Whole building airtightness testing report detailing of test methodology, air flow rates, details of airtightness considerations from schematic design through to construction and statement that the target air permeability from the energy model has been achieved; and • Signed confirmation from the testing practitioner and main contractor that the results have been sighted. **Building Information** • Owner's project requirements document, or an equivalent document, defining the nominated building systems; • Operations and maintenance information; • Building log book; and • Building user information. **Credit Achievement**	x	x			x	x	x	x	x		x			x		**MINIMUM EXPECTATION** **Airtightness testing** The airtightness test should be carried out either across a sample area, or the whole building. For sample area testing, the test should carried out on either 2,000m2 or 10% of the building's total envelope area, whichever is greater. The sample areas tested should include the uppermost occupied floor of the building, and be representative of the external envelope construction, including different façade types and building geometries. Air tightness commissioning is encouraged to be undertaken at various stages of the project, such as: • Pre-design phase: the process of commissioning for airtightness begins at the project inception, when broad expectations and goals for performance are defined; • At schematic design phase: review must be completed. This may include creation of an air barrier system schematic, definitions of 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 separations in the buildings; • Design development phase: review for air tightness must be completed. This includes plan reviews for air barrier continuity on building plans, sections, and details. Constructability and construction sequence must be considered. Costs of completion of the air barrier system must be considered. Scope of work and necessary coordination between trades and responsibilities must be considered. A plan for stages of commissioning for air tightness must be defined and included in the project timeline; • Construction phase: 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. Tests must be carried out according to the commissioning plan; • Verification phase: extra points for Credit Achievement and Exceptional Performance will be awarded for whole-building air tightness results that reach normal practice or best-practice levels of air tightness; • Verification phase: the aim of the airtightness testing is to verify the air permeability assumptions in the Energy Model as detailed in credit Energy Use. The project team are required to ensure that the testing verifies the as-built

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			Credit Achievement: An independent level of verification is provided to the commissioning and tuning activities through the involvement of an independent commissioning agent, or through a soft landings approach that involves the future facilities management team. For large projects, both must occur.	1	1		• The facilities manager; • The owner's representative and the independent commissioning agent (ICA, if applicable); • The head contractor; and • The services design professionals **Building information** **Operations and maintenance information** The project team must provide operations and maintenance information for all nominated building systems to the building owner (or designated representative). This means: • Appropriate content for all nominated building systems has been developed and provided; • The appropriate user group has access to the information they require to deliver best practice environmental outcomes; and • Guidance on keeping information up to date is provided to the facilities management team in these documents. **Building log book** The project team must develop a building log book to present to the building owner (or designated representative) before practical completion of the project. The building log book must: • Be developed in line with CIBSE TM31: Building Log Book Toolkit; • Cover all nominated building systems; and • Include links or references to all relevant operations and maintenance information. **Building user information** Building user information is a source of up-to-date, relevant information for the building user. Building user information must be able to be updated and edited by the facilities management team, or other appropriate stakeholder groups, to ensure it remains current and relevant to users throughout the life of the building. All building user information must be available to the building owner and facilities management team at the time of practical completion. **CREDIT ACHIEVEMENT** There are two pathways available. • A soft landings approach, that involves the facilities management team; and • The involvement of an ICA in the commissioning and tuning process For buildings with a Total Building Services Value of over $20m, both requirements must be met. For all others, one path will suffice. **Soft landings approach** The soft landings approach is described in 'The Soft Landings Framework Australia and New Zealand' published by CIBSE ANZ, based on the BSRIA guide. **Independent commissioning agent** An ICA must be appointed to advise, monitor, and verify the commissioning and tuning of the nominated building systems throughout the design, tender, construction, commissioning and tuning phases. The specified commissioning requirements must be overseen by a qualified independent commissioning professional(s). 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; and • A registered professional engineer or qualified technician with demonstrated knowledge on nominated systems commissioning and has previous experience with the commissioning process of at least 2 projects similar in scope. 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.	**Soft Landings** • Evidence of implementation of BSRIA 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; and • Evidence of implementation of BSRIA framework.		commissioning process; and • Whilst the requirement of this credit is to conduct the test, but not meet specified targets, the below serve as guidelines: – Should test to at least 50 Pascals – Should aim to achieve leakage target: suggest permeability 3.0 m3·h-1·m-2
Operational Waste	Operational waste can be separated and recovered in a safe and easy manner.	4.0	**Minimum Expectation:** The project team must demonstrate the building is designed to allow effective management of operational waste by: • Separating waste streams; • Providing a dedicated and adequately sized waste storage area; and • Ensuring easy and safe access to waste storage areas for both occupants and waste collection contractors.	Nil	To Comply	Waste Storage	**MINIMUM EXPECTATION** The project must meet all criteria listed below: • Separation of waste streams; • Dedicated waste storage area; and • Sign-off by waste specialist and/or contractor. **Separation of waste streams** The building must provide bins or storage containers to building occupants to enable them to separate their waste. These bins must be labelled and easy to access, and evenly distributed throughout the building. They must also allow for separating the following as a minimum: • General waste going to landfill; • Recycling streams to be collected by the building's waste collection service, including: – paper and cardboard – glass, and – plastic; and • One other waste stream representing at least 1% of the total annual operational waste (by volume) of the building. This may include collecting any of the following waste types: organics, e-waste, batteries etc. Any other single waste stream (except food waste) that represents more than 5% of total annual operational waste (by volume) must also be accounted for. **Dedicated waste storage area** A dedicated area, or areas, for the storage and collection of the applicable waste streams must be provided. The storage area must be 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 recyclable waste streams specified must be based on: • Forecasted waste generated by occupants; and • Collection frequency for each waste stream. The storage area(s) must have easy and safe access by collection vehicles. This includes driveway access to the building, any onsite roads and loading docks, and the storage areas themselves providing safe and easy access for bins to be emptied into collection vehicles. **Signoff by waste specialist and/or contractor** A waste specialist and/or contractor must 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.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Site Plan and/or architectural plans highlighting the location of relevant waste facility areas, demonstrating: – Separation of waste streams; – Dedicated waste storage area; and – Access to waste storage area • Calculations used to demonstrate that the dedicated waste storage area provided is adequately sized; and • Details on how the dedicated waste collection areas meet best practice guidelines, in line with third-party best practice guidelines.	x x x	**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 through a contract for the waste to be removed and sorted. **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. **Collecting waste streams** These streams may be collected in separate bins or in the same bin where commingled recycling is available. Commingled 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.
Responsible Procurement	The procurement process for all products, materials, and services for the building's design and construction follows best practice environmental and social principles	5.0	**Credit Achievement:** The building's design and construction procurement process follows ISO 20400 Sustainable Procurement – Guidance and at least one identified supply chain risk and opportunity is addressed.	1	0	Site-wide	**CREDIT ACHIEVEMENT** The project must meet both criteria below: • Risk and opportunity assessment • Responsible Procurement plan **Risk and opportunity assessment** The project team must undertake a risk and opportunities assessment of its supply chain to identify environmental and social risks and opportunities. The risk assessment must consider risks and opportunities further down the supply chain, such as in the extraction, manufacture or transport of key materials. The risk and opportunity assessment must address at least the following issues: • Human rights; • Labour practices; • The environment; • Fair operating practices; • Consumer issues; and • Community involvement and development. The project must provide a narrative on how it has actively addressed one risk and one opportunity. **Responsible procurement plan** The project must develop and implement a plan to mitigate and manage identified risks and drive implementation of identified opportunities. This can be part of an organisational plan or a stand-alone plan. The plan must: • Identify environmental and social procurement project-level objectives reflecting the risks and opportunities assessment; • Identify targets related to environmental, social and economic objectives in the supply chain and a measurement process for tracking these; • Stipulate clear actions to mitigate and address at least one risk and one opportunity identified in its supply chain; • Establish clear governance structures to ensure implementation of the plan including roles and responsibilities for implementation and monitoring of all procurement and contracts; and • Establish monitoring requirements on site as well as internal reporting requirements to measure impacts and outcomes as well as benefits realised. Contracts must require data collection, monitoring and reporting, and a framework for incentivising the achievement of plan.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Extract from supply chain risk and opportunity assessment; and • Responsible procurement plan	x x	**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. The procurement process must include community involvement and development, consumer issues, fair operating practices, the environment, labour practices, and human rights. The standard also addresses organisational requirements at the middle management level, including the governance that should be in place, people management and training, stakeholder engagement, prioritisation, reporting and grievance processes. The last section sets out the procurement process itself, including planning, sourcing and contract management. It is expected that the head contractor and sub-contractors follow the ISO 20400 guidelines 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 follow the ISO 20400 guidelines. **Procurement scope** The Responsible Procurement credit deals specifically with the building's design and construction procurement processes. It does not deal with operational procurement decisions; however, it is encouraged that these processes also follow ISO 20400 Sustainable Procurement – Guidance.
Responsible Structure	The building's structure is comprised of responsibly manufactured products.	6.0	**Credit Achievement:** 80% of all structural components (by cost) meet a Responsible Products Value score of at least 10.	3	3	Site-wide	**CREDIT ACHIEVEMENT & EXCEPTIONAL PERFORMANCE** Scores for each product can be calculated by using the Responsible Products Value table. Scoring is cumulative, rewarding each initiative achieved. A product can be compliant with one or more initiative and each adds to the product's total score. Examples of recognised initiatives that are present in the Responsible Products Value (RPV) table are: • Industry specific environmental product declarations (EPD); • Product specific environmental product declarations (EPD); • ISO14001 certification; • Climate Active Carbon Neutral Certification; • Chain of custody certification; and • Third-party product certification schemes.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Receipts confirming purchase of stated products; and • Evidence that claimed products constitute 60% of all structural components	x x	**Responsible Products Value table** The Responsible Products Value table presents the various schemes that contribute towards the Responsible Products Value score, and their relevant weighting. The list of schemes may be updated over time. The responsible products table is available on our website. **Example of how to calculate the Responsible Products Value** **Calculating the RPV of a product** A concrete mix used in the building meets the following: • The concrete mix has Climate Active Certification (a) • The concrete mix is manufactured in a plant with ISO14001 certification (b) • The concrete mix has a publicly available product specific EPD (c) To calculate the total RPV, the value of each initiative is added (a+b+c). Calculating the RPV in a product where one or multiple components have an RPV, but the final product does not When calculating the RPV score of a product that has a number of components, and where only one of these complies, the item should be broken down into its key major components (approximately those that make up 80% of the mass of the item in question). An approximate estimate will suffice. Each item is assigned an RPV score and multiplied by the key component makeup, and the total RPV is calculated by adding up these values. For example, in a chair with three key components (timber, foam, fabric), the following would apply: • Timber (60%) with an RPV of 10 = 6 • Foam (20%) with RPV of 0 = 0 • Fabric (20%) with RPV of 12 = 2.4 The chair would have an RPV of 8.4
			Exceptional Performance: In addition to the Credit Achievement, one of the following is met: • 10% of all products in the structure (by cost) meet a Responsible Products Value score of at least 15; OR • 30% of all products in the structure (by cost) have an average Responsible Products Value score of at least 12.	2	2					

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Responsible Envelope	The building's envelope is comprised of responsibly manufactured products.	7.0	**Credit Achievement:** 60% of all building envelope components (by cost) meet a Responsible Products Value score of at least 10.	2	0	Site-wide	**CREDIT ACHIEVEMENT & EXCEPTIONAL PERFORMANCE** The envelope is defined as the elements that surround a building such as the façade, and all façade components such as external shading and insulation, suspended slabs, as well as roofing systems. Scores for each product can be calculated by using the Responsible Products Value table. Scoring is cumulative, rewarding each initiative achieved. A product can be compliant with one or more initiatives and each adds to the product's total score. Examples of recognised initiatives that are present in the Responsible Products Value (RPV) table are: • Industry specific environmental product declarations (EPD); • Product specific environmental product declarations (EPD); • ISO14001 certification; • Climate Active Carbon Neutral Certification; • Chain of custody certification; and • Third-party product certification schemes.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Receipts confirming purchase of stated products; and • Evidence that claimed products constitute 60% of all building envelope components	x	x																		**Responsible Products Value table** The Responsible Products Value table presents the various schemes that contribute towards the Responsible Products Value score, and their relevant weighting. The list of schemes may be updated over time. The responsible products table is available on our website. **Example of how to calculate the Responsible Products Value** **Calculating the RPV of product** A concrete mix used in the building meets the following: • The concrete mix has Climate Active Certification (a) • The concrete mix is manufactured in a plant with ISO14001 certification (b) • The concrete mix has a publicly available product specific EPD (c) To calculate the total RPV, the value of each initiative is added (a+b+c). **Calculating the RPV in a product where one or multiple components have an RPV, but the final product does not** When calculating the RPV score of a product that has a number of components, and where only one of these complies, the item should be broken down into its key major components (approximately those that make up 80% of the mass of the item in question). An approximate estimate will suffice. Each item is assigned an RPV score and multiplied by the key component makeup, and the total RPV is calculated by adding up these values. For example, in a chair with three key components (timber, foam, fabric), the following would apply: • Timber (60%) with an RPV of 10 = 6 • Foam (20%) with RPV of 0 = 0 • Fabric (20%) with RPV of 12 = 2.4 The chair would have an RPV of 8.4
			Exceptional Performance : In addition to the Credit Achievement, one of the following is met: • 10% of all products in building envelope (by cost) meet a Responsible Products Value score of at least 15. OR • 25% of all products in the building envelope (by cost) have an average Responsible Products Value score of at least 12.	2	0																						
Responsible Systems	The building's mechanical, hydraulic, transportation and electrical systems are comprised of responsibly manufactured products.	8.0	**Credit Achievement :** 20% of all active building systems (by cost) meet a Responsible Products Value score of at least 6.	1	0	Site-wide	**CREDIT ACHIEVEMENT & EXCEPTIONAL PERFORMANCE** Active building systems are characterised by energy and movement, and include all mechanical, hydraulic, transportation and electrical systems present in the building. Passive systems such as a façade shading device are not included. Scores for each product can be calculated by using the Responsible Products Value table. Scoring is cumulative, rewarding each initiative achieved. A product can be compliant with one or more initiatives and each adds to the product's total score. Examples of recognised initiatives that are present in the Responsible Products Value (RPV) table are: • Industry specific environmental product declarations (EPD); • Product specific environmental product declarations (EPD); • ISO14001 certification; • Climate Active Carbon Neutral Certification; • Chain of custody certification; and • Third-party product certification schemes.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Receipts confirming purchase of stated products; • Evidence that claimed products constitute 20% of all building systems; and Alternate documentation can also be used by project teams to demonstrate compliance.	x			x	x	x	x	x	x	x									**Responsible Products Value table** The Responsible Products Value table presents the various schemes that contribute towards the Responsible Products Value score, and their relevant weighting. The list of schemes may be updated over time. The responsible products table is available on our website. **Example of how to calculate the Responsible Products Value** **Calculating the RPV of product** A concrete mix used in the building meets the following: • The concrete mix has Climate Active Certification (a) • The concrete mix is manufactured in a plant with ISO14001 certification (b) • Evidence to support claims made in the submission • The concrete mix has a publicly available product specific EPD (c) To calculate the total RPV, the value of each initiative is added (a+b+c). **Calculating the RPV in a product where one or multiple components have an RPV, but the final product does not** When calculating the RPV score of a product that has a number of components, and where only one of these complies, the item should be broken down into its key major components (approximately those that make up 80% of the mass of the item in question). An approximate estimate will suffice. Each item is assigned an RPV score and multiplied by the key component makeup, and the total RPV is calculated by adding up these values. For example, in a chair with three key components (timber, foam, fabric), the following would apply: • Timber (60%) with an RPV of 10 = 6 • Foam (20%) with RPV of 0 = 0 • Fabric (20%) with RPV of 12 = 2.4 The chair would have an RPV of 8.4
			Exceptional Performance: In addition to the Credit Achievement, one of the following is met: • 5% of all active building systems (by cost) meet a Responsible Products Value score of at least 11. OR • 15% of all active building systems (by cost) have an average Responsible Products Value score of at least 8.	1	0																						
Responsible Finishes	The building's internal finishes are comprised of responsibly manufactured products.	9.0	**Credit Achievement :** 60% of all internal building finishes (by area) meet a Responsible Products Value score of at least 7	1	1	Site-wide	**CREDIT ACHIEVEMENT & EXCEPTIONAL PERFORMANCE** Internal finishes include flooring, plasterboard, paints, ceilings, partitions, doors, internal windows or similar. Where a component faces two spaces (e.g. a door), it is counted once for each space. Joinery used as part of a wall finish may be counted, e.g. wall-mounted lockers. Loose furniture is not included. Scores for each product can be calculated by using the Responsible Products Value table. Scoring is cumulative, rewarding each initiative achieved. A product can be compliant with one or more initiatives and each adds to the product's total score. Examples of recognised initiatives that are present in the Responsible Products Value (RPV) table are: • Industry specific environmental product declarations (EPD); • Product specific environmental product declarations (EPD); • ISO14001 certification; • Climate Active Carbon Neutral Certification; • Chain of custody certification; and • Third-party product certification schemes.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Receipts confirming purchase of stated products; and • Evidence that claimed products constitute 60% of all building finishes Alternate documentation can also be used by project teams to demonstrate compliance.	x	x																		**Responsible Products Value table** The Responsible Products Value table presents the various schemes that contribute towards the Responsible Products Value score, and their relevant weighting. The list of schemes may be updated over time. The responsible products table is available on our website. Example of how to calculate the Responsible Products Value **Calculating the RPV of product** A concrete mix used in the building meets the following: • The concrete mix has Climate Active Certification (a) • The concrete mix is manufactured in a plant with ISO14001 certification (b) • The concrete mix has a publicly available product specific EPD (c) To calculate the total RPV, the value of each initiative is added (a+b+c). **Calculating the RPV in a product where one or multiple components have an RPV, but the final product does not** When calculating the RPV score of a product that has a number of components, and where only one of these complies, the item should be broken down into its key major components (approximately those that make up 80% of the mass of the item in question). An approximate estimate will suffice. Each item is assigned an RPV score and multiplied by the key component makeup, and the total RPV is calculated by adding up these values. For example, in a chair with three key components (timber, foam, fabric), the following would apply: • Timber (60%) with an RPV of 10 = 6 • Foam (20%) with RPV of 0 = 0 • Fabric (20%) with RPV of 12 = 2.4 The chair would have an RPV of 8.4
			Exceptional Performance: In addition to the Credit Achievement, one of the following is met: • 10% of all internal building finishes (by area) meet a Responsible Products Value score of at least 12. OR • 20% of all internal building finishes (by area) have an average Responsible Products Value score of at least 9.	1	0																						
TOTAL				17	9																						
HEALTHY																											
			Minimum Expectation : Pollutants entering the building are minimised, and a high level of fresh air is provided to ensure levels of indoor pollutants are maintained at acceptable levels.	Nil	To Comply		**MINIMUM EXPECTATION** The project must comply with all criteria below: • Ventilation system attributes; • Provision of outdoor air; and • Exhaust or elimination of pollutants. **Ventilation system attributes** **Separation from pollutants** The building ventilation systems must be designed to comply with ASHRAE Standard 62.1:2013 or AS 1668:2012 (whichever is greater) regarding minimum separation distances between pollution sources and outdoor air intakes. Windows, doors, openings, vents, grilles, and skylights are all considered outdoor air intakes for purposes of this credit and must be modelled taking into account their free area. **Cleaning ductwork** All new and existing ductwork that serves the building must be cleaned prior to occupation in accordance with a recognised Standard. This includes all ductwork in the base building that serves the building from the air handling unit(s) to the supply vents. If no ductwork exists, these requirements are deemed to be met. **Provision of outdoor air** There are three pathways projects can pursue to demonstrate compliance, as described below: **Comparison to Industry Standards** For this option, outdoor air must be provided to each space in the nominated area at a rate greater than the minimum required by AS 1668.2:2012 by 50%. To demonstrate compliance, the HVAC system must be clearly sized to accommodate the increased outdoor air rates. The project must use the design occupancy, where known, rather than the default occupancy when calculating the required rates. The design occupancy is to be determined by the project team – any assumptions made must be justified within the Submission. Where the occupant density is unknown, projects must utilise the occupancy rates prescribed within Table A1 Appendix A of AS 1668.2:2012. **Performance based approach** For this option, the system must be capable of providing enough outdoor air to maintain carbon dioxide (CO2) levels at, or less than 800ppm within each space in the nominated area, at all times during the design occupancy period. The system must continuously measure the concentration of CO2 within the breathing zone of each space during occupancy hours. The system must then adjust the amount of outdoor air to each space (up to the maximum design outdoor air quantity) to ensure that CO2 levels are maintained below the stipulated ppm threshold. **Zoning the system** CO2 sensors shall be located so that they provide accurate representative readings of the CO2 concentrations in occupied spaces. A sensor shall be installed in each enclosed space. At a minimum, CO2 sensors should be located with (and as regularly as) temperature sensors and monitor an area no greater than 500m2. **Modifying the air quality threshold** The nominated CO2 thresholds are applicable to most spaces. If appropriate, the project may nominate alternative thresholds from ASHRAE 62.1:2013. The justification must be accompanied																				**Relevant Standards** Standards for the 'Ventilation System Attributes' criterion include:

GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

PROJECT ADDRESS:
20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party																											Guidance
									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Hydraulic Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor							
Clean Air	Pollutants entering the building are minimised, and a high level of fresh air is provided to ensure levels of indoor pollutants are maintained at acceptable levels.	10.0	**Credit Achievement:** The building's ventilation systems allow for easy maintenance, and high levels of outdoor air are provided.	2	0	All Regularly Occupied Spaces	with documentation from a recognised Standard or peer reviewed research. **Natural ventilation and Residential buildings** For this option, project teams must demonstrate how they have deployed a best practice strategy to reduce and eliminate mould. **Exhaust or elimination of pollutants** It must be demonstrated that pollutants from printing and photocopying equipment, cooking processes and equipment are limited from the nominated area by either: • Removing the source of pollutants; or • Exhausting the pollutants directly to the outside. For the first option, sources of pollutants, such as printing or photocopy equipment, kitchen stoves or vehicles, must be compliant with minimum emissions standards or not be present within the nominated area. For the second option, specified sources of pollutants shall be exhausted directly to the outside of the project in accordance with a recognised Standard, and/or physically separated from occupants. **CREDIT ACHIEVEMENT** **Ventilation system attributes** Any mechanical ventilation system within the building, whether existing or new, must provide adequate access to both sides of all moisture and debris-catching components for maintenance within the air distribution system. Where it can be demonstrated that it is not possible to provide adequate access for cleaning and maintenance purposes [for example, ducted split system fan coil units (DX split/VRF/VRV)], the following conditions are applicable: • Design teams may provide access to the upstream side of fan coil units where the coils are protected by a filter rated at MERV 8 or higher and: – Provide heating only; or, – Provide cooling only with the coil assembly no more than 4 rows deep; or, – Provide dual heating/cooling with the coil assembly no more than 4 rows deep • For fan coil units or air handling units located within a ceiling void, in addition to the above criteria, the project team must fully demonstrate safe access for cleaning and maintenance. This may include: – Access panels in unit / ductwork is in close proximity to the coil to be cleaned. – Access panels in the ceiling below the unit is in close proximity to the unit / ductwork access panel. – The upstream surface of the coil must be accessible within 1m of the ceiling panel. **Provision of outdoor air** **Comparison to Industry Standards** For this option, outdoor air must be provided to each space in the nominated area at a rate greater than the minimum required by AS 1668.2:2012 by 100%. To demonstrate compliance, the HVAC system must be clearly sized to accommodate the increased outdoor air rates. The project must use the design occupancy, where known, rather than the default occupancy when calculating the required rates. The design occupancy is to be determined by the project team – any assumptions made must be justified within the Submission. Where the occupant density is unknown, projects must utilise the occupancy rates prescribed within Table A1 Appendix A of AS 1668.2:2012. **Performance based approach** For this option, the system must be capable of providing enough outdoor air to maintain carbon dioxide (CO2) levels at, or less than 700ppm within each space in the nominated area, at all times during the design occupancy period. The system must continuously measure the concentration of CO2 within the breathing zone of each space during occupancy hours. The system must then adjust the amount of outdoor air to each space (up to the maximum design outdoor air quantity) to ensure that CO2 levels are maintained below the stipulated ppm threshold. Zoning the system: CO2 sensors shall be located so that they provide accurate representative readings of the CO2 concentrations in occupied spaces. A sensor shall be installed in each enclosed space. At a minimum, CO2 sensors should be located with (and as regularly as) temperature sensors and monitor an area no greater than 500m2. Modifying the air quality threshold : The nominated CO2 thresholds are applicable to most spaces. If appropriate, the project may nominate alternative thresholds from ASHRAE 62.1:2013. The justification must be accompanied with documentation from a recognised Standard or peer reviewed research. **Natural ventilation** For this option, the nominated areas must be provided with good access to outdoor air, appropriate for the activities and conditions in the space. The naturally ventilated space must meet the requirements of AS 1668.4:2012 under all likely weather conditions. Projects must justify how the nominated area will perform as a naturally ventilated space in these conditions.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Mechanical drawings for each ventilated space; • Extract from the ventilation system specification for each system; • Extracts from the Environmental Management Plan that specify ventilation cleaning; and • 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.	x	x	x		x			x	x																										• AIRAH HVAC 2010 Hygiene Best Practice Guideline. • ASHRAE Standard 62.1:2013, Section 5. • ACR 2006 Assessment, Cleaning and Restoration of HVAC Systems. • SMACNA IAQ Guidelines for Occupied Buildings under Construction. Standards for the 'Provision of Outdoor Air' criterion include: • AS1668.2:2012 The use of ventilation and air-conditioning in buildings - Mechanical Ventilation in buildings. • AS1668.4:2012 The use of ventilation and air-conditioning in buildings - Natural Ventilation of buildings. • ASHRAE 62.1:2013 Ventilation for Acceptable Indoor Air Quality. **Ventilation** In the case of natural ventilation, wind pressure, thermal buoyancy and ceiling fans are the only available sources of pressure to drive outdoor air movement. Where the supply and removal of air in an occupied space are provided by means other than openings in the façade, non-powered ventilators, solar chimneys or infiltration processes, the primary ventilation mode is considered to be mechanical ventilation; As per AS 1668.4-2012, failure to ensure adequate outdoor air ventilation through the minimum permissible openable openings, at all times, and adequate air movement through the enclosure may result in contaminant levels reaching concentrations that may cause adverse health effects; and The intent of the Clean Air criteria is the provision of fresh air to the occupied areas. Energy efficiency (and by extension thermal comfort) are considered in the Energy Use credit.
Light Quality	The building provides good daylight and its lighting is of high quality.	11.0	**Minimum Expectation :** The building provides adequate levels of daylight and good lighting levels suitable for the typical tasks in each space.	Nil	To Comply	All Regularly Occupied Spaces	**MINIMUM EXPECTATION** The project must comply with all criteria below: • Provide lighting comfort; • Address glare; and • Provide adequate daylight. **Lighting comfort** Lighting within the building must meet the following criteria: • All lighting must be flicker-free; • Light sources must have a minimum Colour Rendering Index (CRI) average R1 to R8 of 85 or higher, and have a CRI R9of 50 or higher; • Light sources must meet best practice illuminance levels for each task within each space type with a maintained illuminance that meets the levels recommended in AS/NZS 1680.1:2006 series applicable to the project type and including maintenance; • The maintained Illuminance values must achieve a uniformity of no less than that specified in Table 3.2 of AS/NZS1680.1:2006, with a maintenance factor method as defined in AS/NZS 1680.4.; and • All light sources must have a minimum of 3 MacAdam Ellipses. **Glare** Glare from light sources must be limited within the nominated area. Three options are provided for demonstrating compliance with this requirement; a performance method, and two prescriptive methods. A combination of methods can be used to demonstrate compliance to suit different spaces. **Prescriptive method 1** Bare light sources must be 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. Alternatively, for LED luminaires the Unified Glare Rating (UGR), as estimated from the manufacturers data sheets for a standard room, must not exceed the maximum values listed in Table 8.2 of AS/NZS 1680.1:2006. **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 must not exceed the maximum values listed in Table 8.2 of AS/NZS 1680.1:2006. The UGR rating must be calculated in accordance with the procedure outlined in Clause 8.3.3 of AS/NZS 1680.1:2006. **Daylight** This Minimum Expectation aims to ensure the building is providing daylight access to building occupants through solutions that exceed the typical relevant federal, state, or local regulations. The project team is required to show how the building's design: • Maximises the number of occupants that are in or near daylit areas during their daily activities for all building types; • Ensures regularly occupied spaces are in reasonable proximity to glazed façades, windows or skylights; • Controls or mitigates glare in the daylit spaces; • Maximises daylight to spaces that prioritise learning, healing, and living: – For schools, how all classrooms have access to a view and daylight – For hospitals, how all patient areas have access to a view and daylight – For apartments, how in 95% of all apartments, the living rooms and all bedrooms have access to a view and daylight. • Provides building occupants with unrestricted access to daylit indoor common spaces. As part of the submission, the project team is required to submit: • A narrative describing the building's daylight, view and glare control strategy; • A simple calculation of the amount of space that has adequate daylight as a proportion of the primary areas of the building; and • An assessment against the five requirements above. Where the above requirements are unable to be met, the project team must: • Outline the barriers to achieving the requirements and the measures taken to mitigate loss of daylight quality for occupants. **CREDIT ACHIEVEMENT** There are two parts to this credit: • Artificial lighting; and • Daylight For the Credit Achievement, at least one part must be met by the building. A combination of paths is acceptable. **Artificial lighting** This criterion applies to all regularly occupied areas in the building. Areas that are either transient or accessed intermittently such as corridors, storage, back of house or plant rooms can be excluded. Spaces can be excluded if the use of the space (for example, a laboratory) justifies specific light conditions – a Technical Question must be submitted to the GBCA for confirmation. Compliance is required to be demonstrated across 95% of the nominated area for this credit to be achieved. The artificial lighting solution must address the quality of light in the space, provide highlights and contrast, and seek to avoid excessive lighting or overly uniform solutions. • The walls within the field of view of occupants in regularly occupied spaces must have an average surface reflectance value of 0.70 and an average surface illuminance of at least 50% of the horizontal illuminance levels required for task. This requirement does not apply to green walls or to coloured/patterned/biophilic feature walls that make up less than 20% of the field of view of the occupants; and • Vertical illuminance in workspaces: ensure that 50% of the horizontal task illuminance reaches the average eye height for 90% of primary spaces using vertical illuminance calculation grid. The illuminance values must be calculated in accordance with AS/NZS 1680 series for the relevant task. Where unknown, a conservative estimate can be used. The lighting solution should provide for highlights of colour and contrast across multiple spaces. The contrast between spaces should not exceed the maximum luminance ratios as defined in AS 1680.1 Table 3.2 for visual task, immediate surrounds and general surrounds. **Daylight** For non-residential buildings, at least 40% of the principle averaged across the building must receive high levels of daylight with no less than 20% on any floor or tenancy (whichever is smaller). For residential buildings, 60% of the combined living and bedroom area of each apartment unit must comply with the daylight requirements. Kitchens are not included in the calculations. The daylight levels must also be present in at least 20% of the area of each bedroom and living area. Residential buildings and hospitality buildings must provide room blackout blinds or curtains to all bedrooms. If blinds or curtains are part of a packaged décor, all blinds offered for the bedroom décor must be blackout blinds. **EXCEPTIONAL PERFORMANCE** To claim Exceptional Performance, both criteria under the Credit Achievement must be achieved.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Daylight modelling report or manual calculations; • Lighting Drawings; • Architectural Drawings; • Lighting Specifications/Schedules; • Product Data Sheets; and • Isolux Plot Drawings	x	x	x		x			x	x																										**MINIMUM EXPECTATION** **Exclusions to the CRI** There are no exclusions to the CRI requirement for internal lighting. Exterior lighting not using LED may seek to justify an exemption in accordance with AS1158 via a Technical Question. **Space and activity types** Guidance for lighting levels for different space types and activity types are listed in AS/NZS 1680.1:2006. Where recommended maintained illuminance values for a particular space are not specified, the values to be used must relate to the closest type of task as defined in AS/NZS 1680.1:2006 Table 3.1. **Glare control for daylight** Tinted glazing, fixed shading devices, or blinds and screens are acceptable methods of managing glare. **Daylight access** For non-residential buildings, it is anticipated, but not required, that at least 20% of the primary spaces per floor or tenancy (whichever is smaller) would receive access to high levels of daylight. The simple calculation of the percentage of space with adequate daylight can be demonstrated using either the guidance in the credit criteria below for daylight calculations OR by calculating the primary floor area that is within 4m of a façade with a window to wall ratio of at least 50% plus the area that is within 45 degrees line of sight to a skylight (excluding double counting of floor areas that achieve both). **CREDIT ACHIEVEMENT & EXCEPTIONAL PERFORMANCE** **Calculating daylight** There are two options for calculating daylight: • Manual calculations: Calculations must comply with the GBCA's Green Star Daylight and Views Hand Calculation Guide. • Daylight autonomy: High Levels of daylight are deemed to have at least 160 lux due to daylight during 80% of the nominated hours.
			Credit Achievement : The building provides either best practice Artificial Lighting or best practice access to daylight.	2	2																																
			Exceptional Performance: The building provides both best practice Artificial Lighting and best practice access to daylight.	2	0																																

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GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

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									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Hydraulics Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	
Acoustic Comfort	The building provides acoustic comfort for building occupants.	12.0	**Minimum Expectation:** An Acoustic Comfort Strategy is prepared to describe how the building and acoustic design aims to deliver acoustic comfort to the building occupants.	Nil	To Comply	All Regularly Occupied Spaces	**MINIMUM EXPECTATION** An Acoustic Comfort Strategy must be prepared describing how the building design will deliver acoustic comfort to the building occupants. The following Acoustic Comfort criteria are to be addressed: • Quiet enjoyment of space; • Functional use of space; • Control of intrusive or high levels of noise; • Privacy; • Noise Transfer; and • Speech intelligibility. The Acoustic Comfort Strategy is to include: • A summary of the Standards, legislation, guidelines and other requirements that apply to the project; • The proposed performance metrics for each of the Acoustic Comfort criteria relevant to the different uses within the building and whether this exceeds minimum legislative or best practice guidelines; and • Description of how the design solution is intended to achieve the proposed performance metrics. The strategy must be prepared by a qualified acoustic consultant during the design stage and the design solutions described in the strategy must be incorporated into the Contract Documents. **CREDIT ACHIEVEMENT** The project must comply with all criteria below: • Internal noise levels; • Acoustic separation; • Impact noise transfer through floors; and • Reverberation control (non-residential spaces only). **Internal noise** Internal ambient noise levels in the nominated areas must be no less than 5 dB below the lower range value and no greater than the upper range value relevant to the activity type in each space as recommended in AS/NZS 2107. **For residential buildings** In residential dwellings the internal ambient noise levels can exclude those services under the direct control of the occupant such as air-conditioning units and switchable exhaust fans (e.g. toilet, kitchen hoods and laundries). **For buildings with sleeping areas** In buildings with sleeping areas (e.g. residential, hotel, hospitals, etc), to achieve the Internal Noise performance requirements of this credit, noise levels must not exceed recommended Sleep Disturbance criteria as defined in the NSW EPA Road Noise Policy 2011: • Up to two noise events per night: maximum internal noise levels below 70 dB LAmax; and • All other events: maximum internal noise levels below 55 dB LAmax **Measuring noise levels** Noise measurements and documentation must be provided by a qualified acoustic consultant and in accordance with AS/NZS 2107. Noise measurements must account for all internal and external noise including noise arising from building services equipment, noise from outdoor sources such as traffic, speech masking, and (where known) noise from industrial process. Occupancy noise is excluded. For open plan spaces compliance must be demonstrated by doing 1 measurement per 100 m2. Every floor of the building is to be tested. For enclosed rooms, 10% of the enclosed rooms are to be tested. These need to be representative of the spaces within the building and reflect the range of external noise impacts on the building. The selection of representative spaces must be justified and must consider how the spaces are considered to be the most conservative with respect to both internal, and external noise sources. The acoustic compliance report must include mark-up plans of where the tests were conducted. For naturally ventilated buildings the internal noise requirements must be achieved with all windows/openings closed. The acoustic consultant should also provide the results of measurements when the windows/openings are open to no less than 10% of the minimum natural ventilation area required for the ventilation design of the building and describe how the project has been designed to minimise external noise intrusion in this configuration. These measured noise levels do not need to meet the internal noise level criteria. **Acoustic separation** The project must address noise transmission between enclosed spaces within the nominated area. There are two ways to demonstrate compliance: • Privacy; or • Sound insulation. **Privacy** **For residential:** • All walls and floors (excluding riser walls) separating enclosed spaces must exceed the minimum NCC requirements by 5 points (excluding impact noise – refer impact noise transfer credit); • Party walls separating open plan kitchens (where joinery units are fixed) from another open plan kitchen/living room shall be discontinuous in construction (discontinuous in accordance with the National Construction Code); and • Entry doors must have perimeter and threshold seals. **For all other spaces:** 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.) The sounds tests from which Dw is derived must be measured in accordance with ISO 16283-1. **Sound insulation** The partition between the spaces should be constructed to achieve a weighted sound reduction index (dB Rw) of: • At least 45; for all partitions separating enclosed spaces which are: – Fixed without a door; and/or – Glazed partitions without a door* • 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 door; and • At least 50 through floors between occupied spaces **Impact noise transfer** Impact noise transfer measured in accordance with ISO 16283-2 through a floor where: • Floors are located above nominated areas; or • Adjacent spaces belonging to different tenancies which share a floor must not exceed dB LnT,w: – 55 for floors above residential accommodation spaces – 60 for all other spaces **Reverberation** The reverberation time in the nominated area must be not exceed the maximum for the intended use recommended in AS/NZS2107. This criterion does not apply to residential spaces.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Minimum Expectation** • Acoustic Comfort strategy. **Credit Achievement** • 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.	x	x	x											x							**MINIMUM EXPECTATION** **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. **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; and • Control of reverberation. Reference Standards The following Standards and Guidelines are examples of those expected to be referenced in the Acoustic Comfort Strategy report. The acoustic consultant will identify which apply to this project based on building type, location and client requirements. • National Construction Code (for residential); • AS/NZS 2107; • Association of Australasian Acoustical Consultants (AAAC) Guidelines (www.aaac.org.au); • Relevant State Government Guidelines and Legislation; and • Client's acoustic requirements (if applicable).
			Credit Achievement The building is designed and tested to achieve minimum acoustic performance requirements aligned with the Acoustic Comfort Strategy.	2	2																														
Exposure to Toxins	The building's occupants are not directly exposed to toxins in the spaces they spend time in.	13.0	**Minimum Expectation:** The building's paints adhesives, sealants, carpets, and engineered wood products are low or non-toxic. Occupants are not exposed to banned or highly toxic materials in the building.	Nil	To Comply	All Regularly Occupied Spaces	**MINIMUM EXPECTATION** The project must comply with all criteria below: • Paints, adhesives, sealants, and carpets; • Engineered wood products; and • Banned or highly toxic materials. **Paints, adhesives, sealants, and carpets** At least 95% of internally applied paints, adhesives, sealants (by volume) and carpets (by area) must meet stipulated 'Total Volatile Organic Compounds (TVOC) Limits' below. Compliance can be demonstrated in the following ways: • The product(s) are certified under a recognised Product Certification Scheme. The certificate must be current at the time ofpurchase; • The product(s) are tested in a laboratory; or • There are no paints, adhesives, sealants and carpets in the building at practical completion. **Page 91-92 Table** **Engineered wood products** Either no new engineered wood products are used in the building, or at least 95% (by area) of all engineered wood products meet specified formaldehyde emission limits, as per the following page. Where there are engineered wood products, compliance to emission limits can be demonstrated in two ways: • The product(s) are certified under a recognised Product Certification Scheme. The certificate must be current at the time of purchase; and/or • The product(s) are tested in a laboratory. Formwork, car parking applications, and non-engineered wood products (such as milled timber) are excluded from the credit. **Page 92-93 Table** **Lead, asbestos and PCBs** A comprehensive hazardous materials survey must be carried out on any existing buildings or structures on the project site, in accordance with the relevant Environmental and Occupational Health and Safety (OH&S) legislation. Where the survey identified asbestos, lead or PCBs in any existing buildings or structures, the materials must be stabilised, or removed and disposed of in	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Minimum Expectation** • Extracts from contract specifications for adhesives and sealants; • 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 and proof of purchase to demonstrate costs of compliant materials; • Bill of Quantities from Quantity Surveyor or Cost planner, demonstrating material costs; and	x	x	x		x	x	x	x	x	x											**MINIMUM EXPECTATION** **Paint and adhesives testing methods** The following VOC test methods are relevant to paints: • ISO Method 17895 (2005), for a material with a presumed VOC content <1%; • ISO Method 11890-2 (2006), for a material with a presumed VOC <15%; • ISO Method 11890-1 (2007), for a material with a presumed VOC content >15%; and • 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.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. **Theoretical TVOC calculations** Where TVOC content for the individual items is known, a theoretical calculation based on the subtotal of the known VOC values of the product's raw material components is acceptable. This is not relevant to carpets and engineered wood products where experimental testing is required. The calculations must include the following: • Numerical TVOC results expressed in grams/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 inpredients.

GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

PROJECT ADDRESS:
20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party																							Guidance
									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	
			Credit Achievement: On-site tests verify the building has low Volatile Organic Compounds (VOC) and formaldehyde levels.	2	2		accordance with best practice guidelines; or the survey concluded that no hazardous materials were found in any existing buildings or structures on the project site. **CREDIT ACHIEVEMENT** A test must be undertaken to verify that the TVOC and formaldehyde levels are within the concentration limits **Page 94 both tables** The required samples are determined by whichever is larger between occupied areas or floors. At least three samples are to be taken per floor. These must be representative of where the occupants are likely to spend a majority of their time. Testing must be conducted: • Under designed project conditions. For example, for naturally ventilated spaces, the windows should be open during testing; • At a minimum, the lowest (that is, the ground floor entrance) and highest floors must have measurements taken, as well as floor with the highest estimated occupants; • In areas representative of the regularly occupied spaces on the floor; and • Before 12pm. Samples must be taken through an active collection method in accordance with the following standards: • ISO 16000-6; • ASTM D5197; or • EPA TO-17. Testing must take place after practical completion and prior to occupants moving into the building.	• Hazardous materials survey. **Credit Achievement** • On-site VOC test results; and • As built drawings showing the location of the test samples.																								**Lead, asbestos and PCBs** In the case of a refurbishment, this credit element is deemed to be satisfied if 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** **Page 96 Table**
Amenity and Comfort	The building provides internal amenities that improve occupant experience of using the building.	14.0	**Credit Achievement:** The building has dedicated amenity rooms to act as parent room, a relaxation room, or an exercise room.	2	2	Site wide	**CREDIT ACHIEVEMENT** The building includes one or several rooms designed to promote either inclusivity, mindfulness or exercise for staff or occupants. For a room(s) to qualify, it must be classified as per below: • Parent room. • Relaxation, meditation, or prayer room. • Exercise room. The room size to be provided must be as follows: • The size of the room is calculated at a ratio of 1m² per every 10 occupants or staff; and • The room must be no smaller than 10m2. Building occupancy is determined by the project team and must be consistent with other credits in the submission. The room(s) must be accessible to all staff and building occupants. The room must be separate from bathrooms, showers, lockers, and active facilities. All amenities and/or infrastructure necessary to use the room(s) for its intended purposes must be provided (for example, including a sink or bench for a parent room). In addition, the room(s) must meet the following: • Credit Achievement for the Light Quality credit; • Credit Achievement for the Acoustic Comfort credit; and • The 'Equal access to the building' criterion of the Design for Inclusion credit. These amenity rooms are for staff or regular building occupants. Examples of building occupants are: • Facilities management staff • Building tenants • Residents in an apartment building • Staff in shops in a shopping centre • Workers in an industrial setting • Staff in hospitality buildings, tourism centres, or conference facilities Amenity rooms provided for the primary purpose of visitor enjoyment, even if staff can use them, are not acceptable alternatives, unless the room sizes have been designed to account for visitor numbers too. Examples of visitors include: • People who shop in shopping centre or shops • Delivery drivers • Hotel occupants • Conference attendees	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • A narrative describing the various rooms. • As build 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 Light Quality and Acoustic Comfort credits. • Evidence that the room complies with the 'Equal access to the building' criterion of the Design for Inclusion credit.		x	x																				**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 uses 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 recommemended that where multiple rooms are designed, a diverse range of room types be provided. **Design Guidelines** Below are relevant guidelines that provide useful insights and design principles for parent and first aid rooms. **Parenting room** • https://aushfg-prod-com-au.s3.amazonaws.com/download/RDS_PAR_4.pdf • https://aushfg-prod-com-au.s3.amazonaws.com/download/RLS_PAR_3.pdf **Quiet or religious rooms** •https://www.diversitybestpractices.com/sites/diversitybestpractices.com/files/import/embedded/anchors/files/_attachments_ articles/rr_quietroomsbestpractices.final_.feb2015_0.pdf
Connection to Nature	The building fosters connection to nature for building occupants.	15.0	**Credit Achievement:** The building provides views, includes indoor plants, and incorporates nature-inspired design.	1	1	All Regularly Occupied Spaces	**CREDIT ACHIEVEMENT** The project must comply with all criteria below: • Views • Plants • Nature-inspired design **Views** At least 60% of primary spaces occupied for more than two hours must have a clear line of sight to a high quality internal or external view. All floor areas within 8m from a compliant view meet this credit criterion. **Plants** Indoor plants must be provided in the nominated spaces. One or more plants in pots with a soil surface area totalling at least 500cm² for every 15m² of the primary spaces is required. An ongoing maintenance plan must be established to ensure plant health is maintained. The contract must include: • A 2-year contract with a plant maintenance contractor to enact the plan; • A schedule of plants within the nominated space; • Service intervals; • Policy regarding the maintenance of soil moisture, pH and nutrients; • Diseased plant replacement policy; and • Cleaning requirements and commitments. **Nature-inspired design** Five additional nature-inspired design interventions must be provided in alignment with the following principles: • Elements that provide differing natural sensory experiences; • Elements that reflect natural and cultural patterns and forms; • Using natural materials; and • Natural motifs and art.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Drawings showing access to views and/or line-of-site showing that no obstructions exist. • As build drawings showing the location of plants in the space. • Extracts from the ongoing management plan for plants. • Narrative of the five nature-inspired design features, along with evidence to support claims. • Evidence of how occupants can interact with nature (e.g. site plans showing green roofs).		x	x							x										**Relationship with Biodiversity Enhancement credit** Biodiversity Enhancement focuses on external landscaping that promotes biodiversity (i.e. diverse, resilient etc). This credit instead deals with internal planting, with green roofs an exception. 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 claimed in this credit under the 'Views' criterion (that is, as a high-quality external view). **Views** The line-of-sight shall be 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. 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 must contain either high plant density, xeriscape gardens or arid climate landscaping. The landscaping may be horizontal or vertical. **Plants** 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. Plants within an open plan space should be distributed throughout as far as possible. An ongoing maintenance plan must be established to ensure plant health is maintained. While this credit deals with indoor plants specifically, green roofs or internal green walls are deemed to comply with the credit. A green roof may only contribute 50% towards compliance with the credit and must be accessible to building occupants. This ensures that planting is still provided internally, where occupants spend most of their time. Nature-inspired design Using design elements to connect people to nature builds on the other aspects of this credit. Project teams can demonstrate this through design drawings, specifications and a narrative supporting the principles listed in the credit. The 'Biophilic Design Guidebook' by the Living Building Institute, as referenced below, contains design principles that can be used as a guide when developing these design strategies and responses.
			Exceptional Performance: ~~5% of the building's floor area or site area (whichever is greater) is allocated to nature in which occupants can directly engage with.~~	1	0		**EXCEPTIONAL PERFORMANCE** ~~Occupants can interact with nature either inside the building, or externally through a green wall or roof garden.~~ ~~At least 5% of the building's floor area or site area (whichever is greater) must be allocated to this opportunity.~~ ~~The allocated area must be accessible and have the necessary infrastructure to allow the activity to occur (for example water source/ taps for irrigation, storage area for tools and equipment).~~																						
TOTAL				14	9																											
RESILIENT																																
Climate Change Resilience	The building has been built to respond to the direct and indirect impacts of climate change.	16.0	**Minimum Expectation:** The project team completes the climate change pre-screening checklist. The project team communicates the building's exposure to climate change risks to the applicant.	Nil	To Comply	Site-wide	**MINIMUM EXPECTATION** Project team members must consider potential impacts from climate change when completing the checklist including, but 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; and • Indirect risks from impacts to other interdependent systems and services (e.g. transport networks, power, water, telecommunications). Both historic and future data must be used when completing the checklist. All rows and columns must be completed. The Minimum Expectation is achieved on completion of the checklist and doesn't require identified risks to be treated. The checklist must be signed off by a member of the project leadership team and shared with key project stakeholders, including the client/building owner. If the Credit Achievement for this credit is met, requirements of this assessment are considered to have been met **Page 108 Climate Change Checklist Table** **CREDIT ACHIEVEMENT** ~~**Climate change risk and adaptation assessment**~~ ~~A suitably qualified professional must undertake a climate change risk and adaptation assessment and author a report. The suitably qualified professional must:~~ ~~• Perform the assessment using the information from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report1 Representative Concentration Pathway 8.5 (RCP 8.5).~~ ~~• Perform the assessment using two timescales that are relevant to the project's anticipated lifespan: one medium-term timescale between 2040 to 2050; and one long-term timescale between 2070 to 2090.~~ ~~• Identify the primary and secondary climate change variables relevant to the project and each risk.~~ ~~• Define and include the consequence and likelihood tables and risk matrix used to assess climate risks.~~ ~~• Assess risks in consultation with multidisciplinary representatives from within the project team and a selection of relevant external stakeholders.~~ ~~• Develop a risk register of 'extreme' or 'high' risks to the building and surrounding infrastructure, and the treatment options.~~ ~~• Communicate the results of the assessment to the leads of all design disciplines.~~ ~~The author must ensure the assessment:~~ ~~• Aligns with the Australian Standard AS 5334:2013 Climate change adaptation for settlements and infrastructure; and~~ ~~• Follows the principles of risk management outlined in the Australian and New Zealand Standard AS/NZ ISO 31000:2009 Risk Management.~~ ~~**Managing risks**~~ ~~The project team must ensure risks are addressed as follows:~~ ~~• All risks rated as 'Extreme' must be addressed through specific design responses;~~ ~~• All risks rated as 'High' must be addressed through design or future operational responses; and~~ ~~• Regardless or risk rating, at least two risks identified in the assessment must be addressed by specific design responses.~~	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Climate change risk assessment. • Risk assessment criteria, including the likelihood and consequence tables, risk matrix, RCP and timescale, and any assumptions significant in the development of the assessment. • Details of the adaptation responses. • Evidence the assessment was communicated to design leads. ~~• Project risk register, highlighting the 'high' or 'extreme' identified climate change risks.~~		x	x							x										**Staging** The Climate Change Resilience risk assessment should be 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. **Risk Assessment** Priority should be given to corporate enterprise risk management or project-specific risk assessment criteria to enable climate change risks to be incorporated into the project's broader risk management processes. **Relevant external stakeholders** Examples of relevant external stakeholders include known tenants, government officials, emergency services, and utilities, or as determined by the Suitably Qualified Professional. **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. **Base Building vs Tenant Scope** By undertaking the climate change risk and adaptation assessment during project design, opportunities to incorporate adaptation responses in the base building can be maximised, thereby improving the resilience of the building for tenant use. Additional non-physical adaptation responses, including emergency management plans and information on how to cope during extreme climate events, should be 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). **Review process** The assessment should be reviewed and updated whenever the climate change science that informs the scenarios for assessment is updated.
			Credit Achievement: ~~The project team develops a project-specific climate change risk and adaptation assessment for the building.~~ ~~Extreme and high risks are addressed.~~	1	0																											

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DOCUMENT REVISION: 2.0 DATE: 25/02/2025

PROJECT ADDRESS:
20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party: Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	Guidance
Operations Resilience	The building can respond to acute shocks and chronic stresses that can affect its operations over time.	17.0	**Credit Achievement :** - The project team undertakes a comprehensive review of the acute shocks and chronic stresses likely to influence future building operations. - The building's design and future operational plan addresses any high or extreme system-level interdependency risks. - The building's design maintains a level of survivability and design purpose in a blackout.	2	0	Site-wide	**CREDIT ACHIEVEMENT** **Comprehensive Risk Assessment** The suitably qualified professional authoring the operations resilience assessment must: • Identify a set of clear resilience objectives and performance goals for the building; • Collaborate with key internal and external project stakeholders, including community representatives, to identify and confirm the relevant acute shocks and chronic stresses likely to impact the functionality of the building and its ability to meet performance goals; • Identify and confirm the interdependent infrastructure systems, networks, services and assets the building relies on; • Identify key areas of system vulnerability, specifically how those may be affected by the identified shocks and stresses that may impact the building through reduced capacity and/or functionality; • Outline response procedures in the event of an identified shock event impacting the building and the local community; and • Consult with relevant authorities with regards to evacuation procedures and emergency actions. As a minimum, the following shocks and stresses must be addressed in the assessment: **Shocks** • Failure of critical infrastructure (power, water and digital); • Health pandemic; • Water security; • Geological hazards (landslides, earthquakes, tsunamis); and • Direct attack (cyber and physical) **Stresses** • Ageing infrastructure; • Rising cyber dependency; • Increasing energy costs; and • Lack of transport accessibility and availability **Managing risks** The project team must ensure risks are addressed as follows: • All risks rated as 'Extreme' must be addressed through specific design responses. • All risks rated as 'High' must be addressed through design or future operational responses. • Regardless of risk rating, at least two risks identified in the assessment must be addressed by specific design responses. **Addressing power loss** The project team must perform an assessment of the building's survivability in the case of a blackout. The building must then be designed to account for its design purpose and provide a measure of survivability for the likely occupants. The project team must identify: • The design purpose of the building, and the potential for the building to be occupied in the case of a blackout. • The needs of occupants in such a situation. This may include the building being used by the community as refuge in the case of a blackout. • The servicing needs of that building to ensure the occupants are safe during the blackout. • The appropriate duration that the building can maintain its design purpose during the blackout. • How the building can remain safely habitable after a blackout (specifically fire systems, ventilation, temperature, water pumping and vertical transportation). • How the building will be able to operate in island mode, with consideration to loss of internet services for the Building Management System or for situations where the building is being powered on site.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Operations resilience assessment. • Details of how shocks and stresses have been assessed. • Risk assessment criteria, including the likelihood and consequence tables, and any assumptions significant in the development of the assessment. • Details of the adaptation responses. • Assessment of the building's survivability during a blackout with design responses.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	**Staging** The Operations Resilience risk assessment should be 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 Change Resilience credit, and it is encouraged that these are done in parallel, ideally within the same risk assessment. If the Climate Change 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 Change 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. **Project scope** For the Operations Resilience credit, the relationship between the base building and tenanted spaces may be affected where a tenant is particularly impacted by a shock or stress that is not otherwise identified or prioritised by the building. The project should consider where such a scenario may occur and identify potential risks to the core function of the building, or building's ability to cater to the needs of the tenant where extraordinary conditions exist. 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.
Community Resilience	The building contributes to improving the resilience of the community.	18.0	**Credit Achievement:** The project team undertakes a needs analysis of the community, identifies shocks and stresses that impact the building's ability to service the community, and develops responses to manage these.	1	0	Site-wide	**CREDIT ACHIEVEMENT** The project team must develop a community resilience plan that: • Defines its surrounding local community, and the groups which rely on or interact directly or indirectly with the building. In addition to considering tenants and visitors, this must identify key vulnerable communities; • Identifies resilience objectives and goals associated with servicing the community; • Identifies social considerations affecting the community; • Identifies acute shocks and chronic stresses that impact the project's function and ability to service the community (including climate-related shocks and stresses if the Climate Change Resilience credit is not targeted); • Demonstrates how the development of actions (physical and non-physical responses) to manage the impact from shocks and stresses is in response to the outcomes of community engagement; • Shows how the two most significant impacts identified are dealt with specifically through the building's design; and • Identifies how material shocks and stresses identified for the building may impact on these stakeholders by considering clear set of social indicators (see Guidance section). The project team must undertake at least one community capacity building activity prior to or during construction. A suitably qualified professional must author the community resilience plan.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Community resilience plan. • Overview of the community capacity building activity.	x	x																	**GUIDANCE** **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; and • 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 includes 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 residential 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. While this credit only requires one community engagement activity, it is encouraged that projects engage with their community on several occasions.
Heat Resilience	The building reduces its impact on heat island effect.	19.0	**Credit Achievement :** At least 75% of the whole site area comprises of one or a combination of strategies that reduce the heat island effect.	1	1	Site-wide	**CREDIT ACHIEVEMENT** The strategies that can be used to reduce the heat island are: • Vegetation; • Green roofs; • Roofing materials, including shading structures, having the following: – For roof pitched <15°– a three-year SRI of minimum 64; or – For roof pitched >15°– a three-year SRI of minimum 34. • Unshaded hard-scaping elements with a three-year SRI of minimum 34 or an initial SRI of minimum 39; • Hardscaping elements shaded by overhanging vegetation; and • Water bodies and/or water courses. The area of the site that is shaded by permanent structures (e.g. part of a car park to the south of a tall building) during the summer solstice are also deemed compliant.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • 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; and • Supplier Documentation material data sheet for compliant roofing and hardscape materials.	x	x	x	x						x		x					**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 • White concrete: 86 • 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. 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; or • 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 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.

GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

PROJECT ADDRESS:
20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party																				Guidance
									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	
Grid Resilience	The building contributes to the functioning of the grid as it transitions to a higher level of renewable energy capacity.	20.0	**Credit Achievement :** The building meets one or several of the following: • Provides active generation and storage systems; • Has the infrastructure to deliver an appropriate demand response strategy; or • Has reduced its electricity consumption through passive design.	3	0	Site-wide	**CREDIT ACHIEVEMENT** The project meets one or a combination of the paths outlined below: • Active generation and storage systems; • Demand response; and • Passive design solutions Where active generation and storage systems and demand response management are jointly used, the overall reduction must be 10% of the building's total electrical load. **Active generation and storage systems** The building has the capacity to reduce its electricity peak demand by 10% of the building's annual peak electricity demand for at least a one-hour period. The peak demand reduction can occur through thermal storage solutions (such as chilled water storage systems), by electricity storage solutions (batteries), or through renewable on-site generation. Where the electricity demand reduction is achieved by using on-site generation or electricity storage: • The system (generation or storage) must incorporate switch gear and transfer switches to enable it to operate in the event of grid outage or grid demand response event. This means that the system should be able to work in either: • A long-term paralleling with the grid mode, such that the generator can export back to the grid; or; • Island mode to power the building, or to power critical building systems. • The building must have approvals in place with the electricity utility company to operate as a peak reduction system and to have the capacity to become part of a network load demand system or to operate in island mode should it be required. Unless a separate agreement exists with the network operator, the generator must not export more than 30% of electricity generated to the grid during peak solar generation periods. That is, the building should be consuming, storing, or transferring through a micro-grid to other buildings, most of the available excess electricity being generated. For this pathway, the building management system (BMS) must include a demand management dashboard that shows the peak demand target, current, historical demand, alongside the critical performance characteristics. The BMS must also have the capacity to accept external control signals to enable signing up to current or future demand response programs. The active demand management strategies must also be tested and commissioned prior to occupancy, assuming a full load profile on a peak day. **Demand response** The demand response strategy must show how at least 10% of the building's annual peak electricity demand is being shed without affecting occupant amenity (comfort, lighting, movement) as outlined in credits Light Quality and Amenity and Comfort for at least 4 hours. This pathway relies on the building having the plan and infrastructure to manage demand responses, which includes: • Ensuring the building's automated management system has forward predictive capabilities (based on potential weather events outside standard design days, or predictions by the network operator) to alert building management to a potential event; • Having 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 (usually comfort temperature); • Having the building management system provide an automated way to start their load shedding strategy and enable communication to relevant parties; • Having the ability for the building's automated management system to accept external control signals to enable signing up to current or future demand response programs; and • This pathway also relies on ensuring the demand response strategy is tested, and that occupants and the building management system are aware what the implications are. This means: – Including load shedding responses in the scope of work for the commissioning activities. – Including the load shedding strategy in the relevant building management manuals and training. – Introducing a communication strategy to outline to occupants how they will be impacted on the day of a potential event. – Where the building is tenanted, introducing language in leasing contracts outlining the load shedding strategies and what impacts these may have on tenants. Occupant amenity is defined as maintaining a similar level of operation as when the building is not load shedding. **Passive design solutions** For this criterion to be awarded, the building must achieve the below: • The building's facade demonstrates a 10% improvement over a reference building modelled to Section J requirements of the National Construction Code 2019, or the version of the code applicable to the building's construction, whichever is later. The calculation must follow either Method 2 in the wall/glazing calculator or use a JV3 model; and • The building is mostly naturally ventilated (that is, the building has no mechanical cooling or heating for 80% of the building's occupiable area); and • The building's occupiable area is less than 3,000sqm. Buildings that don't meet this criterion that have are passively designed, should contact the GBCA for alternative paths. This path does not apply to industrial buildings or data centres.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Active generation and storage systems** • Energy model demonstrating the buildings peak energy demand; • Description of active generation or storage systems or technologies; • Overview of the buildings BMS; and • Evidence of approval with utility provider or evidence that no more that 30% of generated electricity is exported. **Demand response** • Description of the plan or infrastructure to manage demand response; and • Evidence that the system has been implemented into building commissioning processes and tested. **Passive design solutions** • Energy model showing the building's façade demonstrate a 10% improvement over reference buildings; • Mechanism drawings or other showing how the building is mostly naturally ventilated; and • As built drawings showing the occupiable spaces.		x				x															**Applicability** This credit is applicable to the energy modelling of Class 2 to 9 buildings. Refer to the Energy Consumption and Greenhouse Gas Emissions Calculation Guidelines for details on how to complete the modelling calculation, including definitions. **Issues related to this credit** This credit aims to address the following issues related to enabling the ongoing transformation of the grid. The credit aims to encourage two approaches to this interaction: • Managing demand; • Managing a building's capabilities to provide energy to the grid, or to adjust the building's demand in response to the needs of the grid at a point in time; There are five key components to this credit: • The degree to how much the building is impacting on the grid during peak times or similar shocks; • The capacity for the building to contribute to increasing the amount of renewable energy into the grid; • 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; and • 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. **Peak demand reduction** Project teams are encouraged to review demand response, load shifting and onsite energy storage solutions to meet this credit. Energy storage solutions may be electricity storage (for example, batteries) or thermal storage (for example, chilled water tanks). The term "electricity demand reduction" has been referenced in this credit. Other terms, such as "peak lopping" or "peak shaving" are used interchangeably with "electricity demand reduction" and essentially deliver the same outcome. **Onsite 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 onsite 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 recognise 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. **Onsite diesel generation and net zero** This credit does not recognise the use of diesel generators to encourage managing grid interactions. While diesel generators may be an effective way to manage grid interactions, this credit is aiming to provide a best practice approach to delivering its outcome. As diesel generators are typically found in buildings, this outcome is not considered beyond standard practice. However, noting that diesel generators can be used to achieve the goals of this credit, we recommend scheduling the regular generator start up and loading as part of the maintenance schedules to coincide with peak demand reduction events to get maximum use of the burnt fuel. We also recommend that you review the content of this credit and consider how your generator can support grid decarbonisation. However, this will not be rewarded. **Base building vs tenancy** For the Grid Resilience credit, the base building should consider the relationship with the tenanted spaces and how tenant operations may have an impact on the base building peak demand, both in terms of magnitude and timing. However, we note the credit is only going to be scored on managing base building services. In cases where tenancy or process loads were included in the peak energy calculations, the project team should detail in their submission that this is the case, and note that the profile of the building shown for this credit may differ from that shown in the Energy Use credit. **Future opportunities** While this credit is concerned at this time with the resilience of the grid during specific events, there is the opportunity to develop solutions that assist the grid on an on-going basis. This could take shape of hosting significant battery or thermal storage to help modulate grid interactions, or other similar solutions, particularly at the precinct level. We expect future updates to this credit to move in this direction.
TOTAL				8	1																								
POSITIVE																													
Upfront Carbon Emissions	The building's upfront carbon emissions from materials and products have been reduced and offset.	21.0	**Minimum Expectation:** The building's upfront carbon emissions are at least 10% less than those of a reference building.	Nil	To Comply	Site-wide	Upfront carbon emissions are those from modules A1 to A5 as defined in EN 15978. **MINIMUM EXPECTATION** **Reducing upfront carbon emissions** The building's upfront carbon emissions reductions must occur through good design and material selection. Carbon offsets purchased against the building's upfront carbon emissions from construction cannot be used to show compliance against the 20% reduction in the Credit Achievement or the Exceptional Performance. The reduction targets for the Minimum Expectation, Credit Achievement, or Exceptional Performance do not include demolition works. However, to claim the Credit Achievement and Exceptional Performance, demolition works must be offset. Calculating upfront carbon emission reductions To demonstrate compliance, project teams can either: • Model the proposed and reference buildings following the methodology of the Life Cycle Impacts credit; or • Complete the Upfront Carbon Emissions Calculator. Project teams seeking to achieve the Exceptional Performance must use the Life Cycle Assessment pathway. **Exclusions** • Demolition works are excluded from the Minimum Expectation. **CREDIT ACHIEVEMENT** **Reducing upfront carbon emissions** The building's upfront carbon emissions reductions must occur through good design and material selection. Carbon offsets purchased against the building's upfront carbon emissions from construction cannot be used to show compliance against the 20% reduction in the Credit Achievement or the Exceptional Performance. The reduction targets for the Minimum Expectation, Credit Achievement, or Exceptional Performance do not include demolition works. However, to claim the Credit Achievement and Exceptional Performance, demolition works must be offset. **Calculating upfront carbon emission reductions** To demonstrate compliance, project teams can use either: • Model the proposed and reference buildings following the methodology of the Life Cycle Impacts credit.; or • Complete the Upfront Carbon Emissions Calculator Projects must document a reduction in upfront carbon according to the materials and products in the scope **Offsetting demolition works** Demolition works must be captured and offset. Where an existing building less than 30 years old has been fully or partly demolished for construction, an embodied carbon calculation must be done for the demolished portion and these emissions offset. Where the existing building is between 30 to 50 years old, the contribution must be calculated and discounted at 10% for every two additional years past year 30. In the absence of available data, the existing building can be assumed to follow modern code-compliant construction techniques for the purposes of this calculation. **EXCEPTIONAL PERFORMANCE** In addition to meeting the Credit Achievement, the developer, applicant, or building owner must offset all remaining upfront carbon emissions from Modules A1 – A5. Project teams seeking to achieve the Exceptional Performance must use the Life Cycle Assessment pathway.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission • Life Cycle Assessment report (if pathway used) • Upfront Carbon Emissions Calculator (if pathway used) **Suggested evidence:** • Bill of quantities showing materials used. • Documentation as per Life Cycle Impacts credit (if pathway used).		x	x	x	x	x	x	x	x	x	x		x			x		**Project scope** In tenanted buildings, upfront carbon emissions from tenant fitouts are considered in the sector-specific credit Tenant Emissions. **Pathways to demonstrate compliance** Life Cycle Assessment (LCA) If a project team has completed a LCA in accordance with the Life Cycle Impacts credit, results from that assessment can be used to demonstrate compliance with this credit. In this case, the project team shall report on the global warming potential impact of modules A1 - A5. This result shall be entered into the GBCA Upfront Carbon Emissions Calculator. The calculator will show the percentage reduction. Simple carbon calculation The GBCA Upfront Carbon Emissions Calculator can be used to calculate the reduction in the building's upfront carbon emissions. **Low-carbon or carbon neutral products and design** All claims of carbon in products must be accompanied by 3rd party verified data, such as in Environmental Product Declarations (EPD). The following can be used to contribute towards compliance with the credit: **Carbon Neutral Products** 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 justifying its equivalency. Additional schemes will be added once they become available and added as a FAQ on the GBCA's website. Environmental Product Declarations (EPDs) EPDs used for the Responsible Products credits may be used to demonstrate compliance. If a product with an EPD is used that is not claimed in the Responsible Products credits, the complying EPD and proof of use of the product must be included in the submission. **Offsets** Residual upfront carbon emissions beyond the Credit Achievement reduction target, and carbon emissions from demolition works, may be offset through verified offset schemes. Acceptable offset schemes are listed in the Renewables and Offsets in Green Star Guide. **Upfront carbon emissions calculator** The calculator provides a simplified methodology for calculating the upfront carbon emissions of a building. It calculates the Modules A1 to A3 upfront emissions associated with at least the following materials: • Concrete (total); • Steel, structural and reinforcement; • Structural timber and frames; • Internal and external glass and glazing, including framing; • Façade materials and cladding; • Masonry (brickwork and blockwork) and stone including grout; • Pipes and conduits, including plastic and metal; • Internal wall and ceiling lining including plasterboard, fibre-cement, timber cladding; • Roofing including tiles and sheet metal; and • Floor coverings for example, carpets, ceramic tile and floor panels Materials used in the calculator must capture at least 90% of physical materials and 90% of financial value of building products. Any material not listed above that may be significant to the project's upfront carbon emissions must be captured.
			Credit Achievement: – Net Zero Path – The building's upfront carbon emissions are at least 20% less than those of a reference building.	3	3																								
			Exceptional Performance: The building's upfront carbon emissions are at least 20% less than those of a reference building, and all remaining emissions from Modules A1 – A5 are offset.	3	0																								

GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

PROJECT ADDRESS:
20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party																							Guidance
									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	
Energy Use	The building has low energy consumption.	22.0	**Minimum Expectation:** The building's energy use is at least 10% less than a reference building.	Nil	To Comply	Site-wide	**Note:** The project team to conduct energy simulation to determine performance and the number of points achievable. **ALL PERFORMANCE LEVELS** Energy use is measured as MJ/m2/year. This credit defines the reference building as a building modelled to Section J requirements of the National Construction Code 2019 or later. If the building's approval is subject to a later code, that building must use the latest version. The results from the energy model must include all energy consumed by base building systems. Consumption from tenant systems such as plug loads, domestic appliances, and manufacturing or process loads are excluded from the calculation. Refer to the Greenhouse Gas Emissions Calculator Guide for more information. **Minimum compliance** The energy model must show the following has been met: • For all buildings, each building's system and façade must comply with the corresponding Section J requirements in the National Construction Code. That is, the building cannot show that their façade, or any system, performs worse than the reference building even if the overall energy use reduction is 10% or more. • For residential buildings, no individual apartment can be less than the larger number of: – The minimum NatHERS rating stated in the code, or – 6.5 star NatHERS rating. **On-site renewables** The Minimum Expectation addresses the energy use from the building's systems and the effect of the building's façade. Therefore on-site renewable energy generation systems connected behind the meter cannot be used to calculate reductions in energy use of the building for the Minimum Expectation. On-site renewable energy generation systems connected behind the meter can be used to calculate reductions in energy use of the building beyond the Minimum Expectation requirement for Credit Achievement and Exceptional Performance.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Energy modelling report; • Extracts from specifications; • Extracts from commissioning reports; • As built drawings of the façade; • Evidence of renewable energy generation on-site (e.g. contracts, as built drawings); and • Schedule identifying all on-site storage systems installed in the building.																									**Alternative pathways for demonstrating compliance** An alternative pathway is provided for Commercial office buildings. Alternative pathways may be released at later stages. Project teams are encouraged to propose their own through a Technical Question. **For commercial office buildings** An alternative pathway to demonstrate compliance is to sign and comply with a NABERS Energy rating 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. The below NABERS Energy Rating Commitment Agreements are accepted: **Page 138 Table** * The modelling margin is inclusive of the modelling margin for the NABERS Commitment Agreement, not in addition to. The scope of the NABERS Energy rating is base building only, and currently applies to Class 5 offices only. The energy performance results shall use reference scenario modelling inputs, not off-axis scenario inputs. Refer to the NABERS Energy Guide to Building Energy Estimation for more information. This pathway may be used to assess the Class 5 component building total GFA. The reference pathway must be used for the modelling of the remainder of the building. **Project scope** For buildings with lettable tenanted spaces, Green Star Buildings expects the building owner/developer to deliver solutions within the lettable area of a building that meets the Green Star credit criteria, not the tenant. Awarding credits for a base building cannot depend wholly on a tenant to be responsible for delivering outcomes. This extends to Cold Shell areas. Cold Shell areas are becoming increasingly common in the Australian market. The rating tool expects that for Cold Shell areas, the base building [services] will enable the tenant to build high quality spaces, meaning the delivery of outcomes is still expected. As such, for tenanted spaces, modelling of energy use can be based on the provision of base building systems to the tenancy and an assumption that minimum NCC requirements will be met. Alternatively, if specified in leasing requirements, Tenancy Fitout Guides or similar, modelling can be based on minimum requirements included in these documents. This guidance would need to identify (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. For standalone tenant systems, projects may model based on minimum requirements outlined in leasing agreement documentation as above.
			Credit Achievement : – Net Zero Path – The building's energy use is at least 20% less than a reference building.	3	3					x	x			x	x	x	x	x	x	x	x											
			Exceptional Performance: ~~The building's energy use is at least 30% less than a reference building.~~	3	0																											
Energy Source	The building's energy comes from renewables.	23.0	**Minimum Expectation:** The building provides a Zero Carbon Action Plan.	Nil	To Comply	Site-wide	**Net Zero Carbon in Operations Pathway Bonus** This credit is part of the Net Zero Carbon in Operations path in Green Star Buildings (see page 19 in the Introduction). When the pathway is achieved, an additional Leadership Challenge point is awarded to the building for a total of 15 points for this path. **MINIMUM EXPECTATION** **Zero Carbon Action Plan** The project team must develop a Zero Carbon Action Plan for the building. The plan must be signed off by the building owner or developer and included in any operational documents for the building. The Zero Carbon Action Plan must include a target date by when the building is expected to operate as net zero carbon. The Zero Carbon Action Plan must cover all energy consumption, procurement, and generation and cannot rely on procuring renewable fuels as its only solution. It must also include infrastructure provided for tenants or future occupants such as gas installations for cooking. The Zero Carbon Action Plan must be done prior to the tender phase of the project. The plan must: • Quantify the building's scope 1 (including refrigerants) and 2 emissions between now and 2050 without any interventions; • Quantify the building scope 1 (including refrigerants) and 2 emissions in 2050 once all interventions have occurred; • Describe the changes the building is required to undertake to be net zero carbon in operation as the distinct parts of the building's systems reach end of life; • Identify spatial considerations and physical interventions needed to replace fossil fuel using equipment, refrigerants and infrastructure; • Perform a cost analysis of the potential costs and savings if the building was designed to be net zero; and • Be signed-off by the building owner or the developer. It must also outline, if relevant: • A description of energy-consuming electrical, mechanical, or hydraulic systems and any refrigerants used; • Any future spatial requirements or changes to plant rooms stemming from changes to existing building systems; • Any additional capacity built into the building, substations, or building systems to enable any proposed changes. This may include the capacity to accommodate any future additional loads, energy storage or demand response solutions which may occur or be implemented during the life of the building; and • An upgrade or replacement timeline for the distinct systems, or system components, describing the point at which they are to be replaced with the appropriate alternatives. **CREDIT ACHIEVEMENT** All electricity under the control of the building owner or operator must be accounted for and sourced from renewables. Electricity use for tenant loads is excluded from this credit (see Tenant Emissions). Both on-site and off-site renewables are acceptable. Where the project team claims the credit through off-site renewables, the building owner must sign a renewable energy contract. The shortest contract length is: • Five years; or • 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, the shortest contract length is three years. Other commitments may be acceptable through a Technical Question. The contract can be part of a corporate power purchasing agreement for a building portfolio. **EXCEPTIONAL PERFORMANCE** ~~This credit addresses the following:~~ ~~• Energy under the control of the building owner or operator; and~~ ~~• Non-electricity energy uses that are not under the building owners' control, such as cooking or heating that uses liquid or gaseous fuels burned on site, with some minor exceptions (see Guidance).~~ ~~Energy use for tenant loads is excluded from this credit.~~ ~~Both on-site and off-site renewables are acceptable.~~ ~~Where the project team claims the credit through off-site renewables, the building owner must sign a renewable energy contract. The shortest contract length is:~~ ~~• Five years; or~~ ~~• 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, the shortest contract length is three years. Other commitments may be acceptable through a Technical Question.~~ ~~The contract can be part of a corporate power purchasing agreement for a building portfolio.~~ ~~Should infrastructure in the building that can use fossil fuels to power typical building systems exist, the applicant must show how it will not use fossil fuels during the building's operation.~~	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Zero Carbon Action Plan with supporting evidence; • Signed PPA including extracts on the length of contract; • Evidence that the PPA or on-site generation covers 100% of electricity or energy; and • Public commitment to the Global Commitment for Net Zero Carbon Buildings managed by WorldGBC.																									**Applicability** This credit applies to all building sectors. For industrial buildings and other building types where the building owner doesn't retain operational control of the site, the scope is all electricity and energy as required to be accounted for in the Energy Use credit. **Exceptions** A small amount of fossil fuels is allowed for cooking or emergency purposes. The total modelled energy consumption from fossil fuels (MJ/m2/annum) cannot be more than 1% of the building's total modelled energy use. In this case, the building applicant must buy carbon offsets equal to 5 years of fossil fuel emissions. See the Renewables and Offsets Guide for more information on acceptable offsets. This credit does not address gas use for manufacturing or research purposes. GBCA encourages project teams to look at how to decarbonise these loads as part of the development of the project. However, as these aren't building loads, these are not eligible for a market transformation claim. **Green Star rating and renewable energy** Where the building's energy use comes from renewables, the Green Star certificate will note that the building'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. **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. **Refrigerants** Synthetic refrigerants are made up of chemicals that have a high global warming potential (GWP). GWP is the relative amount of degradation the refrigerant can cause to global warming. Because of this, refrigerants must be safely disposed at the end of their life at great cost. In the future building owners may be impacted by future requirements for safe disposal which may include increases in penalties that should be considered today. Alternatives to synthetic refrigerants include nature refrigerants such as water, carbon dioxide, ammonia and hydrocarbons. They are currently available and are valid alternatives to current synthetic refrigerants. **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
			Credit Achievement : 100% of the building's electricity comes from renewable electricity.	3	3					x	x			x	x			x	x	x												
			Exceptional Performance : ~~– Net Zero Path –~~ ~~100% of the building's energy comes from renewables.~~	3	0																											
Other Carbon Emissions	The building's emissions from refrigerants and remaining carbon sources are eliminated or offset.	24.0	**Credit Achievement :** – Net Zero Path – The building owner eliminates or offsets emissions from refrigerants.	2	2 (if required not counted)	Site-wide	**CREDIT ACHIEVEMENT** All refrigerants from building systems or domestic appliances provided by the building must be captured in the credit. This includes where fridges or freezers are provided as part of a fitout package in a residential setting. There are two pathways available: • Eliminates high-GWP refrigerants from the building; or • Offsets 100% of carbon emissions from refrigerants. **Eliminating refrigerants** High-GWP refrigerants must be eliminated from the building. The use of refrigerants with a GWP of 10 or less is considered to comply with the credit. Natural refrigerants in most cases comply with this criterion. **Offsetting refrigerants** Emissions are calculated by multiplying the total refrigerant charge by its Global Warming Potential (GWP) for each type of refrigerant, and adding these together. Where refrigerants are used in the building, adequate access for maintenance and/or replacement must be provided. **EXCEPTIONAL PERFORMANCE** ~~This Exceptional Performance aims to address emissions that have not been addressed by claiming other credits. If other credits have been claimed, the emissions that are to be offset in this credit are lower.~~ ~~The emissions addressed in this credit are:~~ ~~• Emissions from the building's electricity use (as determined in the Energy Use credit) multiplied by the grid coefficient (unless the Energy Source Credit Achievement is met, in which case these emissions are zero);~~ ~~• Emissions from the building's energy use as determined in the Energy Use credit (unless the Energy Source Exceptional Performance is met, in which case these emissions are zero);~~ ~~• Upfront carbon emissions as determined in the Upfront carbon emissions credit (unless the Upfront Carbon Emissions is met, in which case these emissions are zero);~~ ~~• Life-cycle emissions from modules B and C as calculated in Life Cycle Impacts;~~ ~~• Emissions from construction equipment use, and utilities during construction on site; and~~ ~~• Construction waste emissions.~~ ~~The project team must include the above and any other carbon emissions over 1% of the total carbon emissions profile for the building (significant emissions).~~ **~~Alternative calculation method for Exceptional Performance~~** ~~As an alternative path to calculating emissions from items 4 to 6 the building owner can make an additional offset purchase equal to 5 years of modelled operational energy use (from the Energy Use credit), multiplied by the current grid coefficient to cover additional emissions not captured by any other calculation. These are not offsets for future operational use, rather they address emissions related to other carbon sources not already captured.~~	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Confirmation that refrigerants have been eliminated from the building along with supporting documentation (e.g. mechanical as built drawings); • Calculations showing the total refrigerant charge to be offset; • Evidence of purchase of offsets (e.g. contract) clearly showing the length of offset; and • Overview of the remaining carbon emissions and evidence of their offset.																									**Excluded equipment** Where specialty medical or manufacturing equipment exists, project teams should submit a Technical Question to the GBCA if they intend to exclude such equipment from the calculations. **Offsets** Refer to the Renewables and Offsets Guide in Green Star for more information on eligible offsets. **Refrigerants** Synthetic refrigerants are made up of chemicals that have a high global warming potential (GWP). GWP is the relative amount of degradation the refrigerant can cause to global warming. Because of this, refrigerants must be safely disposed at the end of their life at great cost. In the future building owners may be impacted by future requirements for safe disposal which may include increases in penalties that should be considered today. Alternatives to synthetic refrigerants include nature refrigerants such as water, carbon dioxide, ammonia and hydrocarbons. They are currently available and are valid alternatives to current synthetic refrigerants.
			Exceptional Performance: ~~All other emissions not captured in the Positive category are eliminated or offset.~~	2	0																											

GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

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20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

IGS INTEGRATED GROUP SERVICES

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party																		Guidance
									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	
Water Use	The building has low water use.	25.0	**Minimum Expectation:** The building installs efficient water fixtures or uses 15% less potable water compared to a reference building. Multi-unit residential buildings use 10% less potable water compared to a reference building.	Nil	To Comply	Site-wide	**MINIMUM EXPECTATION** There are two pathways for demonstrating compliance with this criterion: • Follow the prescriptive approach that describes fixture and appliance efficiency; or • Show a 15% reduction against a reference building through the GBCA's Potable Water Calculator Either one will suffice to achieve the Credit Achievement. **Sanitary fixture and appliance efficiency** All fixtures and water-using appliances installed within the project's scope must, at a minimum, meet the following WELS ratings: Fixture type WELS rating Taps 6 star Urinals 5 star Toilets 4 star Showers 4 star (below 4.5L/min) Clothes Washing Machine 4 star Dishwashers 5 star **Potable water reduction compared to a reference building** The GBCA's Potable Water Calculator assists in calculating how much more efficient a building is compared to a reference building. It considers fixtures, appliances, and water reuse systems. **CREDIT ACHIEVEMENT** The building uses 45% less potable water compared to a reference building. Multi-unit residential buildings use 40% less potable water compared to a reference building. The Potable Water Calculator must be used alongside the Potable Water Calculator Guide. The building must have infrastructure for recycled water in a district or location where local council or water authorities (or similar) have planned for installation of recycled water infrastructure. ~~**EXCEPTIONAL PERFORMANCE**~~ ~~The building uses 75% less potable water compared to a reference building.~~ ~~Each unit in an apartment building uses 60% less potable water compared to a reference building. The Potable Water Calculator must be used alongside the Potable Water Calculator Guide.~~	**Submissions for this credit must contain:** • Submission Summary via the online portal • Water Use calculator • Evidence to support claims made in the submission **Suggested evidence:** • WELS certificates; • Manufacturer's data; • Drawing(s) for each typical floor showing isolation valves for floor-by-floor testing of the fire sprinkler system, and drawings of the water storage and re-use system(s); • Drawing(s) clearly showing the location of all heat rejection equipment installed on the project; • Drawings showing the landscape design and the irrigation system, listing the name, location, and plant species zone as it appears in the Calculator; • Manufacturer's information showing that the application efficiency for the landscape irrigation system; • Manufacturer's information including backwash volume and frequency of filter cleaning; and • Drawing(s) of process cooling water usage loops.		x					x				x		x						**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 Potable Water 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.
			Credit Achievement: The building uses 45% less potable water compared to a reference building. Multi-unit residential buildings use 40% less potable water compared to a reference building.	3	3																						
			~~**Exceptional Performance:**~~ ~~The building uses 75% less potable water compared to a reference building.~~ ~~Each unit in an apartment building uses 60% less potable water compared to a reference building.~~	~~3~~	~~0~~																						
Life Cycle Impacts	The building has lower environmental impacts from resource use over its lifespan than a typical building.	26.0	**Credit Achievement:** The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice.	2	2	Site-wide	**CREDIT ACHIEVEMENT** The reduction in life cycle impacts must be demonstrated through a whole-of-building, whole-of-life (cradle to grave) comparative Life Cycle Assessment (LCA), as defined by EN 15978. All EN 15978 modules (A to D) must be included in the assessment. The results of the LCA must be entered into the GBCA's Life Cycle Assessment Calculator, which will apply normalisation and weightings to the results to determine compliance with the credit. Results are to be reported in the functional unit of per square metre of Gross Floor Area (GFA). **The reduction must be against the impact categories on page 154 table.** The credit cannot be claimed if the calculated impact in any one category increases the total normalised and weighted score for the project by more than 10%. For all building types, a standard practice reference building as per EN 15978 must be used. The reference building must be a standard practice, code-compliant design, which is fit-for-purpose for the site and operating conditions of the proposed building. **Methodology** **Scope** Whole-of-Building as defined in EN 15978. Refer to section 7.5 'The Building Model'. **System boundary** Cradle to grave, including all life cycle modules (modules A to D) and scenarios as detailed in EN 15978. **Functional unit** Impacts are assessed and reported on a per square metre (m2) project Gross Floor Area (GFA) basis. **Service life of permanent building elements** The service life required by the client or through regulations, whichever is the greater. If no required service life is defined, a default service life of 60 years is to be applied. **Service life of replaceable building and construction elements** Use actual product/material design life, or refer to table 9: Indicative component lifespan of RICS professional standards and guidance, UK Whole life carbon assessment for the built environment (2017). **LCA Data** The selection of data must be based on EN 15978. Data quality shall be reported and peer-reviewed. Use of locally based data, preferably EN15804 compliant Environmental Product Declarations (EPDs), shall take precedence over generic or global data, where available unless it is for imported products. **Quality Assurance** The LCA report must comply with quality assurance requirements by meeting one of two options: **Option A** • The report produced by an LCA Certified Practitioner; and • Subject to organisational quality assurance, which has been certified in accordance with ISO9001. The GBCA LCA Peer Review Checklist is to be completed by an independent professional and included in the submission. **Option B** • The report produced by an Experienced Individual; and • Peer reviewed by an LCA Certified Practitioner or independent Experienced Individual, with a completed GBCA LCA Peer Review Checklist. Refer to the Definitions section for competency requirements.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Life Cycle Impacts calculator • Evidence to support claims made in the submission **Suggested evidence:** • LCA Report; • Peer Review Statement; • LCA practitioner competencies statement or LCACP certificate for practitioner and peer reviewer; • Standard Practice Reference Building Documentation; and • Actual Reference Building Documentation.	x	x	x	x	x	x	x	x	x	x	x		x		x	x			**Upfront Carbon Emissions credit** The results from this credit can be used to demonstrate compliance with the Upfront Carbon Emissions credit. **LCA Data** When conducting the LCA for the project, the following Green Star based inputs shall be consistent with: • Reference Building operational energy benchmarks as used in the Energy Use Calculator for the project for year one energy use; • Reference Building Water usage as used in the Water Use credit (if targeted); and • Product-specific and industry-wide EPDs submitted in response to the Responsible products credits (if targeted). **Emission factors for electricity use** If the building has a design life of 60 years or more, future energy projections assuming decarbonisation of the power supply may be calculated using current state/territory emissions factors and dividing by four. The division by four assumes a linear taper of grid emissions to zero carbon over the first 30 years (divide by two) and then continuing zero carbon emissions for the following 30 years (divide by two again). The same emissions factor is to be applied across the whole life span of the building. If the Energy Source credit is targeted, the emissions factor for the sourced electricity may be applied for the secured contract duration. At the end of the contract and for the remaining lifespan of the building, the standard emissions factor is to be applied. If the design life of the building is shorter, future energy projections must be calculated for both the reference and actual LCA models in accordance with RICS (2017) Section 3.4.2 Future energy projections – Decarbonisation of the energy supply. **Effects of the Zero Carbon Action Plan** The effects of the Zero Carbon Action Plan cannot be taken into account in the LCA model. **Standard practice reference building** This pathway shall be adopted for all building types. The standard practice reference building shall be agreed through consultation with structural, mechanical, electrical and architectural professionals. The Reference Building shall be representative of standard practice for a building of the same characteristics of the project.
TOTAL				30	14																						
PLACES				8																							
			Minimum Expectation: The building includes showers and changing facilities for building occupants that are accessible, inclusive and located in a safe and protected space.	Nil	To Comply		**MINIMUM EXPECTATION** The project must meet both criteria listed below: • Changing facilities • Accessible, inclusive, and located in a safe and protected place **Changing facilities** The design of the shower facilities must be appropriate to encourage their use. The project team is expected to justify how their location, locker sizes, privacy requirements, and size meet this aim. **Showers** The building must install showers and lockers based on the occupancy of the building: Occupants Showers 0 - 49 1 Unisex 49 – 50 2 100 - 200 4 200+ Additional 1 per 200 occupants above 200 All showers must be at least 900m x 900m to enhance usability. Showers and bathrooms provided to meet statutory accessibility requirements do not count towards the minimum showers required to meet this Minimum Expectation. **Lockers** One locker must be provided for every eight staff occupants. The lockers must be secure and located in the changing rooms. Lockers provided within tenancies, not in changing rooms, do not count toward this credit. **Accessible, inclusive, and located in a safe and protected place** Upon accessing, pedestrians and cyclists must be protected from the elements and other vehicles. Access must be safe, with consideration given to avoiding steep gradients, surface grip levels and visibility around tight corners. Access to the facilities must be well lit between entryway to bike parking, all amenities and lift lobbies and main access points to the building. All regular building occupants must have easy access to lockers, showers, and building entry. Occupants must be able to find the facilities thanks to clear signage throughout the building and access points. **CREDIT ACHIEVEMENT** The building must comply with the criteria below: • Introducing cyclist facilities; • Developing a sustainable transport plan;																				**MINIMUM EXPECTATION** **Applicability** This Minimum Expectation applies to all building types except residential. **Occupancy rates** When calculating occupancy rates, if the project design occupancy values are available prior to issuing of Tender

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GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party																									Guidance
									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Hydraulics Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor							
Movement and Place	The building's design and location encourages occupants and visitors to use active, low carbon, and mass transport options instead of private vehicles.	27.0	**Credit Achievement :** The building's design and location prioritises walking, cycling, and transport options that reduce the need for private fossil fuel powered vehicles.	3	3	Site-wide	• Reducing private vehicle use; and • Encouraging walkability. **Cyclist facilities** The building's access must prioritise walking and cycling options. This means the building's access must be well lit, weather protected, and separated from vehicles. The building must also include access to cyclist facilities that are separated from the primary vehicle entrance to ensure safety. Cyclist facilities must have signposted access to the changing rooms amenities as per the Minimum Expectation. The cyclist facilities must ensure the cycling equipment is safely secured. The amount of cyclist facilities is to be informed by the Sustainable Transport Plan. In a residential building, the access points must connect to the relevant cycling storage facilities. If these are at a unit level, the project team must show how the access won't be blocked by strata at a later date. **Sustainable transport** The project team must prepare and implement a Sustainable Transport Plan. The requirements or recommendations made in the Sustainable Transport Plan must then be reflected in the design of the building's facilities and ongoing operational processes. As a minimum, the Sustainable Transport Plan must include the following: • 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 mass 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 projects which may change or influence mode share (such as planned, or under construction infrastructure) and the year of completion for the new infrastructure; and • Roles and responsibilities for implementing, monitoring, and auditing the Sustainable Transport Plan in the building's operational phase. The transport plan must be prepared by a suitably qualified Transport Planner. The building must include the following: • Car sharing parking spaces must include an electric vehicle connection, regardless whether the vehicles are electric at the time of practical completion; • Infrastructure to allow for future of electric charging to each parking spot in the parking area. This means ensuring the building has EV distribution boards to allow for allow for future connection for EV's. These distribution boards must be located so that no connection requires a cable of more than 50m from the parking bay to the connection. • The building must be fitted with an EV load management system. The EV load management system must be capable of determining how and when the electric vehicles should be charged to minimise building peak power demand whilst ensuring the vehicles are charged. **Reducing private vehicle use** Using the inputs from the Sustainable Transport Plan to complete the GBCA's Movement and Place Calculator, the building's design and location must be shown to reduce emissions from transport, encourage mass transport use, and reduce vehicle kilometres travelled compared to a reference building. The changes must be as follows: • Emission reduction (40%); • Active mode encouragement (90%); and • Vehicle Kilometres Travelled (VKT) reduction (>20%) **Encouraging walkability** The building's design and location must encourage walking to and from a number of amenities. This means designing roads within the building boundary to prioritise pedestrians, and either providing within, or being located close to, a number of amenities. **Roads** If there are roads within the building boundary, the design must prioritise pedestrians over vehicles. Roads should be designed to be low speed (10km/hr). Pedestrians must have the right of way, and road design must encourage this. **Amenity diversity** Occupants should have access to a diversity of amenities across the below eight categories. There must be at least 10 amenities across five categories within 400m radius of the building, as determined by Google Maps or other mapping services. • 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; • 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; and • Outdoor facilities: e.g. Playgrounds, parks	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission • Movement and Place Calculator **Suggested evidence:** **Minimum Expectation** • Transport Drawings showing the provision and location of changing facilities; • As built drawings showing the number and size of showers, and of lockers; and • Site drawings or as built drawings showing how the changing facilities are safe and protected. **Credit Achievement** • Sustainable transport Plan including a site-specific transport assessment; • Site plans showing how pedestrian access has been prioritised; • As build drawings showing the number and location of cyclist facilities; and • Manual calculations showing proximity to amenities.	x	x	x																							documentation, these take precedence. When these are not available, the project should use the design occupancy (staff) estimation for their Development Application. **Location of changing facilities** Facilities can be provided within the building's boundary, or outside. If the facilities are outside the site boundary, they must be within a reasonable walking distance, under the control of the building owner and be accessible to all building occupants (depending on the users being served by those facilities). Reasonable walking distance is defined as a five-minute walk or less. **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. **CREDIT ACHIEVEMENT** **Suitably 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 five years' experience in transport planning; • Has co-authored at least five building Sustainable Transport Plan / Green Travel Plans or similar; or • Chartered member of a relevant industry body. **Calculating amenities** Where possible, connections between the building and amenities should have shade and shelter along the route, as well as be well lit and safe. Major obstructions, such as highways, limit an individual's capacity to walk. As such, where those are found, they act as virtual barriers, and, unless the crossing is within the 400 meters, all amenities beyond the obstruction cannot be counted. Amenities that are similar in nature to that of the development cannot be considered for purposes of this credit. For example, an educational project cannot claim a nearby educational facility. Where there are two or more of any one amenity, this will count as only one amenity. For example, three food and beverage shops will only count as one amenity, four convenience stores will only count as one additional amenity, etc.
Enjoyable Places	The building provides places that are enjoyable and inclusive.	28.0	**Credit Achievement :** The building delivers memorable, beautiful, vibrant communal or public places where people want to gather and participate in the community. The spaces are inclusive, safe, flexible and enjoyable.	2	2	Site-wide	**CREDIT ACHIEVEMENT** The project must meet both criteria listed below: • Provide new publicly-accessible spaces that are enjoyable and support community activity and interaction are provided. • Deliver an Activation Strategy to facilitate initiation of placemaking activities. **Publicly accessible spaces** Communal or public space must be provided to the following extent: Building type — Building size (m2) — Communal space requirements (m2) All building types except residential — ≥ 1,000 — 0.25 m2/ occupant or 2.5% of GFA, whichever is greater Residential with mixed use — All — 1.75 m2 / dwelling (minimum of 250 m2) The communal or public space must: • Accommodate community-based activities; • Have capacity and flexibility to operate in multiple modes of usage; • Demonstrate relevance of the space for local people (demographics, social profile, current needs); • Demonstrate the space has been designed for enjoyment; and • Be available to the community to use for free. It must be clearly demonstrated that the spaces are publicly accessible. **Activation strategy** An activation strategy must be provided to ensure placemaking continues after practical completion. The strategy must demonstrate how the future occupants and the wider community can contribute to the place activation, addressing the following: • The target of the activation activities; • How the activation will be funded and managed for the first 12 months of operation, and be sustained beyond those months; • Estimated timing of activation; • Potential suppliers, facilitators or initiators of placemaking activation activity commencement; • How the building occupants and the wider community will be encouraged to initiate activations e.g. communication channels and support network; • Demonstrate how the strategy can be further implemented by the future tenants and occupants; and • Assign roles and responsibilities for implementation of the strategy, including evaluation and monitoring. The strategy must be included as part of the building's handover to ensure implementation in operation.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Site plans showing the size of public or communal spaces; • Letter from the building owner confirming the space is publicly accessible and may be used for free; • An overview of how the public or communal spaces comply with the requirements (e.g. flexible); • A narrative of how the spaces have been designed for enjoyment; and • Activation strategy.	x	x	x																							**Applicability** For multi-unit residential projects, public space may not be desired byresidents. Some developments may provide communal/shared spaces for residents and visitors, but not completely public spaces. This is acceptable for residential projects only. **Existing space** Existing communal space prior to the building cannot be considered. The purpose of this credit is to create new communal spaces. **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; • Inclusive design elements; • Design for people and usage, demonstrating spatial flexibility/adaptability, potential uses/activities in spaces and modes ofoperation, 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; and • Demonstrate materials and products of high quality and durability. **Scope of credit** The base building provides the foundations of Enjoyable Places. Tenancies can affect the experience and enjoyment of places, through: • The nature of frontages to new places; • Occupation or habitation of places for commercial purposes; and • Activation outcomes (contributing to activity). Tenant engagement is encouraged to fully achieve the desired outcome. However, there are no requirements for tenants for the purposes of this credit. **Enjoyable Places design** Sources to support designing high quality, enjoyable places can be found below: • Government Architect New South Wales: Better Placed https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/strategy-documents/better-placed-a-strategic-design-policy-for-the-built-environment-of-new-south-wales-2017.pdf • Government Architect New South Wales: Implementing Good Design https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/discussion-papers/discussion-paper-implementing-good-design-2018-03.pdf • Government Architect New South Wales: Evaluating Good Design https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/discussion-papers/discussion-paper-evaluating-good-design-2018-03.pdf
Contribution to Place	The building's design makes a positive contribution to the quality of the public environment.	29.0	**Credit Achievement:** The building's design contributes to the liveability of the wider urban context and enhances the public realm.	2	2	Site-wide	**CREDIT ACHIEVEMENT** There are two pathways for demonstrating compliance with this credit: • Urban Context Report and public realm interface design; or • Independent design review Either one will suffice to achieve the Credit Achievement. **Urban context analysis** **Urban Context Analysis** The building must provide an urban context report that outlines the urban context of the development and the design responses. The report must include: • Urban context analysis: – Assessment and analysis of the local setting and wider urban context. This must include physical, social, cultural and economic factors; – Outline any planned changes to the local area (for example if located in a growth zone) and the project's design response to those. This may include Local or State Government's vision for the area; and – Identify any local challenges which the building can contribute to address. • Design responses: – Demonstration of the design responses to the urban context analysis; and – Demonstration that the that the public space is not negatively impacted by the proposed design. **Independent Design review** Design reviews are held at key points in the development of the design. At a minimum, these must occur as follows: • Design Review during concept/schematic design stage, to ensure that proponents can take advantage of the advice offered at a time where the design is flexible	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Urban context analysis** • 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; and • Architectural drawings showing the public realm interface design. **Design review panel** • 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; and • A declaration from the project application confirming that the design review panel meets the independency requirements	x	x	x												x											**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 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 9 Criteria for 'Better Fit' (page 5); • Central Melbourne Design Guide provides quantified requirements for extent of active frontage and ground-level floor space; and • Urban Design Guidelines for Victoria include a Buildings chapter with guidance for interfaces **Public realm interface** The building con contribute positive 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; and • Designing entrances to be welcoming and to contribute to the public realm.

GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

PROJECT ADDRESS:
20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party	Guidance
							enough to accommodate change without impacting on time and cost constraints; • A subsequent review when the design has been further progressed. This review session will typically occur during design development; and • At building permit stage (after development approval) a further check must take place by the Design Review Panel Chair or delegate, to ensure that the final design reflects approved development application and any relevant conditions related to design quality. **Composition of the Design Review Panel** As a minimum the Design Review Panel must be comprised of one panel chair and two panel members. Members of the panel must: • Possess project-relevant skills and experience; • Be recognised experts in their discipline, with a minimum of 10 years' experience; • Be registered by a relevant professional peak body and be bound by that institutes' code of ethics in relation to objectivity,integrity and accountability; and • Have expertise relevant to this credit.	A declaration from the project application confirming that the design review panel meets the independency requirements. Alternate documentation can also be used by project teams to demonstrate compliance. The key requirement is that evidence is provided to support each claim made within the Submission Summary.	Building owner Head Contractor Project Architect Structural Consultant Mechanical Consultant Electrical Consultant Hydraulics/Fire Consultant Mechanical Contractor BMS / Control Contractor Electrical Contractor Hydraulics / Fire Contractor ESD Consultant Landscape Consultant / Contractor Ecologist Acoustic Specialist Civil Engineer / Contractor Urban Planner Quantity Surveyor	**Example of negative impacts** Negative impacts that could be captured in the Urban Context Analysis include wind, noise and shade generation, light pollution, and the urban heat island effect. If the Heat Resilience credit has been achieved, it does not need to be included in the Urban Context Report for the purposes of the Contribution to Places credit. **Relationship between Contribution to Place and Enjoyable Places** The key difference between the two credits is that Contribution to Place deals with the surrounding areas of the building, while Enjoyable Places deals with areas on-site. Should projects target both credits, it is encouraged to consider how the building's designs may negatively impact the public spaces provided under the Enjoyable Places credit.
Culture, Heritage and Identity	The building reflects local culture, heritage and identity.	30.0	**Credit Achievement :** The building's design reflects and celebrates local demographics and identities, the history of the place, and any hidden or minority entities. This celebration was arrived through meaningful engagement with community groups early in the design process.	1	1	Site-wide	**CREDIT ACHIEVEMENT** There are two pathways to achieving this credit: • Community led design responses; or • Independent design review. Either one will suffice to achieve the Credit Achievement. **Community led design response** The project team must show that they have undertaken local analysis to identify culture, heritage and identity unique to the project site and area. The project team must undertake community engagement as part of this local analysis. As a result of community engagement, the project must reflect local identity, culture and heritage in the design of the building in a publicly demonstrable way. This can be achieved through: • Community art or placemaking projects; • Selection of suppliers/designers of artwork or cultural elements; • Building elements that tell stories of the past and heritage; and • Spaces and uses that reflect the local identities. **Independent Design Review** Design reviews are held at key points in the development of the design. At a minimum, these must occur as follows: • Design Review during concept/schematic design stage, to ensure that proponents can take advantage of the advice offered at a time where the design is flexible enough to accommodate change without impacting on time and cost constraints; • A subsequent review when the design has been further progressed. This review session will typically occur during design development; and • At building permit stage (after development approval) a further check must take place by the Design Review Panel Chair or delegate, to ensure that the final design reflects approved development application and any relevant conditions related to design quality. **Composition of the Design Review Panel** As a minimum the Design Review Panel must be comprised of one panel chair and two panel members. Members of the panel must: • Possess project-relevant skills and experience; • Be recognised experts in their discipline, with a minimum of 10 years' experience; • Be registered by a relevant professional peak body and be bound by that institutes' code of ethics in relation to objectivity, integrity and accountability; and • Have expertise relevant to this credit.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Community led design responses** • Culture, Heritage and Identity Report outlining key findings of the local analysis and how community engagement activities influenced the design; and • As built drawings, site drawings, architectural drawings showing how the culture, heritage and identity is incorporated into the buildings designs. **Design review panel** • 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; and • A declaration from the project application confirming that the design review panel meets the independency requirements.	x x x	**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 projects' 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 e.g. spatial designs or land uses that reflect the local culture and identity is 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; and 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; and • 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. **Culture, heritage and identity report** The Culture, heritage and identity report should include details of the local analysis and outline how community engagement informed key design responses including: • List the various community groups in the area, including hard-to-reach groups, and identify stakeholders by relevant categories (e.g. business, residential, interest groups, government); • How the engagement data influenced the building design and programming, with supporting evidence; and • How decisions were fed back to the community groups that participated in the engagement activities.
TOTAL				8	8					
PEOPLE										
Inclusive Construction Site (Practices)	The builder's construction practices promotes diversity and reduces physical and mental health impacts.	31.0	**Minimum Expectation:** During the building's construction, the head contractor provides gender inclusive facilities and protective equipment. The head contractor also installs policies on-site to increase awareness and reduces instances of discrimination, racism and bullying.	Nil	To Comply	Site-wide	**MINIMUM EXPECTATION** The head contractor must ensure the following is provided, or available, on-site: • Separate gender inclusive bathroom facilities and changing amenities with a high degree of privacy; and • Diverse gender-specific fit-for-purpose personal protective equipment (PPE) for diverse body sizes and types. The head contractor must: • Implement policies to address issues of discrimination, racism, and bullying on-site; • Introduce on-site redress procedures for any relevant breaches, and corrective measures to be put in place should any incident be identified; • Empower a diverse lead team to manage these policies on-site, and • Provide training to all contractors and sub-contractors on these policies (as per below). The head contractor must provide the following training to 95% of all contractors and subcontractors present on site for at least three days: • Information on drug and alcohol awareness and mental health; and • Information on policies implemented on discrimination, racism, and bullying on site. **CREDIT ACHIEVEMENT** The project must comply with both criteria listed below: • Needs analysis; and • Physical and mental health impacts. **Needs analysis** The programs or solutions can be implemented directly by the head contractor or through partnerships with mental and physical health organisations. The responsible party should carry a needs analysis of site workers and contractors to determine appropriate actions. The policies and programs should be relevant to all construction workers on site for the full duration of construction. A mix of programs is acceptable throughout the duration of construction period. • The programs must cover at least 80% of the workforce that have attended the site for more than three days from commencement on site to practical completion. **Physical and mental health impacts** The head contractor must show that they have introduced programs and solutions to address at least five of the following: • 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; • Preventing violence and injury; • Decreased psychological stress; and • Finding fulfillment at work or mindful meditation. **Evaluating the program's effectiveness** The project must provide an evaluation report to the client and sub-contractors with the following information: • Information on the programs or initiatives that were delivered, including information on dates, attendance, and available languages; and • A review on whether the programs delivered the intended outcomes including recommendations for improving future delivery of these programs.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Minimum Expectation** • Description of the types of PPE available to construction workers; • Evidence of purchase of appropriate PPE; and • Extracts from relevant policies that address discriminating, racism and bullying. **Credit Achievement** • Extracts of evidence detailing the programs and policies implemented to promote health and wellbeing on site; • Evaluation report of the effectiveness of the training; • Evidence detailing the process to manage training, and track workers trained. Examples of evidence include extracts from the training policy, a report from a third-party provider, or similar; and • Extracts of training such as screenshots, presentation, or similar, showing the information provided as part of training.	x	**MINIMUM EXPECTATION** **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://tradeswomenaustralia.com.au/). The provision of gender inclusive bathrooms and changing facilities are a minimum. Should the building's construction identify opportunities to provide additional 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. **CREDIT ACHIEVEMENT** **Criteria definition** When training and policies are developed, consideration should be given to the method and form of delivery to address cultural and anguage barriers.
			Credit Achievement : The head contractor provides high quality staff support on-site to reduce at least five key physical and mental health impacts relevant to construction workers. They must also evaluate the effectiveness of their interventions.	1	1					

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party																		Guidance
									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	
~~Indigenous Inclusion~~	~~The building celebrates Aboriginal and Torres Strait Islander people, culture and heritage.~~	~~32.0~~	**~~Credit Achievement :~~** ~~The building's design and construction celebrates Aboriginal and Torres Strait Islander people, culture and heritage by undertaking one or both of the following:~~ ~~• Playing an active role in the organisational Reconciliation Action Plan; and~~ ~~• Incorporating design elements using the Indigenous Design and Planning principles.~~	~~2~~	~~0~~	~~N/A~~	**~~CREDIT ACHIEVEMENT~~** ~~There are two pathways to meeting this credit:~~ ~~• The building's design and construction played a central role in the delivery of the targets in the project owner's organisational Reconciliation Action Plan (RAP); or~~ ~~• The building's design process followed Indigenous Design and Planning principles.~~ ~~Both require visible and inclusive participation of Aboriginal and Torres Strait Islander throughout the project's life cycle.~~ **~~Reconciliation Action Plan~~** ~~To meet this Credit Achievement, the project team must demonstrate that:~~ ~~• A key member of the Project Team is part of the organisational RAP Working Group;~~ ~~• At least 90% of the RAP targets have been met on the project; and~~ ~~• All implemented actions related to the RAP are publicly reported on the Project's website.~~ **~~Inclusion of Indigenous design~~** ~~The project team must demonstrate that the Australian Indigenous Design Charter guiding principles are incorporated in the design of the building including:~~ ~~• How local Aboriginal and Torres Strait Islander communities have been engaged throughout the design development;~~ ~~• How the project has been designed to acknowledge and recognise the Indigenous culture of the site;~~ ~~• How information on the reconciliation and cultural values of the project will be made available to the public, visitors and building tenants in the operational phase of the project's life.~~ ~~At a minimum, the following four principles from the Australian Indigenous Design Charter are to be addressed:~~ ~~•~~ **~~Indigenous Led~~**~~: Ensure Aboriginal and Torres Strait Islander representation in the creation of the design;~~ ~~•~~ **~~Community Specific~~**~~: Ensure respect for the diversity of Aboriginal and Torres Strait Islander culture by following community specific cultural protocols;~~ ~~•~~ **~~Impact of Design~~**~~: Always consider the reception and implications of all designs so that they are respectful to Indigenous culture; and~~ ~~•~~ **~~Shared Knowledge~~** ~~(collaboration, co-creation, procurement): Develop and implement respectful methods for all levels of engagement and sharing of Indigenous knowledge (collaboration, co-creation, procurement).~~ ~~The project team must demonstrate engagement has happened from concept design and continues through to operational handover.~~	**~~Submissions for this credit must contain:~~** ~~• Submission Summary via the online portal~~ ~~• Evidence to support claims made in the submission~~ **~~Suggested evidence:~~** **~~Reconciliation Action Plan (RAP)~~** ~~• Extract from the Reconciliation Australia website demonstrating that the project's RAP is endorsed by Reconciliation Australia;~~ ~~• Extracts from the organisation's Annual Report or website (or similar) demonstrating that the RAP is publicly reported upon;~~ ~~• Reconciliation Action Plan Report (or similar) on the outcomes from the project's RAP demonstrating that at least 90% of the RAP targets have been met in the first reporting cycle; and~~ ~~• Evidence that a key member of the project team is also on the RAP working group~~ **~~Inclusion of Indigenous Design~~** ~~• Extract from indigenous engagement strategy;~~ ~~• Evidence of Aboriginal and Torres Strait Islander engagement from concept design throughout the project's life cycle;~~ ~~• As built drawings or photographic evidence of incorporated designs;~~ ~~• Evidence of information being made available to public (e.g. website); and~~ ~~• Comparison against the four principles from the Australian Indigenous Design Charter.~~																			**~~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~~ **~~Australian Indigenous Design Charter (AICD)~~** ~~The Australian Indigenous Design Charter 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.~~ ~~For more information on the context, role and protocols of these principles, including definitions, please refer to the original AIDC charter: http://indigenousdesigncharter.com.au/australian-indigenous-design-charter/~~ **~~Database for indigenous 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. https://supplynation.org.au/ 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.~~ **~~Page 185 Table~~**
~~Procurement & Workforce Inclusion~~	~~The building's construction facilitates workforce participation and economic development of disadvantaged and under-represented groups.~~	~~33.0~~	**~~Credit Achievement:~~** ~~Through the implementation of a social procurement strategy, at least 2% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups~~	~~2~~	~~0~~	~~N/A~~	**~~CREDIT ACHIEVEMENT & EXCEPTIONAL PERFORMANCE~~** **~~Social procurement strategy~~** ~~The project team must develop and implement a social procurement strategy or plan (this can be part of an overall project procurement plan/strategy). The project team must also include targets and annual reporting requirements in the strategy.~~ **~~Social procurement strategy~~** ~~The plan must include:~~ ~~• A description of the project's social procurement and workforce objectives, needs, and targets;~~ ~~• A demographic study of the local region to inform identification of target workforce groups and their skills;~~ ~~• Descriptions of the roles and responsibilities in the implementation and monitoring of social procurement and workforce targets and contracts;~~ ~~• Data collection and reporting templates / tools, including how data from Tier 2 and Tier 3 contractors will be collected;~~ ~~• Monitoring and reporting requirements; and~~ ~~• Reporting requirements for the project director.~~ ~~Projects must report the following at the time of practical completion:~~ ~~• Dollar spent and as a proportion of building contract value;~~ ~~• Supplier(s) engaged;~~ ~~• Where workforce targets are in place, the number of jobs created per target group expressed as Full Time Equivalent; and~~ ~~• Jobs supported.~~ **~~Employment opportunities strategies~~** ~~Generation of employment opportunities for disadvantaged and under-represented groups can be achieved:~~ ~~• Directly, through workforce targets; or~~ ~~• Indirectly, through social procurement.~~ ~~A combination of these strategies can be used to achieve the credit, as long as the total dollar spend on the above activities is equal to or greater than Criteria percentage of the building's total contract value.~~ ~~The building's design and construction can contribute to generating employment opportunities for disadvantaged and under-represented groups through the procurement of goods, services and construction by:~~ ~~• Aboriginal and/or Torres Strait Islander businesses;~~ ~~• Social enterprises; and/ or~~ ~~• Disability enterprises.~~ ~~Enterprise providers must be indendently certified by third party organisations such as Supply Nation, Social Traders, BuyAbility and government chamber of commerce.~~	**~~Submissions for this credit must contain:~~** ~~• Submission Summary via the online portal~~ ~~• Evidence to support claims made in the submission~~ **~~Suggested evidence:~~** ~~• Social Procurement Plan;~~ ~~• Evidence of workforce targets in main contracts and sub-contracts;~~ ~~• Evidence of social procurement targets in main contracts and sub-contracts; and~~ ~~• Evidence that enterprises are independently certified by third party organisation~~	x	x																	**Disadvantaged and under-represented groups** This credit addresses groups such as, but not limited to: • Aboriginal and/or Torres Strait Islander people; • Women in non-traditional roles/ professions; • Apprentices; • Those from a culturally and linguistically diverse (CALD) background; • Long-term unemployed; • Refugees and asylum seekers; • Ex-offenders; and • Disabled. A person who is represented by many groups may contribute more than once. **Eligible construction procurement** The following definition of construction from the Victorian Social Procurement Framework is being used. 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; and • Contract administration. **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 (i.e. Supply Nation, Social Traders and BuyAbility for example) provide advisory services to help projects identify opportunities for suitable spend and can provide data demonstrating social impacts. **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; and the National Centre for Vocational Education provide useful statistics and data to help develop project specific targets. 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; and • 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; and • 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. **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. **Social procurement** Social procurement is being driven at a State level by a number of 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; and • Insights into Social Procurement: From Policy to Practice. Early engagement with procurement professionals and identified supply chain are important success factors.
			~~Exceptional Performance:~~ ~~Through the implementation of a social procurement strategy, at least 4% of the building's total contract value has been directed to generate employment opportunities for disadvantaged and under-represented groups.~~	~~1~~	-																						
Design for Inclusion	The building is welcoming to a diverse population and is welcoming to their needs.	34.0	**Credit Achievement:** The building is designed and constructed to be inclusive to a diverse range of people with different needs.	2	2	Site-wide	**CREDIT ACHIEVEMENT** To be compliant, the building's design and construction must be able to be navigated and enjoyed by stakeholders of diverse ages, genders, and abilities (for example physical, sight, sound, mind, spectrum). This applies to common spaces, bathroom facilities and amenities provided within the building. This must include: • Equal access to the building: Provide equitable, appealing, safe, and secure access in a manner that does not segregate or stigmatise users through all principal entrance points and main thoroughfares inside and outside the building; • Diverse wayfinding: Introduce visual, physical, olfactory, and auditory solutions to help individuals navigate the site in a safe and enjoyable manner; and • Inclusive spaces: Introduce internal and external spaces for a diverse range of users, including parents, family restrooms, emergency rooms, quiet rooms and social interaction rooms. These rooms must be accessible to all users. **~~EXCEPTIONAL PERFORMANCE~~** ~~The project team must consult with distinct community types to develop a needs analysis that will influence the project during the design phase. The consultation must be undertaken early in the design process and include a balanced cross-section of representation of the target group. The consultation must be considerate and relevant to the project. The consultation process must generate a report that is then used to influence the design of the project.~~ ~~As a result of the needs analysis, the building must show how it aligns with best practice guidelines, such as the Design for Dignity Guidelines: Principals for Beyond Compliance Accessibility in Urban Regeneration. 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.~~	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Credit Achievement** • As build drawings showing equal access to the building; • Evidence of diverse wayfinding, including photographs; and • As build drawings showing inclusive spaces. **~~Exceptional Performance~~** ~~• Extract from consultation plan with disability community;~~ ~~• Evidence, through as built drawings or photographs, of how the outcomes of the consultation have been incorporated into the buildings design; and~~ ~~• Analysis of the building's designs against the Design for Dignity Guidelines: Principals for Beyond Compliance Accessibility in Urban Regeneration or other best practice guidelines.~~	x	x	x																**GUIDANCE** **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; and • 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 (for example, how to support the evacuation of different types of disabled person(s) in a fast and safe manner). **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.
			~~Exceptional Performance:~~ ~~Engagement with target groups has informed the inclusive design.~~	~~1~~	-																						
TOTAL				9	3																						

GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

PROJECT ADDRESS:
20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

IGS INTEGRATED GROUP SERVICES

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party																							Guidance
									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	
NATURE																																
Impacts to Nature	Ecological value is conserved and protected.	35.0	**Minimum Expectation:** The building was not built on, or significantly impacted, a site with a high ecological value.	Nil	To Comply		**MINIMUM EXPECTATION** The Minimum Expectation is met where: • At the date of purchase or option contract, the building, infrastructure, or construction works do not clear: – Old-growth forest, – Prime agricultural land, – Any wetland listed as being of 'High National Importance', – Aspects considered 'Matters of National Significance' listed under the Environmental Protection and Biodiversity Conservation Act (1999) regardless of whether they have been referred to the Federal Environmental Minister for consideration and assessed as a 'controlled action' or not. • If the project site is adjacent to the above, or within 100 meters, or the site contains the above and these are being protected, the construction and future operations of the site takes measures to reduce their impact to the above as follows: – Both the Waterways Protection Credit Achievement and the Credit Achievement for this credit is met, and – The light pollution impacts are managed, and – Where the site is next to a wetland (as above), by also putting in place Wetland Protection Measures. The Minimum Expectation applies to the condition of the site that existed at the date of site purchase or option contract (previous condition of the site). 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. **Managing light pollution impacts** **Light pollution to neighbouring bodies** The project team must demonstrate that all outdoor lighting on the project complies with AS 4282:1997 Control of the obtrusive effects of outdoor lighting. The conditions apply to all boundaries, apart from boundaries with roads. The boundary shall be taken as the site boundary, with no setback and no consideration of the location of adjacent buildings (i.e. worst-case scenario). The following values from Table 2.1 of AS 4282:1997 must be applied: • For Class 2 buildings (residential), the compliance is for columns 4 and 5 as per Table 2.1 of AS 4282:1997; or • For Class 3 to 9 buildings (non-residential), the compliance is as per column 3 as per Table 2.1 of AS 4282:1997. The system must comply with both pre- and post-curfew requirements. **Light pollution to night sky** It must be demonstrated that one of the following specified reductions in light pollution has been achieved by the project. • Control of Upward Light Output Ratio (ULOR); or • Control of Direct Illuminance. This covers all external lighting of a project. 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 considered external. **Control of Upward Light Output Ratio (ULOR)** For this option, the project team must demonstrate that no external luminaire on the project has a ULOR that exceeds 5%, relative to its actual mounted orientation. Project teams must demonstrate that the ULOR provided or calculated in the documentation, is relevant to the as-installed orientation of the luminaire. Control of Direct Illuminance For this option, the project team must demonstrate that direct illuminance from external luminaires on the project produces a maximum initial point illuminance value no greater than: • 0.5 Lux to the site boundary; and • 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 shall be in accordance with AS 4282:1997. The calculation plane must cover the area between the site boundary and building façade or vertical service to be illuminated. The horizontal calculation plane shall be set at the top of the building fabric, excluding spires. Calculation plane grid points shall have a 0.5m spacing. All illumination results shall be reported to within 2 decimal places. **Wetland management plan** The site-specific Wetland Management Plan must be prepared by a qualified Ecologist or other qualified professional and include requirements for ongoing quarterly monitoring, annual reporting and management of the wetland ecosystem for a minimum of five years. The plan must be exhibited to the public on the applicant's website, or the local council's offices or library, for a minimum of 24 months. **CREDIT ACHIEVEMENT** The project team must show how ecological values will be protected including: • Documenting the current, future and past ecological values on the site by type and biomass. This includes terrestrial and aquatic ecological values, geologic features and soils (including interaction with living things). When determining biodiversity value, the project must reference local, regional, state and national priorities and strategies; • The proportion of existing vegetated area being retained and the biodiversity value of this area; • Identifying local and regional threats and mitigation requirements; • Listing active management strategies to be employed to protect the integrity of ecological values throughout the project planning, construction and occupancy; • Documenting the community engagement process, and outline risks and opportunities to enhance the site; and • Detailing consultation outcomes with local stakeholders including Aboriginal or Torres Strait Islander groups and environmental groups. Where an ecologist has undertaken an assessment and deemed the area of high biodiversity value, the project must retain at least 50% of this area contiguously. The project team must then provide a narrative as to how the following impacts to nature and the community have been mitigated: • Light and noise pollution (this is met if required for the Minimum Expectation); • Habitat disturbance and connectivity (deemed met if Biodiversity Enhancement and Nature Connectivity credits are achieved); • On-site and downstream water quality (Deemed met if Waterway Protection credit is achieved); • Migratory paths of insects, birds or other species; • Two local issues appropriate to the project site (e.g. pest management and groundwater); and • Consideration must be given to these impacts during demolition, siteworks, construction, or future occupation.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Minimum Expectation** • Extracts from the Development Application. • Zoning Plans. • Light pollution: – 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. • If triggering the wetland requirements: – Wetland Management Plan – Evidence as per Waterway Protection credit. **Credit Achievement** • Ecological assessment report. • Evidence that 50% of the site has been retained: – Narrative from Ecologist – As built drawings.	x								x	x		x	x							**MINIMUM EXPECTATION** **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. **Wetland assessment and protection** For the purposes of this credit, a wetland is considered of 'High National Importance' if it is: • Deemed significant under a state or national register; or • A listed wetland under: – The Ramsar Convention on Wetlands; or – 'A Directory of Important Wetlands in Australia'. Where the project site does not impact on any wetlands of 'High National Importance', the project is deemed to comply with this aspect of the Minimum Expectation and no further action is required. **Light pollution** **Exclusions** Signage related to emergency exits and external emergency lighting that only illuminates in the event of an emergency/power failure are excluded from the requirements of this credit. Lighting related to other safety requirements are also excluded, for example, the lighting of ATMs. External emergency lighting that is integrated into the general external lighting scheme must comply with the requirements of the credit. For example, lights that act as general lighting but have a battery pack to ensure that they also stay on in the event of a power failure must comply. **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. **CREDIT ACHIEVEMENT** **Relationship to Nature Connectivity and Biodiversity Enhancement credits** Should 50% of the existing site be retained, this may be captured in both the Biodiversity Enhancement and Nature Connectivity credits.
Biodiversity	The building's landscape		**Credit Achievement:** • The building's site includes an appropriate landscape area; • The landscaping includes a diversity of species and prioritises the use of climate-resilient and indigenous plants; and • The project team develops a site-specific Biodiversity Management Plan and provides it to the building owner or building owner representative.	2	0	Site-wide	**CREDIT ACHIEVEMENT** **Landscape area** At a minimum, external landscape in the building, whether horizontal or vertical must be provided at a ratio of either 15% of the site area or at a ratio of 1:500 of the GFA, whichever is larger. Vertical or horizontal landscapes are acceptable. **Diversity of species** Landscape must be shown to be diverse and include multiple species/genus/etc. Greater than 60% of plants must be indigenous and the site must include at least one significant (nesting) tree or equivalent habitat provision per 500m² of landscaped area. No invasive species are allowed, as per the Australian Weeds Strategy 2017 to 2027. There are two pathways to demonstrate diversity in plant selection and climate resilience. **Prescriptive pathway** The landscaping must meet the following plant diversity targets: • 10% plant species; • 20% plant genus; and • 30% plant family. **Performance pathway** An ecologist must assess and verify that the choice of landscaping and biodiversity is diverse and resilient to climate change impacts, thereby increasing the longevity of the landscape. An Ecologist must provide this narrative. **Biodiversity management plan** A suitably qualified professional, such as a qualified ecologist or landscape architect, must prepare the Plan. The plan must outline key actions that need to be undertaken in order to maintain the ecological integrity of biodiversity on the site, whether this is existing or that	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** **Credit Achievement** • Site Plans marked up with landscaping; • Aerial Site Photographs marked up with landscaping; • Biodiversity Management Plan; and • If Ecologist appointed, confirmation of: – No invasive species – Diverse landscaping																				**GUIDANCE** **Relationship with 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 the landscaping requirements are met: that is, diverse plant selection, resilient plants, and no invasive species. 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 Impacts to Nature credit** In the Impacts to Nature credit, an ecologist determines whether existing landscaping is of high biodiversity value. When this is the case, 50% of the landscaping area needs to be retained. When this occurs, it can contribute towards meeting compliance with this credit. The spaces can be counted in both credits and no further landscaping is required

GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

PROJECT ADDRESS:
20 AVON RD, PYMBLE NSW

GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party																		Guidance
									Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	
~~**Biodiversity Enhancement**~~	~~enhances the biodiversity of the site.~~	~~36.0~~	~~**Exceptional Performance:**~~ ~~• A greater area of landscaping is provided; and~~ ~~• The landscaping includes critically endangered and/or endangered plant species native to the bioregion.~~	~~2~~	~~0~~	~~Site-wide~~	~~created as part of the development.~~ ~~The following key requirements must be outlined in the biodiversity management plan:~~ ~~• The vision and objectives for the site's biodiversity values;~~ ~~• Roles and responsibilities in the implementation of the Plan;~~ ~~• A description of the biodiversity baseline on-site;~~ ~~• How success and implementation will be measured;~~ ~~• How impacts or threats to biodiversity on site post practical completion will be mitigated; and~~ ~~• Provision for update of the Biodiversity Management Plan where necessary;~~ ~~The Plan must be included as part of the project's handover.~~ ~~**EXCEPTIONAL PERFORMANCE**~~ ~~**Landscape area**~~ ~~As a minimum, external landscape in the building, whether horizontal or vertical must be provided at a ratio of either 30% of the site area or at a ratio of 1:300 of GFA, whichever is larger. Vertical or horizontal landscapes are acceptable.~~ ~~**Diversity of species**~~ ~~Landscape must be shown to be diverse and include multiple species/genus/etc.~~ ~~An ecologist must review, assess and verify how the choice of landscaping and biodiversity is diverse and resilient to climate change impacts, thereby increasing the longevity of the landscape.~~ ~~Greater than 80% of plants must be indigenous and the site must include at least one significant (nesting) tree or equivalent habitat provision per 250m^2 of landscaped area.~~ ~~No invasive species are allowed, as per the Australian Weeds Strategy 2017 to 2027.~~ ~~The site must preserve, restore and/or support vulnerable ecosystem through planting critically endangered and/or endangered plant species which are native to the bioregion.~~	~~– Diverse landscaping~~ ~~– Climate-resilient landscaping.~~ ~~• If no Ecologist appointed:~~ ~~– Evidence of plant diversity (species, genus and family).~~ ~~**Exceptional Performance**~~ ~~• Site Plans marked up with landscaping;~~ ~~• Aerial Site Photographs marked up with landscaping;~~ ~~• Biodiversity Management Plan; and~~ ~~• Ecologist report on:~~ ~~– Landscaping diversity and resiliency~~ ~~– No invasive species~~ ~~– How the site supports vulnerable ecosystems.~~		x											x	x					for those spaces. The project team must still demonstrate that the landscaping area requirements of this credit are satisfied. **Relationship with 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 project team can demonstrate the landscaping requirements of the credit: that is, diverse plant selection, resilient plants, and no invasive species. **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; and • City of Melbourne, Urban Forest Diversity Guidelines, 2011
~~**Nature Connectivity**~~	~~Wildlife movement is facilitated within and adjacent to the site.~~	~~37.0~~	~~**Credit Achievement:**~~ ~~The site must be built to encourage species connectivity through the site, and to adjacent sites. If the project sits within a blue or green grid strategy it must contribute to the goals of the strategy.~~	~~2~~	~~0~~	~~Site-wide~~	~~**CREDIT ACHIEVEMENT**~~ ~~The site may include any of the following strategies:~~ ~~• **Landscaping:** Where connectivity is being achieved through landscaping, this must be contiguous with existing, restored and new habitats. As a minimum requirement for habitat connectedness, the conservation area must make up at least 25% of the total external area within the building's site boundary. To be eligible, this must be at least 182m^2; or~~ ~~• **Infrastructure**: Design features such as a canopy bridge, wildlife tunnels, green roofs, amphibian tunnels and green infrastructure are used to connect nature on site to adjacent natural areas, which are either existing, restored or new.~~ ~~For both pathways, the project is to provide a narrative on how the pathway would support the targeted wildlife species.~~ ~~In addition to the above, if the project sits within a blue or green grid strategy, the project team must demonstrate how its design and landscaping contribute to the goals of the strategy.~~	~~**Submissions for this credit must contain:**~~ ~~• Submission Summary via the online portal~~ ~~• Evidence to support claims made in the submission~~ ~~**Suggested evidence:**~~ ~~• 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; and~~ ~~• Drawings detailing that habitat design.~~		~~x~~											~~x~~	~~x~~					~~**Building location**~~ ~~It is noted that for buildings located in the CBD the infrastructure pathway may be difficulty to implement. The project team are encouraged to meet this criterion through the landscaping pathway.~~ ~~**Green and blue grids**~~ ~~Projects should contact their local municipality to determine whether the project sits within a wider Green or Blue Grid strategy.~~ ~~**Blue grid**~~ ~~The blue grid is defined as 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;~~ ~~• Wetlands;~~
~~**Nature Stewardship**~~	~~Biodiversity is restored beyond the building site.~~	~~38.0~~	~~**Credit Achievement:**~~ ~~The building owner, as part of the project's development, undertakes activities that protects or restores biodiversity at scale beyond the development's boundary.~~	~~2~~	~~0~~	~~Site-wide~~	~~**CREDIT ACHIEVEMENT**~~ ~~To be eligible for the Nature Stewardship credit, the project must meet the Credit Achievement in the Impacts to Nature credit.~~ ~~**Area of restoration or protection**~~ ~~The area of restoration must be equivalent to the total GFA of the development, or site area, whichever is greater.~~ ~~**Location of restoration or protection activities**~~ ~~Land for restoration must be in Australia and restored to equivalent ecological value of the site before any development occurred. The location of the land designated for the offsite restoration must not be in the development boundary.~~ ~~A qualified Ecologist must confirm that the ecological value is equivalent.~~ ~~There are situations where land restoration may occur in a site where the building is located, but not within the development boundary (e.g. a university campus).~~ ~~Project teams are encouraged to contact GBCA to determine whether this site complies.~~ ~~Project teams must ensure that the land being claimed for restoration and protection activities is not being double counted for multiple buildings or other activities.~~ ~~The Certified Assessor reserves the right to query for additional information during assessment.~~ ~~**Activities to protect or restore**~~ ~~Achieving the credit can be done by either:~~ ~~• The project owner protecting or restoring an area offsite themselves; or~~ ~~• The project owner supports an organisation that restores an area on their behalf.~~ ~~In all cases, for the activities above, the project team must show how the action is additional. That is, the action goes beyond any legislated requirements and how it is resulting in an outcome that wouldn't have happened otherwise.~~ ~~There may be other pathways that can be used by building owners to demonstrate that they are restoring or protecting an area outside their development boundary.~~ ~~Project teams are encouraged to contact GBCA to explore these opportunities.~~ ~~**The project owner restores or protects an area themselves**~~ ~~A Restoration or Protection Management Plan (Plan) must be prepared by an experienced ecologist. The Plan must detail how ecological values are to be enhanced and/or restored including:~~ ~~• What site was chosen and evidence of its purchase;~~ ~~• Why the project chose the site, with details on ecological value;~~ ~~• How the site for restoration will be equivalent in ecological value to the site prior to development;~~ ~~• Validation of the offsite restoration approach by a suitably qualified independent ecologist or similar professional;~~ ~~• The timeframes for protection or restoration; and~~ ~~• Commitment to set-aside and manage the site land in perpetuity including on-going funding provision.~~ ~~**Legislated requirements**~~ ~~Where the project is required to purchase biodiversity offsets, invest in land restoration, restore land, or similar, as part of an EPBC action or development approval, or other legislated requirements, these actions cannot be used to demonstrate compliance with this credit.~~	~~**Submissions for this credit must contain:**~~ ~~• Submission Summary via the online portal~~ ~~• Evidence to support claims made in the submission~~ ~~**Suggested evidence:**~~ ~~• Offsite Restoration Management Plan;~~ ~~• Evidence of site purchase;~~ ~~• Evidence of formal partnership;~~ ~~• Overview of restoration activities; and~~ ~~• Evidence of funding provisions.~~	~~x~~												~~x~~	~~x~~					~~**Offsets**~~ ~~This credit does not replace nor reward formal regulated offset requirements as covered by the Commonwealth's Environmental Protection and Biodiversity Conservation Act 1999 environmental offsets policy, or other state and territory offset regulations.~~ ~~**Development boundary**~~ ~~Refers to the boundary that is being developed as part of the project's development approval. This includes the building or buildings, landscaping, car parking, ancillary infrastructure, or even other buildings within a broader precinct.~~ ~~**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, the Certified Assessor would expect to see how the enhancement is ties to the building seeking certification, 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; and~~ ~~• Monitoring and benchmarking.~~ ~~**Examples of partner organisations**~~ ~~The below are some example organisations that may be used for the second pathway.~~ ~~• 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; and~~ ~~• The Nature Conservancy –Australia Program.~~ ~~Other organisations may be used, provided their activities are verified by a third party.~~
~~**Waterway Protection**~~	~~Local waterways are protected, and the impacts of flooding and drought are reduced.~~	~~39.0~~	~~**Credit Achievement:**~~ ~~The building demonstrates an annual average flow reduction (ML/yr) of 40% compared to pre-development levels and meets specified pollutants targets.~~	~~2~~	~~0~~	~~Site-wide~~	~~**CREDIT ACHIEVEMENT**~~ ~~**Runoff volume**~~ ~~The development must demonstrate an annual average flow reduction (ML/yr) of 40%. (Note: Reduction in average annual stormwater discharge refers to the average annual reduction in stormwater volume discharged from the development, with treatment, compared with the stormwater volume that would be discharged without treatment)~~ ~~**Water pollution**~~ ~~All runoff discharged from site meets specified pollution reduction targets listed in the table below.~~ ~~Pollutant Reduction Target (% of the typical urban annual load)~~ ~~Credit Achievement Exceptional Performance~~ ~~Total Suspended Solids (TSS) 85% 90%~~ ~~Gross Pollutants 90% 95%~~ ~~Total Nitrogen (TN^2) 45% 60%~~ ~~Total Phosphorus (TP)^2 65% 70%~~ ~~**Environmental Management**~~ ~~Minimise the risk of chemical pollutants and other toxicants entering the stormwater system, including by, but not limited to:~~ ~~• Chemical storage, loading, refuelling or work areas must install bunding, with any spills draining to trade waste or appropriate treatment devices. These areas must have an awning or roofing to separately divert rainfall into the stormwater system.~~ ~~• If a site has more than 200m^2 of uncovered areas where vehicles are likely to transit and/or park, then hydrocarbon treatment devices must be installed, specified to remove at least 98% of hydrocarbons, sized to treat a 1-in-3 month ARI (4EY) flow.~~ ~~**EXCEPTIONAL PERFORMANCE**~~ ~~**Runoff volume**~~ ~~The development must demonstrate an annual average flow reduction (ML/yr) of 80%. (Note: Reduction in average annual stormwater discharge refers to the average annual reduction in stormwater volume discharged from the development, with treatment, compared with the stormwater volume that would be discharged without treatment)~~ ~~**Water pollution**~~ ~~All runoff discharged from site meets specified pollution (Exceptional Performance) as per the table above.~~	~~**Submissions for this credit must contain:**~~ ~~• **Submission Summary** via the online portal~~ ~~• **Evidence** to support claims made in the submission~~ ~~**Suggested evidence:**~~ ~~**Average flow reduction**~~ ~~Calculation/Modelling Report by a suitably qualified professional. The report should describe:~~ ~~• Civil/Hydraulics drawings showing the stormwater collection, storage and treatment facilities and detailing their functional elements;~~ ~~• Hydraulics drawings showing all the capture, storage, piping and discharge route; and~~ ~~• 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).~~ ~~**Pollution Targets**~~ ~~• Independently verified performance certification for each manufactured stormwater treatment device, proving its ability to achieve the pollution reduction targets.~~		x					x				x					x			**On-site detention (OSD)** Some sites local drainage authorities 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 requirements should also be integrated and included in the design and submission documentation for consistency and buildability. **Typical urban annual load** Typical urban annual load reductions can be estimated using continuous simulation modelling 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). **Water sensitive urban design** Water-sensitive urban design (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. **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. If this is the case the project team should submit a Technical Question to have this approach approved. **Climate scenarios** If the project is targeting the Climate Change Resilience credit, the Risk Assessment included in this credit submission should be used to determine the appropriate climate change scenario. If the project is not targeting the Climate change resilience credit, the project may refer to local council flood level guidance. **Modelling** Pollutant export modelling using computer programs such as MUSIC, STORM etc. 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. **Reduction in average annual stormwater discharge** A reduction in average annual stormwater discharge refers to the average annual reduction in stormwater volume discharged from the development, with treatment, compared with the stormwater volume that would be discharged without treatment. The volume reduction must be achieved through a combination of evaporation, transpiration, harvesting and retention, pervious paving, and other Water Sensitive Urban Design practices.
			~~**Exceptional Performance:**~~ ~~The building demonstrates an annual average flow reduction (ML/yr) of 80% compared to pre-development levels and meets specified pollutants targets.~~	~~2~~	~~0~~																						
TOTAL				14	2																						
LEADERSHIP																											

GREEN STAR SCORECARD & PATHWAY
TOOL: GREEN STAR BUILDINGS V1
DOCUMENT REVISION: 2.0 DATE: 25/02/2025

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GREEN STAR MINIMUM SCORE REQUIRED FOR 5 STAR - MINIMUM 35
GREEN STAR SCORES TO BE TARGETED FOR 5 STAR: MINIMUM 42 (5 STAR WITH 7 BUFFER POINTS)

Note: details below are provided as a guide only, where required the project team shall refer to the Green Star Buildings V1 for further details.

CATEGORY / CREDIT	OUTCOME	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TO TARGET	Nominated Area	Requirements	Submission Content	Responsible Party: Building owner	Head Contractor	Project Architect	Structural Consultant	Mechanical Consultant	Electrical Consultant	Hydraulics/Fire Consultant	Mechanical Contractor	BMS / Control Contractor	Electrical Contractor	Hydraulics / Fire Contractor	ESD Consultant	Landscape Consultant / Contractor	Ecologist	Acoustic Specialist	Civil Engineer / Contractor	Urban Planner	Quantity Surveyor	Guidance
Market Transformation	Celebrates initiatives or outcomes that are deemed new and break barriers, and in turn inspire others to follow.	40.0	**Credit Achievement:** The project demonstrates: • How a building solution or process is considered leading in their targeted sector,nationally or globally; or • That the technology or process is not commonly used within Australia's building industry; or globally, depending on the context of the innovation claimed.	up to 5			**CREDIT ACHIEVEMENT** Projects can make up to five claims for this credit. Each claim is only worth one (1) point. To claim points, the project team must show that an initiative is innovative by demonstrating that the technology or process is not commonly used within Australia's building industry; or globally, depending on the context of the innovation claimed.	**Submissions for this credit must contain:** • Submission Summary via the online portal • Evidence to support claims made in the submission **Suggested evidence:** • Description of the claim; • Description of how and why the claim is considered leading practice; • Overview of how the claim is aligned with the GBCA's scoring metrics; and • Alternate documentation can also be used by project teams to demonstrate compliance.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	**Leading technology or process** Leadership points in this pathway 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; and • Can clearly justify alignment with the GBCA's scoring metrics: – Control of outcome: the initiative delivers a guaranteed outcome. That is, it is not process-related – Length of impact: the initiative delivers long-lasting impacts – Scale of impact: the scale of impact is significant. For example, the outcome may satisfy multiple UN Sustainable Development Goals – Transformation potential: the initiative has the potential to transform an industry or sector. – Value generation: the initiative can deliver benefits to both stakeholders (e.g. building owner or occupants) as well as the general public. **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.
Leadership Challenges	Promotes achievements that are considered leading practice in Australia.	41.0	**Credit Achievement:** The project meets a Leadership Challenge developed by the GBCA	Unlimited	1 TBC		**CREDIT ACHIEVEMENT** Projects teams can target as many Leadership Challenges as they wish. Leadership Challenges will be uploaded to the GBCA website as they are developed. All criteria as listed on the Leadership Challenge must be met to claim reward.	As per Leadership Challenge.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TOTAL					1																						

TOTAL POINTS TARGETED:	**42 POINTS**

MINIMUM TOTAL POINTS REQUIRED FOR 5 STAR:	**35 POINTS**	
MINIMUM TOTAL POINTS TO TARGET FOR 5 STAR:	**42 POINTS**	**5 STAR WITH 7 BUFFER POINTS**

- **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 **(15 out of 100 points)**
- **5 Star** – demonstrates *Australian Excellence* by being a high environmental performer that addresses social issues relevant to the building owner **(35 out of 100 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 **(70 out of 100 points)**