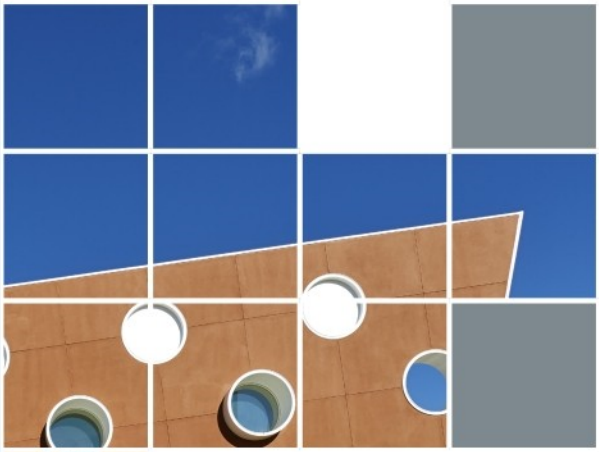

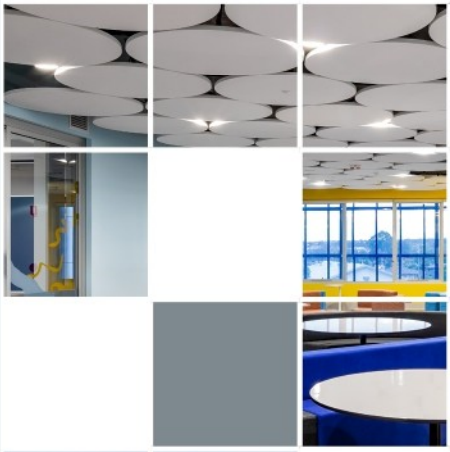
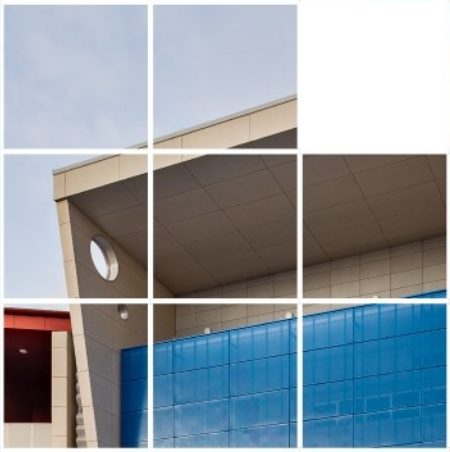
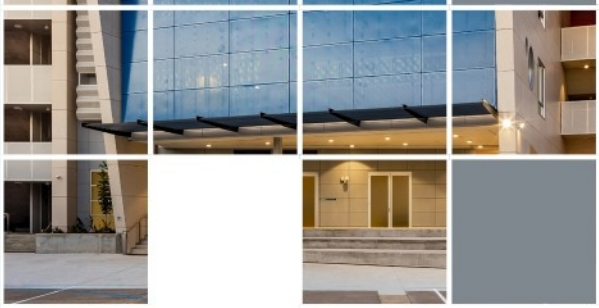

THE GABLES NEW PRIMARY SCHOOL

Sustainable Development Plan

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1. INTRODUCTION

The Sustainable Development Plan has been prepared by Energy & Sustainability Consultants on behalf of the NSW Department of Education (the Applicant) to assess the potential environmental impacts that could arise from the development of The Gables New Primary School at Lot 301 DP 1287967 on Fontana Drive, Gables (the site).

This report has been prepared to outline the sustainability context for the project as mentioned in section "2.1 Scope and Purpose".

This report accompanies a Review of Environment Factors that seeks approval for the construction and operation of a new primary school at the site, which involves the following works:

- Construction of school buildings, including learning hubs, a school hall and an administration and library building.
- Construction and operation of a public preschool.
- Delivery of a sports court and fields.
- Construction of car parking, waste storage and loading area.
- Associated site landscaping and open space improvements.
- Associated off-site infrastructure works to support the school, including (but not limited to) services, driveways and pedestrian crossings.

For a detailed project description, refer to the Review of Environmental Factors prepared by Ethos Urban.

1.1 SCOPE AND PURPOSE

The purpose of this report is to outline the sustainability context for the project, review compliance against sustainability performance targets, and describe the pathway for delivery of a 5-Star Green Star rating and sustainable development outcomes.

The scope of this report includes:

- Definition of the sustainability goals for the project.
- A review of available sustainability initiatives.
- Preliminary Green Star pathway to achieve a minimum of 5-Star rating.

1.2 PROJECT DESCRIPTION

The new public school is based on the EFSG Core 35 Primary School scheme, including the associated infrastructure. The Gables Public School is proposed to accommodate the following:

- 4 x General learning spaces.

- 3 x Support learning spaces.
- 1 x Multi-Purpose Hall.
- Core facilities, including Administration building and Library.
- Provision for future expansion of learning hub.
- Outdoor play areas including sports courts.
- Landscaping, including outdoor learning areas.
- Carpark, waste storage, loading area and associated services infrastructure.

The site is located on Cataract Road, Gables, within The Hills Local Government Area (LGA), approximately 50km northwest of the Sydney CBD and 10km north of the Rouse Hill Town Centre. It comprises one lot, legally described as Lot 301 DP 1287967, that measures approximately 2.2ha in area. The site is bound by Pennant Way to the north, Cataract Road to the east, Fontana Drive to the west and a vacant lot to the south.

Figure 1: Site Aerial.

1.3 SINSW VISION AND OBJECTIVES

The Department's vision is to be Australia's best education system and one of the finest in the world. It strives to deliver quality education outcomes while protecting the environment, contributing to economic prosperity, and helping communities to thrive.

SINSW promotes the benefits of incorporating sustainable development concepts and approaches into building design,construction, and operation for SINSW development to meet current as well as future accommodation requirements.

The following are the objectives of the project:

- **Unlock human potential:** Empower each person with the health, wellbeing, confidence, creativity, and resources to succeed.
- **Foster connections:** Embed respect and caring for Country, nature, history, diversity, and community across everything we do.
- **Act on climate change:** Achieve net zero emissions.
- **Consume responsibly:** Operate efficiently, design out waste and uphold high labour and environmental standards in the supply chain.
- **Build resilience:** Equip school communities to withstand and adapt to change.

1.4 STAKEHOLDER CONSULTATION

The stakeholder consultation will be undertaken through involvement of SINSW's project reference group, architects, and design consultants to inform the sustainability strategy development.

Independent design reviews will be undertaken by SINSW's technical stakeholder group, and the State Design Review Panel.

1.5 STATEMENT OF SIGNIFICANCE

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and the environment;
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

2. REF REPORTING REQUIREMENTS

The following reporting requirements summary table directs to the section of the report that addresses each REF deliverable requirement.

Table 1: REF requirements summary

Item	REF Requirement	Relevant Section of Report
1.0	Identify how ESD principles (as defined in clause 7(4) of Schedule 2 of the EP&A Regulation) are to be incorporated in the design and ongoing operation of the development.	Section 4.10
2.0	Outline how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards and integrate environmental design strategies in accordance with the Environmental Design in Schools Manual.	Section 5

3. POLICY CONTEXT AND STRATEGIC ALIGNMENT

Sustainable design guidance and initiatives for the project will be in accordance with the following:

3.1 NCC 2022 – SECTION J

The National Code (NCC) is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government with the aim of achieving nationally consistent, minimum necessary standards of relevant health and safety, amenity and sustainability objectives efficiently. Section J of NCC volume 1 2022 sets out the minimum energy efficiency requirements for all commercial buildings in Australia. The Gables Public School is required to comply with the NCC, including Section J which relates to energy efficiency.

3.2 NSW GOVERNMENT RESOURCE EFFICIENCY POLICY'S (GREP)

The aim of the NSW Government Resource Efficiency Policy (GREP) is to reduce the NSW Government's operating costs and lead by example in increasing the efficiency of its resource use. The policy intends to drive resource efficiency by NSW Government agencies in four main areas – energy, water, waste and air emissions from government operations. The policy describes measures to achieve set targets and minimum standards.

3.3 EDUCATION FACILITIES STANDARDS AND GUIDELINES (EFSG)

The Educational Facilities Standards and Guidelines (EFSG) are intended to assist those responsible for the management, planning, design, construction and maintenance of new and refurbished school facilities. The EFSG is a suite of information compiled into Design Guides to aid in the planning, design and use of NSW Department of Education school facilities. The guides aim to provide functional and durable facilities within a systematic whole life, value for money framework that considers enhancement of learning and teaching, planning and development, sustainability and facilities management. DG02 of the EFSG relates to Ecologically Sustainable Development and describes requirements for schools to achieve sustainable development outcomes.

3.4 GOVERNMENT ARCHITECT NSW ENVIRONMENTAL DESIGN GUIDE FOR SCHOOLS

The Government Architect NSW (GANSW) released an Environmental Design in Schools Manual which illustrates a set of design principles as guidelines to follow for new development and expansion of schools. The design principles from the GANSW Design Guide for Schools include:

- Built Form and Landscape.
- Sustainable, Efficient and Durable.
- Accessible and Inclusive.
- Health and Safety.
- Amenity.
- Whole of Life, Flexible and Adaptive.

- Aesthetics.

These principles have been applied to the concept design to support the achievement of sustainable development outcomes.

3.5 STATE ENVIRONMENTAL PLANNING POLICY (SEPP)

The State and local planning legislation and policies set the rules that control what development can occur in the land. The State Environmental Planning Policy (SEPP) applies across the state of NSW. The Local environment plans set planning rules for each local government area.

3.6 GREEN STAR

Green Star is a voluntary sustainability rating tool for buildings, tenancies and communities in Australia. The Green Building Council of Australia (GBCA), A not-for-profit organisation with the key objective of driving the transition of the Australian property industry towards the design and construction of a more sustainable built environment. This project is targeting achievement of a 5-Star certified rating under the Green Star Buildings V1 rating system.

3.7 SINSW SUSTAINABILITY REQUIREMENT

SINSW takes a holistic view of sustainable development and requires the conserving and enhancing of human societies to be considered, along with ecological conservation and enhancements. SINSW draws its core principles from federal and state legislation on Ecological Sustainable Development (ESD) and draws from international literature regarding Sustainable Development.

3.8 THE GABLES PUBLIC SCHOOL CORE SUSTAINABILITY INITIATIVES

Throughout our analysis of this project, we have identified a suite of core sustainability initiatives that will provide value to the project and support sustainable development outcomes. These have been developed to leverage proposed concept plan arrangements and support sustainability priorities.

- **High performance glazing and building fabric**: East/ West/ North side of the proposed building should be buffered due to harsh sunlight throughout the day. The use of high-performance windows and shading are likely to assist in minimising energy use.

- **Onsite renewable energy**: Use available roof space for the installation of solar PV arrays to offset electricity consumption and demand from the utility network.

- **Electric vehicle charging**: Providing future provision of Electrical Charging (EV) infrastructure in proposed car parking. This will support sustainable transport for stakeholders.

- **High performance building systems**: Reducing energy usage by designing for high-efficiency buildings services. This may include items such as intelligent lighting control and heat-recovery type mechanical systems.

- **Biophilic Design**: Effective biophilic design improves the comfort of building occupants by better connecting occupant experience with characteristics the natural environment. Improved occupant

comfort in a school environment supports improved teaching and learning outcomes. Biophilic design initiatives include access to views, use of 12`natural lighting, and natural ventilation.

- **Place:** Providing connection to Country, nature, history, and diversity through the design.
- **Regenerative environmental design:** Regeneration of the environment and biodiversity to enhance the ecological value of the site and project.
- **Materials and waste:** Using regionally sources materials for effective indoor environment quality and waste segregation at source.
- **Water:** Reduce usage of potable water through efficiency water fixtures. Incorporate recycled water supply for flushing and landscaping.

3.9 ESD COMPLIANCE SUMMARY

Below table addresses how the project's specific sustainability initiatives satisfy the relevant ESD requirements.

Table 2: ESD compliance summary.

No:	ESD Requirement	Proposed Compliance Strategy	Compliance
1	Identify how ESD principles (as defined in section 193 of the EP&A Regulation) are be incorporated in the design and ongoing operation of the development.	**The precautionary Principle:** The design will be reviewed against the holistic sustainability principles to ensure a high ecological sustainable design outcome is achieved. The core principles considered are: 1. Efficient use of resources – energy, water, and materials 2. Enhancing indoor environment quality and occupant comfort. 3. Minimising ecological impact. 4. Climate change risk assessment to access the anticipated impacts of climate change and implement design strategies to mitigate these impacts. 5. Incorporation of Indoor Environmental Quality design features. 6. To improve ecological value of the site – Heat Island effect. 7. Access to high quality views. 8. Strategies to reduce operational waste and separation of waste streams. **Inter-generational Equity**:	Yes

No:	ESD Requirement	Proposed Compliance Strategy	Compliance
		Student and staff health will be considered through the incorporation of Indoor Environmental Quality design features – daylight, glare analysis, best practice lighting, indoor air quality, thermal comfort assessment, acoustic design, and responsible material selection to reduce internal pollutants and resource depletion for future generations. **Conservation of Biological Diversity & Ecology:** The proposed design will consider design strategies to minimise the urban heat island effect and improve ecological value of the site. Access to views will be considered to increase student engagement with the natural environment. **Improved Valuation, Pricing and Incentive Mechanisms:** The operation total cost will be reduced through sustainable considerations to reduce energy, water and waste requirements considering the whole-of-life costing. The project will ensure that these principles are incorporated to include value for money, fit for purpose. Long term reliability and flexibility. Strategies to reduce operational waste will be considered and the development of an operational waste management plan and separation of waste streams.	
2	Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards, and integrate environmental design strategies in accordance with the Environmental Design in Schools Manual.	The project is designed as per the GANSW requirement. Refer to the appendix section for details. The project is developed in line with the following sustainability frameworks: 1. 5 Star Green Star rating corresponding to an Australian Best Practice Development 2. Alignment to EFSG strategy Sustainability initiatives relating to broad categories of Green Star Buildings V1. Refer to Appendix B for an indicative Greenstar Buildings V1 scorecard.	Yes

No:	ESD Requirement	Proposed Compliance Strategy	Compliance
3	Demonstrate how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive urban design) and material resources.	The following proposed initiatives are included into the design to reduce the GHG emissions and aim for net zero emissions by 2050: 1. Exceeding NCC 2022 section J requirements 2. Exceeding minimum R-values of Section J (1.3, 1.5, 1.6) where feasible. 3. High performance building fabric, including high performance glazing. 4. Energy efficient lighting and equipment's 5. Roof mounted solar photovoltaic (PV) system. 6. Selection of sustainable product materials with third party certification 7. Passive design strategies Adopting Green Star 'Positive' credits across the development where feasible	Yes

4. SUSTAINABILITY IN DESIGN

4.1 ASPECTS OF SUSTAINABILITY

The planned school development intends to create a progressive sustainability outcome for the community while going above and beyond the minimal building requirements. Throughout the entirety of the project's life cycle, from building to operation, the sustainability measures employed on the project will help to preserve resources and future resilience. The proposed Gables Public School development's design purpose has been compared to the GBCA's Green Star Building V1 rating tool to fulfill the requirement for ESD.

4.2 RESPONSIBLE

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

- Ensure collaboration is at the heart of the design and construction of the building.
- Divert construction and demolition waste from entering landfill.
- Validate that the building can perform optimally and efficiently over time and in different climates.
- Promote and reward responsible procurement processes.
- Support the supply chain on their sustainability journey.

4.2.1. PROPOSED INITIATIVES

The following initiatives have been incorporated into the concept design to ensure that the project minimises its environmental impact through construction and operational management:

- The construction waste generated will be reused or recycled, to limit the amount of waste going to landfill.
- Selection of materials that are easily cleaned with low-toxicity cleaning products.
- Select resistant materials to reduce wear and tear requiring replacement.

4.2.2. OPPORTUNITIES AND RISKS

- The products and materials procured for the development should come from a local source, contain a low embodied energy content.
- Pre-commissioning, commissioning, and tuning of building systems to ensure systems are operating as intended.
- Waste management plans for demolition, construction and operation of the site. The targets set should not deviate from the main plan.

4.3 HEALTHY

The healthy category focus on improving the indoor environmental quality of the building. The Green Star Buildings builds on this focus by considering health to be fundamental, it emphasises the importance of the built environment in enhancing the health and wellbeing of occupants. The credits in this category:

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

4.3.1. PROPOSED INITIATIVES

- Passive design principles to be adopted in the design, including high-performance building envelope, thermal comfort and natural ventilation.
- LED lighting to be provided to improve lighting comfort.
- Low VOC and low or no formaldehyde products specified where possible to improve the indoor environmental quality for users.
- Acoustic design to support the school building's function as training, teaching and multi-purpose spaces for students, staff and community use.

4.3.2. OPPORTUNITIES AND RISKS

- Common area lighting controlled by motion and /or daylight sensors to reduce the operation of artificial lighting when it is not required.
- Responsible materials used in the project for reduced environmental impact and improved indoor environmental quality.
- High efficiency heating and cooling to improve thermal comfort.

4.4 RESILIENT

Resilient category allows buildings to demonstrate potential climate risks that may impact the building's ability to function optimally over the long-term. Credits in this category focus on:

- How the building will withstand other shocks and stresses, such as health pandemics and infrastructure failure.

- Build the resilience of the community that interact with the building.
- Reduce the building's contribution to the heat island effect.
- Support the functioning of the grid as it transitions to a higher level of renewable energy capacity.

4.4.1. PROPOSED INITIATIVES

- Adaptable building design that will withstand shocks, stresses and infrastructure failures.
- Significant site vegetation to reduce urban heat island effect.
- Roof mounted solar photovoltaic (PV) system in accordance with EFSG requirement.
- Preliminary consideration to assess how the proposed design is responsive to future climate impacts.

4.4.2. OPPORTUNITIES AND RISKS

- A Climate Change Adaptation Plan developed for the building to address specific climate risks of the design and how they might be mitigated to reduce risk.
- Undertake a Climate Change Risk Assessment in response to future climate impacts.

4.5 POSITIVE

The positive category addresses building to reduce energy consumption and switching to renewable energy. The credits in this category:

- Lead to better low carbon design and selection of materials.
- Reduce operating costs due to energy efficient design and lessen the buildings dependency on the grid.
- Support the transition of the electricity grid by procuring renewable energy.
- Lower water consumption through efficient designs and selection of efficient fixtures.
- Understand and reduce the life cycle impacts of the building.

4.5.1. PROPOSED INITIATIVES

- Exceeding NCC 2022 Section J requirement deemed-to-satisfy (DtS) requirements. The EFSG requires the development to target 10% reduction in energy consumption compared to a reference building.
- Improve minimum building envelope R-values of section J1.3, J1.5, J1.6 where feasible.
- High performance and energy efficient lighting to be provided throughout, and high-efficient heating and cooling for the building.

- Effective shading devices which reduce solar heat gains to conditioned spaces.
- Selection of water efficient fittings and fixtures.
- Recycled water reuse system for toilets and landscaping.

4.5.2. OPPORTUNITIES AND RISKS

- Selection of low-carbon materials for reduce embodied emissions.
- Adaptable building design that is climate responsive.
- Adopting minimum targets energy efficiency of appliances (air conditioners, TVs, fridges, computers) to make energy efficiency one of the selection requirements.
- Consider green energy technologies as part of the design.

4.6 PLACES

The places category focuses on people and integration of the building into urban fabric and delivers places that increase social cohesion. Credits in this category:

- Reduces the impact of private vehicle use in the built environment.
- Ensures occupants get the benefits of active movement.
- Provide communal spaces where community comes alive, where bonds are strengthened and where a sense of belonging is fostered.
- Ensure the building contextually responsive and a good fit in the location, is positively received by the community and can be considered a good neighbour.
- Allow building to carry a significant meaning to locals or those that provide a window to the past and the current culture.

4.6.1. PROPOSED INITIATIVES

- Traffic engineer has been engaged to carry out a transport assessment in line with the SINSW requirements.
- To encourage active and public transport, bicycle parking for staff and students as well as change facilities for staff are provided to the development.

4.6.2. OPPORTUNITIES AND RISKS

- Students achieve daily physical activity requirements through active travel to school.
- Prioritise multi-modal transport planning and infrastructure provision to school.
- Minimise traffic disruption to the school and community during construction.

- Monitor and evaluate the School Transport Plan process to revise and improve the process to achieve outcomes.

4.7 PEOPLE

The people category encourages solutions that address the social health of the community by bringing a new dimension to the design and construction of buildings. It highlights issues such as diversity and gender equity, inclusion, and mental health. Credits in this category:

- Allow construction workers, regardless of the gender or sexual preference, to enjoy being on site, feeling safe a benefit from physical and mental health initiatives.
- Celebrate Aboriginal and Torres Strait Islander people, culture and heritage through a Reconciliation Action Plan or building designs.
- Create employment opportunities for disadvantaged communities and groups such as Aboriginal and Torres Strait Islander, and support small and medium sized enterprises to diversity the supply chain.
- Take more inclusive view of how people access and engage with a place and how they can do so seamlessly with equity and dignity.

4.7.1. PROPOSED INITIATIVES

- Allowing construction workers regardless of the gender or sexual preference and to enjoy being on site.
- Involving Aboriginal and Torres Strait islander people, culture and heritage in the initial process of the design.
- Providing employment opportunities for the disadvantage communities via construction or any small and medium sized enterprises.
- Implement policies to address issues of discrimination, racism, and bullying on-site.

4.7.2. OPPORTUNITIES AND RISKS

- Design for people and usage, demonstrating spatial flexibility/adaptability, potential uses in spaces and modes of operation.
- Placemaking activation approaches to be incorporated in the design.
- Policies and programs implemented are relevant to construction workers on site.

4.8 NATURE

The nature category focuses on to protect ecological and biodiversity value, by encouraging development on land of limited value. And minimise impacts to on-site ecological and biodiversity during and after construction. Credits in this category:

- Limits the development's impacts on the natural world.
- Specifically focus on creating biodiversity in cities and regions that is indigenous and resilient to climate change.
- Provide natural corridors for animals to migrate.
- Allow buildings to claim reward for taking initiatives that restore biodiversity offsite.
- Protect waterways by reducing harmful pollutants that leave the building site.

4.8.1. PROPOSED INITIATIVES

- Incorporate waterwise landscaping principles, including xeriscape (draught tolerant species) landscaping for improves ecology and biodiversity at the site.
- Selection of locally indigenous native planting where feasible.

4.8.2. OPPORTUNITIES AND RISKS

- Biophilic design (green walls, plants/interaction with nature) to provide students and staff with a strong connection to nature, creating visible and functional green spaces.
- Adopting Green Star Biodiversity Enhancement credit across the development where feasible.

4.9 LEADERSHIP

The leadership category aims to recognise the implementation of innovative practices, processes and strategies that promote achievements in the built environment that are beyond the scope of the rating tools.

4.10 GREEN STAR ALIGNMENT

A preliminary Green Star pathway assessment is provided in ***Appendix B***. Points have been chosen to align with proposed project arrangements and are cognisant of the risks and opportunities faced by the project. A final scorecard for achievement of a 5-Star rating have been prepared.

5-Star – 35 points are required to achieve a 5-Star rating for the project. The final assessment has nominated 41 points to be achieved, providing a buffer of 6 points. The Green Star rating system is closely aligned with SINSW Objectives. Table 3 provides a comparison between Green Star categories and SINSW objectives.

Table 3: SINSW objectives alignment with Green Star.

SINSW Objectives	Green Star alignment
Unlock human potential	Healthy
Foster connections	People, Nature & Places
Act on Climate Change	Positive

SINSW Objectives	Green Star alignment
Consume responsibly	Resilient and Positive
Build Resilience	Positive

Table 4 provides a summary of the proposed points score in each of the Green Star categories.

Table 4: Green Star preliminary score summary.

Category	Available Points	5-Star Target
Responsible	17	3
Health	14	7
Resilient	8	2
Positive	30	9
Places	8	3
People	9	7
Nature	14	8
Leadership	8	0
Total	**100***	**39**
Points Requirement		*35*
Buffer		*4*

** Note, maximum 100+ points are available. There is no limit to how many leadership challenges project teams can target.*

5. CLIMATE CHANGE RESILIENCE STATEMENT

The impacts of climate change on the proposed development have been assessed based on predicted climate change models. A climate Adaptation Workshop has been held with project stakeholders to:

- Identify and describe risks posed by climate change to the development and rate the consequences and likelihood of each.
- Identify and evaluate potential adaptation actions and/or design strategies to mitigate risks which are deemed unacceptable.

To facilitate this process, pre-workshop notes will be provided to all stakeholder attending the workshop which mainly consists of:

- Climate change projections
- Consequence scale for the risk assessment
- Likelihood scale for the risk assessment

A climate change risk assessment has been conducted in accordance with AS 5334-2013 and the Green Star Building V1 requirements, as detailed in document LCE24495-1-031-Climate Change Adaptation Plan. This assessment identifies the anticipated impacts of climate change, with reference to projections from the Commonwealth Scientific and Industrial Research Organization (CSIRO) as well as the New South Wales Government's NSW and ACT Regional Climate Modelling (NARCliM) projections.

Refer to Table 5 for the mitigation measures addressing the climate change risks associated with the proposed Gable New Primary School.

6. MITIGATION MEASURES

Table 5 summarises the mitigation measures described in this report.

Table 5: Mitigation measure summary

Project Stage *Design (D)* *Construction(C)* *Operation (O)*	**Mitigation Measures**	**Relevant Section of Report**
D / O	Selection of drought tolerant plant species and measures for reduced heat island effect to improve resilience to climate change.	Section 4.4
D	Connection of site to local recycled water supply. Use of recycled water for irrigation.	Section 4.5
D / C	Selection of construction materials for reduced embodied emissions within the building.	Section 4.5
D	Integration of passive design strategies, high-performance building systems, and on-site energy generation to minimize energy consumption and mitigate the risks associated with climate change.	Section 4.5 Section 5.0

APPENDIX A – ESD SCHEDULE

LCE24495 - ESD Schedule - Sustainability Initiatives

SINSW BOX HILL PUBLIC SCHOOL

Revision DA1 **15/10/2024**

LUCID CONSULTING AUSTRALIA

Category	ID	Initiatives	Description	Requirements and Targets	Relevant discipline(s)	EFSG	Green Star Alignment	Project Comments	Benefit	Cost	Priority
Energy Efficiency - Thermal Envelope	1.1	Air tightness design and testing to best practice	Airtightness limits the amount of air leakage through building fabric. This reduces unwanted infiltration and associated heat losses/gains, resulting in smaller thermal plant and increases the energy efficiency of building. Thermal comfort is also improved through reduced drafts and infiltration.	Engage a specialist airtightness consultant to review building details and system arrangements during the design phase and undertake testing following construction. Performance target: $4m^3/h.m^2$ at 50 Pa.	Architect	NA	Responsible - C3 - Verification and Handover	Openable windows for natural ventilation will require effective sealing to meet air tightness requirements.	High	Medium	2
	1.2	High performance building fabric	High performance building fabric with high thermal resistance reduces heat/cooling losses from conditioned spaces to outside through walls, glazing and ceiling. This results in the increases the energy efficiency of building.	Increase building fabric performance by 10% above DtS requirements. 1. Target low cost initiatives such as increased ceiling batt insulation thickness and thermal break strips for metal studs. 2. Double glazed units for glazed elements.	Architect	DG02.03 - Ecologically Sustainable Development DG06.02 - Cooling/Heating	Positive - C22 - Energy Use	East/West/North side of the proposed building should be buffered to avoid harsh sunlight throughout the day. Use of Double glazing will help avoid heat ingress in the building.	Medium	Medium	3
	1.3	Optimised window to wall ratio	Extent of glazing is optimised to balance natural lighting requirements. This minimises thermal plant size whilst maintaining views to outside.	Limit external vision glazed area for façade orientations as follows: - East and west: maximum 40% of the external wall area. - North and south: maximum 60% of the external wall area.	Architect	DG02.03 - Ecologically Sustainable Development	Positive - C22 - Energy Use	Balance application of initative with requirements for daylighting and access to views.	High	Low	1
	1.4	Incorporation of thermal mass	Selecting materials that are suitable for absorbing, storing releasing heat or cooling throughout the day. Thermal mass can help stabilise internal room temperatures and reduce conventional heating/cooling demands.	Incorporate heavy weight construction for selected internal walls.	Architect / Structural	DG02 - Ecologically Sustainable Development	Positive - C22 - Energy Use	Recommended initiative where feasible to support the operation of natural ventilation performance. Impact to embodied carbon to be considered in detail.	Medium	Medium	3
	1.5	Efficient building shading	External shading and building orientation is optimised to limit direct solar loads into the building, while allowing for access to natural light. This results in reduced solar heat gains and lower heating loads, allowing for rationalised equipment sizes.	Where possible the majority of façade area should face a north or south direction. External shading (vertical or horizontal) should be provided to limit solar radiation to north, east, and west facades during summer.	Architect	DG2.3.1 - Ecologically Sustainable Development DG06.02 - Cooling/Heating	Positive - C22 - Energy Use	External shading on East/West/North facade to counter direct solar heat gain into the building. Site Is constrained to a largely East/West exposure which requires mitigation thorugh shading.	High	Medium	2
	1.6	Ground-level insulation and reduction of thermal bridging	Insulation is applied to the slab and slab edge to reduce heat loss and gains through the building fabric. This may result in improved thermal comfort and reduced heat loads and associated energy consumption.	Provide insulation to underside of slab, in excess of code requirements. Nominal 50mm board insulation.	Architect	DG02 - Ecologically Sustainable Development	Positive - C22 - Energy Use	Recommend to only include where required as a DtS prescriptive requirement of NCC Section J.	N/A	N/A	N/A

Category	ID	Initiatives	Description	Requirements and Targets	Relevant discipline(s)	EFSG	Green Star Alignment	Project Comments	Benefit	Cost	Priority
Energy Efficiency - Building Services	2.1	Air-side heat recovery	Energy is recovered from internal spill air and transferred to incoming outside air. This allows for reduced mechanical system sizing and energy consumption.	Heat recovery ventilators are provided to all systems providing outside air rates that exceed code requirements by 20% or more.	Mechanical	NA	Positive - C22 - Energy Use	Increased outside air is a minimum greenstar requirement and it is recommendd to included ERV to reduce outside air heat loads and energy consumption.	High	Medium	2
	2.2	All-electric heating	Heating service requirements to be solely provided by electricity to help reduce carbon emissions. Provides a gateway to achieve net-zero in the future once the grid has transferred to clean energy.	DHW generation to be provided by heat pumps or distributed electric systems. Space heat to by provided by electric DX plant.	Mechanical / Hydraulic	NA	Positive - C22 - Energy Use	Currently integrated into design. Project requirement to align with stakeholder expectations and broader strategic context.	High	Low	1
	2.3	High performance HVAC systems	Selecting equipment and controllers that enable variable-speed capabilities for HVAC systems to reduce energy consumption. This may result in improved thermal comfort and reduced heat loads and associated energy consumption.	All HVAC systems to incorporate high COP performance and variable speed control.	Architect	DG2.3.2 - Ecologically Sustainable Development DG55 - Cooling Policy DG16.09 - Building Regulations	Positive - C22 - Energy Use	HVAC systems to be of VRV heat recovery type. All lighting to be of LED technology.	High	Medium	2
	2.4	Roof-mounted solar PV	Positioning of PV panels covering roof areas to optimise exposure and maximise electrical energy generated. Generation of electricity can be used to reduce energy consumption from the utility network.	Provide sufficient solar PV coverage to offset building energy consumption. (Proposed 77kw, 194 panels)	Electrical / Architect	DG2.3.4 - Ecologically Sustainable Development DG61 - Electrical Services; 0933 Power Generation - Photovoltaic	Resilient - C22 - Energy Use	Project requirement to align with EFSG requirement and offset building energy consumption. EFSG requirement is 75kw. - Proposed 77kw with 194 panels @600mm c/c - All PV panels are proposed to be located on the Hall Building roof	High	Medium	2
	2.5	Battery storage	Provision of on site battery storage connected to PV array to store solar energy which can then be reused at peak or cost efficient times.	Battery storage is provided to offset peak demand by 10% or greater.	Electrical	NA	Resilient - C20 - Grid Resilience	Future provisions to be allowed for. Battery storage may pose cost risks and onerous fire protection requirements.	Low	High	5
	2.6	Ground-source heating and cooling	Thermal energy for heating and cooling is transferred to/from the surrounding geology. This allows for the operation of high-efficiency water source plant and alleviates the spatial and acoustic constraints associated with air-source plant.	Initiative not recommended. See project comments for more information.	Mechanical	NA	Positive - C22 - Energy Use	The associated cost of this initiative is likely to be prohibitive.	N/A	N/A	N/A
	2.7	Efficient fans	Selecting equipment and controllers that enable variable-speed capabilities for HVAC utilities to reduce energy consumption.	All fans to incorporate EC motors or be served by variable speed drives.	Mechanical	NA	Positive - C22 - Energy Use	To be incorporated into mechanical design.	Medium	Low	2
	2.8	Efficient lighting	Specifying high efficient LED lighting throughout including associated controls.	All lighting to be LED technology and served by a central control system including occupancy sensing and daylight control.	Electrical	DG02.03 - Ecologically Sustainable Development	Positive - C22 - Energy Use	All lights installed in the project are LED light fixtures. DALI control system is incorporated in the design.	High	Low	1
	2.9	In-slab heating and cooling	The circulation of heated or chilled water through integral plumbing in concrete slabs to provide temperature control. Enhanced occupancy comfort & reduced HHW temperatures resulting in energy savings.	Initiative not recommended. See project comments for more information.	Mechanical	DG06.02 - Cooling/Heating	Positive - C22 - Energy Use	The cost of this initiative is likely to be prohibitive. The use of floor heating is not feasible to schools.	N/A	N/A	N/A
	2.10	Use of ceiling fans	Provision of ceiling fans to generate air movement within the occupied spaces. This allows for improved comfort conditions.	To generate airmovement in the occupied spaces. For schools - classrooms and all the regularly occupied spaces.	Architect / Mechanical	DG02 - Ecologically Sustainable Development; GAO - 3 Strategies for environmental design	Positive - C22 - Energy Use	Recommend to include for comfort conditions and reduce energy use associated with cooling. Aligns with Government Architect guidance. Proposed in current concept design.	High	Low	1
	2.11	Demand control for ventilation	Provide monitoring of indoor CO_2 concentrations for control of outdoor air provision. Allows for increased IEQ monitoring. Optimises outside air flow rates for improved energy efficiency.	Provide CO_2 sensors to occupied spaces.	Mechanical	NA	Positive - C22 - Energy Use	Proposed for the concept mechanical design. Allows for the optimisation of OA air provisions and reduced energy consumption.	High	Medium	2

Category	ID	Initiatives	Description	Requirements and Targets	Relevant discipline(s)	EFSG	Green Star Alignment	Project Comments	Benefit	Cost	Priority
Land use and Ecology	3.1	Water-sensitive urban design	Consideration for sites' water demands and respective rainfall into designing landscape and engineering technologies for stormwater. Provides Improved site ecology, access to greenery, and assistance to flood management.	Strategy to be determined in consultation with landscape architect and civil engineer.	Architect / Landscape / Civil	DG2.4.3 - Ecologically Sustainable Development	Nature -C39 - Waterway protection	Preference to provide passive irrigation systems and wicking beds in garden areas. Landscape architect to advise.	High	Medium	2
	3.2	Native plantings	Endemic and native species included in landscaping that can tolerate conditions and climatic variations. Endemic and native species require reduced maintenance, conserve water, adapt easily to local weather and soil conditions and promote biodiversity.	Minimum 80% of planting to be endemic and/or native species.	Architect / Landscape / Ecology	DG02.06 - Ecologically Sustainable Development	Nature - C36 - Biodiversity enhancement	Preference to design landscape with Native/Adaptive species. Xeriscaping design is good for project.	High	Low	1
	3.3	Vegetation retention	Maintain trees on site where arboricultural and visual values allow. Greater tree coverage around site allows for a reduced urban heat map, access to greenery, and improved soil conditions.	Provide planting adjacent the building and within green roofs to enhance shading.	Architect / Landscape / Ecology	DG02.06 - Ecologically Sustainable Development	Nature - C36 - Biodiversity enhancement	Placement of larger trees to avoid building expansion locations. To retain existing trees to improve site ecological value. Landscape architect to advise.	High	Low	1
Site Emissions and Waste	4.1	Reduced light pollution to neighbouring bodies and night sky	Lighting designs to be cognisant of neighbouring properties and night sky by utilising warm colours, shielding, dimmers and controls. Reduces unnecessary lighting pollution, helping with circadian rhythm of consumers.	Lighting to be designed in accordance with AS 4282:2019. External luminaires to have an Upward Light Output Ratio (ULOR) of less than 5%.	Electrical	DG02.03 - Ecologically Sustainable Development	Nature - C35 - Impacts to Nature	All outdoor lighting design in the project to comply with AS 4282:2019.	Medium	Low	2
	4.2	Reduced heat island effect	Provision of vegetation, green roofs and/or natural shading throughout the site to help deflect sun radiation and increase moisture evaporation to atmosphere.	Maximise opportunities and green infrastructure that reduces urban heat island effect. 75% of the total project site area to comprise building or landscape elements that reduce the impact of the heat island affect. This includes landscape, vegetation, green roofs, and treatment to other external surfaces to reduce solar absorption.	Architect / Landscape	DG06.02 - Cooling/Heating DG27.12 - Roofing	Resilient - C10 - Heat Resilience	Provision to provide at least 75% of the total project/whole site area comprises of strategies to reduce the heat island effect. The strategies considered: - Vegetation - Roofing/hardscape materials to contain three year SRI minimum value.	Medium	Low	2
	4.3	Multiple waste streams and waste reduction (Operational)	Provision for the multiple waste streams of the site, including general waste, organic waste and various recycling waste streams. Allows materials to be recycled appropriately reducing waste to landfill. Provision of waste protocols for problematic waste streams such as batteries and electrical equipment.	Requirements to be determined during waste and materials strategy development.	Architect / Waste specialist	DG02.07 - Ecologically Sustainable Development	Responsible - C4 - Responsible Resource Management	A central waste storage area (with multiple waste streams) is recommended and should be easily accessible for waste collection.	Medium	Low	2
	4.4	Multiple waste streams and waste reduction (construction)	Construction material estimates should be sufficient to allow for unforeseen problems but not excessive as to create significant economic loss.	90% of construction waste to be diverted from landfill.	Contractor	DG02.07 - Ecologically Sustainable Development	Responsible - C2 - Responsible Construction	Pre-fabrication of buildings can significantly minimise construction waste.	Medium	Low	2
	4.5	Stormwater peak discharge and pollution reduction	Implementation of mitigation measures that compromise flow or quality of stormwater with engineered controls (GPT, swale, retention basin, wetlands etc.). Improve site ecology, access to greenery and can help with flood management.	Project to demontrate a reduction in average annual stormwater discharge (ML/yr) of 40% (requirement) or 80% (exceptional) across the whole site.	Civil	DG2.4.3 - Ecologically Sustainable Development	Nature -C39 - Waterway protection	Project to demonstrate a reduction in average annual stormwater (ML/yr) across the whole site. Application of initative to consider integration with wider develpoment stormwater capture and treatment system.	Medium	Medium	3

Category	ID	Initiatives	Description	Requirements and Targets	Relevant discipline(s)	EFSG	Green Star Alignment	Project Comments	Benefit	Cost	Priority
Water Efficiency	5.1	Greywater treatment plant	Provision of treatment plant to reuse waste water from sources of non-faecal contamination e.g. WHBs, showers, laundry for systems such as toilet flushing and irrigation. Allows for reduced main water consumption	Initiative not recommended. See project comments for more information.	Hydraulic	NA	Positive - C25 - Water Use	Not recommended to project due to provision of recycled/reclaimed water available to site and involves additional capital costs for the plant.	N/A	N/A	N/A
	5.2	Recycled water connection	Provision of recycled water connection and site reticulation to supply toilet flushing and irrigation.	The project will incorporate a connection to the site's recycled water system, which will supply recycled water for irrigation and toilet use. This sustainable approach will enhance water efficiency and reduce the overall demand for potable water consumption by at least 45%.	Hydraulic	DG53 - Water	Positive - C23 - Water Use	Reclaimed water readily available at the site. Rainwater tank not required.	Medium	Medium	3
	5.3	Fire test water capture	Capture of water discharged during fire testing. Allows for reduced mains water consumption for irrigation and the like.	Drainage for fire water systems to be provided and discharge to rainwater tank.	Fire / Hydraulic	DG02.4.2 - Ecologically Sustainable Development	Responsible - C3 - Verification and Handover	Water to be recycled back to central storage tank (no draw from mains water). Subject to tank locations.	Medium	Low	2
	5.4	High-efficiency fixtures	Provision of low-flow fixtures throughout the building. Allows for reduced mains water consumption.	Provide water efficient sanitary fixtures: - All taps with a WELS rating of not less than 6 Stars (max. 5.0 L/min) - Shower heads with a WELS rating of not less than 4 Stars (max. 6 L/min) - Water closets with a WELS rating of not less than 4 Stars (max. 3.5 L/average flush, dual flush). - Urinals with a WELS rating of not less than 5 stars (max. 1L/Flush)	Hydraulic / Architect	DG53 - Water	Positive - C23 - Water Use	Provision to provide water efficient fixtures.	High	Low	1
	5.5	Water leakage system & flow control devices	Implement a site wide leakage detection system and local flow control devices to minimise the potential water wastage from an unknown leak.	Provide a water leakage detection system capable of detecting a major water leak within the building(s). Also provide local flow control devices to cold water supplies to each WC area to minimise water leakage and wastage from sanitary fittings.	Hydraulic	NA	Positive - C25 - Water Use	Recommend to include in the project and require ongoing maintenance. This benefits school/project for any early leak detection.	High	Medium	2
Materials	6.1	FSC certified timber	Use timber and timber products for construction that are certified with the FSC to ensure material is sourced responsibly.	The structural timber/frames products used to be FSC certified for construction.	Structural / Architect	DG01 - Whole of Life	Responsible - C2 & C4	Project team to confirm if the project uses responsible wood (FSC) for construction and is sourced responsibly.	High	Medium	2
	6.2	Reponsibly manufactured products	Reusing of existing materials salvaged from the site or purchasing reclaimed materials for structural or aesthetic uses. Allows for the reduction of embodied carbon.	50% of all structural components (by cost) meet a Responsible Products Value (RPV) of at least 10. Structural Components include: Steel, timber, concrete load bearing elements.	Structural / Architect	DG01 - Whole of Life	Responsible - C2 & C5	Purchasing/ reusing salvaged materials in the project or having an EPD or third party certifications for the products.	High	Medium	2
	6.3	Low-carbon concrete	Use of fly ash, manufactured sand or other suitable industrial waste products over Portland cement, traditional aggregates and virgin materials, to reduce the environmental impact of concrete. In addition, water used within the concrete mix should be considered to be obtained from captured or reclaimed water. Provides lower embodied carbon and water consumption.	Portland cement content to be reduced and all products should be third party verified or should have Environmental Product Declarations (EPD).	Structural	DG01 - Whole of Life	Positive - C21	Use of low-carbon concrete in the project to reduce carbon emmisions and will reduce portland cement content.	Medium	Low	2
	6.4	Structural timber construction	Timber is used for the construction of structural elements in lieu of concrete or steel.	Initiative not recommended. See project comments for more information.	Structural / Architect	DG2.5.2 - Ecologically Sustainable Development	Responsible - C6 - Responsible Structure	Not proposed due to budget constraitns.	High	Medium	2
	6.5	Low GWP refrigerants	Refrigerants used in mechanical cooling and heating plant equipment should have low Global Warming Potential and ozone depletion potential to minimise environmental hazard.	Refrigerant to be R32 where possible.	Mechanical	NA	Positive - C21 - Upfront Carbon Emissions	Use of low GWP refrigerants may be limited by availability of products within the market.	Low	High	5

Category	ID	Initiatives	Description	Requirements and Targets	Relevant discipline(s)	EFSG	Green Star Alignment	Project Comments	Benefit	Cost	Priority
IEQ	7.1	Access to Daylight	Visual comfort is an important part of ensuring building occupant health, comfort and wellbeing. Reducing glare that can cause discomfort and distraction, and enabling occupant lighting control, the building can increase productivity of its users.	For all classrooms it is a requirement to have a good daylighting. At least 40% of the regularly occupied areas across the building must receive high levels of daylight with no less than 20% on any floor.	Architect	DG2.3.1 - Ecologically Sustainable Development DG12 - Light - Natural	Healthy - C11 - Light Quality	Daylight modelling to be completed in accordance with Green Star requirements.	Medium	Medium	3
	7.2	Installation of potable water dispensers for staff	Filtered potable water is provided by dedicated dispensers for visitors and staff.	Provision of potable water dispensers in staff work areas, end of trip (as applicable), and lobby.	Architect / Hydraulic	N/A	NA	Recommended to install water dispensers in the important locations (such as lobby, EOT, visitors area etc.)	Medium	Low	2
	7.3	Enhanced outside air rate	Increase the provision of outside air beyond minimum requirements to expel internally generated pollutants and improve air quality. Scientific research suggests that an airflow rate significantly exceeding that recommended by standards is needed to minimise sick building syndrome symptoms and to improve human performance and productivity. A number of CO2 studies suggest that the risk of sick building syndrome symptoms decreases significantly, when CO2 concentrations are less than 800 ppm.	Where CO_2 monitoring is provided, maintain CO_2 concentrations below 800ppm. OR Provide outside air at a rate 50% greater than minimum required by AS 1668.2:2012 and ESG for optimum energy consumption.	Mechanical	NA	Healthy - C10 - Clean Air	Increased outside air is a minimum greenstar requirement and is recommended to consider the initiative. Project to provide 50% greater than required by standards.	High	Medium	2
	7.4	High performance acoustics	Provision of internal acoustic treatment which limits external noise ingress based on room activity type. Reduce unnecessary reverberation and implement acoustic separation between adjacent spaces. Allows for improved occupant comfort and greater productivity.	Project to meet requirements of ESD tool credit 10 including internal noise levels, reverberation, and acoustic separation.	Acoustic / Architectural / Mechanical	DG11 - Acoustics	Healthy - C12 - Acoustic Comfort	Recommended to avoid external noise. Especially the classrooms requires high performance acoustics for improved comfort and productivity.	High	Medium	2
	7.5	Low-VOC products and finishes.	VOCs encompass a wide group of volatile substances of both natural and artificial origins which have a wide range of health effects from nose, eye and throat irritation, headaches and nausea to liver, kidney and central nervous system damage. Furthermore, some select VOCs are known or suspected carcinogens. Specify low-VOC products only to minimise the emissions of harmful organic compounds into the environment.	All products and finishes to be low-VOC or water based paints.	Architect	DG2.5.2 - Ecologically Sustainable Development	Healthy - C13 - Exposure to Toxins	Project to incorporate all products and finishes to have low-voc paints.	High	Low	1
	7.6	Natural ventilation	Provision of natural ventilation can help reduce inhalation of harmful indoor substances to avoid adverse health and other respiratory infections. Achieving natural ventilation through open windows can provide a positive human experience.	Provide operable windows for ossupants.	Mechanical / Architect	DG05.01 - Air Movement	Healthy - C10 - Clean Air	Incorporated into design.	High	Low	1

Category	ID	Initiatives	Description	Requirements and Targets	Relevant discipline(s)	EFSG	Green Star Alignment	Project Comments	Benefit	Cost	Priority
Education and Awareness	8.1	Staff/student engagement	Increase the availability of information on the benefits and outcomes of sustainable design practices and sustainable operation practices across the industry. Educate and inform staff to gain 'buy in' for the sustainable systems to allow correct, efficient running of equipment and processes.	Strategy to be informed through consultation.	SINSW/Architects/ Consultants	N/A	NA	Recommended strategy to be implemented and staff/students are involved in the process of sustainable operation practices.	High	Low	1
	8.2	Occupant engagement through learning and visualisation platform including educational displays	Informative educational displays indicating initiatives and live performance of systems are provided to the building. Educate and inform staff to efficiently run the equipment and system.	Equipment performance display to be introduced.	Electrical / Mechanical / Hydraulic	NA	NA	Recommended to install educational displays at strategic locations about building equipment and system.	High	Low	1
	8.3	Incorporation of public spaces	Provision of public places that are enjoyable and inclusive. The spaces are safe, flexible, and enjoyable.	The building provides memroable, beautiful, vibrant communal or public spaces where people want to gather and particiapte in the community.	Architect	NA	Places - C28 - Enjoyable Places	Public spaces may or may not be suitable depending on security requirements. To be confirmed with the project team.	TBC	TBC	N/A
	8.4	Design with country	The act of reconciliation illuminates and drives awareness of historical contributions of marginalized and colonized communities through action and future-facing programs (i.e., land acknowledgments, truth and reconciliation practices, empowerment programs, financial relief and economic development).	Create a program for historical acknowledgement informed by the traditional owners which acknowledges their beliefs/practices, promotes engagement / reparations, identifies a 3-year action plan to develop a relationship that benefits the traditional owners (e.g. through funding, education, employment, mental health support) and includes a signed document. Develop a communication plan and express historical context publicly.	PM / Architect	NA	Places - C30 - Culture, Heritage, and Identity	Recommended initiative to express historical context publicly. This is considered as part of the design. Architect to confirm.	High	Low	1
Biophilic Design	9.1	Integrated vegetation for shading	Provide or retain vegetation to provide natural shade. Reduce heat loads to the building as well as increasing usable external areas for staff and consumers throughout the year.	Strategy to be informed through consultation with landscape architect	Architect / Landscape	DG02.06 - Ecologically Sustainable Development	NA	Shading to be incorporated in landscape design. Landscape / Architect to advice.	Medium	Medium	3
	9.2	Local gardens including composting for food waste	Provide a dedicated gardening area which can be utilised by staff and students. Produce can be used onsite and reduces green waste from site.	20m^2 (or any feasible area) of local garden space to be provided.	Architect / Landscape	DG02.06 - Ecologically Sustainable Development	N/A	Subject to stakeholder requirements and ambitions.	Medium	Low	2
	9.3	Access to high-quality views	Natural elements, such as plants and daylight, have been linked with health-promoting benefits, including decreased levels of depression and anxiety, increased attentional capacity, better recovery from job stress and illness, increased pain tolerance and increased psychological well-being. Design building and glazing to ensure staff and consumers can access views to greenery and nature.	60% of the occupied spaces to have access to high quality views. Design spaces to incorporate natural materials / patterns / shapes / colours / images / sounds and at least one of: plants, water features, nature views; as well as design elements addressing celebration of culture/place, art or human delight.	Architect	DG02.06 - Ecologically Sustainable Development	Healthy - C15 - Connect to Nature	Recommended to have high quality views from the building as it enhances the occupants comfort and productivity.	High	Low	1
	9.4	Access to external green space	Natural elements, such as plants and daylight, have been linked with health-promoting benefits and helps students. Design building and glazing to ensure staff and students can access views to greenery and nature.	60% of the occupied spaces to have access to high quality views.	Architect	DG02.06 - Ecologically Sustainable Development	Healthy - C15 - Connect to Nature	Design spaces to incorporate natural materials and at least one of: plants, water features, nature views; as well as design elements addressing celebration of culture/place, art or human delight.	High	Medium	2
	9.5	Green Roof	Design building with a green (or brown roof).	Provision to provide at least 75% of the total project/whole site area comprises of strategies to reduce the heat island effect. The strategies considered: - Vegetation - Roofing/hardscape materials to contain three year SRI minimum value. - Greenroof	Architect / Landscape	NA	Positive - C22 - Energy Use	Not recommended due to budget and may increase structural load. Maintenance will be an on-going issue.	Low	High	5

Category	ID	Initiatives	Description	Requirements and Targets	Relevant discipline(s)	EFSG	Green Star Alignment	Project Comments	Benefit	Cost	Priority
Management and Monitoring	10.1	Detailed energy sub-metering incorporated into EMS	Comprehensive sub-metering for building services to exceed compliance requirements off NCC 2022 Section J9.	BMS system to incorporate EMS functionality and data display package.	Electrical	NA	Responsible - C3 - Verification and Handover	Energy metering and EMS system required.	High	Medium	2
	10.2	Detailed water sub metering	Comprehensive sub-metering for water-consumption break-down between amenity and ancillary uses.	Water metering to be provided to each distinct use.	Hydraulic	DG53.04 - Water	Responsible - C3 - Verification and Handover	Water sub-metering to be installed for different applications.	Medium	Medium	3
	10.3	Independent commissioning agent	Independent commissioning agent (ICA) to guide/monitor all independent services design reviews, pre-commission, commissioning, building tuning and monitoring in compliance with Green Star Buildings V1.	Project to engage an ICA.	ICA	NA	Responsible - C3 - Verification and Handover	Project to engage ICA to guide commissioning process post construction.	High	Medium	2
	10.4	Services and Maintainability Review	Services and maintainability review should be completed and the review should be summarised in a report and all items addressed and final sign-off by all team members before tender stage.	During design stage the project team to conduct a services and maintainability review of the building. The report to be prepared before the tender stage and signed-off by the project team.	Services consultants/ICA	NA	Responsible - C3 - Verification and Handover	To be completed by design team.	High	Low	1
	10.5	Certified Products	The building's occupants are not directly exposed to toxins in the spaces they spend time. All the occupied spaces to have certified products used such as 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'.	Contractor	NA	Healthy - C13 - Exposure to Toxins	Standard requirement for greenstar project.	Medium	Medium	3
	10.4	Soft landings framework implementation	Following a checklist of requirements that are completed moving from design stage to operational/construction stage, ensuring that building users are considered and engaged.	Project to be delivered in accordance with the soft landings framework.	ICA	NA	Responsible - C3 - Verification and Handover	Soft Landings framework will benefit the transition from contractor to SINSW. ICA to provide the framework based on the project requirement.	Medium	Low	2
Transport	11.1	Electric vehicle charging	Provision of electric vehicle chargers within the building's carpark to encourage the use of electric vehicles.	Minimum 5% of carparking spaces to be provided with vehicle chargers.	Electrical	NA	Resilient - C20 - Grid Resilience	EV charges to be provided. Note: 20% future provision required by NCC 2022.	Medium	Medium	3
	11.2	End of trip facilities	End of trip facilities including bike parking, change rooms and showers are provided to encourage the use of active transport.	End of trip facilities provided to serve 20% of regular occupants (staff only) and provide appropriate levels of bike storage & bike maintenance tools	Architect	NA	NA	EOT requirement to be included in the design (bike parking, change rooms and showers). Require confirmation from Architect.	High	Medium	2
	11.3	Reduction of idling vehicles	Combustion fumes from idling vehicles can have a detrimental impact on indoor air quality and lead to adverse health effects.	Vehicles (except for emergency / deliveries) are not allowed within 3.5m of the building. Provision of signage to limit unnecessary idling of all vehicles on the campus.	Architect	NA	NA	To incorporate 'no idling' near the building drop off/ car parking zones. Project team to confirm.	High	Low	1
Resilience	12.1	Water and heat-sensitive carpark design.	Exposed hardstand areas such as carparks are likely to create a heat island effect. This can be detrimental to the health of people accessing the site. Any urban heat island effect is likely to be exacerbated by increasing temperatures and the increased frequency of heatwaves.	Include shading throughout the carpark (natural or solar shade structures). Incorporate softscape to breakup continuous hardstand areas.	Landscape Architect	DG2.4.3 - Ecologically Sustainable Development	Resilient - C10 - Heat Resilience	Design to incorporate solar shade and avoid asphalt surface for car parking. Recommend Reclaimed Asphalt Pavement (RAP) to for car parking.	High	Medium	2
	12.2	Increased rainwater tank sizing.	Future rainfall patterns are subject to uncertainty and are likely to differ from historical averages. Contingency in tank sizing should be incorporated to account for future periods of drought or increased rainfall.	Apply a 10% sizing contingency to rainwater tank sizing.	Hydraulic	DG53 - Water	NA	Recommended to consider the future periods of rainfall and increase the tank sizing for the project.	Medium	Low	2
	12.3	Mechanical design conditions.	The effects of climate change are likely to affect operating conditions. This should be allowed for in design conditions.	Incorporate increased temperatures through to 2040 I design conditions. Allow for increased plant space to accommodate potential increased sizing requirements for 2070 conditions.	Mechanical	NA	NA	Recommended initiative to consider climate change in to the design conditions. Need confirmation from Mechanical team.	Medium	Low	2

APPENDIX B – GREENSTAR BUILDINGS V1 SCORE CARD

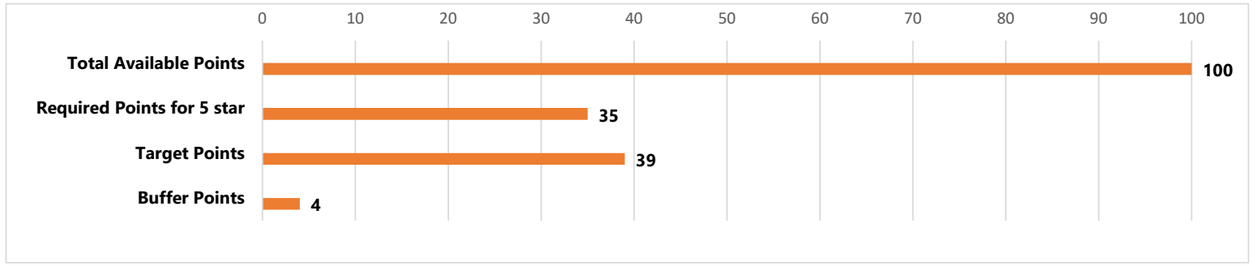
SCHOOLS INFRASTRUCTURE NSW - THE GABLES PUBLIC SCHOOL

GREEN STAR BUILDINGS - 5-STAR PATHWAY

Registration prior to 2023

Total Available Points	**100**
Required Points for 5 star	**35**
Target Points	**39**
Buffer Points	**4**

Revision S2 **16/10/2024**



LUCID CONSULTING AUSTRALIA

TOTAL POINTS

39

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
RESPONSIBLE									**Points**
Industry Development	**CREDIT 1** The development facilitates industry transformation through partnership, collaboration and data sharing.	**Res-1.1**	**Green Star Accredited Professional (GSAP)**	At least one Green Star Accredited Professional (Green Star AP) must be engaged as part of the project team from the time of registration.	**Credit Achievement**	**1**	Standard requirement for Green Star project. SINSW/ Design team or Contractor will be required to engage/employ GSAP for project delivery.	GSAP	**YES 1**
		Res-1.2	**Financial Transparency**	The project team must complete, and include in the submission, the Green Star Financial Transparency Disclosure Template.	**Credit Achievement**		Basic credit without any implications for the project in terms of cost or program.	Contractor	
		Res-1.3	**Marketing Sustainability Achievements**	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.	**Credit Achievement**		Basic credit without any implications for the project in terms of cost or program.	GSAP	
Responsible Construction	**CREDIT 2** The builder's construction practices reduce impacts and promote opportunities for improved environmental and social outcomes	**Res-2.1**	**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. The responsible party must have an Environmental Management System (EMS) certified to a recognised standard such as AS/NZS ISO 14001.	**Minimum Expectation**	**-**	Standard criteria for all project seeking ecologically responsbile construction outcomes. The contractor/Builder to confirm IS014001 accreditation.	Contractor	**YES ME**
		Res-2.2	**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.	**Minimum Expectation**		Standard criteria for all project seeking ecologically responsbile construction outcomes. EMP to be implemented by the contractor/Builder.	Contractor	
		Res-2.3	**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.	**Minimum Expectation**		To be coordinated through site waste contractor.	Contractor	
		Res-2.4	**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.	**Minimum Expectation**		The contractor provides training on the sustainability targets of the building to all subcontractors. The training content will be provided by GSAP.	Contractor	
		Res-2.3	**Construction and Demolition Waste Diversion**	Projects must divert at least 90% of construction and demolition waste from landfill.	**Credit Achievement**	**1**	To be coordinated through site waste contractor.	Contractor	**YES 1**

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Verification & Handover	**CREDIT 3** The building has been optimised and handed over to deliver a high level of performance in operation	**Res-3.1**	**Metering & 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.	**Minimum Expectation**	-	The building must have accessible to energy and water metering for all common uses and major uses for all the buildings. Metering to allow for seperation HVAC, lighting, power etc. Metering data to be networked to central EMS monitoring system, to be integrated with the site BMS.	Mech, Elec, Hydraulic, Fire	**YES** **ME**
		Res-3.2	**Performance Targets**	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. Common methods for demonstrating compliance with this is through the development of a design intent report or an owner's project requirements (OPR) document.	**Minimum Expectation**		Design intent report to be prepared by Lucid in coordination with all consultants and services contractors.	GSAP	
		Res-3.3	**Services & Maintainability Review**	Before construction, the project team must conduct a services and maintainability review of the building.	**Minimum Expectation**		Lucid (Electrical, Mech services) & Warren smith (Hydraulics) to complete a review of design documents for service and maintainability and capture the review results.	Mech, Elec, Hydraulic, Fire	
		Res-3.4	**Building Commissioning**	During construction and before practical completion, all building systems must be commissioned per a recognised commissioning standard (CIBSE or ASHRAE commissioning guides). Airtightness must be considered as part of the commissioning process during the following stages 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.	**Minimum Expectation**		Head Contracto to develop commissioning plan prior to practical completion and specifications must be included in the construction documentation listing requirements for all systems. Head Contractor to conduct reviews and testing for air tightness.	ICA	
		Res-3.5	**Building 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.	**Minimum Expectation**		The SINSW must contractually commit to a tuning process that includes quaterly adjustements and measurement for al least the first 12 months after occupation. The commitment must include a building tuning manual, a description of the building tuning team and the confirmation that the SINSW has engaged parties to tune the nominated systems. Head Contractor to coordinate with SINSW commissioning team for tuning of all building systems and provide the services.	ICA	
		Res-3.6	**Operations & Maintenance Information**	The project team must provide operations and maintenance information for all nominated building systems to the building owner (or designated representative).	**Minimum Expectation**		Development of best practice O&M Manuals for the building. Contractor and Services Contractors to develop and include in services specification notes.	ICA	
		Res-3.7	**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.	**Minimum Expectation**		Building Log Book needs to be developed as per standards. The intent is to provide information for those managing the school/building and to be used for training and induction document for staff/contractors.	ICA	
		Res-3.8	**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.	**Minimum Expectation**		Head Contracto to develop Building User Guide for schools and include in services specification notes.	ICA	
		Res-3.10	**Independent Commissioning Agent**	An Independent Commissioning Agent (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).	**Credit Achievement**	**1**	Commissioning to be completed by the Contractor and overseen by SINSW commissioning team.	ICA	**YES** **1**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Responsible Resource Management	**CREDIT 4** Operational waste can be separated and recovered in a safe and easy manner.	**Res-4.1**	**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, one other waste stream representing at least 1% of the total annual operational waste (by volume) of the building.	**Minimum Expectation**	-	The collected wastes are segregated and the bins are evenly distrubuted throughout the building. Waste specialist to review proposed design for compliance.	Architect	**YES** **ME**
		Res-4.2	**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.	**Minimum Expectation**		School to include a dedicated waste storage area for easy access and collecting the waste.	Architect	
		Res-4.3	**Waste Consultant Engagement**	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.	**Minimum Expectation**		Qualified waste auditor/specialist to be engaged.	SINSW	
Responsible Procurement	**CREDIT 5** The procurement process for key products, materials, and services for the building's design and construction follows best practice environmental and social principles.	**Res-5.1**	**Risk and Opportunity Assessment**	Prior to appointment of the Head Contractor, the project team must undertake a risk and opportunities assessment of 10 or more key items in the project's supply chain (as selected by the project team) to identify environmental, social and human health risks, and opportunities following ISO 20400 Sustainable Procurement – Guidance. 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.	**Credit Achievement**	**1**	Not targeted for project.	N/A	**NO** **0**
		Res-5.2	**Responsible Procurement Plan**	The project team must develop a plan for how the project will responsibly procure 10 or more key items mitigating risks and implementing opportunities identified in the Assessment following ISO 20400 Sustainable Procurement – Guidance as a guide to developing the plan. The plan must: • Identify the potential trade packages in which the 10 or more items would be procured • Identify project-level environmental, social, economic objectives reflecting the risks and opportunities assessment • Outline mitigation principles and standards • Establish a governance process with roles and responsibilities for overseeing implementation of the procurement plan objectives • Outline requirements for data collection and impact measurement monitoring and reporting • Provide a framework for incentivising the achievement of the plan with relevant contractors and trades The plan must be embedded in tender documentation for the head contractor or relevant trades. It must be implemented in partnership with relevant contractors and trades throughout construction, demonstrating data collection, monitoring, and reporting has been carried out.	**Credit Achievement**		Not targeted for project.	N/A	
Responsible Structure	**CREDIT 6** The building's structure is comprised of responsibly manufactured products.	**Res-6.1**	**Good Practice Products**	The project must have **50% of all structural components (by cost)** meet a Responsible Products Value of **at least 10**.	**Credit Achievement**	**3**	Credit not targeted at this stage due to procurment uncertainty and cost risk. Achievement of this credit requires detailed specifications in design and detailed monitoring throughout construction for the preparation of evidence. Cost impacts are highly dependent on market conditions and product availability.	N/A	**NO** **0**
		Res-6.2	**Best Practice Products**	The project must have **10% of all products in the structure (by cost)** meet a Responsible Products Value of **at least 15**. These products do not need to be in addition to the Credit Achievement; they can be used towards meeting the Credit Achievement AND the project must have **80% of all products in the structure (by cost)** meet a Responsible Products Value of **at least 10.**	**Exceptional Performance**	**2**	As above.	N/A	**NO** **0**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET	
Responsible Envelope	**CREDIT 7** The building's envelope is comprised of responsibly manufactured products.	**Res-7.1**	**Good Practice Products**	The project must have **30% of all building envelope components (by cost)** meet a Responsible Products Value of **at least 10**. 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. Values for each product can be calculated by using the Responsible Products Value calculator.	**Credit Achievement**	**2**	Credit not targeted at this stage due to procurment uncertainty and cost risk. Achievement of this credit requires detailed specifications in design and detailed monitoring throughout construction for the preparation of evidence. Cost impacts are highly dependent on market conditions and product availability.	N/A	**NO**	**0**
		Res-7.2	**Best Practice Products**	The project must have **10% of all products in the building envelope (by cost)** meet a Responsible Products Value of **at least 15**. These products do not need to be in addition to the Credit Achievement; they can be used towards meeting the Credit Achievement AND the project must have **60% of all products in the building envelope (by cost)** meet a Responsible Products Value of **at least 10.**	**Exceptional Performance**	**2**	As above.	N/A	**NO**	**0**
Responsible Systems	**CREDIT 8** The building's mechanical, hydraulic, transportation and electrical systems are comprised of responsibly manufactured products.	**Res-8.1**	**Good Practice Products**	The project must have **20% of all active building systems (by cost)** meet a Responsible Products Value of **at least 6**. Active building systems are characterised by energy and movement, and include all mechanical, hydraulic, transportation and electrical systems present in the building. Lighting, security, and fire systems are also included. Products that make up active systems such as pipes, cables, ducts etc are included. Passive systems such as a façade shading device are not included.	**Credit Achievement**	**1**	Credit not targeted at this stage due to procurment uncertainty and cost risk. Achievement of this credit requires detailed specifications in design and detailed monitoring throughout construction for the preparation of evidence. Cost impacts are highly dependent on market conditions and product availability.	N/A	**NO**	**0**
		Res-8.2	**Best Practice Products**	The project must have 5**% of all active building systems (by cost)** meet a Responsible Products Value of **at least 11**. These products do not need to be in addition to the Credit Achievement; they can be used towards meeting the Credit Achievement AND the project must have **35% of all active building systems (by cost)** meet a Responsible Products Value of **at least 10.**	**Exceptional Performance**	**1**	Not targeted.	N/A	**NO**	**0**
Responsible Finishes	**CREDIT 9** The building's internal finishes are comprised of responsibly manufactured products.	**Res-9.1**	**Good Practice Products**	The project must have **40% of all internal building finishes (by cost)** meet a Responsible Products Value of **at least 7**. Internal finishes include flooring, plasterboard, paints, ceilings, partitions, doors, internal windows or similar. Joinery used as part of a wall finish may be counted, e.g., wall panelling or fixed shelving/cupboards that make up a partition. Sealants and adhesives used for finishes are also included. Loose furniture is not included.	**Credit Achievement**	**1**	Credit not targeted at this stage due to procurment uncertainty and cost risk. Achievement of this credit requires detailed specifications in design and detailed monitoring throughout construction for the preparation of evidence. Cost impacts are highly dependent on market conditions and product availability.	N/A	**NO**	**0**
		Res-9.2	**Best Practice Products**	The project must have 10**% of all internal building finishes (by cost)** meet a Responsible Products Value of **at least 12**. These products do not need to be in addition to the Credit Achievement; they can be used towards meeting the Credit Achievement AND the project must have **60% of all active building systems (by cost)** meet a Responsible Products Value of **at least 7.**	**Exceptional Performance**	**1**	Not targeted.	N/A	**NO**	**0**
						17				**3**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
HEALTHY									
Clean Air	**CREDIT 10** 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.	**Hlt-10.1**	**Ventilation System - Separation**	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	**Minimum Expectation**	-	The mech/design team to ensure that the indoor pollutant levels are maintained at acceptable levelas and as per standards.	Mech	**YES ME**
		Hlt-10.2	**Ventilation System - Ductwork Cleaning**	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	**Minimum Expectation**		The contractor to ensure that all ductwork that serves the building must be cleaned prior to occupation in accordance with a recognised standard.	Mech	
		Hlt-10.3	**Outside Air Rates - Minimum**	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% OR the system must be capable of providing enough outdoor air to maintain carbon dioxide (CO_2) levels at, or less than 800ppm within each space in the nominated area, at all times during the design occupancy period.	**Minimum Expectation**		The design team to ensure that the outdoor air is provided as per the required standard and meet the credit criteria. Provide atleast 50% greater than the AS 1668.2:2012 for all nominated areas. Mechanical team has confirmed the same. The adequate space requirement to be provided to ensure the installation of the ERV system.	Mech	
		Hlt-10.4	**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.	**Minimum Expectation**		The design team to eliminate pollutants by removing source of pollutants or exhausted directly to the outside as per recoqnised standards. This is captured in the design and confirmed.	Mech	
		Hlt-10.5	**Ventilation System - Hygiene 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)], additional requirements are applicable. Refer submission guidelines.	**Credit Achievement**	**2**	Not targeted due to impact of 100% OA increase and feasibility.	Mech	**NO 0**
		Hlt-10.6	**Outside Air Rates - Performance**	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% OR the system must be capable of providing enough outdoor air to maintain carbon dioxide (CO_2) levels at, or less than 700ppm within each space in the nominated area, at all times during the design occupancy period.	**Credit Achievement**		Not targeted due to impact of 100% OA increase.	Mech	

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Light Quality	**CREDIT 11** The building provides good daylight and its lighting is of high quality.	**Hlt-11.1**	**Lighting Comfort - Minimum**	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 R9 of 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/NZS 1680.1:2006, with a maintenance factor method as defined in AS/NZS 1680.4.; and All light sources must have a minimum of 3 MacAdam Ellipse.	**Minimum Expectation**	-	The design team to ensure the lighting design within the building meets minimum comfort requirements. Electrical team has incorporated the lighting comfort as part of the design.	Elec	**YES** **ME**
		Hlt-11.2	**Glare - Minimum**	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. Refer Submission Guidelines.	**Minimum Expectation**		The design team to ensure the glare from light sources are limited within the regularly occupied spaces. The hub rooms should be glare free. Incorporated in the design as confirmed by electrical team.	Elec	
		Hlt-11.3	**Daylight - Minimum**	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; Provides building occupants with unrestricted access to daylit indoor common spaces.	**Minimum Expectation**		The design team to ensure the building is providing daylight access to building occupants. For classrooms should have adequate access to daylight and views. Architect to confirm.	Architect	
		Hlt-11.4	**Artificial Lighting - Performance** **OR**	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. Min. expectation + The building provides best practice artificial lighting for 2 points	**Credit Achievement**	**2**	Lighting design to incorporate additional luminaires and high performance arrangements to meet credit intent and requirements. Electrical team has confirmed inclusion of the same.	Elec	**YES** **2**
		Hlt-11.5	**Daylight - Performance** **OR**	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 Class 2 and Class 3 buildings, 60% of the combined living and bedroom area of each 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. Daylight must be calculated using Daylight Autonomy. High levels of daylight are considered 160 Lux for 80% of occupied hours.	**Credit Achievement**		Control of glare may require blinds or screens to be installed to glazed facades. Specifically to the classrooms. To be confirmed by the project team.	Architect	**YES**
		Hlt-11.6	**Daylight and Artificial Lighting- Performance**	Exceptional Performance is awarded where the project complies with both Hlt-11.5 and Hlt-11.6.	**Exceptional Performance**	**2**	Exceptional performance is achieved when the project achieves daylight performance and artificial lighting performance.	As above	**YES** **2**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Acoustic Comfort	**CREDIT 12** The building provides acoustic comfort for building occupant.	**Hlt-12.1**	**Acoustic Comfort - Minimum**	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.	**Minimum Expectation**	**-**	Acoustic comfort strategy should be prepared by a qualified acoustic consultant during the design stage and the design solutions described in the stratergy must be incorporated into the contract documents. For Schools the following applicable acoustic criteria are to be addressed as below: 1. Max Internal noise levels 2. Min Internal noise levels 3. Acoustic seperation 4. Impact noise transfer 5. Reverberation control	Acoustic	**YES** **ME**
		Hlt-12.2	**Maximum Internal Noise Levels**	Internal ambient noise levels in the regularly occupied areas must be no greater than the upper range value relevant to the activity type in each space as recommended in the current AS/NZS 2107:2016.	**Credit Achievement**	**2**	Noise levels are designed to be suitable and relevant to the activity type. Ambient noise levels in primary and secondary spaces should be as per in Table 1 of AS/NZS 2107:2016. This applies to all primary and secondary spaces.	Acoustic	**YES** **2**
		Hlt-12.3	**Minimum internal noise levels**	Internal ambient noise levels in the regularly occupied areas must be no less than 5 dB below the lower range value relevant to the activity type in each space as recommended in the current AS/NZS 2107:2016.	**Credit Achievement**		Noise levels are designed to be suitable and relevant to the activity type. Ambient noise levels in primary and secondary spaces should be as per in Table 1 of AS/NZS 2107:2016. This applies to all primary and secondary spaces.	Acoustic	
		Hlt-12.4	**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. Refer submission guidelines.	**Credit Achievement**		Project to addresses noise transmission between enclosed spaces in line with Green Star requirements, with requirements differing according to the space type. Glazed operable walls have reduced requirements. This applies to all primary and secondary spaces.	Acoustic	
		Hlt-12.5	**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 and 60 for all other spaces.	**Credit Achievement**		Not targeted. Note 3 of 5 credit components required to achieve 2 points.	Acoustic	
		Hlt-12.6	**Reverberation**	The reverberation time in the nominated area must be not exceed the maximum for the intended use recommended in AS/NZS2107.	**Credit Achievement**		The reverberation time in the nominated area are below the maximum stated in the 'Recommended Reverberation Time' provided in Table 1 of AS/NZ 2107:2016. This applies to all primary and secondary spaces.	Acoustic	
Exposure to Toxins	**CREDIT 13** The building's occupants are not directly exposed to toxins in the spaces they spend time in.	**Hlt-13.1**	**TVOC**	At least 95% of internally applied paints, adhesives, sealants (by volume) and carpets (by area) must meet stipulated 'Total Volatile Organic Compounds (TVOC) Limits'. Refer Submission Guidelines.	**Minimum Expectation**	**-**	All internally applied paints, adhesives, sealants and carpets to meet TVOC as per greenstar requirements.	Architect, Contractor	**YES** **ME**
		Hlt-13.2	**Formaldehyde**	At least 95% (by area) of all engineered wood products meet specified formaldehyde emission limits. Refer Submission Guidelines.	**Minimum Expectation**		All formaldehyde used in the project should meet the VOC levels as per the green star standards.	Architect, Contractor	
		Hlt-13.4	**Existing Buildings - Lead, Asbestos & 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 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.	**Minimum Expectation**		Not applicable - not targeted.	Architect, Contractor	
		Hlt-13.5	**As-Built Emissions Sampling**	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.	**Credit Achievement**	**2**	Green Star Buildings requires as-built air quality testing and monitoring within the commissioning process. Not targeted in design phase. Potential to target during construction if further points are required.	Contractor	**NO** **0**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Amenity & Comfort	**CREDIT 14** The building provides internal amenities that improve occupant experience of using the building	**Hlt-14.1**	**Amenity Rooms**	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 a 'Parent room', a 'Relaxation, meditation, or prayer room', or an '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 staff or occupants AND the room must be no smaller than 10sqm. 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 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: 1) Credit Achievement for the Light Quality credit, 2) Credit Achievement for the Acoustic Comfort credit, 3) The 'Equal access to the building' criterion of the Design for Inclusion credit.	**Credit Achievement**	**2**	The design team/Architect to include one or several rooms designed to promote mindfulness or exercise/relaxation/meditation/prayer room for staff and students. The project team to confirm the same. Currently based on the design it is not provided.	Architect	**NO** **0**
Connection to Nature	**CREDIT 15** The building fosters connection to nature for building occupants.	**Hlt-15.1**	**Connection - 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.	**Credit Achievement**	**1**	Building arrangement with external and internal open spaces appears to be suitable. Further assessment required to assess the credit requirement.	GSAP	**YES** **1**
		Hlt-15.2	**Connection - Indoor Plants OR**	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.	**Credit Achievement**		Not targeted. Providing indoor plants in the nominated areas may not be suitable and appropriate for schools.	NA	
		Hlt-15.3	**Connection - Interaction with Nature OR**	Occupants can interact with nature either inside the building, or externally through a green façade (or wall) or garden. At least 5% of the building's regularly occupied areas or land within the site boundary (whichever is greater) must be planted area (either vertical or horizontal). 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).	**Credit Achievement**		The design will incorporate a strong connection to nature by integrating the school's food garden and outdoor kitchen. This initiative will provide students with hands-on experience in gardening and cooking, fostering a greater appreciation for the environment and sustainable practices.	Landcape	
		Hlt-15.4	**Connection - Indoor Plants and Interaction with Nature**	Exceptional Performance is awarded where the project complies with both Hlt-15.2 and Hlt-15.3.	**Exceptional Performance**	**1**	Not targeted.	Not targeted	**NO** **0**
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CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
RESILIENT									
Climate Change Resilience	**CREDIT 16** The building has been built to respond to the direct and indirect impacts of climate change.	**Rsl-16.1**	**Climate Change Pre-Screening Checklist**	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.	**Minimum Expectation**	-	Lucid to prepare Climate Change Adaptation Plan and communicate resulting requirements with project team.	GSAP	**YES ME**
		Rsl-16.2	**Risk and Adaptation Assessment**	A suitably qualified professional must undertake a climate change risk and adaptation assessment and author a report. 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.	**Credit Achievement**	**1**	Lucid to prepare Climate Change Adaptation Plan and communicate resulting requirements with project team.	GSAP	**YES 1**
		Rsl-16.3	**Management of 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 response.	**Credit Achievement**		Lucid to prepare Climate Change Adaptation Plan and communicate resulting requirements with project team.	GSAP	

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Operations Resilience	**CREDIT 17** The building can respond to acute shocks and chronic stresses that can affect its operations over time.	**Rsl-17.1**	**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 these 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 • Consult with relevant authorities with regards to evacuation procedures and emergency actions.	**Credit Achievement**	**2**	Not targeted.	N/A	**NO** **0**
		Rsl-17.2	**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 response	**Credit Achievement**		Not targeted.	N/A	
		Rsl-17.3	**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.	**Credit Achievement**		Not targeted.	N/A	
Community Resilience	**CREDIT 18** The building contributes to improving the resilience of the community.	**Rsl-18.1**	**Community Resilience Plan**	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 - Identifies how material shocks and stresses identified for the building may impact on these stakeholders by considering a clear set of social indicators. 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.	**Credit Achievement**	**1**	Not targeted.	N/A	**NO** **0**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Heat Resilience	**CREDIT 19** The building reduces its impact on heat island effect.	**Rsl-19.1**	**Urban Heat Island Mitigation**	At least 75% of the whole site area comprises of one or a combination of strategies that reduce the heat island effect. The strategies that can be used to reduce the heat island are: Vegetation; Green roofs; materials and hardscaping with minimum SRI values (refer Submission Guidelines), hardscaping elements shaded by overhanging vegetation; and water bodies and/or water courses.	**Credit Achievement**	**1**	The project site area to have combination of strategies that reduce the heat island effect. Landscape architect/ Architect to confirm the total percentage considered for heat island effect.	Architect, Landscape	**YES 1**
Grid Resilience	**CREDIT 20** The building contributes to the functioning of the grid as it transitions to a higher level of renewable energy capacity.	**Rsl-20.1**	**Active Generation & Storage Systems** **OR**	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. 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.	**Credit Achievement**	**3**	Not targeted.	N/A	**NO 0**
		Rsl-20.2	**Demand Response** **OR**	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.	**Credit Achievement**		Not targeted.	N/A	
		Rsl-20.3	**Passive Design Solutions** **OR**	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. • The building is mostly naturally ventilated (that is, the building has no mechanical cooling or heating for 80% of the building's occupiable area). • The building's occupiable area is less than 3,000sqm.	**Credit Achievement**		Not targeted.	N/A	
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CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET	
POSITIVE										
Upfront Carbon Emissions	**CREDIT 21** The building's upfront carbon emissions from materials and products have been reduced and offset.	**Pos-21.1**	**Embodied Carbon Reduction - Minimum**	The building's upfront carbon emissions are at least 10% less than those of a reference building. The building's upfront carbon emissions reductions must occur through good design and material selection. To demonstrate compliance, project teams can either model the Proposed and Reference Buildings following the methodology of the Life Cycle Impacts credit (Life Cycle Assessment); or complete the Upfront Carbon Emissions Calculator.	**Minimum Expectation**	**-**	Building emissions are at least 10% less than those of a reference building. Minimum expectation and can be achieved through good design and material selection. Emissions reduction can be targeted through use of structural timber.	GSAP, Architect, Civil, Structural	**YES**	**ME**
		Pos-21.2	**Embodied Carbon Reduction - Performance**	The building's upfront carbon emissions are at least 20% less than those of a reference building.	**Credit Achievement**	**3**	Not targeted	GSAP, Architect, Civil, Structural	**NO**	**0**
		Pos-21.3	**Embodied Carbon Reduction - Performance**	Exceptional Performance for 3 additional points: - The building's upfront carbon emissions are atleast 40% less than those of a reference building.	**Exceptional Performance**	**3**	Not tageted.	N/A	**NO**	**0**
Energy Use	**CREDIT 22** The building has low energy consumption.	**Pos-22.1**	**Energy Use - Minimum**	The building's energy use is at least 10% less than a reference building. 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	**Minimum Expectation**	**-**	Building energy use is less than 10% than a reference building. Can be achieved through the selection of efficient systems. Energy modellig will be performed by Lucid to confirm and meet the minimum expectation.	GSAP, Mechanical, Electrical	**YES**	**ME**
		Pos-22.2	**Energy Use - Performance**	The building's energy use is at least 20% less than a reference building with a maximum contribution from renewables.	**Credit Achievement**	**3**	Building energy use is less than 20% than a reference building. Can be achieved thorugh the selection of efficient systems. Energy modellig will be performed by Lucid to confirm and meet the credit achievement.	GSAP, Mechanical, Electrical	**YES**	**3**
		Pos-22.3	**Energy Use - Performance**	The building's energy use is at least 30% less than a reference building with a maximum contribution from renewables.	**Exceptional Performance**	**3**	Building energy use is less than 20% than a reference building. Can be achieved thorugh the selection of efficient systems and significant solar PV . Energy modellig will be performed by Lucid to confirm and meet the credit achievement.	GSAP, Mechanical, Electrical	**YES**	**3**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET	
Energy Source	**CREDIT 23** The building's energy comes from renewables.	**Pos-23.1**	**Energy Source - Minimum**	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.	**Minimum Expectation**	**-**	SINSW to confirm that the school building provides a 'Zero Carbon Action Plan'. Noting that it's a requirement for the project to achieve 5 star rating. Zero Carbon Action Plan consist of 4 important/priorities: 1. Drive uptake of proven emissions reduction technologies that grow the economy. 2. Empower consumers/School to make sustainable choices. 3. Invest in the next wave of emissions reduction innovation to ensure economic prosperity from decarbonisation beyond 2030. 4. Ensure the NSW Government leads by example.	SINSW	**YES**	**ME**
		Pos-23.2	**Renewables - 100% Electricity**	100% of 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. The contract can be part of a corporate power purchasing agreement for a building portfolio.	**Credit Achievement**	**3**	Not targeted. 100% renewables not available.	SINSW	**NO**	**0**
		Pos-23.3	**Renewables - 100% Energy**	100% of all **energy** under the control of the building owner/operator and all non-electricity energy provided for uses that are not under the building owner's control must be sourced from renewables. Fossil fuels cannot be used on site for any domestic hot water, space heating or cooking under any circumstances regardless of base build or tenant use. Fossil fuels for industrial processes are excluded from the assessment. Any fossil fuels used for emergency power or laboratory equipment must be less than 1% of the total building energy consumption and be offset for the first five years of operation. 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.	**Exceptional Performance**	**3**	Not targeted.	SINSW	**NO**	**0**
Other Carbon Emissions	**CREDIT 24** The building's emissions from refrigerants and remaining carbon sources are eliminated or offset.	**Pos-24.1**	**Emissions Offset - Refrigerants**	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. 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. See Green Star Renewables and Offsets Guide for more information on acceptable offsets.	**Credit Achievement**	**2**	Not targeted. Limited low-GWP product availability within market.	Mech, SINSW	**NO**	**0**
		Pos-24.2	**Emissions Offset - Refrigerants**	Emissions from the building's energy use must be offset. All emissions associated with LCA modules A1 - A5 (product sourcing and construction must be offset. Any other significant emissions (over 1% of total inventory) must also be offest.	**Exceptional Performance**	**2**	Not targeted. Significant costs may be associated with offset purchse.	N/A	**NO**	**0**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET	
Water Use	**CREDIT 25** The building has low water use.	**Pos-25.1**	**Water Use - Minimum**	The building uses 15% less potable water compared to a reference building.	**Minimum Expectation**	**-**	Provide water efficient sanitary fixtures: - All taps with a WELS rating of not less than 6 Stars (max. 5.0 L/min) - Shower heads with a WELS rating of not less than 3 Stars (max. 6 L/min) - Water closets with a WELS rating of not less than 4 Stars (max. 3.5 L/average flush, dual flush). - Urinals with a WELS rating of not less than 5 Star (Max. 1L/flush) Provide connection to recycled water network for toilet flushing and irrigation.	Hydraulic	**YES**	**ME**
		Pos-25.2	**Water Use - Performance**	The building uses 45% less potable water compared to a reference building.	**Credit Achievement**	**3**	Implementation of high efficiency fixtures, supported by recycled water use.	Hydraulic	**YES**	**3**
		Pos-25.3	**Water Use - Performance**	Exceptional Performance for 3 additional points: - The building uses 75% less potable water compared to a reference building.	**Exceptional Performance**	**3**	Not targeted.	N/A	**NO**	**0**
Life Cycle Impacts	**CREDIT 26** The building has lower environmental impacts from resource use over its lifespan than a typical building.	**Pos-26.0**	**Life Cycle Assessment**	The project demonstrates a 30% reduction in life cycle impacts when compared to standard practice. 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).	**Credit Achievement**	**2**	Optional inclusion. Recommended.	SINSW	**NO**	**0**
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CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
PLACES									
Movement & Place	**CREDIT 27** The building's design and location encourages occupants and visitors to use active, low carbon, and mass transport options instead of private vehicles.	**Pla-27.1**	**Change 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. The building must install showers and lockers based on the occupancy of the building. 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. 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.	**Minimum Expectation**	-	EOT facilities to be included in the design based on the no of occupancy of the building. Architect to confirm.		**YES** **ME**
		Pla-27.2	**Accessible**	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 - clear signage throughout the building and access points	**Minimum Expectation**		Easy access to various facilities to be incorporated in to the design. Plans are underway and will review once the plans are completed. Architect to confirm.		
		Pla-27.3	**Cyclist Facilities, Transport Plan & Private Vehicles**	In addition to the Minimum Expectation, the building's access prioritises cycling and includes bicycle parking facilities, a Sustainable Transport Plan has been prepared and implemented, the building has EV charging capabilities, transport options that reduce the need for private fossil fuel powered vehicles are prioritised, and the building's design and location encourage walking.	**Credit Achievement**	**3**	Point not currently targeted. Subjected to broader discusssion between SINSW and the GBCA.	Transport	**NO** **0**
Enjoyable Places	**CREDIT 28** The building provides places that are enjoyable and inclusive.	**Pla-28.1**	**Publicly Accessible Spaces**	The project provides new, publicly accessible spaces that are enjoyable and support community activity and interaction 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 (refer guidance below) • Be available to the community to use for free. It must be clearly demonstrated that the spaces are publicly accessible	**Credit Achievement**	**2**	Not targeted.	Architect	**NO** **0**
		Pla-28.2	**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 • 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.			Note targeted.	Architect	

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Contribution to Place	**CREDIT 29** The building's design makes a positive contribution to the quality of the public environment	**Pla-29.1**	**Urban Context Report** **OR**	The project team must provide an urban context report and public realm interface design that outlines the urban context of the development and the design responses. The report must include: • Urban context analysis including 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 changes. This may include Local or State Government's vision for the area, identify any local challenges which the building can help to address • Design responses including demonstration of the design responses to the urban context analysis and demonstration that the public space is contributing positively to the proposed urban context.	**Credit Achievement**	**2**	Target as part of existing design process.	Architect	**YES 2**
		Pla-29.2	**Independent Design Review** **OR**	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 • 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	**Credit Achievement**		Applicability of SINSW review process to this credit to be confirmed.	Architect	
Culture, Heritage & Identity	**CREDIT 30** The building reflects local culture, heritage, and identity.	**Pla-30.1**	**Community Led Design Response** **OR**	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 • Spaces and uses that reflect the local identities Where this pathway is being pursued, it must be demonstrated that the International Association for Public Participation Australasia (IAP2) core values for public participation were used and that the project achieved the 'Collaborate' status. The project must produce a report detailing the community engagement activities undertaken and resultant design responses.	**Credit Achievement**	**1**	Not targeted.	N/A	**YES 1**
		Pla-30.2	**Independent Design Review** **OR**	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 • 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 The Design review panel must be independent of the project. This can occur through an external Design review panel, such as the Government Architect Office, or in-house Design review panel, as long as it can be demonstrated that they act independent of the project team.	**Credit Achievement**		Applicability of SINSW review process to this credit to be confirmed. SDRP review process to be cited for compliance.	N/A	
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CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
PEOPLE									
Inclusive Construction Practices	**CREDIT 31** The builder's construction practices promotes diversity and reduces physical and mental health impacts.	**Peo-31.1**	**Construction Practices - Minimum Expectations**	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. 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	**Minimum Expectation**	**-**	Best practice requirement. The project to comply with On-site Facilities, Policies, and Training. The head contractor must: 1. Separate gender inclusive bathroom facilities and changing amenities with a high degree of privacy. 2. Diverse gender-specific fit-for-purpose personal protective equipment (PPE) for diverse body sizes and types. 3. Implement policies to address issues of discrimination, racism, and bullying on-site. 4. Provide training to all contractors and subcontractors.	Contractor	**YES ME**
		Peo-31.2	**Construction Practices - 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	**Credit Achievement**	**1**	In addition to the Minimum expectation, the project to comply with: Needs analysis : Carry out needs analysis of potential site workers anf sub-contractors at tender (or similar early stage) to determine appropriate actions. The policies and programs should be relevant to all construction workers.	Contractor	**YES 1**
		Peo-31.3	**Construction Practices - Physical & 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 fulfilment at work or mindful meditation.	**Credit Achievement**		In addition to the Minimum expectation, the project to comply with: Physical and Mental Health Programs. The contractor must introduce programs and solutions to address programs.	Contractor	
		Peo-31.4	**Construction Practices - Program Evaluation**	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.	**Credit Achievement**		In addition to the Minimum expectation, the project to comply progams's effectiveness. This can be evaluated via feed back and a review on the programs delivered.	Contractor	

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Indigenous Inclusion	**CREDIT 32** The building celebrates Aboriginal and Torres Strait Islander people, culture, and heritage	**Peo-32.1**	**Reconciliation Action Plan** **OR**	The project team plays an active role in the organisational Reconciliation Action Plan. OR The building's design and construction incorporates design elements using the Indigenous design and planning strategies and principles. Any design element must be informed by consultation undertaken with the local Aboriginal and Torres Strait Islander community or through nominated representatives. Where an organisational RAP has already been developed and endorsed, the project is required to adapt this to the project under certification. The project must provide an outcomes document detailing specific engagement, implementation and actions that have positively influenced the outcomes of the project.	**Credit Achievement**	**2**	Not targeted.	N/A	**YES 2**
		Peo-32.2	**Inclusion of Indigenous Design** **OR**	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, Shared Knowledge - Develop and implement respectful methods for all levels of engagement and sharing of Indigenous knowledge. The project team must demonstrate engagement has happened from concept design and continues through to operational handover.	**Credit Achievement**		At a minimum, the four principles from the Australian Indigenous Design Charter are to be addressed. Targeted through design with country process.	Design with Country	

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Procurement and Workforce Inclusion	**CREDIT 33** The building's construction facilitates workforce participation and economic development of disadvantaged and under-represented groups	**Peo-33.1**	**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) that directs **at least 2%** of the building's total contract value to generate employment opportunities for disadvantaged and under-represented groups. The project team must also include targets and annual reporting requirements in the strategy. The plan must include all the following: • 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 head contractors will be collected • Monitoring and reporting requirements • 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.	**Credit Achievement**	**2**	Socail procurement strategy to be developed by the contractor.		**YES 2**
		Peo-33.2	**Employment Opportunities**	Generation of employment opportunities for disadvantaged and under-represented groups can be achieved either: • Directly, through workforce targets • 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 the required 2% value 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 any of the following means: • Aboriginal and/or Torres Strait Islander businesses • Social enterprises • Disability enterprises Enterprise providers must be independently certified by third party organisations such as Supply Nation, Social Traders, Buy Ability and government chamber of commerce.	**Credit Achievement**		Credit to be targeted. Green Star compliance requirements (2% of contract value) are only marginally greater than the Aboriginal Participation in Construction Policy (1.5% of contract value). Social Procurement Strategy to be prepared for the project to facilitate compliance.		
		Peo-33.3	**Employment Opportunities**	Per Credit Achievement requirements above PLUS The project team must develop and implement a social procurement strategy or plan (this can be part of an overall project procurement plan/strategy) that directs **at least 4%** of the building's total contract value to generate employment opportunities for disadvantaged and under-represented groups. See Credit Achievement requirements for further information.	**Exceptional Performance**	**1**	Not targeted.	N/A	**NO 0**
		Peo-33.4	**Employment Opportunities**	Per Credit Achievement requirements above PLUS Generation of employment opportunities for disadvantaged and under-represented groups can be achieved either: • Directly, through workforce targets • 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 the required 4% value of the building's total contract value.	**Exceptional Performance**		Not targeted.	N/A	

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Design For Inclusion	**CREDIT 34** The building is welcoming to a diverse population and is welcoming to their needs.	**Peo-34.0**	**Inclusive Design**	To be compliant, the building's design and construction must be able to be navigated and enjoyed by stakeholders of diverse ages, genders, and physical and mental abilities. 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. • 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.	**Credit Achievement**	**2**	Inclusive design requirements for Green Star exceed EFSG requirements. Current design and previous reporting to be reviewed by the Head contractor by detailed design stage for compliance with this credit. Any gaps or additional requirements to be advised.	Architects	**YES 2**
		Peo-34.1	**Inclusive Design**	A Needs Analysis is conducted, meeting the following requirements: • The project team must consult with distinct community types to develop a needs analysis that will influence the project during the design phase • Consultation must be undertaken early in the design process and include a balanced cross-section of representation of the target group • 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.	**Exceptional Performance**	**1**	Not targeted.	N/A	**NO 0**
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CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
NATURE									
Impact to Nature	**CREDIT 35** Ecological value is conserved and protected.	**Nat-35.1**	**Impacts to Nature - Minimum Expectations**	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.	**Minimum Expectation**		The project must comply with all three of the following: 1. Site Ecological Value 2. Managing Light Pollution Impacts 3. Wetland Management Plan	Ecology	**YES** **ME**
		Nat-35.2	**Impacts to Nature - Light Pollution Impacts**	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 3 to 9 buildings (non-residential), the compliance is as per column 3 as per Table 2.1 of AS 4282:1997. 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	**Minimum Expectation**	**-**	The project to demonstrate that all outdoor lighting on the project complies standards. This is achievable and is confirmed by Electrical team.	Ecology	
		Nat-35.3	**Impacts to Nature - Wetland Management**	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.	**Minimum Expectation**		Site-specific Wetland Management Plan to be prepared by a qualified Ecologist.	Ecology	
		Nat-35.4	**Impacts to Nature - Performance**	The building's design and construction conserves existing natural soil, hydrological flows and vegetation elements; and if deemed necessary by an Ecologist, at least 50% of existing site with high biodiversity value is retained.	**Credit Achievement**	**2**	In addition to the Minimum Expectation, the project should comply: 1. Protecting Ecological Values, and 2. Retaining High Biodiversity Values	Ecology	**YES** **2**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Biodiversity Enhancement	**CREDIT 36** The building's landscape enhances the biodiversity of the site.	**Nat-36.1**	**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.	**Credit Achievement**	**2**	Landscape architect to advise and incorporate in the design.	Ecology	**YES 2**
		Nat-36.2	**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: The landscaping must meet the following plant diversity targets: 10% plant species; 20% plant genus; and 30% plant family. OR 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	**Credit Achievement**		Landscape architect to advise and incorporate in the design.	Ecology	
		Nat-36.3	**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 created as part of the development.	**Credit Achievement**		Ecologist to prepare the site's Biodiversity Management Plan.	Ecology	
		Nat-36.4	**Greater 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.	**Exceptional Performance**	**2**	Greater landscape area targeted.	N/A	**YES 2**
		Nat-36.5	**Endangered 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 250m² 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.	**Exceptional Performance**			N/A	
Nature Connectivity	**CREDIT 37** Wildlife movement is facilitated within and adjacent to the site.	**Nat-37.0**	**Species Connectivity**	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 182m² • 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.	**Credit Achievement**	**2**	Targeted. Requires ecology input.	N/A	**YES 2**

CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
Nature Stewardship	**CREDIT 38** Biodiversity is restored beyond the building site.	**Nat-38.1**	**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.	**Credit Achievement**	**2**	Not proposed for the project.	N/A	**NO 0**
		Nat-38.2	**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.	**Credit Achievement**		Not proposed for the project.	N/A	
		Nat-38.3	**Activities to Protect or Restore**	Achieving the credit can be done by either: • The project owner protecting or restoring an area offsite themselves • 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.	**Credit Achievement**		Not proposed for the project.	N/A	
		Nat-38.4	**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, development approval, or other legislated requirements, these actions cannot be used to demonstrate compliance with this credit.	**Credit Achievement**		Not proposed for the project.	N/A	
Waterway Protection	**CREDIT 39** Local waterways are protected, and the impacts of flooding and drought are reduced.	**Nat-39.1**	**Stormwater - Volume Reduction**	The development must demonstrate an annual average flow reduction (ML/yr) of 40% compared to pre-development levels.	**Credit Achievement**	**2**	Not targeted at this stage. Stormwater treated as part of wider deevlopment.	N/A	**NO 0**
		Nat-39.2	**Stormwater - Pollution Reduction**	All runoff discharged from site meets specified pollution reduction targets: Total Suspended Solids - 85%, Gross Pollutants - 90%, Total Nitrogen - 45%, Total Phosphorus - 65%. AND 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 200m² 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.	**Credit Achievement**		Not targeted at this stage. Stormwater treated as part of wider deevlopment.	N/A	
		Nat-39.3	**Stormwater - Volume Reduction**	The development must demonstrate an annual average flow reduction (ML/yr) of 80% compared to pre-development levels.	**Exceptional Performance**	**2**	Not targeted at this stage. Stormwater treated as part of wider deevlopment.	N/A	**NO 0**
		Nat-39.4	**Stormwater - Pollution Reduction**	All runoff discharged from site meets specified pollution reduction targets: Total Suspended Solids - 85%, Gross Pollutants - 90%, Total Nitrogen - 45%, Total Phosphorus - 65%. AND 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 200m² 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**		Not targeted at this stage. Stormwater treated as part of wider deevlopment.	N/A	
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CREDIT	AIM OF CREDIT	CODE	SUB-CREDIT	CREDIT CRITERIA REQUIREMENT	CREDIT TYPE	AVAIL. POINTS	PROJECT APPLICATION COMMENT	KEY PARTIES	PROJECT TARGET
LEADERSHIP									
Market Transformation	**CREDIT 40** Celebrates initiatives or outcomes that are deemed new and break barriers, and in turn inspire others to follow.	**Led-40.1**	**Innovative Initiatives**	To claim points, the project team must show that an initiative is innovative by demonstrating that the technology or process is not commonly used within Australia's building industry globally, depending on the context of the innovation claimed. Projects must demonstrate these initiatives align with the GBCA's scoring metrics: • Control of outcome: the initiative delivers a guaranteed outcome • Length of impact: the initiative delivers long-lasting impacts • Scale of impact: the scale of impact is significant. For example, the outcome may satisfy multiple UN Sustainable Development Goals • Transformation potential: the initiative has the potential to transform an industry or sector • Value generation: the initiative can deliver benefits to both stakeholders (e.g., building owner or occupants) as well as the general public.	**Credit Achievement**	**5**	Point not currently targeted.	GSAP	**NO** **0**
Leadership Challenges	**CREDIT 41** Promotes achievements that are considered leading practice in Australia	**Led-41.1**	**Leadership Challenge**	Leadership Challenges will be available on the GBCA website via the Resources Portals they are developed. All criteria as listed on the Leadership Challenge must be met to claim reward. There is no limit to how many Leadership Challenges project teams can target.	**Credit Achievement**	**3**	Opportunities yet to be identified.	GSAP	**NO** **0**
						8			**0**
					TOTAL (Excl. Leaderhsip)	**100**			**TOTAL** **39**